A Prospective Study of the Clinical Content of Palliative Medicine Interdisciplinary Team Meetings

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Abstract
Structured interprofessional communication should improve the structure and clarity of the plan of care. The interdisciplinary team meeting (IDTM) is an opportunity for shared information on patients’ and family care needs. We report a prospective observations study of palliative medicine IDTM, which recorded the clinical issues discussed. One hundred and forty-five disparate clinical items were identified for 59 patients and were discussed by the IDTM in about 240 minutes. By content analysis and research meeting consensus, they were grouped into 9 agreed interdisciplinary themes. The 9 themes were then subjected to biostatistical analysis and 3 communication clusters identified. Themes consisted of 3 major communication clusters: (1) clinical services, (2) psychosocial, and (3) care plan. Two themes (information exchange and clinical transitions) did not cluster. The IDTM identified patient care need, reported concerns, and supported collaboration in proactive patient care plans. Future research projects with more patients and a large number of meetings can confirm our findings. This should also examine specific contributions by professional discipline.

Keywords
communication, discharge plan, hospital, interdisciplinary team, palliative medicine

Introduction

Health System
The health care system in the United States is challenged by numerous issues; control of hospital length of stay (LOS) is an important one. There is an urgent need to integrate complex accumulated medical events and speed timely but safe hospital discharges. These events challenge patients, their families, and medical teams. Everyone struggles with the complex psychological and physical transitions involved, particularly in people with life-threatening illnesses. This clarity depends on timely accurate information in a dynamic environment. Such information should ideally include not just medical but also nursing, psychosocial, and other perspectives.

The Medicare Hospice Benefit law required an interdisciplinary team meeting (IDTM) as part of the structure of hospice services. Most IDTM anecdotal and research reports have focused on the hospice IDTM. They may be time consuming, poorly structured, and ineffective. More recent qualitative studies explored hospice team processes. Gaps were identified in interprofessional collaboration. A common language was used to communicate specific aspects of care, for example, pain, but there seemed to be a lack in recognition of the need to reflect on team processes.

The descriptors “multidisciplinary,” “interprofessional,” and “interdisciplinary” are intermixed in the literature. Clarification is important. “Multidisciplinary” has been defined as “team members who work sequentially and the medical record is the chief means of communication.” Interdisciplinary and interprofessional teams in contrast work collaboratively with regular meetings to discuss patient status and evolve the care plan, but the term “multidisciplinary” is pervasive.

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The literature is limited around the functions and content of IDTM in medical practice. Studies have utilized qualitative techniques mostly in weekly 1-hour meetings in specific clinical settings like geriatrics, pediatric, and psychiatry. One reported the shared qualities of daily meeting by varied disciplines in an acute surgical unit. Daily IDTM were considered helpful to set daily priorities, improve predictability, focus plans of care, share professional knowledge and perspectives, and learn from other disciplines and interpersonal interactions.

Physicians or nurses usually chaired the IDTM perhaps due to their global clinical and operational perspectives. A power differential has been noted between physicians and other team members, and this can create dialectical tension. The drawback was that this minimized psychosocial input. The structure, process, participants, and functions of IDTM have been described to a minor extent but not the clinical content. One exploratory study suggested the importance of interdisciplinary teamwork. Yet there appeared to be no mutual understanding of either purpose or process. In palliative medicine, the importance of psychosocial care for comprehensive and optimal team function has been noted. Qualitative research has explored member perceptions and experiences to more fully understand team dynamics. The psychosocial role may be contested and require new interdisciplinary team models, policies, and structures. A literature review identified team structure and processes as the 2 components that impacted on interprofessional team work. Blurring and misunderstanding of professional roles and responsibilities were common and raised challenges. Audit was also not addressed; teams did not have effective feedback on how to improve performance.

