



The impact of Clinical Nurse Specialists on the decision making process in cancer multidisciplinary team meetings: A qualitative study

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ABSTRACT

Purpose: There are well-documented barriers to nurse participation in cancer multidisciplinary team (MDT) meetings. This paper aims to identify the approaches used by Clinical Nurse Specialists (CNSs) in this setting to contribute during discussion, and to consider the impact of these approaches on the decision making process. In doing so it aims to highlight ways that CNSs can increase their influence, and enhance multidisciplinary engagement.

Methods: This study is based on analysis of observation data from 122 MDT meetings in gynaecology, haematology and skin cancer MDTs. Field notes were reviewed, identifying 58 cases where CNSs contributed to MDT discussion. Audio recordings of the relevant sections were then transcribed and analysed thematically.

Results: Five approaches were used by CNSs to contribute in MDT meetings: sharing information, asking questions, providing practical suggestions, framing and using humour. These approaches influenced three key intermediary processes identified during the analysis ('successful contributions'): prompting discussion, influencing a treatment plan and facilitating teamwork. CNSs contributed successfully in cases where medical factors (such as relapsed disease or complex comorbidities) or non-medical factors (such as strong patient preference), had the potential to impact on the ability of teams to deliver treatment.

Conclusions: CNSs have an important role in cancer MDT meetings. By focusing on a subset of cases where CNSs contributed during MDT discussion, this study has provided an insight into approaches that can be adopted by CNSs to increase their influence on the decision making process, enabling teams to capitalise on their knowledge and expertise in MDT meetings.

1. Introduction

The increasing complexity of cancer care necessitates a team approach to decision making (Mukherjee, 2011; West and Lyubovnikova, 2013). Multidisciplinary teams (MDTs) are the key mechanism for achieving this in practice, both in the UK and internationally (Independent Cancer Taskforce, 2015; Harrison et al., 2008; American College of Surgeons and Commission on Cancer, 2012; Ministry of Health, 2012; Prades et al., 2014). They do so by bringing together the different professionals involved in the delivery of care for patients with cancer, generally meeting weekly to discuss and agree treatment plans for newly diagnosed cancer patients (NHS England, 2014; Harris et al., 2014). A key assumption underpinning this model is that it can encourage holistic treatment planning, by incorporating a range of expertise (National Institute for Health and Clinical Excellence, 2003).

In this context, Clinical Nurse Specialists (CNSs) have a key role to

play alongside medical, surgical and diagnostic professionals (NHS England, 2013; NHS England, 2014; NHS Improving Quality, 2014). In cancer care, these are senior registered nurses, with clinical expertise in a specialised area of nursing. This can be a tumour type, treatment type, or patient type (National Cancer Action Team, 2010). As a core member of the MDT, they are expected to contribute to multidisciplinary discussion, to lead on patient and carer communication issues, to ensure that decision making incorporates holistic needs assessments, and to identify high risk patients who are likely to need complex care plans (NHS Improving Quality, 2014; National Cancer Action Team, 2010; Macmillan Cancer Support, 2014). They are therefore in a position to ensure that clinical decision making incorporates the needs, values and priorities of individual patients (Amir et al., 2004; Lamb et al., 2013c). In practice, studies have shown that CNSs do this by contributing information relating to patient preferences or psychosocial factors, acting as the patient's advocate, and challenging decisions (Lanceley et al.,

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Table 1
Overview of the four cancer MDTs.

Specialty	Trust	Type of hospital	Total team members	MDT lead	Patients discussed ^a	Meeting duration ^b
Gynae	A	Teaching	28	Consultant Surgeon	35	2.5
Haem 1	B	District General	17	Consultant Haematologist	15	1
Haem 2	C	Teaching	40	Consultant Haematologist	14	1
Skin	C	Teaching	21	Consultant Oncologist	47	1.5

^a Mean number of patients discussed per meeting.

^b Approximate duration of the weekly meeting in hours.

2008; Kidger et al., 2009; Amir et al., 2004; Lamb et al., 2011a, 2013c).

From a patient perspective, the role of the CNS in the MDT is important because it provides recognition that the impact of cancer and treatment can have lasting effects which are social and psychological as well as physical (Ouwens et al., 2010, Macmillan Cancer Support, 2014). CNSs often spend longer periods of time with patients than other members of the MDT, for example during extended consultations or regular visits on inpatient wards (Sweeney and Tapper, 2006; Kelly and Masterman, 2011). As a result they are more likely to hold patient centred information, and may be better placed to identify patients' unique circumstances or concerns during discussion than other members of the MDT (Amir et al., 2004; Lamb et al., 2013c). In addition, evidence also suggests that CNSs can make an important contribution to the overall functioning of the team in oncology MDTs (Haward et al., 2003).

