IT-based Information Management in Health Care Networks:
the MedoCom Approach

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Introduction / Background
Integrated Care in Health Care Networks

- Secondary process
- Primary process
- Ambulant care
- Outpatient care
- Inpatient care
- Aftercare
- Transinstitutional information system

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Research Project

Management

IMIV
IT-based Management of Integrated Care Networks

Medical Informatics

10/ 2006 - 10/2009

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Status of Integrated Care in Germany

- > 4.3 million registered patients
- > 5000 contracts

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Definitions of Health Care Networks

Cooperation between independent health care providers\(^1\).

A health network consists of autonomous units that have joined together to achieve a common purpose\(^2\).

A group of three or more autonomous organizations working together across structural, temporal and geographics boundaries to implement a shared population health or health services strategy\(^3\).

\(^1\) Meijboom et al 2004; \(^2\) Alexander et al. 2003; \(^3\) Bailly et al. 2001
Characteristics of Health Care Networks

- autonomy vs interdependence
- cooperation vs competition
- trust vs risk
- integration vs specialization
Information Management

management of information system (strategic, tactical, operational)

organizational goals

organizational options

controlling

steering

information system
Research Questions

Q1 How can health care networks be described systematically?

Q2 How can network characteristics affect transinstitutional information management?

Q3 How can transinstitutional information management be supported by IT?
Methods
Methods

- literature review
- workshops
- expert surveys

Qualitative study with 93 experts of information management

Health care literature management literature

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Results
Transinstitutional information management
# Description of Health Care Networks

<table>
<thead>
<tr>
<th></th>
<th>Focus of analysis: network</th>
<th>focus of analysis: actor</th>
<th>focus of analysis relationships</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>management level</strong></td>
<td>structure of management system</td>
<td>management competencies</td>
<td>managerial dependencies</td>
</tr>
<tr>
<td><strong>process level</strong></td>
<td>process system</td>
<td>process elements assigned to network member</td>
<td>interweavement of process elements</td>
</tr>
<tr>
<td><strong>infrastructure level</strong></td>
<td>architecture of transinstitutional information systems</td>
<td>property rights regarding information resources</td>
<td>information dependencies</td>
</tr>
</tbody>
</table>
Characteristics of Health Care Networks: Centrality

controlling steering

controlling steering
### Characteristics of Health Care Networks: Centrality

<table>
<thead>
<tr>
<th>Centrality</th>
<th>Management Level</th>
<th>Process Level</th>
<th>Infrastructure Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>allocation of managerial authority</td>
<td>low: managerial authority is equally shared</td>
<td>low: processes are assigned equally</td>
<td>low: information resources are controlled equally</td>
</tr>
<tr>
<td>high: managerial authority is concentrated on one or few members</td>
<td>high: processes are mainly assigned to one or few members</td>
<td>high: information resources are controlled by one or few network members</td>
<td></td>
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</tbody>
</table>
# Effects of Centrality on Information Management

<table>
<thead>
<tr>
<th>Category</th>
<th>Centralized Information Management</th>
<th>Decentralized Information Management</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>advantages</td>
<td>disadvantages</td>
</tr>
<tr>
<td>allocation of power</td>
<td>intransparent decision making</td>
<td>mutual control</td>
</tr>
<tr>
<td>efficiency</td>
<td>clear allocation of competency leads to efficient decision making</td>
<td></td>
</tr>
<tr>
<td>dependency</td>
<td>dependency of non-central actors</td>
<td>no dependence on one single actor</td>
</tr>
<tr>
<td>acceptance of decisions</td>
<td>questionable acceptance by non-central actors</td>
<td>acceptance through mutual agreed compromise</td>
</tr>
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**Characteristics of Health Care Networks: Intensity**

<table>
<thead>
<tr>
<th>Intensity</th>
<th>Extent of Managerial Influence</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Management Level</strong></td>
<td>low: managerial influence on collaboration is weak</td>
</tr>
<tr>
<td><strong>Process Level</strong></td>
<td>quantity of process execution</td>
</tr>
<tr>
<td><strong>Infrastructure Level</strong></td>
<td>quantity of resource usage</td>
</tr>
</tbody>
</table>
Outlook: IT-supported Information Management with MedoCom

Requirements:

• provide transparency on network and actor level
• measures for centrality and intensity
• integrate with other transinstitutional management functionalities
Outlook: IT-supported Information Management with MedoCom
Outlook: IT-supported Information Management with MedoCom
Thank You

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