Multidisciplinary team members views about MDT working:

Results from a survey commissioned by the National Cancer Action Team

Open question responses: Radiologists

November 2009

Report prepared by:
Cath Taylor, Research Manager
National Cancer Action Team MDT Development Programme

Kings College London
St Thomas' Hospital
London
SE1 7EH
020 7188 0907
cath.taylor@kcl.ac.uk

Introduction
This report provides the responses given by **radiologists** to the open questions within an on-line survey commissioned by the National Cancer Action Team and undertaken by Business Boffins 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.

For full details regarding the methods and procedure of the survey, please see the final report issued in October 2009: http://www.ncin.org.uk/mdt

Open questions
In total, the survey contained 21 free-text (open) questions covering the following aspects of MDT working *(question shown in italics)*:

1. **Domains that are important for effective MDT working**
   What do you think constitutes an effective MDT?
   - The Team
     - Leadership
       - *What qualities make a good MDT chair/leader?*
       - *What types of training do MDT leaders require?*
     - Teamworking
       - *What makes an MDT work well together?*
   - Infrastructure for meetings
     - Physical environment of the meeting venue
       - *What is the key physical barrier to an MDT working effectively?*
     - Technology (availability and use)
       - *What impact (positive or negative) does teleconferencing/video-conferencing have on an MDT meeting?*
       - *What additional technology do you think could enhance MDT effectiveness?*
   - Meeting organisation and logistics
     - Preparation for MDT meetings
       - *What preparation needs to take place in advance for the MDT meeting to run effectively?*
     - Organisation/administration during MDT meetings
       - *What makes an MDT meeting run effectively?*
   - Clinical decision-making
     - Case management and clinical decision-making process
       - *What model of decision-making could be used for patients with recurrence/advanced disease if these patients are not discussed at an MDT?*
       - *What are the main reasons for MDT treatment recommendations not being implemented?*
       - *How can we best ensure that all new cancer cases are referred to an MDT?*
       - *How should disagreements/split-decisions over treatment recommendations be recorded?*
     - Patient-centred care/coordination of service
       - *Who is the best person to represent the patient's view at an MDT meeting?*

- *Who should be responsible for communicating the treatment recommendations to the patient?*

2. **Measuring MDT effectiveness/performance**
   - *What other measures could be used to evaluate MDT performance?*

3. **Supporting MDTs to work effectively**
   - *What one thing would you change to make your MDT more effective?*
   - *What would help you to improve your personal contribution to the MDT?*
   - *What other types of training or tools would you find useful as an individual or team to support effective MDT working?*
   - *Please provide details of training courses or tools you are aware of that support MDT development.*

4. **Final comments**
   - *Please insert any final comments or observations on the characteristics or indicators of high-performing MDTs and appropriate measures of performance.*

The responses to each question have been compiled into reports according to each discipline, as follows:

Professional Group	**Discipline**	**Total number of respondents to survey**
Doctors	Surgeons **Radiologists** Histo/cytopathologists Oncologists (clinical and medical) Haematologists Palliative care specialists Other doctors (e.g. physicians, GP)	325 **127** 126 164 98 65 188
Nurses	Clinical nurse specialists and other nurses (e.g. nurse consultants, matrons, ward nurses etc)	532
Allied Health Professionals	Allied Health Professionals	85
MDT coordinators	MDT coordinators	302
Other (admin/clerical and managerial)	Other (admin/clerical and managerial)	42
Total number of MDT members who responded to the survey		**2054**

Method

- The total number of respondents from each discipline is shown in the table above.
- The number of respondents who responded to each question is provided at the start of each question.
- All written responses are presented in an unedited form, exactly as given by respondents (including any typographic errors, spelling mistakes, use of capitalisation etc). Exceptions to this are:

a. Where respondents did not provide an answer to a question but instead used a symbol (e.g. /) to indicate that they wanted to miss out the question. Such responses have not been included.
b. Where respondents used free-text questions to simply refer to the previous (multiple choice) question (e.g. 'see above' or 'as above'). Such responses are removed due to the lack of context provided by including these in this report but a total count of such responses is provided in the summary at the start of each question.
c. Where respondents have named an organisation or Trust or potentially identified themselves. Their responses have been anonymised.
d. Where respondents used potentially offensive language. Any such words have been replaced with xxxx.
e. If respondents have given comments that are not relevant to the question. Such comments have been removed from the response.

Responses to 3 of the open questions have been fully analysed to-date and results are provided in the final report issued in October 2009. These are:

- *What do you think constitutes an effective MDT?*
- *What qualities make a good MDT chair/leader?*
- *What one thing would you change to make your MDT more effective?*

Contents

Domains that are important for effective MDT functioning

What do you think constitutes an effective MDT?

96 radiologists responded to this question.

1. well organised. good chair with all team members present, valued and able to express their opinions as appropriate. efficient and effective use of time.
2. Well organised with all the notes present and electroinc data gathering More than one person from each discipline for debate on treatment
3. Tolerable work load and full attendance
4. Time to prepare case approprate referral weekly cover for all members so al specialties are always available
5. Thorough preparation of the cases beforehand and all the relevant members and patient information/results present so that presentations and decisions are efficient
6. There must be respect, willingness to share information and to accept team decisions, and really good preparation by each professional group before-hand. Results, reports of images, biopsy reports, X-rays etc. must be available, and ideally the clinicians involved in obtaining them. Not every mammogram and not every slide need be shown, but interesting cases should be included to teach us all, and the discordant or difficult cases need a lot more time than the concordant and routine.
7. the right people, and not too many people good communication good record keeping
8. Technical support to display data such as imaging and histopathology slides and availability of studies performed in other institusions for example timely transfer of those studies and reports onto the local PACS system. Members of the MDT should of course feel free to discuss treatment plans and to solve controversial opinions. Good support from clerical staff such as the MDT coordinator is essential.
9. Teamwork,committment from all members and sufficient to allow full prepn
10. Teamwork
11. Team work with members who put their egos aside for the benefit of the patients
12. sufficient time to prepare and summary of patients clinical status sufficient time to present data good time management with no overruns into other sessions more than one weekly meeting if necessary
13. sufficient time for meeting sufficient time for preparation all relevant people present
14. streamlined and efficient presentation. No repetition of discussion.
15. Sound and reproducable decision making
16. Small focussed group of relevant team members with good facilities to demonstate imaging and pathology.
17. significant preparation and a smooth well run meeting with all core members represented
18. satisfactory
19. right decision for the right patient
20. Review of data (esp imaging in radiology) prior to MDT which means being sent details of patients to be discussed at a reasonable time, not the day before. Active participation of all core members during the MDT. Good documentation of discussions and outcomes.
21. Respect for specialist opinion and willingness to accept advice, good lead at MDM, good surroundings and easy to hear, good support (notes, films, MDM notes) and secure follow-up to MDM descisions.
22. Regular attendance by all members. Time to prepare beforehand, recognised in job plans.COMMUNICATION.Adequate imaging facilities, diagnostio not clinical workstations in MDT room and images from other institutions availible on PACS not just on CDs.
23. regular and prompt attendance of the core members including physician and surgical input plus radiologist skilled in the relevant area. Needs an effective chairperson to lead the meeting
24. proper organisation time to prepare cases beforehand time to add addendums afterwards everyone concentrating on the job in hand only one person talking at

once

25. presence of all core member, good coordinator
26. Preparation of cases by all disciplines of "their area". Focussed meeting. Adequate time both for preparation of meeting and meeting itself. Team working.
27. One where the appropriate effectors of imaging, analysis, primary treatment and adjuvant treatment have the most up-to-date comprehensive data, to allow them jointly to classify and propose the next step(s) in management of their disease territory according to their combined experience and their frequently reviewed local protocols.
28. one that works well together in providing high quality patient care.
29. One that makes quick effective decisions on patient management
30. One in which the team work together to gain the best outcome for the patients
31. Mutual respect. High quality staff who are willing to communicate.
32. Multidisciplinary challenge from all professionalgroups for the best interest of patients
33. Multi-speciality representation. Structured meetings. Management plan agreed and recorded at the meeting. Follow-up to ensure management plan has been actioned. Accurate data recording.
34. Members from all disciplines involved - in breast - pathologists, breast & plastic surgeons, radiologists, radiographers, nurses,geneticists.
35. Making informed decisions in a speedy manner, which is in the patient's best interests
36. Keen members who can see the benefit to patients from regular communication with colleagues.
37. Informed discussion of all aspects of patient care
38. Having the list distributed in advance and only relevant cases put onto the list and only when complete data set available to make decisions on. Prepared radiologist, patholgist and clinician so each can summarise the important relevant findings
39. hard work, cohesive team members, and sufficent time...as a radiologist can take well inexcess of a PA to prepare and take part in each mdt(averages between 3 and 6 hours depending on the mdt)
40. Good working relationships between members.
41. good time management. leadership. equipment and conditions. refreshments. availablity of records and images. expertise. The discussion.
42. good mechanisms to review appropriate patients with appropriate investigations available on the day and representative members of the whole team present
43. good leadership, good organisation, enthusiasm by all members, good facilities (computer entry, image projection etc.),
44. Good leadership and organization
45. good interaction and organization
46. good info
47. Good imaging display. Good preparation and record keeping. Simple IT equipment which works
48. Good communication, openness, good chairing, good organisation, patient details circulated in advance
49. Good communication between teams, reliable coordination of imaging, meaningful discussion of management
50. GOOD COMMUNICATION MUTUAL RESPECT UNHURRIED MEETING WITH TIME IN ADVANCE TO PREPARE PRESENTAION OF DIFFICULT CASES
51. Good communication No blame
52. Good co-ordinator,good lead clinician
53. Good co-ordination between the different specialities, consistency in attendence, designated venue and time, audio visual support and feedback.
54. Good Clinicians, Radiologists and Pathologists. Defined protocols, access to information and good record keeping
55. good clinical preparation by all groups with appropriate regular attendance and proper patient selection
56. Good clinical knowledge of the patients with specific questions that need addressing.

