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**Medical healthcare utilization as related to long-term care at home  
or in special accommodation**

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## **Abstract**

This study aimed to investigate medical healthcare utilization 3-5 years following the decision about long-term care at home versus in special accommodation in older people. A total of 1079 people who were granted long-term care the years 2001, 2002 or 2003 were studied regarding the number of hospital stays and the number of contacts with physicians in outpatient care in the 3-5 subsequent years. Those living at home and those in special accommodation were compared regarding medical healthcare utilization during the 3-5 subsequent years. Data were collected through the study Good Aging in Skåne (GAS) and through the registers, Patient Administrative Support in Skåne (PASiS) and PrivaStat. Utilization of medical healthcare decreased slightly in the years following the decision about long-term care. Despite younger age and less dependency in activities of daily living (ADL), those living at home utilized hospital and outpatient care to a greater extent than those in special accommodation; these differences remained over time. Thus, it seems as long-term care needs to become more effective in the prevention of medical healthcare utilization among those cared for at home. More, older people who are granted long-term care at home may otherwise imply increased utilization of medical healthcare.

**Keywords:** Utilization of health care, Outpatient care, Hospital care, Long-term care

## 1. Introduction

An increase in the number of older people in need of long-term care and services in combination with financial problems have forced many European countries to apply more restrictive eligibility criteria for beds in nursing homes (Meijer et al., 2000) which has resulted in more older people receiving care at home (Bergmark et al 2000). This trend towards home care might imply a risk of higher utilization of medical healthcare among those cared for at home since there are less professionals around the clock compared to the situation in nursing homes. Previous research (Condelius et al., 2008; Karlsson et al., 2008) has also found a higher utilization of hospital care and outpatient care among those cared for at home compared to those in special accommodation (equivalent to nursing home – housing with access to round the clock care and services) (Lagergren, 2002). Older people discharged back to their own home after a hospital stay have been found to be at higher risk of readmission than those discharged to an institution (Lockery et al., 1994; Camberg et al., 1997; Heggstad, 2002). However, this knowledge proceeds mainly from cross-sectional studies or a study conducted over a limited period of time and does not answer the question of whether distribution of long-term care at home vs. in special accommodation affects utilization of medical healthcare over time. Thus, longitudinal studies on utilization of medical healthcare the years following decision about long-term care at home vs. in special accommodation are warranted.

As in many other countries, the responsibility for providing care and services to older people in Sweden is spread among various authorities. The municipalities have the main responsibility for long-term care and services to older people in their homes or in special accommodations. Provision of long-term care is preceded by a needs assessment by a home-help officer and a decision on how much care and how care and services should be provided. The county councils are responsible for medical healthcare, hospital care, outpatient care and primary healthcare. A majority of municipalities has taken over the responsibility for home nursing care by agreement with the county councils. The involvement of different authorities raises the question on how policy changes within one sector may have implications for the other. Between the years 2000 and 2005 the proportion of people aged 65 years or older who received long-term care and services from the municipality at home increased from 7% to 9% and the proportion in special accommodation decreased from 8% to

6% (National Board of Health and Welfare, 2007). Apart from this increase in the number of older people granted long-term care at home there has also been a change in allocation by which more resources are channeled to those with the greatest needs. This means that those who receive such care tend to be more physically and cognitively impaired than previously (Wimo et al., 1999; Bergmark et al., 2000) which might explain the high mortality rate in this group; 9-14% within the first year and 18-24 % the second year (Jakobsson and Hallberg, 2006). This in turn has implications for medical healthcare since impending death has been shown to increase hospital admissions among older people (Bercovitz et al., 2005; Andersson et al., 2007). Thus the significance of mortality needs to be taken into account when studying medical healthcare utilization in older people over time. It also calls for more knowledge concerning the relationship between provision of long-term care at home or in special accommodation and medical healthcare utilization in older people.

