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

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1. LTC in Germany
2. Theoretical Foundation
3. Social Experiment
4. Conclusions
Number of care recipients

<table>
<thead>
<tr>
<th>Year</th>
<th>Number in million</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>2</td>
</tr>
<tr>
<td>2010</td>
<td>2</td>
</tr>
<tr>
<td>2020</td>
<td>3</td>
</tr>
<tr>
<td>2030</td>
<td>3</td>
</tr>
</tbody>
</table>
Receipts and costs 1995-2003
Growing deficit 2003-2010
Prevalent: home care

70% home care

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

2001

2003

+5.9%
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
Home care arrangement

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 $\Rightarrow$ home care

$\Rightarrow$ 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
  \[\rightarrow\] 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:

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

• Daughter’s utility function:

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

• Health technology:

$\text{(3) } G = A \cdot H(F, Q, I)$

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

$$Y^p + T^g,p = C^p + P^F F + P^Q Q$$

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

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

\( F : P^F U'^p = V'^p \cdot AH_F \)

\( Q : P^Q U'^p = V'^p \cdot AH_Q \)

\( I : W \cdot U'^d = V'^d \cdot AH_I \)
• 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
   ⇒ demand for formal care $F \downarrow$
   ⇒ 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 $I \uparrow$
   ⇒ home care arrangements stabilized by $I \uparrow$
   ⇒ 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
Fundamental evaluation problem:

No observable counterfactual situation

Treatment effect

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

Average treatment effect on the treated (ATT)

(2) $\text{ATT} = E(Y_{1} - Y_{0} | D=1) = E(Y_{1} | D=1) - E(Y_{0} | D=1)$
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
Evaluation Design

- Frail elderly
  - Nursing home care
    - Participants
    - Non-participants
  - Randomization
    - Matching transfer (Program group)
    - In-kind or lump-sum transfer (Control group)
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>
</tr>
<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
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