57. Good chairing; good data collection/coordination
58. Good attendance. Input from members to formulate decision.
59. Good attendance Team approach Well stuctured patient pathways
60. Genuine scope for discussion Adequate protected time for all key members inclusion of all cases
61. From radiology perspective, a functioning PACS system capable of rapidly displaying patient images from base and outside hospitals during the meeting and, allowing radiologist to quickly review cases prior to the meeting. Reports from outside hospitals should be available for all imaging studies, rather than, as is almosts always the case, images alone.
62. Focussed discussion about the parameters of an individual's symptoms, clinical signs, investigations, preliminary and definitive pathology, surgical and post-surgical treatment with relevant experts attending to interpret (preferably to present) the relevant data. Decisions regarding extended investigation (eg staging), the need for repeat investigation or treatment and follow-up should be made, if necessary at successive meetings. Complex cases may benefit from pre-surgical discussion, but straightforward cases can follow agreed, regularly reviewed protocols and be discussed between surgery and post-surgical adjuvant therapy. Data must be available and open to enqiury through PACS and other reporting systems at the meetings. Ideally, time should be set aside within working hours for the meetings. Adequate display technology for data and images (including pathology slides) must be available. Junior staff must be actively involved in the culture of MDMs from an early stage in their careers. Senior staff should be sufficiently numerous to allow meetings to proceed within reasonable time-frames for the patients, whether or not the executive practitioner is present. Hospital notes must be available to annotate the MDT decisions and advice as they are produced, or a secure system of recording made available, to be copied to the notes in time for the next OPD appointment. All cases with the relevant diagnosis, or undergoing surgery for the potential diagnosis, should be reviewed. The need to separate pre- and post-surgical cases into different meetings is an ideal rather than a necessity. There must be a method to ensure that cases incomplete at one MDM are automatically appointed to the next (or next effective) meeting. The role of the MDT Co-ordinator is paramount and needs to be studied by the individual, protocol-controlled, and familiar to all personnel involved. The Co-ordinator and data-collector can be the same person, so long as time is made available, but there should be a suitable substitute for each role (whether one or more individuals) to cover leave of absence for any reason (ie possibly at short notice in case of illness). The matter of "control" of MDMs is contentious, as dictatorial personalities may be inappropriate. History shows that better meetings include those when individuals are seen to have equal status - that every lead clinician feels that he or she is personally "in charge". There should be access to an arbitrator (such as the Medical Director of the Hospital) who can arbitrate at short notice if there are fundamental disagreements about the running or decisions made at the meeting. There must be more that need to go into this diatribe, possibly to be answered in later questions, but that is all I can come up with now.
63. Everybody turning up on time. Excellent A-V aids. Proper preparation before the meeting. Exclusion of inappropriate cases at the meeting. An atmosphere of collaboration, not competition.
64. Efficient timely decisions with all information and appropriate specialist expertise available
65. Efficient (works quickly), representative (of all professional groups), well organized (plenty of notice to review work prior to the meeting)
66. Effective teleconferencing facilities Effective chairing Effective NDT coordinator Enough Time Dedictaed data collection personel Facilities to allow easy auditing
67. effective communication between the various subspecialties with the best interest for the patient at heart
68. effective communication between and contribution from all the members, good organisational support
69. Discussions between surgeons/phyciscians, radiologists, pathologists, allied mediacl staff to achieve 1. confirm the diagnosis 2. define a management plan

70. Discussion of selected cases only, where the input of the differing professional groups is needed
71. Discussion of all cases Preparation time Active Guidelines Individual Treatment plans Good Communication before and after Meeting Good administration to ensure compliance with treatment plans. Audit of planning actions Regular Review Meetings Educational Content Active Participation in Network Meetings Documentation
72. Core of people who can discuss cases and arrive at a consensus. Needs to be open discussion. Essential components are effective co-ordinator and chair. Multidisciplinary nature, including nurse specialists also important.
73. Communication, planning, adequate time allocation
74. Combined working of the clinic teams with imaging and pathology in an environment supported by a very good IT structure/data collection that spans different trusts.
75. Clinician/radiologist/pathologist all familiar with the case, with single point descision making.
76. Clear roles and objectives for each member and the desire to produce a first class service
77. Attendance by key members of different disciplines. Adequate prior preparation so meeting is not unnecessarily prolonged.
78. attendance by clinicians who know pts clinical condition. time for radiological review prior to meeting
79. Appropriately-selected cases; "flat" blame-free culture; explicit decisions
80. Appropriate people, with the relavent skills and relavent data present to enable swift and efficent patient centred decison making.
81. Appropriate and motivated clinicians working together to achieve the same goal (effective patient care)
82. An effective MDT performe the functions of the MDT well. These are many and include; Ensuring the correct tests have been done and reviewed by experts with specialist expertise in that tumour site to enable accurate diagnosis, staging etc. Patients are recruited into trials. Patient information is good. The best treatments are affered as appropriate. Data is recorded. etc
83. All the members of the MDT working together for the patient's benefit
84. all relevant people being present for discussion focussed lists ie why the patient is being discussed adequate facilities and time
85. All members working together and efficiently without repetition.
86. all members to be awre and preapred each case
87. All Information available and easily reviewable ie not disorganised notes and all members of MDT present A clinician who has seen the patient or knowledge of suitablity of patient for actions / interventions discussed Ability to project PACS images and scroll through images effectively ie not a web browser technology Funding to have any outside images supplied on CD to be loaded onto PACS and ready for the MDT Adequate MDT preparation time by all involved so that meeting can be efficient A decision made and recorded at the time of the MDT
88. all core members able to effectively discuss the pts
89. Adequate time to spend discussing each patient
90. Accurate, excellent quality data collection that is communicated effectively and in a timely fashion. Collation of an accurate MDT list in advance of each meeting that truely reflects the required imaging etc to be discussed and retrieval of that imaging if it is not on the trust PACS. Good, effective working relationships between all core members of the MDT. Good quality RELIABLE IT and adequte IT back up at the time of each meeting.
91. ability to pull together all relevant information, clinical, radiological, pathological and social to ensure appropriate decisions made for best patient care
92. A group of like minded people who bring differrent skills for the diagnosis and treatment of cancer who can work effectively as a team
93. a good sense of team, effective communication, sufficient time and good preparation
94. A core of people from all the relevant disciplines. A co-ordinator to organise the meeeting, get together all the relevant imaging, case notes and any other documantation neccessary to discuss each patient fully. Also to liase with pathology

95. A consistent quorum of especially of surgeon plus oncologist otherwise cases come back again and again.
96. A collaberative decision making process with all relevant information available which is effectively documented and then acted upon

The team

What qualities make a good MDT chair/leader?

49 radiologists responded to this question.

1. Understanding of pathology, investigations and treatment with a responsibility outside of the MDT in terms of patient care
2. Time management skills. Encourage exchange of views and accept consensus. Record clear summary.
3. The ability to participate as an equal with other members and the personal authority to take control when needed, coupled closely with the ability to avoid controlling where it is not needed.
4. Team player, patient, calm, good clinician, respected
5. Taking everyones views and thetn make a decision
6. Strong, polite and knowledgeable
7. someone with good management skills who can attend frequently and who can communicate effectively
8. Someone who can focus and keep the core members focused on the question in hand . Be able to summarise the MDT treatment decision. Good time management of the list so complex difficult cases have more time for discussion than straightforward ones.
9. See bigger picture while others dwell on detail
10. Respected clinician, good communicator,
11. respected by the team. seeks views of members equally. Ensures approriate resourcing of support services/clerical/it
12. respect and proven ability to control the meeting and an abilkity to accept advice.
13. Promoting healthy discussions, evidence based practice,choosing the best treatment plan agreement between the members
14. Organisation Strong control of meeting
15. open-mindedness common sense humility able to summarise
16. negotiating skills
17. Needs to be respected. Firm. Able to move people on, summarise and achieve concensus.
18. must be an acknowledged expert in the field who enjoys the respect of colleagues. Must be even handed and diplomatic and a good communicator.
19. moderately assertive personality good communication skills
20. make everyone work together as a team
21. logical, clear-headed unbiased approach
22. Leadership, listening
23. Knows how to pace the meeting i.e. quickly through quick cases
24. Knowledgeable Respected Good Communicator
25. intellectual ability, subject knowledge, management skills to ensure MDT remains focussed.
26. informed, clarity of thought and expression. fair but firm. ability to seek views, extract decisions and keep the meeting on track.
27. informed decision making
28. I don't think a chair/leader is important. Individual consultants should present their own patients and take responsibility for their own section of the meeting
29. good organizational and inter-personal skills, ideally good clinician as well

30. good coordinator and leader
31. Good communicator with good rapport with team members and sound clinical base knowledge
32. familiar with the technology able to include all members of the team guides discussion so all cases recieve appropriate consideration
33. dont really have one
34. Don't know.
35. control
36. Communication skills; understanding the issues; ability to summarise; ability to keep on track and keep people focused; tact and diplomacy
37. communication issues
38. Common sense, time-aware
39. commitment, diplomacy
40. Clear direction and non-confrontational approach
41. Clear communication and direction. Good overall understanding of the speciality and awareness of the contribution from all members. Someone who all members like and respect.
42. Calm, knowledgeable, sense of humour, diplomatic but clear
43. to value acknowledge each members contribution, be able to summarise decisions, encourage discussion but also keep the meeting concise
44. ability to resolve conflict clear thinking ability to summarise respected by everyone else articulate
45. Ability to move the meeting on and focus attention of the meeting where it is most needed.
46. Ability to involve people, summarise, time manage, motivate.....and stand to one side if too close to a difficult decision. Radiologists and pathologists, CNSs can do this last part well if the issue is conentious eg surgery v oncology.
47. ability to control the personalities and get on with the work
48. a knowledgeable clinically involved doctor with good communication skills who is organised
49. a clear thinker, with the mutual respect of colleagues

What types of training do MDT leaders require?

