REFORMING LONG-TERM CARE IN GERMANY: PRELIMINARY FINDINGS FROM A SOCIAL EXPERIMENT WITH MATCHING TRANSFERS

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European Conference on Long-term Care
21 October 2005
1. LTC in Germany
2. Theoretical Foundation
3. Social Experiment
4. Conclusions
Number of care recipients

Year | Number of care recipients in million
--- | ---
2002 | 2
2010 | 2
2020 | 3
2030 | 3
Growing deficit 2003-2010

Year

in billions of euros

2003 2004 2005 2006 2007 2008 2009 2010
Prevalent: home care

- 70% home care
- 30% nursing home care
Problem: nursing home care grows fast

- 2001: 640,000
- 2003: 640,000

Increase: +5.9%
Benefit structure

Benefits for home care

- in-kind transfer
- lump-sum transfer
- combination of both
Levels of benefits for home care

• Level I: considerable need for care
  min. 90 min/day, once daily

• Level II: serious need for care
  min. 180 min/day, three times daily

• Level III: most serious need for care
  min. 300 min/day, day and night available
Benefits at each care level
The actual home care arrangement depends on:

- **Choice of benefit type**
- Need for care level: Level I/II/III
Problem analysis

(1) demographic change

(2) loss of personal networks

(3) nursing home care $\gg\gg$ home care

⇒ high cost pressure
This project: Matching transfers

goal 1: make home care arrangements more flexible

goal 2: stabilizing home care

open question: dynamically cost efficient?
Matching Transfer

(1) “in-kind element“

• exclusively for home care services
• exclusively for legal providers (no black market!)
• no reimbursement for family members
• same expenditure level like in-kind transfer
Matching Transfer

(2) “lump-sum element“

- cash benefit paid to frail elderly
- not restricted to the legally defined items that are granted as in-kind transfers
- benefit recipients pay their care providers
(3) Case Manager

- organizes home care arrangement
- monitors care quality by RAI-HC
  → output monitoring instead of input controlling
2. Theoretical Foundation

- PEZZIN/ SCHONE type model: non-cooperative game

**two individuals:**

- Elderly parent $p$
- Daughter $d$

**three types of home care:**

- Formal care $F$
- Informal care $I$ (family members)
- Soft care $Q$ (purchased in the market, provided by legal carers such as friends, neighbors, but not family members)
• Elderly parent’s utility function:

(1) \( U^p (C^p) + V^p (G) \)

• daughter’s utility function:

(2) \( U^d (C^d) + V^d (G) \)
• Health $G$ is a family public good

• Health technology:

$$ (3) \quad G = A \cdot H(F, Q, I) $$

with $A = \text{efficiency parameter}$. 
• Mother maximizes (1) via $F$ and $Q$ under her budget restriction:

$\sum_{\text{Q}} Y^p + T^{g,p} = C^p + P^F F + P^Q Q$

• Daughter maximizes (2) via $I$ under her time restriction:

$(M - I)W + T^{g,d} = C^d$
• First order conditions:

(6) \[ F : P^F U'^p = V'^p \cdot A H_F \]

(7) \[ Q : P^O U'^p = V'^p \cdot A H_Q \]

(8) \[ I : W \cdot U'^{id} = V'^{id} \cdot A H_I \]
• three ways to finance home care:
  – Cash Transfer $T^c$
  – In-kind Transfer $T^k$
  – Matching Transfer $T^m$
• six equations with six unknowns:
  $$ F, Q, I, G, C^p, C^d $$
1. Recipients of in-kind transfers switch to matching transfer
   \[ \Rightarrow \text{demand for formal care } F \downarrow \]
   \[ \Rightarrow \text{demand for soft care } Q \uparrow \]

2. Demand for $F$ and $Q$ and supply of $I$ are substitutes
   (externalities of health as a family public good)

3. If the daughter decides on the use of the lump-sum transfer, then informal care $I$ $\uparrow$
   \[ \Rightarrow \text{home care arrangements stabilized by } I \uparrow \]
   \[ \Rightarrow \text{nursing home entrance delayed} \]
3. Social experiment

Basic Information:

- 7 sites in East and West Germany
- goal: 2000 participants; 1000 in the program and 1000 in the control group
- duration: 2005-2008
- scientific evaluation by EFH, ZEW, FIFAS
- funding: employee association of LTC insurers
Treatment:

Matching transfer plus case management

Outcome:

• Duration in home care
• Life satisfaction
• Quality of care
• Home Care arrangements
Identification:

Fundamental evaluation problem:

No observable counterfactual situation

Treatment effect

(1) $\Delta_i = Y_{1i} - Y_{0i}$

Average treatment effect on the treated (ATT)

(2) $ATT = E(Y_1 - Y_0 | D = 1) = E(Y_1 | D = 1) - E(Y_0 | D = 1)$
Selection bias

(3) \( E(Y_0|D=1) \neq E(Y_0|D=0) \)

Identification strategy

Social experiment

Missing counterfactual is produced by random assignment
Evalutation Design

Frail elderly

Nursing home care

Randomization

Matching transfer (Program group)

In-kind or lump-sum transfer (Control group)

Participants

Home care

Non-participants
First results from the intake period 2005

Remark: We cannot test hypotheses so far

(1) Reasons for participation

- individually-tailored care arrangements
- in-kind transfer too restrictive
- support by case manager
- development of new care arrangements by professional carers
(2) Reasons for non-participation

• uncertainty of the randomization process
• no payments within family possible
• higher transaction costs
(3) Randomization bias negligible
→ Checked by survey among interested frail elderly

(4) According to survey data, program and control group are comparable

participants: 261

- 184 program group
- 77 control group
Comparability of Home care arrangement

Percentage of program group participants receiving help in different fields of activity from certain LTC providers (service-carer-matrix)

<table>
<thead>
<tr>
<th>Service</th>
<th>Children</th>
<th>Spouse</th>
<th>Other relatives</th>
<th>Professional carers</th>
<th>Other Carers</th>
</tr>
</thead>
<tbody>
<tr>
<td>House work</td>
<td>25</td>
<td>16</td>
<td>13*</td>
<td>29</td>
<td>33</td>
</tr>
<tr>
<td>Shopping</td>
<td>29</td>
<td>13</td>
<td>19*</td>
<td>17</td>
<td>26</td>
</tr>
<tr>
<td>Telephoning</td>
<td>10</td>
<td>7</td>
<td>7</td>
<td>2</td>
<td>6</td>
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<tr>
<td>Preparing meals</td>
<td>24</td>
<td>19</td>
<td>9</td>
<td>18</td>
<td>30</td>
</tr>
<tr>
<td>Eating and drinking</td>
<td>9</td>
<td>9</td>
<td>7</td>
<td>7</td>
<td>6</td>
</tr>
</tbody>
</table>

* indicates significant differences between program and control group
Average provision of hours and expenditures by type of carer in the program group in a typical week

<table>
<thead>
<tr>
<th>Group of carers</th>
<th>Care services in hours</th>
<th>Expenses in €</th>
<th>€ per hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children</td>
<td>12</td>
<td>9</td>
<td>0.75</td>
</tr>
<tr>
<td>Spouse</td>
<td>10</td>
<td>2</td>
<td>0.20</td>
</tr>
<tr>
<td>Other relatives</td>
<td>7</td>
<td>14</td>
<td>2.00</td>
</tr>
<tr>
<td>Professional carers</td>
<td>6</td>
<td>245</td>
<td>40.83</td>
</tr>
<tr>
<td>Other carers</td>
<td>16</td>
<td>159</td>
<td>9.94</td>
</tr>
</tbody>
</table>

→ no significant differences between program and control group
(5) Reasons for low case numbers

- Information about treatment
- Heterogeneity among LTC insurers
- Reluctant participation by formal carers
4. Conclusions

**Hypothesis 1**: Recipients of in-kind transfers switch to matching transfer

We observe only a partial switch to matching transfers due to ...

... high transaction costs

... existence of combined in-kind and lump-sum transfers

... loss of privacy
Hypothesis 2: Demand for \( F \) and \( Q \) and supply of \( I \) are substitutes

Empirical evaluation necessitates follow-up survey
→ Future research
Hypothesis 3: If the daughter decides on the use of the lump-sum transfer, then informal care \( I \uparrow \)

\( \Rightarrow \) home care arrangements stabilized by \( I \uparrow \)

\( \Rightarrow \) nursing home entrance delayed

Empirical evidence:

Anecdotal evidence that matching transfers stabilize home care arrangements and prevent nursing home entrance