Integrating care by bundled payments

Lessons from the Netherlands

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Background

- Integrated care for diabetes is introduced in Netherlands since decades.

- The fragmentary funding hampered the establishment of long-term programs on a national level.

- In 2007 a bundled payment (BP) approach was introduced in the Netherlands to stimulate integrated care programs.
  - 2007-2010: on a experimental basis
  - 2010: structural implementation for dm type 2, COPD and Vascular Risk Management (VRM)
Basic premises of the Bundled Payment (BP) model

- Comprehensive funding for one product
- Contents of the BP contract in conformity with Health Care Standard (‘standard’/generic diabetes care)
- Health Care Standard describes activities (the ‘what’, not the ‘who’, ‘where’ and the ‘how’)
- Fees for BP contracts are freely negotiable
- Fees for subcontractors are freely negotiable
- Not simultaneously with a hospital-based ‘DBC uncomplicated diabetes’
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‘Outline of BP model’

- Legal entity: Privat limited, foundation, cooperative
- Ownership: GPs; some case co-owners: GP lab, hospital, home care

Insurance companies

Care Group

BP contract based on Health Care Standard

Multidisciplinary protocol

contract

contract

contract

employee

contract

GP

SPEC

LAB

DIET

PROVIDER_i

PN
Dutch Health care market

- Insurer
- Patient/consumer
- Health care insurance market
- Health care purchasing market
- Health care delivery market
- BP
- Health care providers
Purchasing market superseded by two markets

- Insurer
  - Health care insurance market
  - Health care purchasing market 1
  - Health care purchasing market 2

- Patient/consumer
  - Health care delivery market

- CG
  - GP
  - LAB
  - PROVn
Effect BP on quality of care and health care costs

Drie jaar integrale bekostiging van diabeteszorg

Effect van integrale bekostiging op curatieve zorgkosten

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Effect BP on quality of care

**Health care delivery process**

- Coordination more intensive and structured
- Additional training and education of care givers
- More attention for benchmarking
- IT hindering factor in most care groups, but BP is flying wheel for IT development
- Task delegation towards nurse practitioner (working in GP practice)
- Insulin dependent patient treated in Care Group instead of hospital

**Process and outcome indicators**

- Slight to modest improvements in most process and outcome indicators
Composite process indicator: % patients who had all process measures checked in the last 12 months (N=23,088)

**Year 2**
- BMI 92%
- SBP 94%
- Creatinine 84%
- LDL 83%
- Hba1c 91%

75%

**Year 3**
- BMI 92%
- SBP 93%
- Creatinine 85%
- LDL 84%
- Hba1c 91%

78%
Composite outcome indicator: % patients below target level on all indicators (N=5,623)
Composite outcome indicator: % patients below target level on all indicators (N=5,623)

T3

Hba1c <53 mmol/mol
64%

LDL cholesterol <2.5 mmol/l
59%

SBP <140 mmHg
51%
Effects BP on curative health care costs

- Objective: Insight in the effects of integrated care and BP on curative health care costs

- One disease: DM

- Distinction between effects implementation of Integrated Care and implementation of BP
  - Integrated care = efforts to enhance quality and continuity of care. Payment method stands apart
  - BP = payment method for integrated care
  → Distinction possible: biggest insurer in the NL is not convinced of the BP approach and still contracts on the basis of a *care management fee*
‘Nationwide implementation of care groups’
Method

• **Data:** Nationwide claim data from Vektis

• **Curative health care costs:** primary care, medicine and hospital-based specialist care

• **Study population:**
  • DM2 Patients in care program (paid by BP or MF) or Care as Usual (CAU).
  • All patients were during study period (2008-2009) in the same payment system (N=64,139)

• **Dependent variable:** difference in costs 2008–2009

• **Adjustments:** 2008 baseline costs, age, gender, comorbidity

• **Analyses:** multivariate regression analyses (diff-in-diff analyses)
  • multilevel modelling (2-level): GP-patients, insurer-patients
### Difference in curative health care costs 2008-2009 (€) adjusted for 2008 baseline costs, age, gender, comorbidity

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>SE</th>
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<tbody>
<tr>
<td>Intercept</td>
<td>-882***</td>
<td>46</td>
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<tr>
<td>2008 baseline costs</td>
<td>-0,7***</td>
<td>0</td>
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<tr>
<td>Payment system</td>
<td></td>
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<tr>
<td></td>
<td>BP</td>
<td>288***</td>
</tr>
<tr>
<td></td>
<td>MF</td>
<td>-74</td>
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<tr>
<td></td>
<td>CAU</td>
<td>ref.</td>
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<tr>
<td>Age (centered)#</td>
<td>17***</td>
<td>2</td>
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<tr>
<td>Gender (ref= female)</td>
<td>296***</td>
<td>48</td>
</tr>
<tr>
<td>Comorbidity</td>
<td>1,813***</td>
<td>36</td>
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</tbody>
</table>

# = age is 67.8
Hospital use of diabetes patients enrolled in a care program (paid via BP or MF) (OR; 95%CI) (ref. = routine care patients) #

# adjusted for age (centered), gender, comorbidity and 2008 hospital utilization
Difference in 2009 hospital use of diabetes patients enrolled in a care program (paid via BP or MF) (OR; 95%CI) (ref.= routine care patients) #

# adjusted for hospital utilization 2008, age, gender, comorbidity
Difference in costs of hospital-based specialist care 2008-2009 for patients in BP and MF-group

![Graph showing the difference in costs of hospital-based specialist care for patients in BP and MF-group. The graph indicates a decrease in costs, with a significant reduction in diabetes-related costs and a smaller decrease in total costs. The BP group shows a decrease of 142 in total costs, while the MF group shows a decrease of 128 in total costs, with a larger decrease in diabetes-related costs.]
Conclusions

- Nationwide implementation of care groups
- The organization and process of care improved
- Slight to modest increase in process and outcomes indicators; however effects difficult to interpret due to IT and transparency problems
- Less patients enrolled in a care program on the basis of BP used hospital care
- BP resulted in an increase of curative health care costs which is mostly to an increase of hospital care costs and the initial investment costs of the BP model
Discussion

- Conflict of interest of GPs (general contractor + subcontractor)
- Risk for market power of Care Groups (no competition)
- Comorbidity vs. single-disease care programs
- Neglect of developments on purchasing market 2, while behaviour of care providers are influenced by the way they are remunerated on purchasing market 2
- Questionable whether modifications to purchasing market are possible without interfering the health insurance and health care delivery market

- Experiments with global payments and shared savings are underway (2013-2017)
Thank you for your attention

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Further reading

- Dinny H de Bakker, Jeroen N Struijs, Caroline A Baan, Joop Raams, Hubertus J.M. Vrijhoef, Frederik T. Schut. Early Results From Adoption Of Bundled Payment For Diabetes Care In The Netherlands Show Improvement In Care Coordination. Health Affairs, 31, no.2 (2012):426-433.

- Jeroen N. Struijs. and Caroline A. Baan. Integrating Care through Bundled Payments — Lessons from the Netherlands. NEJM (2011)364;11


‘Care management fee’

- Care management fee (Coordination, IT Education and further training, etc.)
- Insurances companies
  - Care group
    - Contract
      - GP
      - PN
    - Contract
      - internist
    - Contract
      - Lab
    - Contract
      - Dietician
    - Contract
      - Care provider