37 radiologists responded to this question.

1. Visiting other mdts to emulate good practice
2. They either have it or they don't
3. The best ones know what to do.
4. team working
5. presentation skills, public speaking skills, masterclasses from experienced mdt leaders
6. poeple management
7. Not aware of a need for special training. It is a part of being a doctor that you possess these skills. If you do not, your coleagues lose confidence in you
8. None specifically
9. none as far as I am aware
10. None - they need assessment to determine whether they have leadership qualities required
11. management and leadership
12. management and a strong personality
13. leading efficient discussion
14. leadership skills.
15. leadership skills
16. leadership and communication skill training
17. IT to work the apparatus in the room!

18. if its the right person probably none
19. I don't think a chair/leader is important.
20. how to control and lead a meeting
21. How to chair meetings
22. Dont' know
23. Don't know, but suggest a natural aptitude, long experience of meetings in the NHS, or a degree in psychology!
24. Disease specific Communication Management
25. Depends on clinical experience
26. conflict resolution time managemetnt
27. Communication skills, leadership skills.
28. Communication skills and how to be assertive
29. communication skills
30. communication skills
31. communication and managing teams
32. Common sense
33. Clinical experience. The confidence of her/his colleagues.
34. Chair training.we have run a few courses in Sussex already
35. assertiveness training!!
36. Anything thayt helps with the above
37. ?

What makes an MDT work well together?

40 radiologists responded to this question.

1. understanding and organisation
2. trust in knowledge and judgment
3. time awareness; knowledge of cases; good IT
4. The people
5. team
6. shared purpose and vision good leadership good back up and organisation
7. respect the various views when different from one another
8. Respect for each others' expertise and willingness to learn and listen to each other
9. Respect
10. pt focussed and not competing for glory
11. People
12. mutual understanding of difficult diagnostic areas
13. mutual respect. professionalism, desire to do the best for the patient.
14. Mutual respect, and a shared view that the patient is more important than any member of the team.
15. mutual respect and ownership of network guidelines
16. Mutual respect and mutual objectives in the patients' best interests.
17. Mutual respect An ability to listen to each other Regualr contact outside meetings
18. mutual respect
19. mutual respect
20. MDT members getting to know each other at the meetings certainly helps
21. Like-minded groups of clinicians of all disciplines.
22. Leadership. Sense of humour.
23. Individual commitment to it, and good leadership
24. Good working relationships
25. Good team working, respect for others opinions. Shared outcome objectives
26. good relationships and respect amongst key mdt members
27. Good leadership; appropriate attendance; availability of core information and IT

28. Good leadership and shared vision.
29. good communication efficient discussion
30. good communication
31. Folk not hogging the limelight
32. Effective leader, coordination, attendence, evidence based discussions, feedback and suggestions to improve the team work
33. effective communication between members, clear lines of communication, good organisational support
34. Collaberation between colleagues
35. clinical dedication. Good IT for displaying imaging and pathology with immediate technical support and trouble shooting
36. Attentive listening Staying focussed
37. An individual's knowledge of other members' resources (personal and professional). A sense that one's opinion is valid and valued. A sense of control over one's input. Humility: to admit when other, possibilites have value. Objective if sympathetic handling of each individual case.
38. a range of personalities involved knowledge communication
39. A mutual respect and trust for each member of the team
40. a mixture of good organisation and personalities

Infrastructure for meetings

What is the key physical barrier to an MDT working effectively?

70 radiologists responded to this question.

1. working PACS
2. Viewing conditions for diagnostics and connection to remote sites for conferenced meetings, can feel remote and uninvolved.
3. video-conferencing over several sites
4. video-conferencing
5. venues unable to accommodate PACS workstations - not plausible to use WEB browser for MDT's
6. unavailability of imaging/reports/slides and not functioning projection facilities.
7. Too small a room
8. Too much light to see radiology well
9. The correct people must attend regularly. The results of imaging/pathology must be available
10. Teleconferencing facilities
11. Teleconferencing
12. technology/layout of room making presentation of data difficult
13. technology...lack of imaging
14. Technology not working
15. talking
16. Seeing the screen
17. Repeated failure of core attendance
18. poor viewing facilities for images and slides
19. Poor presentation/slow appearance of images and slides.
20. poor preparation, when people have personal agendas, when insufficient time is allocated to complex cases, when the chair moves on to the next case before discussion of a previous case is finished
21. poor or no coordination, lack of preparation time, inadequate or untimely information, poor attendance, lack of contribution from members
22. Poor Leadership
23. Poor IT systems
24. poor image projection, too much or too little light, not enough desk space, lack of

computer availability

25. Poor equipment and visualisation of important diagnostics
26. poor AV technology
27. Poor acoustics or background noise preventing discussion being heard. Peolpe sitting towardes rear unable to contribute
28. People not turning up
29. overcrowded hot rooms
30. Not being able to see the screens
31. NOT BEING ABLE TO SEE RADIOLOGY
32. Not being able to hear because of room design
33. non availability of patient information , radiology and path suitable IT links insufficient time
34. Noise. VC etiquette very important.
35. No proper venue and inefficient co ordination.
36. no electronic links
37. multiple conversations!
38. memebers getting into personnel issues and rows.
39. members unable to see or hear each other when presenting cases
40. Malfunctioning equipment
41. lack of viewing facilities for imaging
42. Lack of core staff
43. LAck of Communication infrastructure resulting in delays obtaining imaging
44. Key clinicians not being there
45. IT - eg viewing of radiology/pathology/cancer registry pages or the video link where used
46. insufficient space for all to sit comfortably
47. Information not available Fragmentation due to outsourced investigations performed at ISTC and Independent providers
48. incomplete work up
49. Inadequate viewing/audio facilities
50. inadequate viewing of path/mammograms - not able to read cancer register info
51. inadequate technology to present diagnostics
52. inadequate technology or space
53. Inadequate or poor viewing facilities of imaging and histology
54. Inadequate IT
55. inadequate desk space for paper work and keyboard use
56. Inability to hear and inability to see radiological or pathological images
57. Inability to draw attention of all concerned to any important point - including those from, eg, specialist nurses or psychologists with relevant information specific to the patients' non-physical needs and circumstances. There should be system of signalling that an opinion needs to be passed. Physical size of the meeting and physical distance from the centre of the meeting of participants (vs the observers) is central.
58. having a front row that does not allow participation from others
59. failure or lack of projection/tele-conferencing facilities
60. Excessive extraneous noise
61. disorganization
62. difficulty viewing pathology and radiology and the MDT summaries
63. crowded environment poor acoustics
64. core members lost in the crowd
65. being unable to hear each other
66. being able to project the radiology and histology so everyone can easily view it.
67. audible speakers
68. all core members not being present. unable to view images or pathology
69. Acoustics very important - Everyomne should be able to hear as well see images etc.

70. 1. 2. and 3. Absence of data. 4. Inco-ordination of presentation. 5. Absence of prime decision-makers. 6. Noise/soap-boxing.

What impact (positive or negative) does teleconferencing/video-conferencing have on an MDT meeting?

74 radiologists responded to this question.