A study reporting data on team-based processes and outcomes were able to apply an e-teams system design. Metrics included resource utilization, patient and family information needs, and satisfaction measures. Others have reported that teams improve outcomes like family satisfaction, patient satisfaction, and site of care. They may also decrease anxiety, improve symptom control, and lessen cost due to shorter hospital stays.

The IDTM is an opportunity for shared information on patients’ and family care needs. Information and decisions are then shared formally or informally with the patient, family, and other caregivers and professionals. Similar interdisciplinary or multidisciplinary team meetings seem to be common practice in some other clinical settings. There is little information in the literature about IDTMs or its clinical content. We report a prospective observational study of a palliative medicine IDTM, which recorded the clinical issues discussed. The identified clinical items were then grouped into interdisciplinary themes and then further into communication clusters in an attempt to identify key communication skills for administrative and training purposes.

**Materials and Methods**

The Cleveland Clinic is a quaternary-level academic medical center. The Harry R. Horvitz Center for Palliative Medicine is a 23-bed acute care palliative medicine unit within the main hospital. It opened in 1994. It is not a hospice unit and so subject to the usual hospital regulatory and reimbursement considerations. The average age of people admitted to the unit is 62 years, they are 50% male, and 28% African American. Most admissions are cancer related. In a prospective study, the patients admitted to the acute inpatient unit, and the most common primary cancer sites were lung, multiple myeloma, colorectal, esophagus, breast, pancreas, and kidney. Those with solid tumors (78%) had distant metastases and 13% had regional spread. In all, 66% are admitted for symptom control and 27% for complications of advanced illness. Most have Eastern Cooperative Oncology Group performance status of 3 to 4. Comorbid conditions are present in 71%. Average LOS is 10 days. The unit mortality rate is 20%.

Daily clinical IDTM had been conducted since the palliative medicine program was founded in 1987. The IDTM is intended to provide information exchange about important issues such as the following:

1. disease status.
2. life expectancy.
3. symptom management.
4. medical complications, investigations, treatments.
5. timely appropriate hospital discharges.

These began informally but gradually became more structured. When the acute care unit opened, the IDTM moved there with an expanded agenda and more attendees. The meeting is physician led and program based, that is, attendees also include team members who do not work in the unit. The main aims are to discuss and update the daily medical plan, communicate effectively between the medical teams, patient, and family, and identify multiple resources for effective hospital discharges. There is a primary focus on active medical management. Attendance for team members is mandatory for approximately 30 minutes at 8:00 AM daily (Monday-Friday) in the unit meeting room. Team members include chaplain, music therapist, nurses, nurse discharge coordinator, nutritionist, physicians (staff, fellows, and residents), Physician Assistant, and Social Worker. A preprinted IDTM agenda template (Figure 1) is distributed to each participant to help guide the discussion. This agenda guides team members to utilize their skills and present perspectives to update the care plan.

This was an observational study done by 1 member (RP) of the Palliative Medicine research group. RP was not a member of the clinical interdisciplinary team during the project. The study was approved by the Cleveland Clinic Institutional Review Board, and it met the criteria for a waiver of informed consent. Each patient was given a unique study number (1-59). Key participant identifiers like demographic information and medical record numbers were removed to assure patient confidentiality.

**Data Collection**

One author (RP) observed the IDTM 1 day (Wednesday) a week over a period of 8 consecutive weeks. For each patient,
Clinical items were transcribed (see examples in Table 1) every Wednesday for 8 weeks. Attendees included the attending staff physicians, fellow physicians, clinical nurses, social worker, and a biostatistician. This group of clinicians attended both the (daily) IDTM and the separate (weekly) research meetings. The biostatistician involved did not attend the IDTM. The observer transcribed verbatim any clinical issues discussed during the IDTM for 59 consecutive patients. The IDTM agenda template (Figure 1) was utilized to gather the transcribed clinical issues for each patient. The researcher transcribed by hand the IDTM agenda template (Figure 1) information exchanged between disciplines for each patient. They were a form of field notes. No audio or video recordings were used. Individual issues were then categorized and labeled as clinical items for analysis.