Kristensson et al. (2007) (n = 362, age 65+) found that the utilization of hospital care increased significantly in the 4 to 5 months prior to a decision about long-term care. However, few longitudinal studies have focused on medical healthcare utilization in the years following decision about long-term care, especially in relation to whether care is provided in the older person's home or in special accommodation. Previous research has tended to focus on how admission to a nursing home affects medical healthcare utilization and thus failed to address the problem of an increased number of older people cared for at home. Ellencweig et al. (1990) showed a 20% decrease in hospital admission rates and a 40% decrease in general practitioner visits 1 year following entry into a long-term care facility, compared to the preceding year which is in line with the results in study conducted by Shapiro et al. (1987). Wilson and Truman (2004) investigated the pattern of medical healthcare utilization 1 to 5 years before and after admission to a long-term care facility in Canada (n = 47,510) and found three quarters of hospitalizations and two thirds of ambulatory care visits occurred in the years prior to admission. The utilization of physicians' services increased in the subsequent years, which might indicate a more thorough supervision and continuity in primary healthcare following admission to a nursing home. The continuity of primary healthcare has previously been demonstrated to be significant for emergency department utilization among older people (Ionescu-Iltu et al., 2007). Thus investigating utilization of hospital care and outpatient care needs to be done in parallel. Since previous studies do not set nursing homes in relation to the

alternative of long-term care at home it is difficult to evaluate the relative advantage of providing care in nursing homes versus at home when it comes to medical healthcare utilization. Knowledge of the pattern of medical healthcare utilization in the years following a decision about long-term care at home vs. in special accommodation is lacking, although it may be helpful to policy makers in deciding on how to best allocate resources in long-term care without the risk of increased utilization of medical healthcare.

The aim of this study was to investigate medical healthcare utilization 3 to 5 years following the decision about long-term care among older people as related to long-term care provided at home or in special accommodation.

## **2. Materials and methods**

### *2.1. Sample*

The sample comprised 1079 people aged 65 years or older who were the subjects to a decision about municipal long-term care the first time during years 2001, 2002 or 2003. The sample was drawn from the care and services part of the longitudinal study GAS (Jakobsson and Hallberg, 2006) which is a sub-study in the Swedish National Study on Aging and Care (SNAC) (Lagergren et al., 2004). The inclusion criteria for the care and services part of the GAS study are being 65 years of age or older and receiving long-term care from the municipality at home or in special accommodation or receiving at least four visits per month from home nursing care and/or rehabilitation. Those receiving only meals on wheels, transportation service or body carried alarm were excluded. All the participants gave their informed consent to take part in the study.

The context of this study is the southern part of Sweden, in the region of Skåne which is one of the largest county councils in Sweden. Approximately 13% of the Swedish population lives in this region and the municipalities included represent both rural and urban areas.

### *2.2. Data collection*

Data were collected through the care and services part of the GAS study and from the administrative registers, Patient Administrative Support in Skåne (PASiS) and PrivaStat. The GAS study is about care and services provided to older people by the municipalities in relation to their needs and abilities and it has been in progress in five municipalities in the region of Skåne since 2001. Data in GAS are collected by means of a form completed by staff involved in care and services for older people (home-help officers, occupational therapists, physiotherapists and registered nurses). A form is completed at the time the decision concerning long-term care is taken and then every 6<sup>th</sup> months or when changes occur in the person's care needs. Data collection continues until the person dies, stops receiving long-term care or decides not to participate any further in the study. The form comprises questions about demographic data, health complaints, functional status, formal and informal care and adaptation and standard of housing. The form was tested in a pilot study (Hallberg et al., 2003) and minor changes have been made. Information about the date of the decision concerning long-term care and whether the care is provided at home or in

special accommodation, age and sex at this point in time were derived from the GAS study. The ADL staircase (Hulter-Åsberg and Sonn, 1989) is included in the form and used in this study to measure performance in personal activities of daily living (PADL) and instrumental activities of daily living (IADL). PADL includes 6 activities (bathing, dressing, going to the toilet, transferring, continence and feeding) and IADL includes 4 activities (cooking, transportation, cleaning and shopping) in which the person can be graded as dependent, partly dependent or independent. In this study the summarized number of activities in which the person is graded as dependent has been calculated for each section of the staircase (IADL-sum and PADL-sum). IADL sum ranges from 0- independent in all activities to 4- dependent in all activities. PADL-sum ranges from 0- independent in all activities to 6- dependent in all activities.

