360° diagnosis – improvement of quality and cost in hospitals

Hospital Management Conference/
German Hospital Conference

Sören Eichhorst, MD PhD
McKinsey Hospital Institute/
ORPHOZ GmbH & Co. KG

November, 14th 2014
1 Symptoms

2 360°Diagnosis

3 Therapy
German hospitals face several serious challenges

| Economic pressure | More than one-third of hospitals recorded deficits
In 2020, according to RWI, almost every third hospital faced insolvency |
<table>
<thead>
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<tbody>
<tr>
<td></td>
<td>Die Welt, October 2014</td>
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<tr>
<td>War for talent</td>
<td>There continues to be a lack of skilled individuals, which is an urgent problem in hospitals</td>
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<td>DKI press release, November 2013</td>
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| Quality and medical results | OP care favors other clinics
Go under the knife in-house? Every fifth OP nurse would reject that, according to a current survey. Therefore, many hospitals still have problems guaranteeing the necessary sterility for surgical procedures |
|                    | Spiegel Online, March 2014                                                                        |
| Management capabilities and implementation | The reorganization of inpatient working conditions was perceived by just about two-thirds of doctors and three-fourths of nurses as retrogressive |
|                    | Ärzteblatt.de, August 2014                                                                        |
The quality of care in German hospitals differs significantly

Post-operative wound infections after knee TEPs

Infection rate in percent, N=1,031, hospitals

SOURCE: AQUA quality report, 2012; McKinsey
A gap exists between medical evidence and clinical practice

<table>
<thead>
<tr>
<th>Quality aspiration</th>
<th>Clinical practice</th>
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<tbody>
<tr>
<td>Patient-centered approach</td>
<td>Hospitals built around professionals</td>
</tr>
<tr>
<td>Close exchange of all professionals</td>
<td>Suboptimal internal communication</td>
</tr>
<tr>
<td>Seamless external cooperation</td>
<td>Interfaces only partially optimized</td>
</tr>
<tr>
<td>Outcome-oriented quality initiatives</td>
<td>No generally accepted quality metrics</td>
</tr>
<tr>
<td>No sector boundaries</td>
<td>Truly integrated care still a vision</td>
</tr>
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</table>

SOURCE: McKinsey Hospital Institute
Client examples show that negative annual results get worse if no clear interventions are made.

Results development in "zero scenario," in percent of revenue

What result can be expected in the years through 2015 if ...

- Service development stagnates
- Costs increase due to collective wage agreements and inflation
- Productivity improves by only half as much as it has historically
- Materials usage remains high
- Planned needed investments are made

"What happens when nothing happens?"

SOURCE: Client example
1 Symptoms

2 360° Diagnosis

3 Therapy
The 360° diagnosis identifies action areas across all core dimensions of the hospital
McKinsey Hospital Institute – our diagnosis

Modules

Typical topics

A. Market strategy
   - Competitor numbers
   - Market potentials
B. Finances
   - Revenue and cost benchmarking
   - Financial KPIs cockpit
C. Clinical processes
   - Requirements behavior
   - Discharge analysis/coding
D. Supply quality and QM
   - Quality profile by BQS, QSR, and PSI
E. Personnel and organization
   - Determine organizational health via online survey

Analyses are

- **Proven**
  We use tools that have been tried and tested on numerous successful projects
- **Comprehensive**
  Enable assessment of clinic across all relevant dimensions
- **Detailed**
  Analyses implemented for example at department and DRG level
- **Integrative**
  Close collaboration and coordination with clients

SOURCE: McKinsey Hospital Institute
The brief diagnosis has a modular structure and allows holistic analysis of competitiveness of business

**Module** | **Core elements**
--- | ---
A | Market strategy
   - Own market position
   - Competitor numbers
   - Growth opportunities
B | Finances
   - Costs and revenues benchmark
   - Financial KPIs analysis
C | Clinical processes
   - Productivity comparison
   - LoS benchmark
   - Discharge analysis
   - Diagnostics benchmark
   - Coding analysis
D | Quality
   - BQS quality fingerprint
   - Quality analyses by QSR
   - AHRQ patient security indicators
E | Organizational health
   - Leverage and evaluate
   - Organizational Health Index

**SOURCE:** McKinsey Hospital Institute
Market strategy – module analyzes the market position in comparison to the competition, and describes growth opportunities

**Analysis area**

**Central issues**

**Market position**

- From which catchment area do cases come?
- What is the local, regional, and cross-regional market position of the hospital and the individual departments?
- Which services are the hospital’s particular strong point in the market?

**Competition**

- How strong is the field of competitors in which the departments need to prove themselves?
- Who are the key competitors measured by distance, and similarity in terms of services and case numbers?