RP prepared several formal presentations of the 145 clinical items identified. The clinical items for each patient were then discussed in dedicated weekly 1-hour research meetings. Six 1-hour presentations were done by researcher to reach a consensus both on clinical items and interdisciplinary themes. By content analysis and research meeting consensus, they were grouped into 9 agreed interdisciplinary themes (examples [A–F] in Table 1). The 9 themes were then subjected to biostatistical analysis and 3 communication clusters defined (Figure 2) to facilitate training, education, and future research on IDTM process and content. Similarities among the themes formed the clusters (Figure 3 and Appendix A). The purpose was to identify common domains among different interdisciplinary themes.

**Statistical Analysis**

Data were entered into an Excel (2013 Microsoft Corporation, Redmond, WA) spreadsheet. For analytical purpose, worksheet was created based on Table 2. There were 9 rows for 9 themes, and each patient was enlisted in each column. A patient received a value of 1 if a theme was present and 0 if absent for all 9 themes. Data analysis was performed by JMP statistical software (2013 SAS Institute Inc, Cary, North Carolina). Descriptive statistics included frequencies and percentages for categorical data, mean, standard deviation, median, and range for continuous data. Interdisciplinary themes were organized into communication clusters by a reduction method (the Ward hierarchical cluster analysis) and ranked by their strength of association. The cluster analysis measured “distance (D)” between themes and communication clusters. The interdisciplinary themes in each communication cluster resembled each other but not those in other clusters. The technique identified interdisciplinary theme patterns and clustered them by strength and distance (Figure 3; Appendix A). This determined the parsimony of communication clusters with adequate similarity across interdisciplinary themes. A vertical cutoff point to define the clusters was determined through a consensus process.
Results

One hundred and forty-five disparate clinical items were identified for 59 consecutive patients and were categorized into 9 interdisciplinary themes (Table 3). The median (range) number of interdisciplinary themes per patient was 2 (1-5). Their rank order prevalence is given in Table 3. The themes were identified by consensus. In Table 3, themes appear in order of occurrence among 59 patients. Overall, 2 main theme categories emerged. The first was related to patient and family information needs (interdisciplinary themes: numbers 1, 2, 3, and 4). The second was around resource identification (interdisciplinary themes: numbers 5, 6, 7, 8, and 9). All these clinical items were discussed in IDTM, which typically lasted no longer than 30 minutes.

Communication Clusters

The interdisciplinary themes formed into 3 major communication clusters. Through the interdisciplinary research team consensus process, these clusters were each then given empirical descriptive labels (Figure 3), (1) clinical services, (2) psychosocial, and (3) care plan.

1. Clinical services: This cluster was formed from interdisciplinary themes 5 (resource access) and 7 (medical operations). Prolonged hospital stays often resulted from the time required to access available community resources by the discharge nurse and obtain the agreement of the patient and family to utilize them (Table 1; example A).

2. Psychosocial: This cluster (Figure 3) was based on a strong association between interdisciplinary themes 6 (family dynamics), 9 (family spokesperson), and 8 (discharge plan). For example, the discharge nurse, physician, and social worker recognized the complex combination of a clinical transition, financial issues, unclear goals of care, and the absence of family spokesperson (Table 1; example B).

3. Care plan: This cluster included interdisciplinary themes 4 (care goals) and 3 (patient caregiver). This encompassed not only medical care and patient/caregiver decision-making...
**Figure 2.** Study structure and process overview.

**Figure 3.** Communication cluster analysis of interdisciplinary themes. *A vertical cutoff point (7.17 < D < 7.76).*
capacity but also general health concerns and the need for extra support and resources (Table 1; example C).

**Individual Themes**

Of the 9 interdisciplinary themes, 2 did not cluster (Figure 3) and thus remained independent. These were information exchange (theme 1) and clinical transitions (theme 2). Information exchange was the most common individual theme.

