



Analysis on Fiscal Expenditure of Long-term Care Insurance for the Elderly and Policy Recommendation

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Analysis on Fiscal Expenditure of
Long-term Care Insurance for the
Elderly and Policy Recommendations

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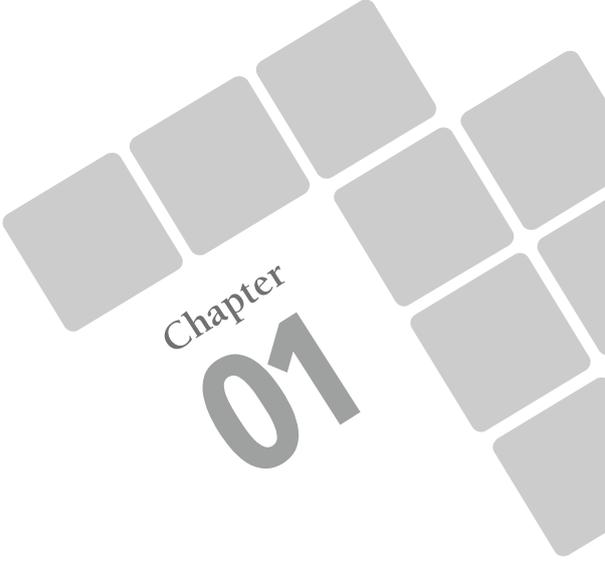
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Chapter

01

Introduction



Chapter 1

Introduction

Section 1. Study Background and Objective

It has been three years since Long-term Care Insurance for the Elderly was adopted in July 2008. The outcomes so far suggest that it has been good in terms of user satisfaction and job creation. Therefore, the Korean government regards the introduction of the insurance system as a success.

On the other hand, the insurance system has focused so much on addressing complaints from users to complement itself that it leads to increase in government expenditure. In particular, since the introduction of the insurance system, insurance premiums have been on the rise (i.e. not only health insurance premium but also long-term care insurance premium rate increased). In the future, the elderly population will continue to increase and cost for long-term care service will also increase due to rising service production cost and service quality improvement, creating pressure on finance of the insurance system. The consequent increase in premiums and government subsidy will face resistance from the insured and government departments in charge of budgeting.

In addition, the insurance system has changed and improved to certain extent over the past two years. However, the model for the insurance system itself represents expenditure increases.

Therefore, as baby boomers are aging out of the workforce, how to meet the increasing demand for the insurance will become a serious social challenge. Furthermore, upgrade of off-grade beneficiaries (some beneficiaries with mild illness) and higher service charges also induce expenditure increases. In other words, if the current rate of expenditure increase is left unaddressed, the social insurance programs will become financially unstable and debt ratio of national finance will continue to increase. Therefore, it is expected that it is difficult for the Korean government to provide subsidy to reduce fiscal deficit of Long-term Care Insurance for the Elderly.

Major industrialized countries that operate the same long-term care insurance system (social insurance) as Korea have continued to reform their insurance systems. Therefore, there is a need for analyzing their experiences closely. For example, Germany increased insurance premium in 2006 as a way to meet the increasing insurance expenditure and introduced the care management system to increase efficiency in service use as part of system reform in 2008. As for Japan, it attempted the first reform in 2006 to shift to a preventive system to meet the needs for long-term care. It is now reviewing the second batch of reform measures to be introduced in 2012. It is reported that these reform measures include limits on benefit expenditure and increase in out-of-pocket cost, and that they are designed to reinforce the home-based care service system.

