Pay-for-Performance in Disease Management Programs – a Perspective for Germany?

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The Problem

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Global status report on noncommunicable diseases in 2010
http://www.who.int/topics/chronic_diseases/en/
Prevalence of Diabetes Mellitus in Germany

Source: Hauner et al., Stock et al.,

- Diabetesregister DDR
- nur medik. Behandelte
- Krankenkassendaten
Projected foregone national income due to heart disease, stroke & diabetes selected countries

Global status report on noncommunicable diseases in 2010
http://www.who.int/topics/chronic_diseases/en/
Features in Dealing with Chronic Disease

„Patient Year“

- About 8745 hours of self-dependent therapy
- Ca. 12 hours of structured education
- Ca. 3 hours of professional care (outpatient care)

Lange, 2006
Why Disease Management?

„Disease Management is the only remaining strategy to deal with chronic diseases…"

Perhaps the greatest contribution of Disease Management lies in the fact that it has the potential to drive change in the way we approach healthcare.

As a new concept in healthcare delivery, Disease Management is pushing the envelope in how we manage chronic disease.“
Coordination of care in Disease Management Programs in Germany

Patient
- Shows diabetes inclusion criteria
- Gets reminder from EMR

Primary Care Physicians
- Includes patient
- Provides service
- Gets quality report

Health Insurance Companies (health plans)
- No care managers needed
- Pays management fee to physician
- Gives information to service organisation, EMR

Pays management fee to physician
- Gets reminder from EMR
### Requirements of the Bundesversicherungsamt

<table>
<thead>
<tr>
<th>Enrolment</th>
<th>Written patient consent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enrolment criteria</td>
<td>Physician diagnosis</td>
</tr>
<tr>
<td>Quality regulations</td>
<td>Quality is measured by process and outcome quality indicators (for instance HbA1C, blood pressure readings, yearly eye inspections, participation in patient education). With regard to diabetes better control of hypertension, more eye exams, regular foot exams, better cholesterol control, and improved patient understanding of the disease were important quality targets</td>
</tr>
<tr>
<td>Documentation</td>
<td>Enrolment criteria, lab readings, documentation of diagnostic and therapeutic interventions, participation in patient education</td>
</tr>
<tr>
<td>Incentives</td>
<td>Bonus for patients and participating physicians</td>
</tr>
<tr>
<td></td>
<td>Sickness fund receives money from risk pool for enrolled patients</td>
</tr>
<tr>
<td>Scientific support</td>
<td>National committee of experts agreed on evidence based treatment goals</td>
</tr>
</tbody>
</table>
**DMP – Evaluation**

**Methods I**

**DMP Group**
- Enrollment in DMP and continuous enrollment over study period
- 139,881 failing to meet inclusion criteria
- 2,685 due to missing values

**Control Group**
- No enrollment in DMP over study period
- 39,764

**Primäre Endpunkte**
- Mortalität & Kosten

**Propensity Score Matching**
- Intervention: 20,185
- Control: 74,196
- Intervention: 19,882
- Control: 19,882

Stock et al., 2010
DMP – Evaluation

Methods II

<table>
<thead>
<tr>
<th>Co-variates for regression analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td>Insurance status</td>
</tr>
<tr>
<td>Zip code (first 3 digits)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>sociodemgraphic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disease severity</td>
</tr>
</tbody>
</table>

- Drug costs 2003
- Hospital costs 2003
- ATC-Codes (Antidiabetika)
- 19 ICD-Codes

Stock et al., 2010
DMP – Evaluation

Methods III

After Matching all included variables were balanced (Standardized difference < 10%)
## Results

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Intervention group</th>
<th>Control group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortality (p &lt; 0,001)</td>
<td>458 (2,30%)</td>
<td>935 (4,70%)</td>
</tr>
<tr>
<td>Difference of overall cost (2007 – 2003) (p &lt; 0,001)</td>
<td>1.094,27 €</td>
<td>1.432.90 €</td>
</tr>
<tr>
<td>Overall cost 2007</td>
<td>3.997,63 €</td>
<td>4.469,52 €</td>
</tr>
<tr>
<td>Drug cost 2007</td>
<td>1977,81 €</td>
<td>1.973,72 €</td>
</tr>
<tr>
<td>Hospital cost 2007</td>
<td>2.019,82 €</td>
<td>2.495,80 €</td>
</tr>
<tr>
<td>Average no of hospitalizations</td>
<td>0,5</td>
<td>0,62</td>
</tr>
<tr>
<td>Average duration of hospitalization</td>
<td>4,79 days</td>
<td>6,41 days</td>
</tr>
</tbody>
</table>