1. Will let you know when it works. Adds to time hugely
2. Wider discussion. Involvement of specialist centre and clinicians
3. When it does not function properly, it can waste a lot of time but we do get imput that would otherwise be absent.
4. We do not need or use it in the MDTs I attend
5. videoconferencing is possible if the equipment works, but needs extra time to set up before the MDT
6. Video-conferencing improves patient care in a centralised Cancer care. Allows peripheral radiologists participate in the MDTs and maintain their skilss
7. too long poor interaction
8. time consuming and unacceptably frustrating for radiology if not linked to a PACS workstation
9. teleconferencing does not promote team working and those aspects of interpersonal interaction which are important to cohesive working and the benefits in time saving from travel being reduced are probably not justified for travel times of about 30mins
10. Telecomferencing is difficult as the IT is only just good enough.....
11. takes longer, requires more concentration, bad connection/reception makes it difficult, allows discussion of cases cross hospitals/institutions with relevant members present who would otherwise not be able to attend
12. sometimes, a large audience on teleconferencing discourages adequate discussion of cases, as there is a large number of cases to get through..
13. sometimes positive - for a small number of complex cases that need specialist opinion negative - imaging projection via webbrowser or videolink is suboptimal/cannot be used for true 2nd opinion reporting
14. slows the meeting down communication not great
15. Slows meeting down but allows more people to attend
16. Slows it down More people make it less efficient
17. Slows it down
18. slows it down
19. slow and inefficient - seldom seems to make any change to management
20. Saves time for travel. Inclusive. We still have some technical issues...particularly relating to showing images across multiple sites.
21. Reportedly (from published experience at Southend) more secure, "real-time" co-ordination with tertiary referral centres. This is not applicable to my solitary MDT.
22. Reduces discussion to a very basic level, and often have to repeat things, and this will eventually cause a serious error
23. positive but we still need to look at the original imaging to make any diagnositc decisions as well as the projected distant scans
24. Positive - can involve more people and increase number of patients discussed Negative - too many patients on the MDT, we discuss over 80 patients on a regular basis. Little cross-site discussion as there is time-lag of speech and images.
25. Poor voice control
26. poor quality connections mean that image review quality suffers
27. Personal interaction impossible
28. painfully slow and time-consuming. Inappropriate use of MDT by satellite units to obtain 'an opinion'
29. Pain in the .....! Rubbish kit, delays in connecting, timing of link up to suit the centre, without regard for local demands, etc

30. Only worthwhile if the technology actually works, otherwise potentially dangerous/misleading
31. Only way of getting pathology input at one of my MDMs
32. Not very much
33. Not had the opportunity to try it yet. In the (slow) process of setting it up
34. Not experienced it.
35. not as effective as all being present but a reasonable second best option
36. Not actually used (yet).
37. none
38. no experience of this
39. no experience of teleconferencing
40. my initial impression is that is a poor substitute for having people physically present. Interpersonal relationships cannot develop to the detriment of communication/pt care
41. More time is wasted getting the system to work properly than working. People do not speak as freely as they don't like seeing themsleves on the screen. The meeting can become too big and people try to talk at both ends of the wire causing confusion.
42. More interruptions, lack of connectivity, can delay decision making if dependent on remote consultant opinion
43. More efficient when people from distant centres need to give an opinion
44. makes meeting much slower
45. Lack of cross linkage to the participating unit PACS systems renders remote opinion on images from other centres useless
46. Key personnel, not able to attend because of location, can share in the meeting and exchange views
47. It slows the meeting down. Difficult to hear remote clinicians. Technology not reliable enough for links to work consistently.
48. It is available to us but we do not use it.
49. It has revolutionised the MDT.
50. It enables everyone to be present and speeds up decision making
51. It enables contributions from members not physically present, but teleconferencing can be rather distracting as the voice is detached from the face and when there are more than just a few people at the other end, it can seem a little weird. Video-conferencing on the other hand is much better as the audio is better and one is also able to identify the person(s) contributing. It also allows physically separate MDTs to occur at the same time with contributions from either end. This however could result in a much longer discussion than necessary.
52. It can provide additional useful input but it can result in some resentment when ex-cathedra decisions are handed down from one end to the other rather than team decision making
53. it can increase confusion and the chance of making mistakes, it is definitely better for communication and smooth running of the meeting if all members are in the same room at the same time.
54. improves attendance with minimum disruption to the clinicians as it avoids unneccessary travelling
55. I understand 2nd hand that it is very slow
56. I have never used it
57. helpful when working at two sites
58. Have never been able to get our equipment working
59. Good when you have it and it's working
60. Good when it works, very disruptive and frustrating when it does not. Can lead to treatment delays if it does not. Tele conferencing is difficult - lack of visualisation a huge barrier. Tele good at allowing people to participate without having to travel
61. Good when it works, but the technology has to be robust as the meeting falls apart if it fails.
62. extra opinions from colleagues elsewhere thoracic surgical opinion every week rather than once a fortnight

63. ensures greater attendance.
64. Enables direct discussion with surgeons at cardiothoracic/upper GI centres.
65. Doesn't work, expensive and acts as a barrier to interaction
66. do not have the facility
67. Disadvantage - porr resolution when viewing radiology or path images
68. Difficult to hear when there is more than one person speaking at once. It is harder to gain the information required, but does save time in travelling
69. delays, breakdowns, frustration, time wasting, complexity - need a course in how to work it! slow to set up and run
70. Can protract the meeting . Less control over case value
71. Can cause delays ,but does allow path team choice not to travel
72. Allows meetings which otherwise would be impossilbe due to geographical location of core members.
73. allows hub and spoke working needs to be of high quality
74. Allows discussion of cases which have been seen/will be treated at remote hospitals

What additional technology do you think could enhance MDT effectiveness?

49 radiologists responded to this question.

1. XDS connectivity of equipment across site (cross enterterprise document sharing, as defined by |IHE - integrating the healthcare enterprise)
2. Wider bandwidth to improve image resolution
3. We have recently obtained all we need but could do with a larger projection screen
4. Viewing remote site's PACS
5. video conference
6. Uploading the images in PACS and PACS links between the groups to do video conferece.
7. The current image projection utlizes the web based imaging. If this is changed to PACS based prjection, it immensely improves functionality
8. The ability to have MDT Worklists in RIS/PACS. The Southern Cluster deployment lacks this funcionality so each patient has to be looked up on the database during the meeting which causes delays and potential for error
9. technical support should be available at all times as often the equipment does not function as it should
10. Separate imaging and data projection.
11. Real time recording of decisions and projection of treatment
12. real time data recording and availability of MDT decisions in electronic patient record or in the notes.
13. Performance data (e.g. good indicators of practice) available for clinicians to see. This would increase enthusiasm for data collection if it isn't all going one way.
14. PACS links to referring private hospitals. Enhanced path information system.
15. PACS connectivity
16. pacs
17. our PACS system cannot display PET-CT. This would greately enhance MDT effectiveness
18. optimum reliable equipment at all levels
19. not sure
20. None
21. MDTs can be too technologically orientated - it is the discussions between the members which is important.
22. Linking of all Trust in areas PACS systems.....we've given up waiting for CfH and are trying to resolve locally, but bigger issue than cancer.
23. It needs to work better

24. Individual microphones
25. Improved VTC technology. We have old outdated technology.
26. Improved video-conferencing. Our system is poor. Sound quality is more important than picture quality and is often inadequate. ideally there should be a technician present able to use a mulitple microphone setup.
27. improved 'query/retrieve' imaging facilities for formal review of 'outside' scans - time for radiologists to prepare for MDT
28. improve quality and resolution of links
29. Images projection which is not available at our teleconferencing MDT
30. Higher resolution projectors for PACS images,particularly mammography
31. High speed links between trusts that support push and PULL PACS images. A nationally agreed software program for data collection to facilitate audit and research
32. full pacs workstation, for mpr reconstruction to answer specific questions
33. Faster PACS access.
34. Facility to have all of one patients images in one file rather than in multiple locations i.e. on a variety of different PACS servers because patient has been seen in different units en route to the MDT (referring hospital, specialist hospital etc)
35. Electronic recording in real time
36. electronic patient record with live data entry
37. dont know
38. Direct PACS archive cross linkage. Not acheived despite DoH support at the XXX [area] imaging review. Highly unlikley presently given the present NPfIT status.
39. Digital mammography which would allow image display with better manipulability and definition.
40. Budget for equipment - getting the projector bulb replaced takes forever and no one thinks it is their from budget. An A-V input would help
41. better viewing conditions than we have at present
42. better videoconferencing facilities more screens for path/radiology/proformas
43. better transmission of images pathological and radiological .
44. Better radiology projection
45. Better projection facilities
46. better IT
47. Availability of outside reports as well as images.
48. at present no facilities for viewing histology
49. air conditioning, faster web browser, better room layout, a clock in the room!

Meeting organisation and logistics

What preparation needs to take place in advance for the MDT meeting to run effectively?

88 radiologists responded to this question.