Meanwhile, there have been few research papers or reports on finance of Long-term Care Insurance for the Elderly released. This can be attributed to the fact that the insurance system was

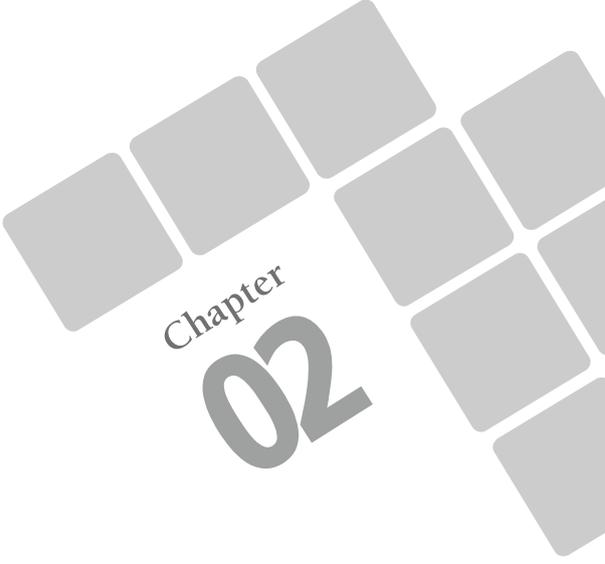
introduced only recently and that there is not much data available for time series analysis. It is true that there are papers or reports on fiscal prediction. However, they do not analyze the status of and factors for fiscal expenditure, as they only focus on trends in total fiscal expenditure.

Therefore, this study closely analyzes increases over the last three years in long-term care expenditure and identifies the determinants. Secondly, the study intends to present a model for fiscal stability based on the analysis.

Section 2. Major Contents and Method

This report primarily focuses on analyzing trends in fiscal expenditure and cause of expenditure decision. The former analysis examines insurance benefits for institutional care and home-based care. Data for the analysis is based on monthly statistical report on Long-term Care Insurance for the Elderly released internally by the National Health Insurance Corporation. The latter analysis is made for various categories. First, it explores factors affecting one's decision to use long-term care service. Secondly, it analyzes differences among regions in terms of ratio of long-term care beneficiaries and determinants.

For the analysis, this report resorts to monthly statistical reports by the National Health Insurance Corporation and refers to various literature.



Chapter

02

**Analysis on Expenditure
Trends of the Long-term Care
Insurance for the Elderly**



Chapter 2

Analysis on Expenditure Trends of the Long-term Care Insurance for the Elderly

Section 1. Analysis on Trends in the Number of Long-term Care Beneficiaries

1. Trends in the number of long-term care beneficiaries

The number of long-term care beneficiaries was 214,480 (equivalent to 4.2 percent of total number of the elderly) when the insurance system was first introduced at the end of December 2008. Since then, the figure has steeply increased. This trend continued toward the first half of 2009. Then, the number of long-term care beneficiaries showed steady growth, to 286,907 (or 5.44 percent of total number of the elderly) at the end of December 2009, 315,994 (or 5.81 percent of total number of the elderly) at the end of December 2010, and to 320,261 at the end of June 2011.

There are reasons behind this trend. In the initial phase of the insurance system, the number of applicants and beneficiaries was not high due to lack of public awareness. Then, as the insurance system became better known to the public, the number of beneficiaries increased. However, the number has become stabilized, since investigation became more accurate after investigation method improved in the latter half of 2009.

In total, the number of beneficiaries increased by about 1.5 times and the ratio of beneficiaries to the total number of the elderly increased by about twice between December 2008 and June 2011. However, considering that the number of the elderly increased only by 1.1 times during the same period, the number of long-term care beneficiaries significantly increased.

〈Table 2-1〉 Changes in the number of long-term care beneficiaries by care grade by year (accumulated)

(Unit: persons, %)

Category		Grade 1	Grade 2	Grade 3	Total
Dec. 2008	Male	17,158	16,570	27,430	61,158
	Female	40,238	41,817	71,267	153,322
	Total	57,396	58,387	98,697	214,480
Dec. 2009	Male	16,731	20,534	46,937	84,202
	Female	37,637	50,559	114,509	202,705
	Total	54,368	71,093	161,446	286,907
Dec. 2010	Male	14,384	20,851	56,556	91,791
	Female	32,610	52,982	138,611	224,203
	Total	46,994	73,833	195,167	315,994
June 2011	Male	13,026	20,345	58,926	92,297
	Female	29,585	52,920	145,459	227,964
	Total	42,611	73,265	204,385	320,261

Source: Statistics on Long-term Care Insurance for the Elderly, National Health Insurance Corporation