However, although CNSs can play a key patient advocacy role and ensure that patient related factors are taken into account when treatment plans are made, studies have shown that they participate far less frequently in MDT meetings than medical or surgical team members (Lanceley et al., 2008; Lamb et al., 2011b; Raine et al., 2014a). Furthermore, even when nurses do speak up during MDT meetings, their contributions can be overlooked or ignored by other members of the team (Lanceley et al., 2008; Kidger et al., 2009). These findings are not unique to cancer MDT meetings in England. An Australian study of a lung cancer team also concluded that despite the rhetoric of multidisciplinary, MDT meetings were dominated by doctors, with little opportunity for genuine multidisciplinary engagement (Rowlands and Callen, 2013). In part, this reflects a lack of time, but it has also been suggested that barriers to CNS contributions include a lack of respect for the type of information they share, and the way that decision making is framed, with a focus on biomedical factors (Lanceley et al., 2008; Devitt et al., 2010; Kidger et al., 2009). Structural barriers to participation in the healthcare setting can also stem from well-established status hierarchies between professional groups (Freidson, 1988; Larkin, 1988; Price et al., 2014).

In cases where CNSs hold information not known to other members of the team, a lack of multidisciplinary engagement has the potential to impact on the quality of the decisions made by the MDT. There is a need therefore to better understand the way that CNSs participate within a setting where barriers to participation are well documented. Identifying the approaches used by CNSs to contribute in MDT meetings has the potential to provide insight into how teams can use the knowledge and information held by CNSs in order to ensure that decisions made reflect the needs of individual patients. In recognition of this, the aim of this paper is to use observation data from 122 cancer MDT meetings in gynaecology, skin and haematology to identify the approaches used by CNSs to contribute, and to explore the impact of these approaches on the decision making process. In doing so it illustrates potential mechanisms for increasing the influence of CNSs, and enhancing multidisciplinary engagement in the decision making process in cancer MDT meetings.

2. Methods

2.1. Study design and context

This research was conducted as part of a larger mixed methods study of chronic disease MDT meetings (the MDT study), which sought to identify the characteristics of MDT meetings associated with decision implementation (Raine et al. 2014a, 2014b, 2015). The MDT study involved multiple researchers collecting, coding and analysing data from 12 MDTs in cancer, heart failure, mental health and memory clinic teams.

This paper presents findings from additional analysis undertaken of qualitative non-participant observation data collected from the four cancer MDTs recruited to the study, based on a generic qualitative approach (Kahlke, 2014). The lead author (IW) was responsible for data collection from the four cancer MDTs, which forms the basis of the analysis for this paper.

The lead author (IW) was an experienced NHS manager (non-clinical). At the time of the study, she was conducting her PhD and did not know any of the participants involved in the study prior to observation.

2.2. Sampling and recruitment

Four cancer teams were purposively recruited to participate in the study from three hospital trusts in a single cancer network in a large metropolitan area of England. All four cancer teams invited agreed to participate. This included two haematology cancer teams, one skin cancer team and one gynaecology cancer team. This sample ensured there was diversity in team size, the number of patients discussed each week, the length of MDT meetings, and hospital type (Table 1).

2.3. Data collection

Data were collected by non-participant observation of a total of 122 weekly MDT meetings across the four cancer teams (Table 2). The period of observation was determined by the need to collect quantitative data on a pre-defined sample of individual patients (330 per team) for the main MDT study (Raine et al., 2014a). Qualitative data were collected from all 122 meetings in the form of field notes and audio recordings. This equated to around 175 h of audio and nearly 1500 individual patient discussions.

Field notes were initially free-form, recording significant events and interactions observed. Within 24 h of the meeting, these were organised by the lead author (IW) according to a qualitative observation coding sheet, based on an adaptation of an Inputs-Process-Outcome model

Table 2
Summary of data collected by team.

Team	Meetings observed	Number of CNSs	Sampled case discussions
Gynae	18	3	12
Haem 1	38	2	10
Haem 2	35	5	7
Skin	31	1	29
Total	122	11	58

Box 1

Overview of the four cancer MDTs

The Gynaecology Cancer MDT

The Gynaecology team was a specialist MDT based at a large inner-city teaching hospital. The team was responsible for managing all gynaecological cancers within their local area, as well as referrals for patients who needed specialist treatment from the surrounding local MDTs.