Based on civil registration numbers data from the GAS study were merged with data from the PASiS and PrivaStat registers. PASiS is an administrative register of care and treatment provided by the County Council of Skåne on an individual basis while PrivaStat is a register of care and treatment provided by private agencies in this region. PASiS includes such information as dates of admission and discharge from hospital, length of hospital stay (LOS) as well as date of contact with outpatient care. The number of hospital admissions and the number of contacts with the physician in outpatient care each year following the decision about long-term care until 2006 were collected from PASiS. The numbers of contacts with the physician in private agencies were collected from PrivaStat. This means that the utilization of medical healthcare could be followed in 5 years in the 2001 Cohort, 4 years in the 2002 Cohort and 3 years in the 2003 Cohort. Date for death was collected from the Swedish population register.

### *2.3. Data analysis*

The three cohorts were compared regarding demographic data, dependency in ADL and the number who were deceased 3 years following the decision about long-term care, using chi-square test for nominal data and ANOVA test for numeric data. To be noted is that the proportion diseased each year was calculated based on the share still alive the preceding year and not on the original sample size. Repeated measures was performed to investigate changes in the mean number of hospital admissions and the mean number of contacts with the physician in outpatient care

over time (3 years following inclusion) in the three cohorts (2001, 2002, 2003) and in those who (at registration) received care at home and those in special accommodation. These analyses were performed using Huynh-Feldt's correction of the degrees of freedom (when the assumption of sphericity was violated) to achieve valid F-ratios in the analyses. It should be noted that those who have missing values in any year under study (i.e. those who died during the study period) are excluded in the repeated measures analyses. Those included in these analyses and those who died were compared regarding the number of hospital admissions and the number of contacts with the physician in outpatient care in the two years following inclusion. This was performed using Student's t-test.

The three cohorts were further divided into those who, at registration, lived at home and those living in special accommodation, and followed graphically regarding utilization of hospital care and outpatient care 1 to 5 years following inclusion. Those who (at registration) received care at home and those living in special accommodation were compared regarding age, dependency in ADL, the number of hospital admissions, the number of contacts with the physician in outpatient care and the number who died 1 to 3 years following registration using Student's t-test. Statistical significance was set at 0.05 except for in the post-hoc analyses where a reduced p-value was used, in accordance with the Bonferroni method (Bland and Altman, 1995). All data were computerized and analyzed using SPSS 14.0 for Windows.

The Ethics Committee of Lund University approved the study (LU 650-00, LU 744-00)

### **3. Results**

A total of 1079 people were included in the study of whom 30% were subject to a decision about long-term care during 2001, 38% during 2002 and 32% during 2003 (Table 1). At the time for inclusion, 65% of the total sample were women, with a mean age of 80 years and 63% received care at home. The mean number of activities in which the sample had been graded as dependent was  $3.4 \pm 1.6$  ( $\pm$  S.D.) in IADL and  $1.5 \pm 1.7$  in PADL. The mean number of hospital admissions was 0.9 (range: 0-13) in the first year and 0.6 (range: 0-12) in the third year. The mean number of contacts with the physician in outpatient care was 10.3 in the first year (range: 0-126) and 8.1 in the third year (range: 0-102) (Table 1). Fifty-seven percent

of the sample had no hospital admission during the first year, 63% non in the second year and 73% non in the third year. Two hundred and forty-seven people had no hospital stays during the whole three years following inclusion. One percent of the sample had no contact with the physician in outpatient care during the first year, 5% in the second year and 10% in the third year. One person had not been in contact with the physician in outpatient care during the three years following inclusion. Forty-seven percent of the sample was dead three years following inclusion. The mean number of days from inclusion to death in the total sample was  $301 \pm 224$  days. Twenty-one percent of those who received care at home died in the first year after inclusion, 16% in the second year and 11% in the third year. For those in special accommodation 27% died in the first year, 25% in the second year and 25% in the third year. The differences in mortality rates between these two groups were significant for the second year ( $p = 0.03$ ) and the third year ( $p < 0.001$ ) but not the first year ( $p = 0.054$ ). Sixty-three people (5.8%) changed their living conditions (i.e., moved from their own homes to special accommodation) during the study period, and the mean number of days from inclusion to change of living condition was  $575 \pm 413$  days. Out of these 63 people 65.1% were women, with a mean age of  $81.7 \pm 5.7$ , and the number in each cohort was 2001  $n = 16$ , 2002  $n = 22$ , and 2003  $n = 25$ . Two thirds (66.7%) of those who moved died within the study period. Among those who did not change their living condition, 64.2% were women, with a mean age of  $80.1 \pm 7.5$ .