Stock et al., 2010
DMP: levels for links to P4P

Care levels for available evidence for improvement in care

- Change of Behavior
  Successful change in physician / patient behavior
  i.e. smoking cessation / prescribing

- Change of Clinical / Physiologic Parameters
  Changes in blood pressure, HbA1c,
  stroke or amputation rates

- Change in healthcare utilization / cost
  Decrease in hospitalization rates, length of stay
Management Components in German DMP (DMAA*)

<table>
<thead>
<tr>
<th>Komponente</th>
<th>Deutsche DMPs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population identification process</td>
<td>Enrollment criteria / DMP physician</td>
</tr>
<tr>
<td>Evidence based guidelines</td>
<td>National care guidelines</td>
</tr>
<tr>
<td>Collaborative practice models</td>
<td>Integration between sectors and within sectors (referral routines)</td>
</tr>
<tr>
<td>Patient self-management education</td>
<td>Patient education</td>
</tr>
<tr>
<td>Process &amp; outcomes measurement</td>
<td>Routine documentation</td>
</tr>
<tr>
<td>Evaluation and management</td>
<td>Evaluation and management routines (i.e. referral routines)</td>
</tr>
<tr>
<td>Feedback loops</td>
<td>Benchmarking and feedback reports, reminder</td>
</tr>
</tbody>
</table>

*Disease Management Association of America
Links to P4P in German DMPs

Physician requirements
Hospital requirements
Practice personal requirements
Practice requirements

Structure

Physician / hospitals
SF patients

Guidelines
Referral routines
Documentation
reminder

Process

Outcomes

Benchmarking
Feedback
Evaluation

Are we doing
The right
things?

Are we
doing
the things
right?

Outcomes result

Focal quality

Physician requirements
Hospital requirements
Practice personal requirements
Practice requirements

BVA
Akkreditierung
Features of P4P schemes, their dimensions and possible links to German DMPs

<table>
<thead>
<tr>
<th>Dimension</th>
<th>German DMP</th>
<th>In place</th>
<th>Possible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Reward Penalty</td>
<td>Both possible</td>
<td>Yes</td>
</tr>
<tr>
<td>Nature incentivated entity</td>
<td>Individual</td>
<td>Both possible</td>
<td>yes</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Focal quality behavior</td>
<td>Structure</td>
<td>All possible</td>
<td>yes</td>
</tr>
<tr>
<td>targeted by incentive</td>
<td>Process</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Outcomes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scope</td>
<td>General</td>
<td>Both possible</td>
<td>yes</td>
</tr>
<tr>
<td></td>
<td>Selective</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Adapted from Conrad & Perry, 2009 and De Bruin et al., 2011
## Features of P4P schemes, their dimensions and possible links to German DMPs

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<th>German DMP</th>
<th>In place</th>
<th>Possible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motivation</td>
<td>Intrinsic, Extrinsic</td>
<td>Both possible</td>
<td>Waiving of co-payments (PT)</td>
</tr>
<tr>
<td>Scale</td>
<td>Relative, Absolute</td>
<td>Not possible, Possible</td>
<td>Documentation (Phy), Enrollment (SF)</td>
</tr>
<tr>
<td>Size</td>
<td>Amount of money</td>
<td>Small amount possible</td>
<td>Documentation (Phy), Waiving of co-payments (PT)</td>
</tr>
<tr>
<td>Certainty</td>
<td>Certain, Uncertain</td>
<td>Possible</td>
<td>Documentation (phy)</td>
</tr>
<tr>
<td>Frequency &amp; Duration</td>
<td>No of times, No of years</td>
<td>Possible ??????</td>
<td>Documentation (Phy), RCS &amp; administration payment (SF)</td>
</tr>
</tbody>
</table>

Adapted from Conrad & Perry, 2009 and De Bruin et al., 2011
P4P in German DMPs- Pro and Contra

- Could target what has not been addressed so far:
  - Delivery system re-designing
  - Patient self management support/ SDM
  - Suitable diseases for P4P
  - All dimensions of P4P can be addressed
  - P4P could be implemented on a national level which yields more uniform results

- Not all diseases are suited for P4P
- High quality improvement already achieved which leaves little room for improvement (ceiling effects)
- No additional money available – where should the money come from?
P4P in German DMPs – Policy issues

- Does P4P also affect cost / efficiency of care or only quality?
- Size of incentive? Reward or penalty?
- National roll out or pilot project?
- What happens when the targets are met?
- Are there unintended consequences?
- Should P4P involve quality of service and patient satisfaction?
- Should results be made transparent?
Thank you for your attention!