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Multidisciplinary Team Meetings - A Literature Based Process Analysis

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The Basics

The Research

The Results

Conclusion and Outlook







The Basics

The Research

The Results

Conclusion and Outlook



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- What is a MDTM?
- KIMBO Collaborative Interdisciplinary Medical BOards
- The research questions
- A literature review
- Results
- Conclusion (answering our questions)
- Further Findings
- Outlook







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What is a MDTM?



Multi Disciplinary Team Meeting 🗈

- Also called a Tumor Board (TB)
- Medical Personell of multiple disciplines get together to discuss one or more patients.
- Also applied outside of tumor treatment (psychology, infections)
- Mostly done in-house or organization
- Has not been proven to significantly improve patient care [2, 3]







Collaborative Interdisciplinary Medical BOards

- Two year Project, until Nov. 2017
- Sponsored by the Austrian Research Promotion Agency (FFG)
- Collaboration between FH-Upper Austria, Compu Group Medical
- Participation of four Austrian hospital organizations
- Goal: To create a tumor board platform that is interoperable and allows collaboration between different medical organizations







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Research Questions



- What is the current state of the art in MDTM?
- How are they conducted and what is the variation in different hospital settings?
- What technical problems and possible solutions thereof exist?



Literature Review



- Searched: Science Direct, PubMed, ACM, IEEE
- After 1990
- Search for: tumor board OR medical team meeting OR multidisciplinary medical team meeting
- Forward and backward search happened afterwards
- Inclusion Criteria: A meeting in person or over teleconferencing solutions between medical personnel of dierent disciplines to discuss the medical situation of one or more patients and further treatment thereof
- Exclusion Criteria: full text unavailable, paper not in english, no papers that only analyze cost, feasability, impact on patient care or quality



Articles Searched



Table: Amount of Articles in selection process of scientific publications

Step in Literature Search	Amount of Articles
Search in databases	837
After duplicates removed from pool	728
Remaining articles after abstract selection	82
Remaining articles after full text analysis	19
Articles after searching referenced articles	25







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Structure:

- 1. Who participates in the MDTM?
- 2. Is the patient involved?
- 3. What information is needed to discuss a patients case?
- 4. How is the MDTM conducted?
- 5. Which problems were identified?
- 6. Which solutions were identified, implemented or suggested?



Participants in the MDTM



- Oncologists, Pathologists, Radiologists and Surgeons are mentioned by more than half of all papers
- 18 other different professions have been identified by one or more papers
- While there is a core-team of participants that always participate in TB other participants are dependent on *the type of cancer* and *the hospitals guidelines or applicable law*



Participation of the patient



- Generally the patient does not participate in the MDTM, often due to an increased workload when he would [4].
- Research does suggest that patient participation is important and valued by both patients and physicians [4, 5]
- Often the patients requests are noted beforehand [3], or nurses represent the patients preferences during the MDTM [6]



Required Information



- Imaging Results (MRI, CT, X-Ray), medical history of the patient, and histological findings have been reported by more than one fourth of all papers
- 18 other different items of information have been identified by one or more papers
- Similar to the participants the required information is dependent on the type of cancer and the hospitals guidelines or applicable law



The Workflow of a MDTM





Figure: Preparation steps for a MDTM



The Workflow of a MDTM





Figure: Steps during the conduction of a MDTM



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The Workflow of a MDTM





Figure: Steps to be executed after a MDTM was finished



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Simplified Workflow





Figure: Simpliefied TB Process



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Problems



- Lack of preparation or lack of time to prepare [6]
- Lack of information available during MDTM (history, co-morbidities, patients wishes, ...) [7]
- Patient is not attending the MDTM [4]
- Patient is attending the MDTMs [3]
- A lack of data standardization [8]
- Members of MDTM not present [7]
- General technical problems (internet connectivity, mouse) [9]
- More adherence to guidelines [2]
- Inconsistencies in patient data [2]



Solutions



- Counseling service directly for patient or patient attendance to MDTM [4]
- Assignment of roles to MDTM members [8]
- Virtual MDTM instead of meetings offline [10]
- Standardized data input and documentation [11]
- Use the MDTM as a learning platform [12]
- Improved preparation of patient case and increased time [13]







The Basics

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Conclusion and Outlook





What is the current state of the art in MDTM?

- MDTM are a well researched topic
- They are widely applied in hospitals all over the world
- They have not conclusively been proven to improve patient care, but are highly valued by both patients and physicians





How are they conducted and what is the variation in different hospital settings?

- There seems to be a core workflow that most MDTM follow
- This workflow differs mostly in small parts such as order, participants and data needed. Mostly depending on *the* organization itself, and the specific cancer type that is discussed.





What technical problems and possible solutions thereof exist?

- Many organizational problems were identified, some of which can be solved, partially supported or mitigated by technology (provide more information, let patients wishes be known beforehand)
- Some technical problems and solutions were found that can be improved by technology (data inconsistencies, role-assignment, vMDTM, Standardized data input)



Further Findings



(findings after publication was published)

- Expert interviews with MDTM organizers and participants in four different Austrian hospital groups have been conducted.
- Results show that existing problems and workflow are similar to the findings of this publication.
- In Austria there is a lack of involvement of partners outside of the hospital environment (such as family physician, radiologist, experts from other hospitals).
- A lack of possibilities to de-identify patient data during the MDTM exists. This would be a requirement for involving external partners



Outlook



- This publication is (hopefully) the start of a research series
- Further research will focus on data availability, workflow support and enhancement as well as interoperability
- The HL7 FHIR standard will be used for data provision and connecting different healthcare environments
- Partial workflow automation, especially concerning data provision and MDTM conduction will be attempted
- The developed concepts will be tested by different Austrian healthcare providers.







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This list is an excerpt of representative publications used for this presentation. For the full list please refer to the accompanying publication.

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