As for changes in the number of long-term care beneficiaries, the number of Grade 1 beneficiaries has decreased since the latter half of 2010, as it fell from 57,396 to 42,611 during the period of December 2008 to June 2011. The number of Grade 2 and Grade 3 beneficiaries changed from 58,387 to 73,265 and from 98,697 to 204,385, respectively, suggesting that the

number of lower-grade beneficiaries dramatically increased. In particular, the number of Grade 3 beneficiaries increased by about 3.07 times during the same period. This suggests that patients showed improvement with long-term care service and people with higher care demand including those with dementia and a stroke of paralysis are given Grade 3 for protection purposes.

In addition, it can be interpreted that the number of Grade 1 beneficiaries (those with the most severe illness) decreased not only because they showed functional improvement but also because there was no clear definition of the most severe illness. Therefore, clear definition for functional status and long-term care service needs of each grade beneficiaries should be made, and improving evaluation and decision tools as well as grade point calculation methods should be reconsidered.

As for distribution of beneficiaries by long-term care grade, proportion of Grade 1 beneficiaries was relatively high in December 2008 as Grade 1, Grade 2, and Grade 3 showed 26.8 percent, 27.2 percent, and 46.0 percent, respectively. As of the end of June 2011, the percentage changed to 13.3 percent, 22.9 percent, and 63.8 percent, respectively, suggesting that the proportion of Grade 3 has significantly increased in relative terms.

2. Changes in the number of long-term care beneficiaries by income level

Changes in the number of long-term care beneficiaries by income level show that the number of those in the middle & higher income level is 258,583 accounting for 80.7 percent, the

number of basic livelihood security recipients 57,690 accounting for 18.0 percent, and the number of low income level 3,988, as of June 2011. This means that most long-term care beneficiaries are in the middle & higher income level.

The study analyzes proportions of long-term care beneficiary grade by income level. As for those in middle & higher income level, Grade 1, Grade 2, and Grade 3 represented 36.3%, 27.9%, and 35.8%, respectively, as of the end of December 2008. As for basic livelihood security recipients, Grade 1, Grade 2, and Grade 3 represented 28.6%, 23.5%, and 47.8%. As for low income level, Grade 1, Grade 2, and Grade 3 represented 35.2%, 24.5%, and 40.3%. It is shown that the proportion of Grade 1 is highest among those in middle & higher income level.

As of the end of June 2011, Grade 1, Grade 2, and Grade 3 represented 27.9%, 28.5%, and 43.6% for those in the middle & higher income level, 22.9%, 23.7%, and 53.4% for basic livelihood security recipients, and 28.0%, 25.0%, and 47.0% for low income level, respectively. The proportion of Grade 1 beneficiaries becomes similar across income levels. Compared to the initial phase of the insurance introduction, the proportion of Grade 1 has become significantly reduced, while the ratio of Grade 3 has become highest.

〈Table 2-2〉 Changes in the number of long-term care beneficiaries by income level by year (accumulated)

(Unit: persons, %)

Category		Grade 1	Grade 2	Grade 3	Total
Dec. 2008	Middle & higher income level	43,969 (27.9)	44,773 (28.5)	68,578 (43.6)	157,320 (100.0)
	Basic livelihood security recipients	11,677 (22.9)	12,052 (23.7)	27,184 (53.4)	50,913 (100.0)
	low income level	1,750 (28.0)	1,562 (25.0)	2,935 (47.0)	6,247 (100.0)
	Total	57,396 (26.8)	58,387 (27.2)	98,697 (46.0)	214,480 (100.0)
Dec. 2009	Middle & higher income level	39,508 (19.2)	52,600 (25.5)	113,863 (55.3)	205,971 (100.0)
	Basic livelihood security recipients	10,375 (18.4)	12,536 (22.2)	33,569 (59.4)	56,480 (100.0)
	low income level	732 (19.9)	904 (24.6)	2,046 (55.6)	3,682 (100.0)
	Total	54,368 (18.9)	71,093 (24.8)	161,446 (56.3)	286,907 (100.0)
Dec. 2010	Middle & higher income level	37,605 (14.8)	60,553 (23.9)	155,681 (61.3)	253,839 (100.0)
	Basic livelihood security recipients	8,760 (15.1)	12,324 (21.2)	37,019 (63.7)	58,103 (100.0)
	low income level	629 (15.5)	956 (23.6)	2,467 (60.9)	4,052 (100.0)
	Total	46,994 (14.9)	73,833 (23.4)	195,167 (61.8)	315,994 (100.0)
June 2011	Middle & higher income level	34,375 (13.3)	60,294 (23.3)	163,914 (63.4)	258,583 (100.0)
	Basic livelihood security recipients	7,689 (13.3)	12,095 (21.0)	37,906 (65.7)	57,690 (100.0)
	low income level	547 (13.7)	876 (22.0)	2,565 (64.3)	3,988 (100.0)
	Total	42,611 (13.3)	73,265 (22.9)	204,385 (63.8)	320,261 (100.0)