The team was large, with around 28 members. This included surgical consultants, medical and clinical oncologists, speciality trainees, psychologists, clinical nurse specialists, pathologists, radiologists, research nurses, a clinical trials manager and an MDT coordinator. The MDT Lead was a consultant gynaecologist, who chaired the meeting and recorded decisions made by the team (these tasks were conducted by different individuals in the other teams).

An average of 35 patients were discussed each week. Meetings lasted around two and a half hours, making these the longest MDT meetings of the four teams.

The Haematology Cancer 1 MDT

The Haematology 1 team was based across two District General Hospital sites in a suburban area. Video-conferencing facilities were used to link the two sites.

This was the smallest of the four teams, with 17 members. This included consultant haematologists, a staff grade haematology doctor, speciality trainees, a pathologist and a radiologist, clinical nurse specialists, clinical trials practitioners and an MDT coordinator. The MDT Lead, who chaired the meeting, was a consultant haematologist.

The weekly meeting usually lasted around an hour, with an average of 15 patients discussed each week. Decisions made for each patient were initially recorded on paper by the MDT coordinator, before being reviewed by the MDT Lead and uploaded into patients' electronic records.

The Haematology Cancer 2 MDT

The Haematology 2 team was based at an inner city teaching hospital. It had a dedicated transplant team, and received referrals from other hospitals that did not provide this level of specialised care.

This was the largest team of the four, with approximately 40 people attending each week. The importance of diagnosis was apparent in the number of diagnostic specialists who attended each week, alongside consultant haematologists, clinical oncologists, speciality trainees, clinical nurse specialists, research nurses, a clinical trials practitioner, a pharmacist and an MDT coordinator. The meeting was chaired by the MDT Lead who was a consultant haematologist.

An average of 14 patients were discussed each week, and meetings lasted an hour. Decisions were recorded for each patient directly into an electronic patient record by one of the haematology specialty registrars.

The Skin Cancer MDT

The Skin cancer team was a specialist MDT, based in an inner city teaching hospital with a large plastic surgery unit. The team managed all skin cancer cases in their local area, as well as specialist cases referred from surrounding MDTs.

Although there was a wide range of disciplines (including oncologists, plastic surgeons, dermatologists, dermatopathologists, a radiologist, a nuclear medicine specialist, speciality trainees, a skin cancer CNS, a research nurse and an MDT coordinator), the team was smaller than Gynaecology and Haematology 2, with 21 members. The MDT Lead was a consultant medical oncologist.

The team discussed an average of 47 patients, at weekly meetings lasting around an hour and a half. The role of capturing the decisions made for each patient was delegated to the member of the team who presented the patient. Decisions were recorded on paper, and subsequently filed in the patient's medical records by the MDT coordinator.

(McGrath, 1964; Lemieux-Charles and McGuire, 2006). This provided a framework to map out features of the meeting context and decision making processes. Following each meeting, the audio recording was re-played, to provide further detail for field notes and to document the timing of key events on the recording for future reference.

Given the volume of data, it was not practical to transcribe all the meetings verbatim. Instead, the field notes from all the meetings were reviewed and coded by the lead author to identify case discussions where a CNS had verbally contributed to the decision making process. This identified a sample of 58 discussions. The number of sampled cases per team, and the corresponding number of CNSs, is illustrated in Table 2. These cases were then cross-referenced against the relevant audio file and selective transcripts of those sections of audio that illustrated the CNS contribution were made (Emerson et al., 1995; Frykholm and Groth, 2011). These selective transcripts enabled a more in-depth analysis of the cases most relevant to the issue of CNS participation, whilst capitalising on the breadth of the full dataset.

2.4. Data analysis

The data were analysed according to the principles of thematic analysis (Braun and Clarke, 2006), using Nvivo V10. After data familiarisation, codes were developed and refined before being abstracted to higher-level themes. The lead author (IW) undertook the initial review of the data to generate the first coding framework. This was reviewed, alongside a selection of data extracts by UCL's Department of Applied Health Research Qualitative Research Group, which facilitated a

discussion about different interpretations of data at an early stage. Further iterations of the coding framework and subsequent themes were developed and refined by the lead author in discussion with all three co-authors (RR, HB and SH). While the experiences of the lead author will therefore have shaped the interpretation and results, the approach taken provided scrutiny of the analysis process, allowing opportunity for consideration of multiple interpretations throughout the process.