Cohort III (registered year 2003) had a significantly lower proportion of women (58%) compared to the other two cohorts (Cohort I: 67%, Cohort II: 68%) (Table 1). Cohort I had a significantly higher proportion living in special accommodation (45%) (Cohort II: 29%, Cohort III: 32.1%) and the highest proportion of dependency in PADL and IADL compared to the other cohorts. No significant differences were found between the cohorts regarding age or the proportion that died during the first, second or third year after inclusion.

### *3.1. Utilization of medical healthcare over time*

The mean number of hospital admissions the third year after the decision concerning long-term care was significantly lower than in the first and second year in Cohort III (Table 2). No significant changes were found between the first, second or third year in Cohorts I or II.

The mean number of contacts with the physician in outpatient care was significantly higher in the first year than in the second and third year in Cohort II (Table 3). The mean number of contacts was significantly lower in the third year than in the first and second year in Cohort III. No significant changes in number of contacts were found between the three years in Cohort I.

Figure 1 shows a downward sloping trend in the mean number of hospital admissions over the years in all three cohorts with a more or less distinct peak in the fourth year in Cohort I, the third year in Cohort II and the second year in Cohort III. These peaks coincide more or less, with the calendar year 2004. The mean number of hospital admissions tends to be constantly lower for those in special accommodation than for those at home in the same cohort except for the fourth year in Cohort I.

No distinct decrease in the mean number of contacts with the physician in outpatient care is visible in Figure 2 in any of the cohorts until the fifth year in Cohort I, the fourth year in Cohort II and the third year in Cohort III. Those in special accommodation tend to have a lower mean number of contacts than those at home in the same cohort for all three years.

The mean number of contacts with the physician in outpatient care decreased significantly for each of the three years in those at home and the mean number of hospital admissions decreased significantly between the first and the third year in this group (Table 4). The mean number of contacts with the physician in outpatient care was significantly lower in the third year than in the first and second year in those in special accommodation. No significant changes in the number of hospital admissions were found over the three years in those living in special accommodation.

### *3.2. Comparison of those included in the repeated measure analyses and those who died*

Those who died, and thus were not included in the repeated measure analyses, had a significantly lower mean number of contacts with the physician in outpatient care than those included the second year in Cohort III (mean for excluded:  $6.7 \pm 5.6$ ,  $p = 0.01$ ). No significant differences were found in the mean number of contacts with outpatient care in Cohorts I or II. The mean number of hospital admissions the first year was significantly higher among those who died in Cohort I (mean for excluded  $1.3 \pm 1.6$ ),  $p = 0.03$ ), Cohort II (mean for excluded  $1.2 \pm 1.5$ ),  $p < 0.001$ ) and in Cohort

III (mean for excluded  $1.3 \pm 1.7$ ),  $p = 0.03$ ). Those who died had a significantly higher mean number of hospital admissions in the second year in Cohort III (mean for excluded  $1.4 \pm 1.8$ ),  $p = 0.04$ ). No significant differences in hospital admissions were found in the second year in Cohorts I or II.