Source: Statistics on Long-term Care Insurance for the Elderly, National Health Insurance Corporation

3. Changes in the number of long-term care beneficiaries by age group

The study analyzes changes in the number of long-term care beneficiaries by age group. As of the end of December 2008, the number of those aged between 65 and 69 was 24,601 (11.5 percent), the number of those aged between 70 and 74 was 37,707 (17.6 percent), the number of those aged between 75 and 79 was 46,060 (21.5 percent), the number of those between 80 and 84 was 43,477 (20.3 percent), and the number of those aged 85 or older represented 22.6 percent. In sum, those aged 75 or older, or the old-old, accounted for 64.4 percent, or two-thirds, of total beneficiaries.

Based on this trend, those aged 75 or older represented 68.0 percent as of the end of June 2011. This shows that the ratio of the old-old increased a little compared to three years ago. It suggests that the very old is the focus of long-term care service.

The study analyzes changes in the number of long-term care approval rate by age group. As of December 2008, approval rate was 1.35 percent for those aged between 65 and 69, 2.63 percent for those between 70 and 74, 4.92 percent for those aged between 75 and 79, 8.54 percent for those between 80 and 84, and 15.25 percent for those aged 85 or older. It shows that the long-term care approval rate increases with age increase. As of June 2011, the approval rate is 1.61%, 3.14%, 5.90%, 11.25%, and 20.22% for each age group. This also suggests that the approval rate rises as age increases.

The approval rate itself of each age group has risen compared

to the initial phase of introduction. As for those aged 85 or older, the approval rate was 11.3 times that of those in their late 60s in December 2008, and 12.6 times in June 2011. There has been little change over time. In sum, it can be interpreted that the approval rate of long-term care increases with the population becoming older.

Meanwhile, those aged 65 or younger represented 6.6 percent of total beneficiaries in December 2008 and 7.4 percent at the end of June 2011. This means that the number of long-term care beneficiaries who are relatively young has quite increased compared to the initial phase of introduction.

〈Table 2-3〉 Changes in the number of long-term health care beneficiaries by age group by grade

(Unit: persons, %)

	0-64 years old	65-69 years old	70-74 years old	75-79 years old	80-84 years old	85 years or older	Total
Dec. 2008	14,221 (6.6)	24,601 (11.5)	37,707 (17.6)	46,060 (21.5)	43,477 (20.3)	48,414 (22.6)	214,480 (100.0)
Dec. 2009	21,576 (7.5)	30,124 (10.5)	47,762 (16.6)	60,492 (21.1)	59,626 (20.8)	67,327 (23.5)	286,907 (100.0)
Dec.r 2010	23,680 (7.5)	30,153 (9.5)	49,982 (15.8)	65,356 (20.7)	68,011 (21.5)	78,812 (24.9)	315,994 (100.0)
June 2011	23,834 (7.4)	29,228 (9.1)	49,361 (15.4)	66,643 (20.8)	69,896 (21.8)	81,299 (25.4)	320,261 (100.0)

Source: Statistics on Long-term Care Insurance for the Elderly, National Health Insurance Corporation

〈Table 2-4〉 Changes in the approval rate by age group compared to population

(Unit: %)

	0-64 years old	65-69 years old	70-74 years old	75-79 years old	80-84 years old	85 years or older	Total
Dec. 2008	0.03	1.35	2.63	4.92	8.54	15.25	0.44
Dec. 2009	0.05	1.66	3.21	6.05	11.00	19.50	0.59
Dec. 2010	0.05	1.66	3.27	6.13	11.74	21.15	0.65
June 2011	0.05	1.61	3.14	5.90	11.25	20.22	0.65

Note: Figures means the ratio to total population of each age group.