The final analysis was based on two coding frameworks: one capturing 'influence' on the decision making process, and the second capturing 'approaches' used to achieve influence.

(i) Influence codes

Influence was defined in terms of the effect of a contribution on the decision making process, rather than the quality of the decision agreed. Inductive codes were created to identify the way in which a contribution had influence on intermediary processes, for example, where it prompted further discussion within the meeting, or influenced a treatment plan. These codes were grouped into themes to capture different elements of the decision making process.

(ii) Approach codes

A second set of inductive codes was generated to capture the approaches being used by CNSs to contribute in each of the cases identified above.

Influence and approach themes were combined and analysed further using the Matrix Coding Query in Nvivo, which enabled exploration of each of the approaches used in relation to influence.

2.5. Ethical approval and research governance

Ethical approval to conduct the study was granted by the East London Research Ethics Committee (10/H0704/68). Approval was also gained from the National Information Governance Board Ethics and Confidentiality Committee (ECC 605 (h)/2010), under section 251 of the NHS Act 2006 to process patient identifiable information without consent.

3. Findings

Despite differences in context (Box 1) there were five approaches used by CNSs to contribute during MDT meetings across the four cancer teams. These were: sharing information, asking questions, using humour, providing practical suggestions, and framing. These approaches influenced three intermediary processes during decision making: prompting discussion, influencing a treatment plan, and facilitating teamwork (see Table 3). The section below considers each of the five approaches in turn, exploring when and how they were used in relation to each of the three intermediary processes identified.

(i) Sharing information

The approach adopted most commonly by CNSs to contribute during MDT meetings was to share information. This occurred on 54 occasions across the sample of 58 case discussions, impacting on the decision making process by prompting discussion, influencing a treatment plan, and facilitating teamwork (Table 3).

The information shared by CNSs was primarily about the person diagnosed with cancer, for example their treatment preferences or psychosocial wellbeing. In contrast, other professionals were more likely to share clinical information about the disease or treatment. CNSs were therefore able to present a different perspective to that put forward by other members of the team.

Sharing information was most likely to prompt discussion, with 32 occurrences. This was because it often highlighted that a lower status member of the team held unique information. This acted as a key mechanism for encouraging other team members to seek further information or to reconsider their initial assessment about the ability of a patient to cope with further treatment in light of their individual characteristics. This included interventions that prompted the team to re-consider whether further treatment was appropriate:

Consultant Oncologist: well first of all how fit is this lady?

CNS: ... she is 97

Consultant Oncologist: well let's not be ageist [laughing]

CNS: that's pushing it a bit

Consultant Oncologist: how fit is she?

Table 3
Summary of approaches used and influence of CNS contributions.

Approaches	Influence on intermediary processes (number of occurrences)			
	Prompts discussion	Influences treatment plan	Facilitates team work	Total
Sharing information	32	13	9	54
Asking questions	13	8	0	21
Using humour	0	8	12	20
Practical suggestions	3	14	0	17
Framing	4	6	0	10

CNS: she's 97 she is her age...leave her alone

[Skin, observation transcript]

It also included contributions prompting the team to reconsider treatment options for patients who had not immediately appeared suitable, for example during discussion of a patient with comorbid mental health issues:

Consultant Haematologist: I think the question is whether he would cope [with chemotherapy]...my recollection is he probably, he wouldn't

CNS: ... well, it's difficult because we saw him regularly throughout his [previous treatment]...and he did personality wise he improved so much on treatment and once he was familiar with us and coming every time...I had a good rapport with him

Consultant Haematologist: ... is he ok with needles and things?

CNS: well we managed every week to get a needle in him...a bit of convincing he was ok

[Haematology 1, observation transcript]

In addition to prompting discussion, CNSs were also able to influence the treatment plan agreed by the team on 13 occasions by sharing information about a patient's circumstances, preferences or psychosocial wellbeing. Providing essential context in this way again helped to ensure that decisions made reflected the needs and circumstances of individual patients:

Consultant Oncologist: if the situation was a little bit more favourable we could offer her the Nicam study

CNS: ... she speaks Cantonese, that could be helpful

Consultant Oncologist: yeah

Oncology StR: I'll ring the interpreters

Consultant Oncologist: yeah I think to consent her for the study we will have to have an interpreter...that's going to be challenging. And then actually getting her up and down to clinic regularly is going to be challenging as well

CNS: as long as she is told when to come and she's not informed by letter she's ok