### *3.3. Comparison of those living at home and those in special accommodation*

Those living at home was significantly ( $p < 0.001$ ) younger (mean age:  $79.0 \pm 6.8$ ) than those in special accommodation (mean age:  $82.6 \pm 7.1$ ), significantly ( $p < 0.001$ ) less dependent in IADL (mean for those at home  $3.1 \pm 1.2$ ), in special accommodation:  $3.9 \pm 0.4$ ) and less dependent in PADL (mean for those at home  $1.0 \pm 1.3$ ), in special accommodation:  $2.4 \pm 1.9$ ) ( $p < 0.001$ ). The mean number of hospital admissions in those living at home was  $1.1 \pm 1.6$  for the first year,  $0.9 \pm 1.5$  for the second year and  $0.6 \pm 1.3$  for the third year. The mean number for those living in special accommodation was  $0.7 \pm 1.4$  for the first year,  $0.6 \pm 1.3$  for the second year and  $0.5 \pm 1.4$  for the third year. The difference in mean number of hospital admissions between those at home and those in special accommodation was significant for the first year ( $p = 0.001$ ) and the second year ( $p = 0.003$ ) but not for the third ( $p = 0.4$ ). The mean number of contacts with the physician in outpatient care in those who received care at home was  $11.4 \pm 9.8$  for the first year,  $10.4 \pm 9.9$  for the second and  $8.9 \pm 11.1$  for the third. The mean number for those in special accommodation was  $8.8 \pm 8.5$  for the first year,  $7.6 \pm 7.1$  for the second and  $6.7 \pm 6.9$  for the third year. The difference in the mean number of contacts with the physician in outpatient care between the two groups was significant for the first year ( $p < 0.001$ ), the second ( $p < 0.001$ ) and the third year ( $p = 0.003$ ).

## **4. Discussion**

Those who receive a decision about long-term care appear to be characterized by high age, high dependency in IADL and PADL, and a high mortality rate with 47% dying within three years. Despite this only a slight decline in utilization of medical healthcare was found in the subsequent years and outpatient care was utilized to a greater extent than hospital care. The mean number of hospital admissions reached approximately 1 per year in all groups (range 0-13) and 23% of the total sample had no hospital admissions the three years investigated. The mean number of contacts with the physician in outpatient care remained around 10 for each year (range: 0 -

126) and only one person had no such contact during the study period. As expected, the majority received care at home and this group was shown to be younger and less dependent in ADL than those in special accommodation. Despite of this those at home utilized both hospital care and outpatient care to a greater extent than those in special accommodation; these differences remained over time. To receive long-term care at home thus seems to signify a higher risk of increased utilization of medical healthcare than is the case when such care is received in special accommodation.

The data in this study come from the GAS study and from the patient administrative systems PASiS and PrivaStat. The PASiS and PrivaStat registers form the basis for the budgeting and financing of medical healthcare in the region of Skåne and can be regarded as reliable when it comes to the variables used in this study. The sample was identified through the GAS study in which there are an unknown number of dropouts. Since there are no registers in the municipalities that correspond to the administrative registers in the region of Skåne, the actual number of people who received long-term care in the years 2001 to 2003 cannot be controlled for. A dropout analysis was performed for those who rejected participation in GAS 2001 (Karlsson et al., 2008) and this showed an over-representation of people living in special accommodation. The unknown number of dropouts constitutes a threat to external validity in this study.

Repeated measures were performed to investigate changes in the utilization of hospital and outpatient care over time. In the comparison of those who were included in these analyses and those who died during the study period, the mean number of hospital admissions was significantly higher in the first year after inclusion among those who died, in all three cohorts. Thus, if those who died during the study period had been included in the repeated measures analysis for utilization of hospital care this might have demonstrated a more significant decrease over time than is now the case. This is visible in the graph for utilization of hospital care (Figure 1) where the decline over time is more evident than in the repeated measure analysis (Table 2). Thus, if mortality is not taken into consideration it may be misinterpreted as a positive result from the point of view of reduced utilization of medical healthcare (Librero et al., 1999). This is especially important when investigating those who receive long-term care who apparently have a high mortality rate. Therefore, data were presented both as utilization of medical healthcare in the total sample (Figure 1 and 2) and in those who remained alive throughout the study period (Table 1-4).