1. thorough understanding of clinical, radiological and pathological issues.
2. thorough review of all relevant radiology
3. The facts related to each input (history, clinical findings, imaging, supplementary haematological/biochemical data, cellular pathology to the most appropriate level) need to be available in appropriate order to the appropriate depth for instant display at the meeting and the appropriate member of the team must be familiar with those facts and their significance.
4. the core members need to review their own aspect of the cases (eg, radiologists review images and pathologists review slides). All relevant clinical information should be available to all core members to enable such review to be relevant to the discussion. Any information external to the hospital should be made available prior to the meeting to enable an in-depth review
5. sELECTION OF APPROPRIATE IMAGES /SLIDES FOR DISPLY CORRELATION WITH PREVIOUS IMAGES/SLIDES CASE SUMMARY FROM NOTES FOR COMPLEX OR UNUSUAL CASES
6. review relevant images
7. review of Radiology and histopathology. Patient notes available with appropriate team to present the patient and ideally a brief question or case history for radiologist and histopathologist when reveiwing the imaging
8. Review of radiology
9. Review of pathology and radiology Collation of patient information
10. Review of pateints past imaging
11. review of mammograms and path results review of notes
12. Review of imaging and histology. Preparation of case presentation by responsible clinician. Check on what action has been initiated on previously presented patients to ensure accurate follow-up.
13. Review of images. Selction of images to display Final opinion to compare with histology
14. Review of images and report
15. Review of images Review of notes review of Histopath
16. Review of clinical presentation Review of Images Review of Pathology
17. review of clinical notes, patient's views and radiology
18. Review of all relevant imaging and pathology
19. review of all recent relevant imaging (though this happens without knowledge of why each patient is being discussed)
20. Review of all previous imaging. A knowledge of patients history and previous non imaging investigations. Any current medical problems or clinical questions
21. Review of all imaging and review of reports
22. Review of all imaging
23. Review images, obtain reports
24. review and comparison of all imaging and imaging reports. Clinical prep eg. knowledge of previous treatment and investigations such as lung function tests
25. review all images and reports put all information into PACS folder for easy access at meeting
26. reveiw
27. relevant clinical information,e.g. date/details of previous surgery/chemotherapy, pre and post treament imaging
28. recognised time in the job plans
29. Radiology, pathology and case notes review
30. radiology, path and clinical review by referring clinician

31. Radiology reviewed, path reviewed, results collated
32. radiology review pathology review case notes available specialist nurses present with any notes they keep
33. radiology review clinicians to know clinical condition of pt
34. Radiology and pathology. Clinicians need to know there own patients on the list.
35. Radiology and pathology reviewed. Case notes obtained.
36. Radiology and Pathology reviewed and slides/ images collected for review. Notes gathered - proforma - ideally electronic prepared for each patient to be dicsussed
37. Radiologist needs time to review all imaging. Someone should know patients performance status and wishes re treatment. Pathologist needs time to review slides.
38. Proper radiological and pathological review. It would really help if we knew the questions to be answered which we don't always
39. Preparation time is FAR MORE IMPORTANT for some specialties than others. Radiologists and pathologists need to review all cases prior to the meeting and this is time consuming. Surgeons, physicians, CNSs and oncologists can just turn up and offer their opinion. This needs to be recognised in Job Plans
40. Notes/imaging/pathology review Make provisional plan for patient
41. Notes read, imaging available and reviewed, Clinical representative assigned and on top of case, conference facilities checked and working, advance patient list sent out with enough time to work through
42. need to look at often complex multimodality imaging from scratch for a large number of patients. this is extremelt tome consuming and takes a minimum of two hours and sometimes upto 4 to 5 hours for some of the mdt's that I am involved in
43. Meeting room technology functioning effectively; notes regarding patients available
44. Looking through all the appropriate imaging
45. Look at pathology and imaging beforehand
46. key scans and other tests need to be checked for availability
47. It would be nice to have enough time to preview the radiology before the meeting.
48. In terms of Radiology ideally only those radiologists who attend an MDT should report the images particularly if the indication for the scan ie they have a cancer is known prior to the repoting as there will then be less descrepant reports and less MDT preparation time will be required by radiologists
49. In my case, image review.
50. In my case all films reviewed
51. imaging reports and images. clinical notes and relevant path reports.
52. Images need to be reviewed. Case summarised for presentation. Any areas of concern highlighted.
53. Image review current and relevant previous
54. I would like the opportunity to be able to prepare prior to the MDT meeting!!!
55. I review all imaging
56. I need to review all the previous and current imaging, and document this to enable smooth presentation to colleagues
57. I look at the imaging for as many patients as possible before the meeting, more emphasis on screening patients if time is short
58. Good coordinator Pathologist need more notice than radiology due to manual systems Good information systems for patient proformas
59. full review of all the imaging and comparision with the reports.
60. from a radiologists perpective, the images of all the cases to be discussed should be reviewed. This makes the presentation of the cases more streamline and quicker. It also allows the presenting radiologist to think about the difficult cases before hand.
61. for my part, to review any previous and current imaging. At present, I do not have outside studies available for prior review, which of course is not ideal.
62. For me, I need to review all the films, check the relevant facts are quickly to hand, and ideally I'd see the histology reports so that I can work out where the discordance is, if any

63. Ensuring you are famililar with radiological images for particular patients to best demonstrate the salient findings in a timely and slick fashion
64. Digitisation of appropriate images, list of patients to be discussed, pending discussions from previous MDT, detailed analysis of relevant patient history ,study of different imaging findings and correlation, pathological correlation. We include screening and symptomatic cases in MDT along with discussion of pathology of image guided resections.
65. cordination of patients notes and information review of imaging and pathology
66. Compare old iamging
67. Clinicians, radiologists and pathologists should have reviewed cases. All relevant notes etc and results should be available (eg lung function tests, so that decisions can be made promptly
68. Clinicians to know who/what they are talking about! Reports (path and radiology) to be available
69. Clinicians need to review case notes and results; radiologists and pathologists need to effectively re-report all cases.
70. Clinicians need to know the patients / review notes. Radiologists need to review scans and know what clinical question needs answering. Ditto with pathologists.
71. Clinical - clinical history and knowledge of where the patient is with respect to the diagnostic/treatment/follow-up pathway. Radiological - preparation and having viewed patient's imaging in sequential order. Ideally this would be with knowledge of the patient's history and pathway but the radiologist needs to be provided with this. Pathologist - to have pre-viewed slides and diagnosis
72. checking the list and making sure the films and reports are ready
73. Careful review of all relevant radiological studies for each patient. Clinical coleagues should be up to date with the clinical cae histories for each patient. Summaries should be available to reviewing radiologists and histopathologists.
74. Brief clinical summary Preselection of relevant images (radiology) + pathology
75. Being sent patient lists prior to MDT (at least a few days in advance of MDT)
76. Availability of all relevant clinical info including radiology and pathology
77. as for radiology, to review all the imaging, which consumes lot of time and saves time during MDT accordingly
78. As far as Radiology is concerned - review of imaging and ensuring all imaging is reported. Becoming famliar with cases you have not been involved with and picking up reports of abnormalities to ensure they are brought to the atention of the meeting. If imaging is not on PACS, attempting to retrieve hard copy images for the meeting.
79. As a radiologist we review all images prior to meeting. Otherwise salient features are missed which may affect treatment planning/ staging
80. As a radiologist loading cases from PACS onto local computer harddrive - risk of crashes otherwise
81. As a Radiologist I need to review each case. Checking that reports and any additional information needed are available. I also need to preview films of patients referred to us from external sources.
82. As a Radiologist I need to review all the imaging. I hope the clinicians review the clinical notes.....
83. As a breast radiologist you need less time except when discussing complex imaging. In our MDT the relevant radiologist who reported the examination is usually present
84. As a (neuro)radiologist I like to review all te relavent imaging with reference to clinical data as appropriate. This is very time consuming.
85. As a Radiologist, hard and soft copy images in sequence and a grip on the consequences of each stage in imaging and image-guided investigation (eg needle biopsy).
86. aLL CORE MEMBERS NEED TO REVISIT THEIR PATIENTS' DETAILS
87. acquisition of current relevant images and often the previous set for comparison summaries of patient histories collation of list with sufficient time to do the above
88. A chair of the MDT I review the notes and ensure appropriate results are available and prepare a case summary

What makes an MDT meeting run effectively?

68 radiologists responded to this question.

1. when more core memebrs are present, when there are fewer casual attendees, when the patients have actually been seen by someone capable of making appropriate decisons, when there are refreshments avaialble.
2. the presence of core members, good prior preparation (reliant on prior information), adequate time to discuss cases, availability of necessary technology eg PACs viewers or browsers for radiology
3. Team working and good relationships between colleagues as well as functioning technology and efficient data presentation
4. Strong chairperson. Preparation by the team.
5. Slick presentation of prepared data to the clinician responsible for the next stage of management. Co-operation in concentration on each case without side issues, separate conversations, distractions (eg mobility of participants for, eg, refreshment). Simultaneous recording of agreed decisions (with or without the rationale for such decisions), when the decisions have been agreed. Definition of the end of discussion of each separate case. Reconstitution and placement of the notes, images, etc for passage to the next stage of management where they will be needed.
6. Slick presentation of key information
7. Quick clever appraisal of information
8. Proper prior preparation, audio visual aids, Timely pathology reports, set protocol in common clinical scenarios, attendance of core members. data co ordination and feed back
9. proper organisation and appropriate, fully working technology
10. Presentation by someone who has actually seen the patient.
11. presence of all core members ad adeqaute opportunity for them to prepare and opportunity to contribute equally to the meeting.
12. preparation, preparation, preparation, preparation, and for radiology effective IT support.
13. Preparation beforehand of images and pathology, effective chair person moving meeting forward
14. preparation and time-keeping
15. Preparation and all core members being present. If any imaging or pathology results are not available, it means delay for the patient to the following week - not good for patient care
16. preparation technology attendance of core members
17. Preparation Good chairmanship Effective co-ordination Good quality IT and support, especially radiology
18. pre-meeting preparation, inc. clinicans having time to review notes, which often slows things down and preparation of case presentation on Pacs for effective and fast image review
19. Organisation,attendance,interest and TIME
20. organisation communication preparation
21. not having too many cases to discuss. Having a clinician present who knows the patient being discussed.
22. Motivation (chairman and presenting clinicians0
23. Leadership, good preparation, remaining focussed, not getting distracted by other issues, but often these other discussions are indirectly related e.g.discussing protocols etc.
24. leadership and effecient management of discussion
25. Keeping number of cases discussed to the bare essential necessary
26. In high volume MDTs discussion can be kept to a minimum if the MDT guidelines are clear and info well presented to members. The Lead Clinician and Chair of

meeting roles do not need to be the same. In fact, I think it is best when they are separated. Time management is crucial. Similarly, though attendance can be educational for Juniors, students etc, they are NOT teaching meetings.