Consultant Oncologist: ok can we just make a note, I'll arrange to see her

[Skin, observation transcript]

Knowledge of a patient's preferences could also be instrumental in helping teams to choose between alternative treatments. As illustrated in the example below, the CNS's awareness of a patient's preference shaped the choice between surgery or radiotherapy:

Consultant Oncologist: this is a guy with multiple cutaneous metastases... so in terms of quality of life what we've been debating is whether surgery would be a better option or whether we should be thinking about radiotherapy

CNS: ... the patient's definitely keen on surgery if that's any if somebody can see him just to

Consultant Surgeon: ... we'll see him we can probably resect it

Consultant Oncologist: ... ok so to see [Consultant Surgeon]

[Skin, observation transcript]

Sharing information based on knowledge of an individual patient also helped to facilitate teamwork by supporting other members of the team on nine occasions. This was important in circumstances where there was a lack of certainty over the best way to proceed. Where a CNS was able to share information about patient preferences, this could ease

the burden of decision making where there was no clear 'right or wrong' answer:

Consultant Surgeon: so we're probably going to have to decide for her in a way even if that's in as much as pushing her towards [having further surgery]

CNS: I think she'd be happy with that though

[Skin, observation transcript]

In addition to sharing patient centred information, there were also a smaller number of examples where CNSs shared clinical information about a patient's disease, symptoms or treatment. While this information was more commonly presented by medical or surgical members of the team, CNSs were also able to act as a 'collective memory' for the team, by sharing their knowledge of a patient's clinical history. This could help to ensure that teams had up to date information when making treatment plans:

Consultant Radiologist: if you look at the amount of oedema around this deposit on the right there's been an increase compared with the baseline CT of November

CNS: that's on steroids as well

Consultant Oncologist: ... yeh...clinically he's deteriorating quite quickly. I think it's really palliation

[Skin, observation transcript]

Central to this approach was the need for CNSs to hold detailed knowledge of the patient being discussed. As a result, they were far less likely to contribute during discussions about patients newly diagnosed, or where they had not met the patient being discussed. Instead, they were more likely to share information about patients who were mid- or post-treatment, because at this stage they had often seen patients more recently than other members of the team had. They were also more likely to share information during discussion of patients who had relapsed disease, those who were described as elderly, and those with comorbidities or psychosocial issues. In these circumstances, knowledge of a patient's preferences or individual needs could be instrumental in helping the team navigate complexity. This included cases where there were limited treatment options available, or to highlight potential barriers to treatment, such as an inability to give consent:

CNS: This lady's on lithium...she's very difficult to get information from...if it wasn't for her mental state she'd be very eligible for trials, but you just can't consent her for them.

[Skin, observation field note]

(ii) Asking questions

The second most frequent approach used by CNSs to contribute to MDT discussion was to ask questions. This occurred on 21 occasions across the sample of 58 case discussions, impacting on the decision making process by prompting discussion and influencing a treatment plan (Table 3).

Asking questions prompted discussion by stimulating others to share expertise or opinions on 13 occasions (Table 3). This capitalised on the MDT meeting as a forum for bringing together individuals with diverse knowledge and expertise:

CNS: how many [doses] of radiotherapy is she going to need?

Consultant Haematologist: ... five, five big doses

CNS: is that five fractions daily or over a course of [a longer period of time]?

Consultant Haematologist: one a day for five days

[Haematology 1, observation transcript]

Asking questions also enabled CNSs to influence proposed treatment plans, although this happened less frequently than prompting discussion, on eight occasions (Table 3). Questioning was a way to challenge another member of the team, without directly disagreeing: "is she going to tolerate R-CHOP [chemotherapy]?" or "why are we doing all this [further investigation] then [if the patient is not suitable for a transplant]?" [CNS, Haematology 1, observation transcripts]. In these cases, asking questions could be seen as a way of advocating on behalf of patients, to ensure that decisions took their needs and specific circumstances into account. This approach was used in cases where there was a difficult decision made during the meeting, or where there was disagreement between members of the team as to the most appropriate treatment. Disagreements stemmed from clinical complexity, or because a patient was likely to need additional psychosocial support to ensure successful delivery of a treatment plan:

Consultant Gynaecologist: she should have a breast assessment given the abnormalities

CNS: how are we going to work it? She is really anti having the mammogram...you know it's going to be extremely difficult to get any sort of diagnosis because she is just adamant...she doesn't want...anything done breast wise

[Gynaecology, observation transcript]

(iii) Using humour

The third most frequently approach adopted by CNSs to contribute during MDT discussion was humour, used on 20 occasions. This approach was most likely to facilitate teamwork (on 12 occasions), but it also influenced a treatment decision on eight occasions (Table 3).