In spite of the high age, the high dependency in ADL and the high mortality rate among this sample the utilization of medical healthcare was found to decrease slightly over the years. This could be a result of that long-term care and the involvement of professional caregivers may facilitate early detection and treatment of medical conditions and thus prevent the need for medical healthcare. Outpatient care was utilized to a greater extent than hospital care, which has been demonstrated earlier by Ellenweigh et al. (1990) and Wilson and Truman (2004). However, the wide range in the number of contacts with outpatient care over the years (0-126) and in the number of hospital admissions (0-13) indicate that some of these older people utilize medical healthcare to a greater extent than the average. Twenty-three percent of the sample had no hospital admissions during the study period. This has been reported previously in a study by Condelius et al. (2008) (n = 4907, age: 65+) showing that 15% of those who were admitted to hospital during one year utilized as much as 35% of all admissions in this sample. Repeated hospital admissions and frequent contacts with the physician in outpatient care may be an expression of fragmented and inadequate care. More knowledge is needed about this group of high-risk individuals so that targeted interventions can take place.

Despite younger age and less dependency in ADL those at home were shown to utilize hospital care and outpatient care to a greater extent than those in special accommodation and these differences remained over time. This verifies the results from previous cross-sectional studies that demonstrate more utilization among those cared for at home (Condelius et al., 2008; Karlsson et al., 2008). Despite differences in designs and methods used the results in previous longitudinal studies point in the same direction as in the present study. Wilson and Truman (2005) revealed those in special accommodation to be least likely to use health services compared to those receiving care at home and those without long-term care. Both the study by Ellenweigh et al. (1990) and that by Shapiro et al. (1987) showed a reduced utilization of medical healthcare in the time following admission to special accommodation.

Even though the reasons for this can not be demonstrated within this study it seems as special accommodation is advantageous when it comes to preventing utilization of medical healthcare among older people. Thus, the prevailing trend for more older people to be cared for at home may imply an increased utilization of medical healthcare in this group. However, this does not mean that special

accommodation is the best solution for everyone. Rather, it seems that long-term care at home needs to be more effective in preventing an increased utilization of medical healthcare in this group. More research is needed to identify more clearly why those living at home utilize medical healthcare to a greater extent than those in special accommodation.

## **5. Conclusions**

Utilization of hospital care and outpatient care decreased slightly in the 3 years following the decision about long-term care, and outpatient care was utilized to greater extent than hospital care in this group. However, a minority seems to use medical healthcare to a greater extent than the average. More knowledge is needed about this group who are apparently in need of continuous medical attention and perhaps are at risk of receiving inadequate and fragmented care. Despite younger age and less dependency in ADL those at home utilized medical healthcare to a greater extent than those in special accommodation, and these differences remained over time. Thus, an increased number of older people who are granted long-term care at home may imply increased utilization of medical healthcare in this group.

**Conflict of interest statement:** None.

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**Table 1.** Description of the total sample and comparisons of the 3 cohorts

	<b>Total sample</b>	<b>Cohort I</b>	<b>Cohort II</b>	<b>Cohort III</b>	<b>p-value</b>	<b>Post-hoc analyses<sup>c</sup></b>
		Year 2001	Year 2002	Year 2003		
	<i>N</i> = 1079	<i>n</i> = 322	<i>n</i> = 411	<i>n</i> = 346		
<b>Age (mean ± SD)</b>	80.4 ± 7.1	81.2 ± 7.4	80.3 ± 7.0	79.9 ± 7.9	0.051 <sup>a</sup>	-
<b>Sex</b>						
Female (%)	64.6	67.4	67.6	58.4	0.014 <sup>b</sup>	- B, C <sup>b</sup>
<b>Living first year (%)</b>						
At home	62.7	50.9	67.6	67.6	<0.001 <sup>b</sup>	A, B <sup>b</sup> , -
Special accommodation	34.1	45.2	27.3	32.1		
Unknown	3.2	3.7	5.1	0.3		
<b>IADL sum (mean ± SD)</b>	3.4 ± 1.1	3.6 ± 1.0	3.3 ± 1.1	3.4 ± 1.0	0.011 <sup>a</sup>	A <sup>c</sup> , --
<b>PADL sum (mean ± SD)</b>	1.6 ± 1.7	1.7 ± 1.7	1.3 ± 1.6	1.6 ± 1.7	0.025 <sup>a</sup>	A <sup>c</sup> , --
<b>Deceased (%)</b>						
First year	22.8	23.3	22.4	22.8	0.958 <sup>b</sup>	-
Second year	18.8	21.9	16.3	19.1	0.243 <sup>b</sup>	-
Third year	16.0	16.1	16.1	15.7	0.993 <sup>b</sup>	-