27. Having all information available.Strong leadership to prevent overrun
28. Having all information available and an excellent MDT co ordinator and good team working. No allowance of separate discussions during the meeting - one discussion only
29. Having a working PACS system
30. Good preparation, clear succinct presentation
31. Good preparation and firm chairing to limit discussion on simple cases
32. good preparation . Focussed core memebers. we lead discussion
33. good preparation full and punctual attendance careful record keeping respect from and for all team members
34. good preparatin on advance, with good coordination and someone who will lead the meeting
35. good organisation with preparation done in advance allowing effective discussion of each patient. results being available. keeping to the point. chair firm but fair in making sure opinions are heard.
36. good organisation beforehand
37. good coordination and preparation if relevant
38. Good communication
39. good co-ordination and organisation of cases
40. Good chairman ,willingness of all to participate .
41. Good chair, stick to agenda, all relevant data available up front, good attendance from core members
42. good chair clear communication of information knowledge of options Up to date Guidelines Comprehensive attendance by m/d team Minutes Individual treatment plans
43. Everyone being aware of their role
44. Efficient organisation. List of patients circulated in advance. Prompt start. Chair who is decisive and moves through patients quickly.
45. efficient chair person who doesn't allow discussions to ramble on.
46. effective co-ordination of results and personal knowledge of the patients
47. discuss relevant cases and matters arising, good preparation decreases time wastage
48. decisive management and the ability to move from one case to the next
49. Control of list of patients to be discussed; good effective chairing; good AV facilities and environment; proper presentation of cases by clinicians WHO KNOW THE PATIENTS AND THE PROBLEM
50. Considered chairpersonship.
51. Concise case presentations and strong leadership with discussions curbed if they become irrelevant
52. cocentration
53. co ordination between the staff
54. clinician knowing pt all results available
55. Clinician awareness of cases on list; powerful computers for radiology; do not discuss all cases
56. clinical preparation and technology
57. Clear leadership and chairing, attention to detail re room layout and equipment
58. Availability of all relevant information and the will to make definite decisions
59. ATTENTION FROM ALL CORE MEMBERS
60. all information available all key professionals who will have an imput into patient care present chaired to prevent individual dominence all coordinated and decisions recorded
61. advance preparation good data recorcing
62. adequate time for case preparation based on previously circulated clinical information managing conferencing well discussing relevant cases only
63. Adequate projection, access to imaging programmes, and a Team member or

(usually) Junior Staff member capable of using the technology. Preparation. Crowd control (preferrably by mutual consent rather than dictat)!! Access to supplementary input (eg Nurse Specialists, Radiographers, Oncoplastic Surgeons)

64. Adequate preparation time. Accurate information and effective, timely communication. Attendance by relevant core members.
65. A good MDT coordinator
66. A good chairperson to focus on current problem/question for MDT. Adequate pre meeting preparation by radiologist and pathologist so only relevant scans/images are shown. Clinicans present who know the patients history./ health status.
67. A good chairman, in addition to adequate preparation
68. 1. Good leadership from Chair 2. Powerpoint summary of each case by surgeons/physicians 3. slick presentation by radiologists and pathologists 4. business like meeting with clear decision making

Clinical decision-making

What model of decision-making could be used for patients with recurrence/advanced disease if these patients are not discussed at MDT?

37 radiologists responded to this question.

1. Written protocol
2. They should come back to MDT
3. they should be discussed
4. they do need to be discussed at mdt even if the decision seems fixed
5. There should be no question of treatment of any stage of disease, including recurrence, without the opinion and approval of the MDT. Comment on this section: The booking of future investigatons or treatments can only be suggested as it depends on the agreement and availability of each patient, to be discussed by letter or at the next attendance/consultation.
6. There may be accepted pathways/options already in use.
7. Standard protocols
8. Review if decision-making falls outside agreed treatment protocols, otherwise MDT becomes overloaded
9. review at specialist clinic
10. protocols
11. protocol led
12. pre-protocolled, discussion of cases varying from agreed protocols
13. Oncologists need to agree a model of care if there is no separate MDT for these cases.
14. Oncologists have been to medical school, they do have some clinical skills....
15. Oncologist led decision making
16. oncologist alone working to agreed protocol or trial
17. oncologist
18. None
19. Network wide agreed managment protocols
20. Mini MDT discussion between limited numbers of members may be appropriate in some situations, eg surgeon requesting image guided biopsy from radiologist need not require agreement of oncologist - common sense should prevail
21. MDT is still useful in virtually all cases
22. MDT discussion of particular patients at oncologist' discretion
23. It is the responsibility of the managing oncologist who is trained to make these decisions

24. Ideally a separate 'metastatic' MDT with radiological support
25. i think all patients with recurrence/advanced disease merit discussion at an MDT
26. Formal protocols for these conditions. Ability to discuss if required by clijnican, ie if not following expected course Common sense of clinican
27. For surgeons and oncologists to discuss
28. dont know
29. Discussion in one stop clinics with appropriate colleagues
30. Discussion between oncologists
31. depends on local setup, but oncology clinic review or informal discussion may be as effective
32. Decision made by oncologist in clinic
33. Common sense!
34. clinical decision making if urgent
35. Best effector decides (Surgeon, Oncologist or Palliative Care Consultant
36. Active Guidelines Audit of administration of instigation and completion of actions recommended by MDTs
37. a separate metastatic MDT

What are the main reasons for MDT treatment recommendations not being implemented?

46 radiologists responded to this question.

1. Usually because they turn out to be impracticable.
2. Undisclosed circumstances
3. time
4. The mainproblem with the MDT is that once a decision has been made, it is difficult to reverse it later
5. the fact that a theorectical discussion has taken place, the patient has not yet been seen and it becomes apparent that the patient does not want or is not fit for the prescribed treatment once seen.
6. pt not fit
7. Poor communication in hospital Lack of training of Junior staff Poor communication with Primary Care
8. Patients being managed primarily by clinicians who are not regular members
9. Patient wishes or fitness.
10. patient preference, sudden change in clinical condition after MDT before treatment.
11. patient preference for a different option/refusal of chemotherapy
12. patient not well enough to have particular treatment or patient declines surgery.
13. patient non acceptance
14. Patient declines/ specifically requests alternatives. lack of data - eg hormone receptor status of a breast cancer. Unforeseen circumstances - eg patient migration to an alternative Team's jurisdiction.
15. Patient declines treatment.Rapid progression of disease, too unwell for chemotherapy. Staging altered as result of EUS.
16. Patient choice. Timing of implementation of MDM decisions is more variable than the actual implementation.
17. Patient choice. Change in performance status Missing evidence emerges
18. Patient choice.
19. Patient choice for another option
20. PATIENT CHOICE
21. Patient choice
22. Patient choice
23. Patient choice

24. Patient choice
25. patient choice
26. patient choice
27. patient choice
28. patient choice
29. patient choice
30. Patient's lead clinician disagrees
31. not all the information available patient choice
32. most often patient choice, sometimes changes in the clinical situation may be the reason
33. Missing information at the time of the MDTM which later alters the decision, eg patient not fit for surgery
34. lack of communications
35. Individual consultant preference overriding the team decision
36. Failure to obtain full clinical picture in advance of the discussion.
37. failure to carry through a descision for whatever reason
38. dont know
39. don't know
40. do not know. Probably patient choice
41. costs of treatment
42. communication breakdown
43. Clinician reviewing patient after mdt discussion. Patient refusal.
44. Clinician doesn't agree and is too arrogant to take advice (surgeons!)
45. Change in pateint clinical circumstances;patient choice
46. change in management following discussion with patient usually

How can we best ensure that all new cancer cases are referred to an MDT?

36 radiologists responded to this question.

1. We send copy reports of all suspected cancer diagnoses on XR/CT to MDT coordinator
2. We probably get ~95% of lung cancer patients
3. we cant
4. Robust team protocols from GP referral onwards
5. Protocols, good communication. Make the process easy
6. pathology link
7. pathology and radiology cancer diagnosis ,default refferal
8. Notify all clinical colleagues that new cancer cases should be referred into the MDT, invite colleagues to attend. Be inclusive rather than exclusive.
9. Not a problem for our MDT, centred for detection and diagnosis in a separate, purpose-built Unit. The Cellular Pathology Department is best placed to prompt discussion as the key factor is the diagnosis of malignancy by histology or cytology, including from general clinicians who come across atypical presentations (ie metastases).
10. Need several safety nets for pathology, radiology and clinicians.
11. involvement of the team
12. Involve all the clinicians in it
13. hospital wide audit of them
14. Good secretarial support, Discuss all the biopsies and FNA without fail in MDT.
15. Ensure that potential referrers are aware of the existence and function of the MDT Ensure effective and understood communication pathways
16. Empowerment of radiologists, pathologists, nurse endoscopists et al who may be first to suspect cancer

17. Electronic patient record combining executive and clinical modules (data HAS to be entered for clinical management and is then available for executive functions- MDT review)
18. education of junior doctors, facilitating inter MDT referral processes,putting fall back systems in place i.e. copies of reports sent to appropriate MDT as well as referring clinician
19. education of all clinicians raising the profile of mdts demonstrate improved outcome
20. education and trawl of cancer register /path
21. education and encouragement of colleagues
22. dont know
23. don't know; not sure if it is that important
24. difficult!
25. development and dissemination of guidelines and protocols within hospitals to ensure all such cases are referred appropriately. all referral routes should have guidelines in place to ensure appropriate pathways are selected for such patients
26. Departmental protocols with clear pathway of referrals
27. co-ordinators can be informed
28. by using pathology data bases
29. by educating and involving all professionals encountering new cases
30. By diagnostic departments ensuring the designated member of each MDT receives copies of reports all new cancers detected.
31. By being vigilant.
32. By advertisement and by trawling of the Pathology database.
33. Autonatic notification of the MDT coordinator by radiology / pathology or clinic on new findings
34. automatic referral generated by key words in radiology reports review of all histology and cytology recieved by pathology
35. Audit processes
36. a well organised system within Pathology

How should disagreements/split decisions over treatment recommendations be recorded?