In the examples observed, humour could facilitate teamwork by diffusing tensions, or by enabling the team to bond over a shared outlet of humour in the face of challenges:

Consultant Gynaecologist 1: you owe me big time because who did I see this morning [patient name]

Consultant Gynaecologist 2: now I did say [loud laughter in the background] I waited and I did say she's never late I actually decided that I would see her myself

Consultant Gynaecologist 1: she [the patient] said...'she's gone without seeing me, you'll have to see me [instead] doctor'

CNS: funnily enough...on the cervical cancer training day weekend she was there and she ignored me for two days! [laughter]

Consultant Gynaecologist: doesn't she want to go to [another Trust] for her treatment? Shall we sell that to her?

CNS: we could sell it

Consultant Gynaecologist 2: well done for seeing her I do think she needs to see a dose of everybody

(Gynaecology, observation transcript)

In other circumstances, humour was also used as a means of challenging another member of the team, for example if there were different opinions about a proposed treatment plan. In the example below, the Haematology 2 team were discussing whether a patient would be able to cope with the demands of a transplant:

Consultant Haematologist 1: there might be disagreement in the room but the issue is that he is able to get to appointments, with great difficulty, but he does come and although sometimes he's difficult to contact by phone generally we can track him down if we try hard enough [laughter]

CNS: well he's got better, he has got better. He's just very independent and quite stubborn

Consultant Haematologist 2: I can relate to that

CNS: *I thought you would [loud laughter from the team]*

(Haematology 2, observation transcript)

As this example illustrates, humour could be used to mask an underlying message. In this case, it could be seen as an attempt to minimise the significance of an issue that was being presented by other members of the team as a barrier to treatment. The CNSs contribution emphasised the fact that this patient was 'like other members of the team,' normalising the negative descriptions of behaviour highlighted by others.

(iv) Providing practical suggestions or alternatives

A fourth approach adopted by CNSs during MDT discussion was to present their contributions as practical solutions or suggestions. This occurred on 17 occasions across the sample of 58 case discussions, impacting on the decision making process by influencing a treatment plan on 14 occasions. On three occasions, this approach also prompted discussion (Table 3).

Most notably, practical suggestions or alternatives were a way to influence a treatment plan in a non-confrontational manner. In these cases, CNSs contributed to ensure that the needs of a patient were accommodated, without directly disagreeing with other team members:

Consultant Haematologist: I mean if we feel that actually getting him up [to clinic] with his family's going to be a struggle it may be easier just to admit him and do it all as an inpatient

CNS: *... are they [the patient's family] coming on Thursday when he comes to the day unit do you think?*

Haematology StR: yes

CNS: *... so can somebody see him on the day unit and do it all like that if they can't come up tomorrow*

Consultant Haematologist: ... yeh we could leave it at that if it's all planned that his family are coming with him on that day...ok excellent

(Haematology 1, observation transcript)

As a result of the CNS's contributions in this discussion, the team agreed to see the patient with his family at his next scheduled outpatient clinic appointment, rather than admitting him as an inpatient, which had been the initial proposal from a Consultant Haematologist.

Providing an alternative suggestion was also a way of raising awareness of an issue specific to an individual patient. This type of contribution appeared to be successful because it enabled teams to resolve or overcome potential barriers to delivering optimal treatment by engaging in further discussion:

Consultant Gynaecologist: [reading from patient's notes] minor dysplasia, deaf, dumb, crikey

CNS: *... her nephew was there today and was signing and obviously I think there's limited capacity to actually understand that she's got cancer but she's been in hospital before and she coped extremely well...I was just thinking I know we've used visual aids before so maybe we can do that... so she was prepared post operatively*

Psychologist: yeh yeh yeh so we can look at those and we can add to them if necessary

(Gynaecology, observation transcript)

As illustrated in this example, practical suggestions were used most commonly when there were factors that were likely to impact on the ability of the team to implement their proposed treatment plan. This included situations where patients or family had expressed strong preferences, and cases where there were potential communication difficulties. Again, a common thread underpinning these cases was the

knowledge held by CNSs of a patient and their specific needs or circumstances. This information appeared to be critical in developing an appropriate solution or alternative course of action to enable the team to incorporate these needs into a final treatment plan.