**Number of hospital stays**

(mean $\pm$ SD, range)	
First year	0.9 $\pm$ 1.5, 0-13
Second year	0.8 $\pm$ 1.4, 0-11
Third year	0.6 $\pm$ 1.3, 0-12
All three years	1.9 $\pm$ 2.7, 0-26

**Number of contacts with physician in outpatient care**

(mean $\pm$ SD, range)	
First year	10.3 $\pm$ 9.3, 0-126
Second year	9.4 $\pm$ 9.1, 0-109
Third year	8.1 $\pm$ 9.8, 0-102
All three years	22.9 $\pm$ 21.9, 0-337

<sup>a</sup> ANOVA <sup>b</sup>  $\chi^2$  -test <sup>c</sup> Student's *t*-test

Reduced *p*-value <0.017 according to the Bonferroni method was used in post-hoc analyses.

<sup>d</sup> Significant differences between: (A) = The Cohorts I and II, (B) = Cohorts I and III, (C) = Cohorts II and III

**Table 2.** Mean number of hospital stays in the 3 years following decision about long-term care in the three cohorts.

	First year	Second year	Third year	$p$ -value <sup>a</sup>	Post-hoc analyses <sup>b</sup>
<b>Cohort I</b>					
(mean $\pm$ SD)	0.9 $\pm$ 1.7	0.7 $\pm$ 1.3	0.6 $\pm$ 1.5	0.071	-
( $n = 193$ )					
<b>Cohort II</b>					
(mean $\pm$ SD)	0.6 $\pm$ 1.2	0.6 $\pm$ 1.2	0.7 $\pm$ 1.4	0.875	-
( $n = 267$ )					
<b>Cohort III</b>					
(mean $\pm$ SD)	0.9 $\pm$ 1.7	0.9 $\pm$ 1.6	0.4 $\pm$ 0.9	<0.001	- B, C
( $n = 216$ )					

<sup>a</sup> Repeated measures (with Huynh- Feldts correction)

The Bonferroni method was used in the post-hoc analyses.

<sup>b</sup> Significant differences between: (A) = Years 1 and 2, (B) = Years 1 and 3, (C) = Years 2 and 3

**Table 3.** Mean number of contacts with physician in outpatient care in the 3 years following decision about long-term care in the three cohorts.

	<b>First year</b>	<b>Second year</b>	<b>Third year</b>	<b>p-value<sup>a</sup></b>	<b>Post-hoc analyses<sup>b</sup></b>
<b>Cohort I</b>					
(mean ± SD)	11.0 ± 12.7	10.5 ± 11.6	10.3 ± 11.6	0.570	-
(n = 195)					
<b>Cohort II</b>					
(mean ± SD)	11.2 ± 8.7	9.4 ± 7.6	9.4 ± 10.1	0.008	A, B, -
(n = 264)					
<b>Cohort III</b>					
(mean ± SD)	10.1 ± 8.3	9.4 ± 9.2	4.6 ± 6.4	<0.001	- B, C
(n = 214)					

<sup>a</sup> Repeated measures (with Huynh- Feldts correction)

The Bonferroni method was used in the post-hoc analyses.

<sup>b</sup> Significant differences between: (A) = Years 1 and 2, (B) = Years 1 and 3, (C) = Years 2 and 3

**Table 4.** Number of contacts with physician in outpatient care and number of hospital stays in the three years following the decision about long-term care in those at home and those in special accommodation