43 radiologists responded to this question.

1. We arrive at concensus
2. Very rare to have a disagreement. Protocols exist to define best treatment option
3. Verbatim. This is a very rare event: an accepted decision is the single most important criterion upon which action is predicated.
4. Difference of opinion should be recorded, and patient notified. Offering review by another mDT should be encouraged.
5. They should not be, only the final majority decision should be recorded
6. these should be rare after discussion. Assuming we are not dealing with interpersonal rivalry between 2 mdt members, the 2 management options should be recorded by the mdt and presented to the patient who may express a firm view. If not the final decision rests with the clinician seeing the patient.
7. The names of the differing parties should be recorded, and both views recorded, and where appropriate communicated to the patient in the right environment
8. That patient will be offered the choice of options or of asking for second opinion
9. take a day off with the entire team and discuss issues formally,, away from hospital
10. Summarise differing opinions in MDT summary
11. should not occur if team is making decision
12. Record in notes and discuss options with patient
13. on register
14. on Mdt sheets in patient notes and elcetronically
15. on mdt forms
16. majority decision recorded
17. just as they are
18. individuals names recorded
19. incorporated onto patients MDT record
20. in writing on electronic proforma
21. in the usual way
22. In the patients notes with reasons given for following one treatment over another with a plan to re-review in a fixed time period.
23. In the MDT outcome sheets giving specified reasons.
24. In our MDT if surgical it is recorded in breast care nurse notes and patient notes, if radiology it is recorded on a coloured sheet and put in xray packet
25. In full with reasons
26. in detail
27. In case notes , informed written consent from the patient and letter to concerned GP.
28. Fully
29. formal note in MDT record
30. Factually!
31. factually!
32. dont know
33. decisions should be recorded as unanimous or majority (with the ratio recorded). Any disagreement should be recorded indicating the differing opinion and member
34. Case notes
35. by the coordinator with the treatment plan
36. As they occur, documeting precisley the disagreement.
37. As they are presented verbally, but majority decisions should be acceptable in any individual case to all parties at the meeting where disagreement arises.
38. As that, with the majority decision followed. It usually means there is no obvious right answer.

39. as such and why
40. As part of summary
41. all views should be recorded on the clinical sheets
42. accurately
43. Consensus decision of "AGREED decision"

Who is the best person to represent the patient's view at an MDT meeting?

75 radiologists responded to this question.

1. Whoever knows the patient
2. usually the nurse specialist (at least locally)
3. their clinician
4. The radiographer/ radiologist who is involved in the case.
5. The primary effector at the particular stage in the process - Surgeon.Radiologist at first step, closely followed by Pathologist, Surgeon/Pathologist at second step (deferring to Oncoplastic Surgeon in certain cases). Oncologist/Surgeon at third step. Oncologist/Palliative care Consultant at last step.
6. the patient's clinician or cancer specialist nurse
7. The most senior clinican on the team who has met the patient or the Nurse specialist who has also met the patient
8. The keyworker clinical nurse specialist
9. The consultant in charge of their care
10. The concultant looking after the patient
11. the clinician who saw the patient
12. The clinician who is directing their diagnosis and management or the assisting nurse specialist
13. The clinician who has seen and assesed the patient
14. The clinician who has mat and assessed the patient
15. the clinician involved or specialist nurse
16. The clinician
17. The clinican and/or cancer care nurse
18. the breast nurse
19. The breast care nurses are best at our MDT
20. Specialist nurses
21. Specialist nurse
22. specialist nurse
23. specialist nurse
24. specialist nurse
25. specialist nurse
26. Specialist Clinical Nurse
27. Specialist breast care nurse
28. several people may do it as long as it is someone who has met the patient such as the nurse specialist / social carer or one of the members of the medical/surgical team
29. sepcialist tumour nurse or physician in charge of initial care
30. Palliative care nurse
31. nurses
32. nurse/other professional
33. Nurse who has met them
34. Nurse specialist or doctor involved in care
35. Nurse specialist

36. Nurse specialist
37. Nurse or clinician
38. nurse
39. nurse
40. Normally the clinician or CNS that knows them.
41. Named clinician in charge of patients' care
42. MDT coordinator or special nurse
43. Macmillan/other nurse
44. Key worker
45. key worker
46. It depends on the MDT team.
47. In oredr as they occur to me: 1.The specialist nurse. 2.The last clinician (?at senior level or at any level?) to interview the patient in the OPD or at admission. 3. The psychologist
48. His direct supervising consultant
49. dont know
50. consultant who has seen the patient
51. Consultant
52. combination of clinicians and senior nursing staff who have met patient
53. CNS/key worker
54. CNS/consultant
55. CNS who has met the patient
56. CNS
57. cns
58. Clinician or nurse who has spent the longest time with patient discussing options
59. clinician in charge
60. Clinician
61. Clinical nurse specialist usually
62. clinical nurse specialist or consultant lookig after pt
63. cancer nurse specialist
64. cancer nurse
65. Breast Care Nurse or Surgeon
66. Breast Care Nurse
67. Breast care nurse
68. Breast care nurse
69. breast care nurse
70. breast care nurse
71. at the breast MDT usually the breast care nurse
72. All the people who have met and talked to the patient
73. a senior doctor or senior nurse who has met the patient
74. A member of the MDT the patient has met
75. a clinician who knows them well

Who should be responsible for communicating the treatment recommendations to the patient?

68 radiologists responded to this question. In addition, 5 radiologists referred to the answer they had given to the previous open question (Q32).

1. Whoever meets the patient so long as they are happy that they can fill the roll
2. their clinician
3. the specialist clinician in charge of the patient
4. the relevant clinician
5. the patient's clinician
6. The next effector - Surgeon or Oncologist in most cases.
7. The next Clinician, preferably Senior, to see the patient at OPD.
8. The MDT should decide by case depending upon treatment recommendation
9. the doctor in charge of the case
10. the doctor implimenting treatment
11. The consultant looking after the patient
12. The consultant in charge of their care
13. the consultant in charge of the patient or the CNS whom the patient has met
14. The clinician who is primarily dealing with the patient
15. The clinician who has seen and assesed the patient
16. The clinician they are under.
17. The clinician or nominated care nurse
18. The clinician incharge of delivering the treatment
19. That clinician or another member of that team whom the patient has met.
20. Surgical team
21. Surgeon/oncologist
22. Surgeon or oncologist
23. surgeon or breast care nurse involved with patient
24. Surgeon / oncologist/ clinician + BCN
25. surgeon ,oncologist ,specialist nurse or radiologist,depending on unit structure and staffing
26. Surgeon (or Breast Care Nurse in certain circumstances)
27. specialist nurses
28. SPECIALIST CLNINCAL NURSE
29. special colorectal nurse
30. relevent consultant
31. Nurse specialist or doctor involved in care
32. Nurse specialist / consultant in charge
33. Nurse specialist
34. nurse
35. nurse
36. Normally the clinician or CNS that knows them.
37. Named clinician in charge of patients' care, or appropriate member of his/her team (eg nurse practitioner)
38. main treating clinician
39. It depends on the MDT team.
40. His direct supervising consultant or a senior member of the same team
41. generally responsible clinician supported by supporting senior nursing staff
42. doctor/ appropriate nurse specialist
43. Depends on circumstances
44. Core carer...Oncologist or surgeon
45. consultant/cns
46. Consultant surgeon, jointly with oncologist if appropriate

47. consultant physician/surgeon
48. Consultant or member of their team
49. consultant clinician in charge
50. consultant and/or clinical nurse specialist (we have very good cancer nurses in some MDTs)
51. Consultant
52. CNS/consultant
53. CNS
54. Clinicians
55. Clinician/oncologist
56. Clinician responsible for the treatment
57. clinician or key worker
58. Clinician in charge of the case
59. Clinician in charge of case
60. clinician in charge
61. Clinician
62. clinician
63. cancer nurse specialist/ key worker
64. Breast Care Nurse or Surgeon or Oncologist depending on treatment, or Radiologist if nothing further to do in Screening
65. breast care nurse
66. appropriate consultant
67. a senoir clinician
68. A member of the MDT the patient has met

Measuring MDT effectiveness/performance

What other measures could be used to evaluate MDT performance?

16 radiologists responded to this question.