(v) Framing contributions in medical or surgical terms

While it was noted above that it was most common for CNSs to contribute by sharing psychosocial information, there was also a subset of cases where CNSs used medical terminology to engage the team in discussion or to influence a treatment plan. On 10 occasions, CNSs not only shared information that was more typically shared by medical or surgical members of the team, but they also adopted a distinctly medical frame in order to do so:

Consultant Radiologist: we've got recent imaging from here for the cervical spine which merely shows degenerative disease...there's an extensive spinal canal component in the current study which wasn't seen previously

CNS: *... she has had spinal radiation since Friday, she's had five fractions, and she's having the fifth fraction today. She had...fractures in T9, 10 and 11 last Monday. We were planning an autograft*

(Haematology 2, observation transcript)

Although this was the least frequently observed approach in the four teams (Table 3), the examples were notable because CNSs were much less likely than other members of the MDT to present their contributions in this way. This may reflect differences in training and expertise, and in their designated role as psychosocial members of the team. However, adopting a distinctly medical frame to contribute during discussion enabled CNSs to successfully influence a treatment plan on six occasions, and to prompt further discussion in four (Table 3). While the observation data do not enable conclusions to be drawn about whether or not this was done intentionally, in the cases where this was observed, influence was achieved by combining knowledge of the medical features of the case with knowledge of the patient (or their family's) wishes. For example, the CNS in Skin was able to persuade the team to make a referral for a patient to radiotherapy, in spite of the surgeon's initial reluctance to consider further treatment:

Consultant Medical Oncologist: why [is this patient on the list]?

CNS: *well the reason I asked him to be put back on it ...*

Consultant Surgeon: ... I did his axillary clearance [surgery] in December...and you can't get any more out you're not going to get everything

CNS: *no he had like 24 positive nodes didn't he with extra capsular spread...anyway his son has gone into orbit and wants him to have some radiotherapy yesterday and he's talking about going down to pay for it somewhere...his son's just very adamant that he wants him seen immediately*

[Skin, observation transcript]

As this example illustrates, framing issues from a medical or surgical perspective was a way to align contributions with the priorities of other members of the team, in a bid to capture their attention in a fast paced environment.

4. Discussion

This study identified five approaches used by CNSs to contribute during MDT meetings. In doing so, CNSs influenced three key processes previously associated with high quality decision making: prompting discussion, influencing decisions, and facilitating team work (Lanceley et al. Kidger et al., 2009; Larson et al., 1998; Lamb et al., 2013b). The most frequently used approach, sharing information, was the only

approach that influenced all three intermediary processes. Asking questions was more likely to prompt discussion than to influence a treatment plan (and was not observed to facilitate teamwork). However, as a somewhat more direct approach, making practical suggestions was more likely to influence a treatment plan than it was to prompt discussion. This was also the case for framing. In turn, using humour as a means of fostering social cohesion was more likely to promote teamwork than any other approach, although it also influenced treatment planning on a smaller number of occasions.

By highlighting the range of approaches used by CNSs, and their influence on the decision making process, these findings emphasise the value of CNS contributions in MDT meetings. They also complement evidence suggesting that there is a desire among MDT members for more open discussion in MDT meetings, including greater involvement from nurses (Lamb et al., 2011c). This is, in part, likely to reflect the important role that CNSs can play in acting as patient advocate. Previous research has shown that a key reason for non-implementation of MDT treatment plan recommendations is a failure to consider patient centred factors such as patient treatment preferences or comorbidities (Blazeby et al., 2006; Raine et al., 2014b, Le-bian et al., 2014). The findings from this study illustrate that CNSs can provide a mechanism for integrating this type of information, especially when opinions differ amongst the team or there is more than one treatment option available.

However, a lack of time is often a key pressure in MDT meetings (NHS England, 2015; Jalil et al., 2014). This is perhaps best illustrated by the fact that out of the 122 meetings observed for this study, and nearly 1500 patient discussions, only 58 cases were identified where a CNS verbally contributed to the decision making process. Other research has already demonstrated that CNSs participate less frequently in MDT meetings than medical or surgical team members (Lamb et al., 2011b, 2011c; Taylor et al., 2012; Jalil et al., 2014). However, it is also important to acknowledge that in the UK at least, pressure to diagnose and treat patients within waiting times targets means that many MDT discussions take place at a very early stage of a patient's treatment pathway. In this study, patients with a new diagnosis of cancer formed the largest group of cases in all four MDTs. In these circumstances, patients may only have been seen by a medical or surgical doctor, and not necessarily be known yet by the CNS, or other members of the team. It is also possible that at this early stage, patients may not even know their diagnosis, or be in a position to articulate the factors that they think may impact on their treatment (Taylor et al., 2014). This has practical implications for the role of CNSs, because in order to advocate successfully in MDT meetings, CNSs must hold information that enables them to contribute (McGrath et al., 2006).