**Growth opportunities**

- What is the overall market potential for the hospital?
- Which departments offer the best growth potentials?
- Which services of a department are the key strengths, and for which base DRGs are the biggest growth potentials?

SOURCE: McKinsey Hospital Institute
**Finances – KPI analysis based on cost and revenue benchmarks**

**Analysis area**

**Central issues**

- How should the revenue and cost situation be assessed compared with similar clinics?
- Which location-specific action areas are indicated by the personnel and material costs analysis for the hospital comparative group?
- Where are the key cost drivers in the clinical and non-clinical area?

**Costs and revenue benchmark**

- How does the hospital perform in peer comparisons of profitability KPIs?
- What conclusions can be drawn regarding the hospital liquidity KPIs?
- What is the funding and capital structure of the hospital compared with similar hospitals?
- How does the hospital perform in terms of infrastructure and investment KPIs?
- How efficient is the turnaround frequency?

**Financial KPIs analysis**

- ▪ 18% der Kosten im Ärztlichen Dienst nicht durch InEK gegenfinanziert, Produktivität unter Benchmark bei überdurchschnittlichen BPK je VK.
- ▪ Produktivitätsbenchmark 1 in Fällen je VK: InEK-Benchmark Personalkosten in Mio. EUR/Bruttopersonalkosten je VK in Tsd. EUR.
- ▪ KM 1: 15,40 InEK + Rendite 3 InEK-Norm 2 in EK-InEK-Norm inklusive Investitionsrendite von 9%.
- ▪ KH 1: 16,92 KM 1: 19,96 +3,04 (+18%) in Kliniken mit Hauptdiagnosenkongruenz > 55%.

SOURCE: McKinsey Hospital Institute
### Clinical processes – Potential analysis for all departments and functional areas

<table>
<thead>
<tr>
<th>Analysis area</th>
<th>Central issues</th>
</tr>
</thead>
</table>
| **Productivity**       | ▪ How big is the funding gap of the clinical service compared to the standard InEK revenues?  
                           ▪ How does the productivity of individual departments in medical services and nursing care compare to benchmark data? |
| **Length of Stay**     | ▪ Which departments have the greatest LoS potentials?  
                           ▪ Which additional capacities could be generated from LoS optimization?  
                           ▪ How do the depts compare in the LoS analysis of the top-10 DRGs? |
| **Discharge management** | ▪ What is the percentage of patients by department that are discharged by 12:00 PM?  
                               ▪ What is the cumulative discharge time curve of the individual departments? |
| **Diagnostics requirements** | ▪ How does the hospital compare in terms of diagnostics requirements compared to the national average?  
                                  ▪ Which services are requested above average frequency by the individual departments? |
| **Coding**             | ▪ What is the CM/CMI potential from optimizing the coding?  
                           ▪ Which departments and which coding levers offer the greatest improvement potentials? |

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SOURCE: McKinsey Hospital Institute
Care quality – identify strengths and weaknesses in medical care and compare with competitors

Analysis area

Central issues

- For which KPIs does the hospital perform better or worse than the QS reference value?
- Where is the hospital positioned compared to other hospitals?
- Which areas offer improvement potentials?

Analysis of external quality assurance

G-IQI-analysis

PSI analysis

- How does the hospital compare in terms of fatality indicators compared to the expected value?
- Are there any key action areas, and if so, where?

- How does the hospital compare in terms of patient safety indicators (PSI) such as post-operation complications and bedsores?
- In which KPIs does the hospital perform particularly well or particularly badly compared to the expected value?

SOURCE: McKinsey Hospital Institute
### Personnel and organization – transparency regarding collaboration between departments, functional areas, and occupational groups

<table>
<thead>
<tr>
<th>Analysis area</th>
<th>Central issues</th>
</tr>
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</table>
| **Management and control**    | - Do the employees have faith in the good medical and business management of the hospital?  
- How do the managers perform in the departments?  
- Do they employ effective control mechanisms, and are these firmly anchored in all levels of the organization?  
- How motivated are employees, and which levers can be used to increase motivation?  
- How can I improve a lack of cooperation between occupational groups and departments? |
| **Culture and motivation**     | - Are the processes economical while also targeted at patient and employees at the same time?  
- To what extent is a culture of quality and learning from mistakes fostered among employees, and does this impair medical quality? |
| **Quality and processes**      | - In their everyday work, are my employees focused on solutions?  
- Do we adequately take into account the needs of patients and referring physicians?  
- Are changes rigorously implemented, and do employees support change? |

**SOURCE:** McKinsey Hospital Institute
The end products of the 360° diagnosis are clearly defined

End products of the project

- **Strengths/weaknesses analysis**
  - General conclusions of analysis across all 7 dimensions
  - Detailed analysis at department level

- **Results workshop**
  - Results discussed with project team and their managers
  - General identification of possible improvement measures

- **Implementation plan**
  - Translate measures identified in results workshop into implementation plan

**Timeline:** 2–8 weeks

SOURCE: McKinsey Hospital Institute
1 Symptoms

2 360°Diagnosis

3 Therapy
Increased quality can also breach the cost spiral

SOURCE: MHI team
Within 2-3 years, typical improvements of 5-6% can be generated along 6 primary fields of action.