Theme 1: Information exchange (Table 1; example D).

Theme 2: Clinical transitions. Usually represents a shift in emphasis in the plan of care away from curative to palliative therapies (Table 1; examples E and F).

**Discussion**

This study identified the complexity of the IDTM communication process. One hundred and forty-five clinical items were discussed by the IDTM in about 240 minutes (8 meetings × 30 minutes), a new item about every 100 seconds. This illustrated the rapidity of a complex communication process conducted under significant time pressures. In addition to the multiplicity of clinical items raised each day, several interdisciplinary themes could be tracked to each patient. This was evidence of the acuity and complexity of the clinical interventions provided in acute care palliative medicine and the consequence challenges of interprofessional communication. The interdisciplinary themes identified by the subsequent consensus process in retrospect appear sensible and clinically relevant. The themes (and the clusters) will form the basis for further staff training and research. The cluster analysis of the interdisciplinary themes was an attempt to identify the key communication strands that underpinned the items and themes.

The clinical services cluster clarified the need for timely integrated clinical and psychosocial assessment and prompt resource access to support clinical operations. The psychosocial communication cluster reflected the importance of a family spokesperson and the family in general in effective discharge planning.

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**Table 2. Clinical Interdisciplinary Themes (N = 9) in 59 Individual Patients.**

<table>
<thead>
<tr>
<th>Study number</th>
<th>Theme numbera</th>
<th>Study number</th>
<th>Theme numbera</th>
<th>Study number</th>
<th>Theme numbera</th>
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<td>3</td>
<td>45</td>
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</table>

*aThemes: (1) information exchange, (2) clinical transition, (3) patient caregiver, (4) care goals, (5) resource access, (6) family dynamics, (7) medical operations, (8) discharge plan, and (9) family spokesperson.

**Table 3. Interdisciplinary Themes in Rank Order of Prevalence.a**

<table>
<thead>
<tr>
<th>Interdisciplinary themes</th>
<th>N⁵</th>
<th>Prevalence, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theme 1: information exchange</td>
<td>34</td>
<td>58</td>
</tr>
<tr>
<td>Theme 4: care goals</td>
<td>20</td>
<td>34</td>
</tr>
<tr>
<td>Theme 2: clinical transitions</td>
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<td>34</td>
</tr>
<tr>
<td>Theme 3: patient caregiver</td>
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<td>31</td>
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<tr>
<td>Theme 6: family dynamics</td>
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<td>24</td>
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<tr>
<td>Theme 7: medical operations</td>
<td>11</td>
<td>19</td>
</tr>
<tr>
<td>Theme 5: resource access</td>
<td>11</td>
<td>19</td>
</tr>
<tr>
<td>Theme 8: discharge plan</td>
<td>11</td>
<td>19</td>
</tr>
<tr>
<td>Theme 9: family spokesperson</td>
<td>6</td>
<td>10</td>
</tr>
</tbody>
</table>

aN = 59 patients.

b>1 theme per patient.

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Figure 4. Interdisciplinary themes per patient.
plans. An identified family spokesperson was an important resource that facilitated clinical decisions and discharge plans. They helped communication between the clinical team and the patient/family. This in turn facilitated mutual understanding around goals of care and patient/family needs. They also served as a conduit to convey patient’s wishes.

Their absence appeared to require more resource utilization. The care plan cluster identified the consequences of the delays in decision making and consequent inappropriate resource utilization. The statistical analysis revealed that patients have complex interdisciplinary problems during their hospital care.