1. record and review agreed "errors" at annual meetings with a record of clinica/radiological/path discrepancies, along the lines of " to err is human" RCR document. Currently, out cry for pixel sized radiology errors, but clinical errors constitute " slipped through the net" !
2. recommendations for test cases where there is national agreement on correctmanagement
3. Quality of information. If you do not know what is going on, you cannot manage it. The NHS is poor at collecting information
4. Percentage of patients with a cancer "captured" by that MDT
5. number of delays due to IT breakdown and to failure of delivery of the correct imaging or histology for the meeting (or failure to be able to view it)
6. not sure the above are relevant or the result of the MDT. What is MDT performance? it is only one part of good treatment.
7. MDTs are a political expedient
8. improved efficiency - a decrease in time of reviewing cases outside MDT
9. I don't think MDT performance should be assessed. Too many patient-specific factors and confounding to make this useful in any way. Furthermore, there is no point if it works well.
10. frequency of further resection, interval cancer incidence in patients discussed in MDT, delayed treatment due to delay in diagnosis.
11. don't know
12. Comparison with commissioning metrics
13. The above are not very good (or very relevant indicators) - satisfactory discussion

of relevant cases as judged by attendees
14. Basically nothing other than patient survival rates matter
15. attendance by team members percentage of cancer cases discussed
16. a standardised set of test cases complete with radiology etc

Supporting MDTs to work effectively

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

53 radiologists responded to this question.

1. vedeoconferencing facilities
2. Too many patients (often more than 50) - lack of concentration towards end of meeting. Either split meeting (too difficult) or reduce the number being discussed e.g. benign symptomatic cases, but this isn't seen as being accepted practice
3. Time
4. The site of the meeting room which is a long walk away from anywhere and behind several keypad locked doors to which we are not privilaged to have the codes.
5. the pace of discussion
6. The co-ordinator.
7. technical support to help it run smoothly and availability of all notes, imaging and so on; in networks will need ready access to outside studies
8. stronger leadership
9. Simpler IT which any of us could work. Immediate on line or in room help if it goes wrong so we don't have to cancel the meeting
10. Remove video-conferencing
11. Remove dysfuncional member
12. Reliable Teleconferencing facilities
13. regular attendance and change in aggressive attitude of a key member
14. Reduce number of non-essential cases discussed
15. put a maximum limit on number of cases to be discussed
16. only discussing patients where all results are available.
17. One works almost perfectly, no change For the other, poor Trust co-ordinator who should be replaced by someone more effective
18. one chest physician
19. Nothing immediately. Evolves
20. nothing
21. More time.
22. more time to discuss cases - it is at lunch time in between 2 othe MDT meetings and we are very short of time
23. more time (including preparation) for less (the most relevant) cases
24. More support for the paperwork involved
25. more prep time which is job planned and post MDT prep time and for the clinicans to know their patients, often they have not even met the patients
26. More clinical input to facilitate radiology preparation
27. List management and control of who gets on it wit more clarity over discussion
28. Less patients discussed
29. keep surgeons from discussing irrrelevant cases
30. Job plans
31. It is pretty good already. Probably faster pathology turnaroud
32. improved organisational support
33. Have more protected time allocated to MDT or have a second MDT to increase the amount of time available for discussion. This needs to be built in to job plans.
34. have better clinical preparation

35. Have an electronic record so that decisions can be accessed without need for case notes
36. have 2 meetings instead of one that discusses too many cases not always properly
37. fewer cases.
38. fewer cases
39. Designated short break half way through
40. data collection support
41. DATA COLLECTION
42. Cooperation of core team members
43. Clinicians review notes before meeting
44. clinicians knowing pts attending MDT
45. Clearly identify who is chairing the meeting
46. Cases should not be included if pathology is not ready/available
47. better radiology image projection
48. better organisation
49. Better data and image display facilities.
50. Better Chest Physicians, with better relationships.....
51. At 1 MDT, an extremely verbose person can delay the meeting !
52. allow suitable time for excessive number of cases we have to discuss
53. A clinician preparing in advance to make sure only the appropriate cases are on the list.

What would help you to improve your personal contribution to the MDT?

38 radiologists responded to this question.

1. Time, MDT not currently recognised in job plan. Shortage of colleagues remedied.
2. Time in job plan to be involved in preparation of cases
3. Time
4. time
5. specified time for preparation
6. Reliable PACS system more preparation time
7. Recognised time within my job plan for preparation. More timely commincation of the patients to be discussed in advance of the meeting. Better, more accurate summary of the clinical details for each patient. More timely delivery of any outside imaging on disc for review. Greater IT support.
8. protected prep time for case preparation both before and after meeting
9. preparation time
10. perhaps i should attend other MDTs to see if they work differently from breast
11. organisational response to clincal issues highlighted in the meetings
12. More time. Having fewer last min additions to the MDT. Better clinical info.
13. more time, better kit
14. More time to prepare fully. Better AV facilities
15. more time to prepare for the MDT
16. more time to prepare and more information prior to the meeting drinkable coffee
17. More time to discuss complex cases.
18. More time
19. more time
20. more time
21. more preparation time, improved access to pt files as necessary
22. More preparation time recognised in my job plan. More support from my

department in recognising the importance of the MDTs.

23. more time
24. keeping up to date with latest developments by attending courses
25. I have just had preparation time allowed in my job plan and now feel infinitely better able to contribute effectvely and rapidly at the MDT
26. Great facilities and some admin help to compile image sets before hand
27. feed back
28. Extra secretarial support
29. education about diseases seen and clinical aspects of treatment and care
30. Earlier provision of data. Protected time within the working day to process and prepare the data. Time within the normal working day to conduct the meeting. Better image display. Embargo on late additions, which are pretty well routine, although this would conflict with my first point. Digital mammography, for better presentation of images.
31. Difficult to identify the time for review of cases
32. consistency in visual aids
33. Better videoconferencing facilities
34. Better technology: PACS rather than current web based system
35. better IT with XDS systems in place for sharing imaging studies, reports and histopathology between all contributing sites before and during the meeting. Electronic record keeping.
36. Better IT support. Very unreliable pacs system, pc repeatedly crashes
37. Better image projection.
38. AVAILABILITY OF AUDIT DATA

What other types of training or tools would you find useful as an individual or team to support effective MDT working?

14 radiologists responded to this question

1. We have only recently been made aware, by one of our own senior MDT members who has a Regional Assessment brief, that our reasonably functional and effective MDT falls well below the apparent high standard of another in the Region.
2. visiting other centres to observe how others do it
3. Training in house during meeting with visiting team guidance
4. Peer review feedback
5. None come to mind.
6. none
7. NO ROLE PLAY
8. Local audits in different aspects of MDT performance
9. i don't want the training just the time and the kit to do my part of the job well
10. Generic updates in the speciality
11. formal training course
12. A magic wand to give adequate time for preparation for MDT
13. A full away-day is a strain on people's time but certainly periodic 'time-out'/meetings for frank discussion are helpful and can be extremely productive.
14. test cases along the lines of the breast performs assessment

Please provide details of training courses or tools you are aware of that support MDT development

7 radiologists responded to this question.

1. pelican MDT training course
2. Pelican MDT course
3. none
4. none
5. none
6. none
7. National TME training program

Final comments

Please insert any final comments or observations on the characteristics or indicators of high-performing MDTs and appropriate measures of performance

17 radiologists responded to this question

1. The right balance of individuals within the team. Good leadership and co-ordination. Time.
2. The Governement waiting targets rae counterproductive and result in investigations and treaments being target rather than patient orientated
3. the biggest hindrances to an effective mdt is lack of preparation time and too many people talking at once.
4. Strong leadership and well supported with IT
5. As a radiologist I am very frustrated that the PACS system which was imposed upon us by the DH is not capable of coping with PET-CT images, and that these are therefore not reviewed as part of our MDT. Patients are being deprived of best care because of this.
6. some measure of efficient use of time (ie don't discuss cases that don't need multidisciplinary input eg small incidental bladder lesions, colonic polyps etc)
7. Our MDM does not work well as we try to cram too much into one lunchtime meeting.
8. need to be clincally directed and not managerially assessed for performance in the context of good practice
9. Most patients are rubber stamped through. A small minority are difficult and useful discussion takes place. The meeting needs to be well organised to prevent wastage of the high cost and time investment of the members for the few cases where the MDT makes a significant positive contribution. A notice highlighting how much each meeting is costing should concentrate minds.
10. More interested in the measuements of quality of delivered care to patients
11. MDT may or may not improve the care of cancer patients, but has done some harm to the care of patients not having cancer in that limited resources are diverted into often drawn out and repetitive discussions
12. Key factor is attendance of core members and freedom from other commitments at time of meeting
13. I think good leadership/chairing is absolutely critical and can't be emphasized enough
14. I have seen a huge variation in the quality and type of physical environment in which MDTs are held, and in particular with regard to projection equipment. A minimum requirement for the latter, dictated by the networks, would support teams in procuring the resources they need.
15. I don't believe that you can assess the MDT as a whole. It is wholy dependent (in my eyes) on the calibre of the individual members.
16. As a radiologist I have participated in 10 different mdts at different hospital over the last 8 years. The biggest disaster is when a (usually) clinician overides the

opinion of radiology/pathology. This is less common now, and may be a cultural change over time, with greater acceptance of team working.

17. As a foundation member of our MDT, learning by the seats of our pants, we have an agreeable group, well-founded in experience and familiar to eachother. Many junior and visiting staff and students attend and we pass on our abilities by example.