The findings of this study are therefore also important because they highlight the circumstances in which CNS contributions had impact on the decision making process. CNSs were shown to contribute successfully in cases where medical factors (such as relapsed disease, complex comorbidities, or multiple treatment options) or non-medical factors (such as strong patient or family preference, psychosocial vulnerability, or communication difficulties), had the potential to impact on the ability of teams to deliver treatment.

Existing literature highlights factors that may underpin the success of approaches used by CNSs to contribute. The first of these is the need to contribute in a way that maintains working relationships within a team by avoiding direct confrontation (Hewitt et al., 2015). The need for 'tactical communication' may be particularly salient in healthcare settings given the well-established status differences between professional groups (Freidson, 1988; Larkin, 1988; Price et al., 2014). Many of the approaches identified in this study support this: for example, CNSs used questions or made alternative suggestions that challenged the contributions of other team members without being confrontational. Similarly, humour was used by CNSs in the four cancer teams when making a potentially 'difficult' point. This builds on research that suggests that humour is a mechanism that enables individuals to raise concerns or issues that they may not be able to do otherwise (Rowe and

Regehr, 2010).

It is also possible that the success of these approaches was related to particular personal characteristics or attributes. Previous research has concluded that CNSs who advocate successfully in MDT meetings are confident, experienced, and have good communication skills, as well as a sense of being 'right' (McGrath et al., 2006).

4.1. Strengths and limitations

The analysis described above was based on data collected during observation of 122 cancer MDT meetings. There are two key limitations to this method of data collection and analysis. First, observation can alter the behaviour of those being studied (Harris et al., 2014). This risk was minimised by carrying out two weeks of pilot observation in each team to enable the MDTs to become accustomed to the presence of a researcher. The lengthy observation period also helped to minimise any observer effect. A second limitation of this approach was that it was not possible to triangulate between difference sources of data, for example to compare and contrast observation data with the views of CNSs themselves. Exploring the views of CNSs about when, how and why they adopt different approaches, would have provided an additional perspective to improve understanding of CNS participation, and warrants further investigation. However, it is important to acknowledge that the approaches identified may not always be adopted consciously. As such, observation remains an important source of data.

The focus of this study was on the process of decision making. This meant it was not possible to consider the impact on the quality of decisions made or their influence on clinical outcomes. Nonetheless, given that decisions themselves are influenced by the way in which they are made, there is value in developing a better understanding of processes as a pre-requisite for improvement (Lamb et al., 2011c; Dew et al., 2014).

In addition, analysis was based on a relatively small subset of 58 cases sampled from a larger dataset. This reflects the challenge of studying individuals who have limited participation within a group, because it is far easier to focus on those who express ideas and share information verbally, than on those who are often silent (Dyne et al., 2003). However, a key benefit of the extended observation period was that it enabled identification of recurring patterns in the data even amongst those who participated the least. It also remains the case that the approaches identified are important because they provide an insight into what is *possible* in these teams. Even if some approaches were only used on a relatively small number of occasions, this does not undermine their legitimacy (O'Reilly and Parker, 2013). Nonetheless, further research based on a wider sample of cases, including a more diverse range of teams and specialities may highlight additional approaches used by CNSs to contribute in the MDT setting. There is also a need to explore the views of lower status groups themselves about when, how and why they adopt different approaches, as well as scope to consider the role of individual characteristics that are associated with the use of different approaches.

5. Conclusion

If cancer MDTs are to achieve their full potential, they must be able to use the relevant knowledge of all members, including CNSs. However, MDT meetings are often dominated by those with medical and surgical expertise. By focusing on a subset of cases where CNSs contributed during MDT discussion, this study has provided an insight into approaches that can be adopted by CNSs to increase their influence, enabling teams to capitalise on their knowledge and skills when making decisions in the MDT meeting.

Author contributions

Designed the study and recruited study participants: IW, RR.

Collected data: IW. Analysed data: IW. Supervised the analysis: HB, SH, RR. Contributed to interpretation of findings: IW, HB, SH, RR. Drafted the paper: IW. Critical review providing important intellectual content: HB, SH, RR. All authors have approved the final version of the paper.

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Declaration of competing interest

None declared.

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