A palliative medicine consultation is often a decision point for clinical transitions. Input from all IDTM members was evident. Varied viewpoints arose from the individual skills and knowledge base of various disciplines. Team members recognized care needs, reported concerns, and collaborated in proactive care. Importantly, the IDTM publicly processed critical transition points and often stimulated review and redefinition of the care plan. This sometimes led to patient and family disputes about hospital discharge. Specific interventions such as crisis management (via a formal family conference or bereavement counseling) were often a response. For some, access to more clinical resources such as bioethics or ombudsman referral were needed to manage the divergent viewpoints of patient, family, and clinical team. The IDTM appeared to reduce the need for such interventions.

The IDTM provided a comprehensive approach to care which is integral also to palliative medicine philosophy and practice. The main goal was to have the interdisciplinary participants share their assessment and communicate information. Much of the IDTM content was about practical clinical problems and the best and most comprehensive approach to the patient and family.

Study limitations included the potential of observer bias, small sample size, and restricted observation frequency and duration. Strengths were the consecutive admissions, consecutive IDTM, prospective data collection, interdisciplinary and objective examination of the content, and function of a typical well-established palliative medicine daily IDTM. The mid-week IDTM was used in an attempt to most accurately capture typical daily clinical team dynamics and patient flow. The cluster methodology mapped subtle relationships, for example, those between the spokesperson and communication around complex clinical transitions.

We identified the frequency, range, and complexity of major palliative medicine IDTM discussion topics. Much of the IDTM reflected routine daily clinical practice placed within a different context. The study melded medical transitions and patient care goals, with the psychosocial dimensions of patient and family care. The communication clusters embodied the complex clinical practice processes and their relevancy to comprehensive care. Better understanding of the IDTM clinical content and the team process can help structure education of fellow physicians, medical interns, and other participants. We also identified opportunities for quality improvement both in medical operations and in resource use.

Use of information technology, for example, tablet computer, would efficiently capture medical and psychosocial information. Electronic documentation, wireless transfer of information, and secure storage would allow for timely review and likely speed communication and facilitate hospital discharges. Future research should confirm our findings, perhaps identify more themes and objectively assess their influence. It should also identify the IDTM impact on hospital LOS and clinical resource utilization.

**Conclusions**

We identified 145 clinical items discussed in 8 consecutive IDTMs. These could be grouped into 9 interdisciplinary themes. These interdisciplinary themes comprised 2 broad categories: patient and family issues and clinical resources. Themes consisted of 3 major communication clusters: (1) clinical services, (2) psychosocial, and (3) care plan. These identified the IDTM process of problem identification and team interventions. Two themes (information exchange and clinical transitions) did not cluster. Both the themes and the clusters appeared clinically relevant. They provide an operational, educational, and research resource to better organize IDTM and train all medical professionals in how to conduct and participate in these important meetings.

**Appendix A. Interdisciplinary Themes: Cluster Analysis.**

<table>
<thead>
<tr>
<th>Distance</th>
<th>Leader themes</th>
<th>Joiner themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.00</td>
<td>(Theme 7) clinical operations</td>
<td>(Theme 5) resource access</td>
</tr>
<tr>
<td>5.92</td>
<td>(Theme 9) family spokesperson</td>
<td>(Theme 6) family dynamics</td>
</tr>
<tr>
<td>6.34</td>
<td>(Theme 9) family spokesperson</td>
<td>(Theme 8) discharge plan</td>
</tr>
<tr>
<td>7.17</td>
<td>(Theme 4) care goals</td>
<td>(Theme 3) patient caregiver</td>
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<td>7.76</td>
<td>(Theme 9) family spokesperson</td>
<td>(Theme 7) medical operations</td>
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<td>9.30</td>
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<td>(Theme 1) information exchange</td>
</tr>
<tr>
<td>10.19</td>
<td>(Theme 9) family spokesperson</td>
<td>(Theme 4) care goals</td>
</tr>
</tbody>
</table>

*Clusters were identified by the Ward method using strength of distance. The smaller the distance numbers the stronger the cluster relationship. Items in each cluster were similar to each other but dissimilar to those in other clusters. Ward clustering strategy creates leader and joiner themes.

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