Transition to restructuring plan "without actions"
Percent of revenues

1. Increases in revenue and productivity, clinical areas
2. Codification
3. Non-personnel costs
4. Administration
5. Tertiary areas
6. Annual result with actions

Annual result without actions

SOURCE: Client example
CorePro – Clinical Pathways as a successful tool to reorganize clinical core processes as well as the key supporting processes

**Referral checklist**
- Aim: optimal preparation of hospital stay in cooperation with GP
- Contains basic data as well information concerning required diagnostics and risks

**Triage guidelines**
- Aim: optimal process-flow in time-critical emergency situations
- Contains interdisciplinary standards for all professional stakeholders
- Based on symptoms

**OR-standards**
- Aim: reduction of cancellations due to lack of required information
- Standardized preparation of patients with clear definition of responsibilities
- Checklists for physicians and nurses with preparation instructions

**Discharge management**
- Aim: Clearly structured discharge process
- Therefore delays are avoided and rehab services as well as outpatient care is ensured at an early stage
- Contains checklists for nurses as well as physicians

SOURCE: McKinsey
Process optimization and clinical pathways can reduce cost and clinical quality

Quality
- Improvement of quality through:
  - Evidence based treatment
  - Continuous implementation of leading edge diagnostics and treatment tools

Cost
- Reduce costs through targeted intervention

Time
- Reduce average length of stay through reducing value-destroying elements

<table>
<thead>
<tr>
<th>Quality</th>
<th>Reduction of complication rate (hip replacement)</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Percent</td>
</tr>
<tr>
<td></td>
<td>3.48</td>
</tr>
<tr>
<td></td>
<td>1.10</td>
</tr>
<tr>
<td></td>
<td>2.38</td>
</tr>
<tr>
<td></td>
<td>-32%</td>
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<table>
<thead>
<tr>
<th>Number of blood tests</th>
<th>Example Strumectomy</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Percent</td>
</tr>
<tr>
<td></td>
<td>2.7</td>
</tr>
<tr>
<td></td>
<td>0.3</td>
</tr>
<tr>
<td></td>
<td>2.4</td>
</tr>
<tr>
<td></td>
<td>-11%</td>
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<table>
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<tr>
<th>ALOS¹</th>
<th>In days</th>
</tr>
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<tbody>
<tr>
<td>Before</td>
<td>8.16</td>
</tr>
<tr>
<td>After</td>
<td>6.09</td>
</tr>
<tr>
<td></td>
<td>-25%</td>
</tr>
</tbody>
</table>

1 Average length of stay

SOURCE: McKinsey

... for each individual patient
- Substantially less complications, e.g., bleedings, infections
- Reduced mortality
- Less ICU referral

... as well as for total health care system
- Inpatient expenditure reduced
- Less follow-up costs due to complications and long-term disability
Optimization of OT processes – first incision times improved significantly during the project

First incision times in the OTs (Weekdays w/o public holidays, Tu.-Th.)

An incision time of on average 10 minutes earlier means a saving of ~480 hours' operating time per annum

SOURCE: McKinsey Hospital Institute
Our experts

Dedicated experts with hospital experience develop the Institute’s knowledge and products

Selected consultants

Sören Eichhorst, Partner
Steffen Hehner, Partner
Karl Liese, Partner
Karsten Lafrenz, Junior Partner
Jan Adams, Junior Partner
Christoph Sandler, Project Manager
Stephanie Bleier, Project Manager
Dörte Seeger, Project Manager
Sonja Wiedemann, Senior Consultant
Harald Pöltner, Project Manager
Anke Donath, Research Expert
Elke Uhrmann-Klingen, Senior Expert

Our consultants

Experienced consultants specialized in the hospital sector – including physicians, business experts, and pharmaceuticals experts – support the Institute

We tap into collective expertise gained from more than 100 hospital projects carried out in the past 5 years in Germany

Our expertise

We have established one of the most extensive hospital databases in Germany

Our infrastructure

We jointly develop hospital topics with McKinsey Hospital Institutes around the world

ORPHOZ is the implementation arm of the Hospital Institute

McKinsey Hospital Institute
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November 14th, 2014

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