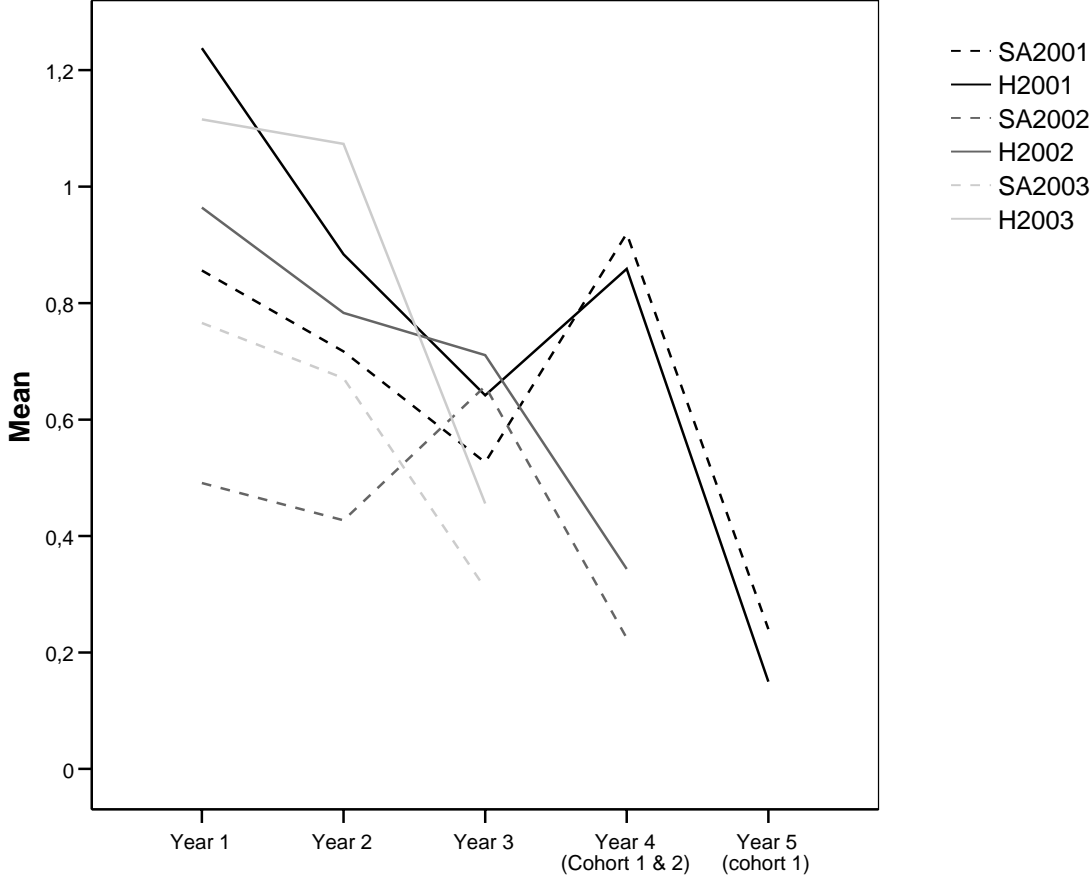
	<b>First year</b>	<b>Second year</b>	<b>Third year</b>	<b>p-value<sup>a</sup></b>	<b>Post-hoc analyses<sup>b</sup></b>
<b>At home</b>					
Contacts with physicians in outpatient care ( <i>n</i> = 444)					
(mean ± SD)	11.8 ± 10.5	10.6 ± 10.8	8.9 ± 11.1	<0.001	A, B, C
Hospital stays ( <i>n</i> = 447)					
(mean ± SD)	0.9 ± 1.6	0.8 ± 1.4	0.6 ± 1.3	0.004	- B, C
<b>Special accommodation</b>					
Contacts with physicians in outpatient care ( <i>n</i> = 201)					
(mean ± SD)	8.8 ± 8.5	8.0 ± 7.4	6.7 ± 6.9	0.002	- B, C
Hospital stays ( <i>n</i> = 204)					
(mean ± SD)	0.5 ± 1.4	0.6 ± 1.4	0.5 ± 1.4	0.387	-

<sup>a</sup> Repeated measures (with Huynh- Feldts correction)

The Bonferroni method was used in the post-hoc analyses.

<sup>b</sup> Significant differences between (A) = Years 1 and 2, (B) = Years 1 and 3, (C) = Years 2 and 3

**Figure 1.** Mean number of hospital stays in the 3-5 years following the decision about long-term care in those at home (H) and those in special accommodation (SA) in the three cohorts



**Figure 2.** Mean number of contacts with physician in outpatient care in the 3-5 years following the decision about long-term care in those at home (H) and those in special accommodation (SA) in the three cohorts