Source: Statistics on Long-term Care Insurance for the Elderly, National Health Insurance Corporation; calculations utilizing Population Predictions of the Statistics Korea

4. Changes in adjustment of long-term care grade approved

Under the current system, grade decision made through on-site investigation in the first phase can be changed by the Grade Decision Committee in the second phase. Therefore, grade can be adjusted based on actual functional status of the elderly. Overall, the adjustment rate (compared to total beneficiaries) increased to as much as 26.9 percent at the end of 2008, but sharply decreased to 5.2 percent at the end of 2008. Since then, the adjustment rate has fallen a little.

As of the end of June 2011, the adjustment rate stands at 2.3 percent only, which is quite a smaller figure compared to the initial stage of the system introduction. This seems attributable to the fact that grade decisions have been made effectively based on the first-phase on-site investigation and other reference data.

As for the overall direction of adjustment, it was downward in the initial stage of introduction (at the end of June 2008), but upward since then. In particular, there have been many upward adjustments among Grade 3 and Off-grade A beneficiaries.

〈Table 2-5〉 Trends in grade adjustment by the Long-term Care Grade Decision Committee (first to second decision)

(Unit: persons, %)

Category		Upward adjustment		Downward adjustment		Total	
		No. of people	(Rate)	No. of people	(Rate)	No. of people	(Rate)
Grade 1	July 2008	184	(0.4)	-	-	184	(0.4)
	Dec. 2008	-	-	442	(0.8)	442	(0.8)
	June 2009	-	-	377	(0.6)	377	(0.6)
	Dec. 2009	-	-	431	(0.8)	431	(0.8)
	June 2010	-	-	454	(0.9)	454	(0.9)
	Dec. 2010	-	-	336	(0.7)	336	(0.7)
	June 2011	-	-	234	(0.5)	234	(0.5)
Grade 2	July 2008	75	(0.2)	723	(2.0)	798	(2.2)
	Dec. 2008	848	(1.6)	429	(0.8)	1,277	(2.4)
	June 2009	799	(1.2)	292	(0.4)	1,091	(1.7)
	Dec. 2009	295	(0.4)	351	(0.5)	646	(1.0)
	June 2010	206	(0.3)	349	(0.5)	555	(0.8)
	Dec. 2010	112	(0.2)	312	(0.4)	424	(0.6)
	June 2011	66	(0.1)	324	(0.5)	390	(0.6)
Grade 3	July 2008	45	(0.1)	3,374	(5.9)	3,419	(5.9)
	Dec. 2008	5,524	(5.6)	414	(0.4)	5,938	(6.1)
	June 2009	6,840	(5.0)	157	(0.1)	6,997	(5.1)
	Dec. 2009	5,555	(3.5)	223	(0.1)	5,778	(3.6)
	June 2010	5,214	(2.9)	280	(0.2)	5,494	(3.0)
	Dec. 2010	3,755	(2.0)	299	(0.2)	4,054	(2.1)
	June 2011	3,001	(1.5)	329	(0.2)	3,330	(1.7)

Note: Figures in () means percentage out of total beneficiaries.

Source: Statistics on Long-term Care Insurance for the Elderly, National Health Insurance Corporation

Section 2. Analysis on Changes in Utilization Rate of Long-term Care Benefits

1. Changes in benefit utilization rate by long-term care grade

This study analyzes changes in benefit utilization rate by long-term care grade. It is found that the rate increased from 61.2 percent in December 2008 to 82.5 percent in June 2011. The long-term care service utilization rate was low in the initial introduction stage and has started to dramatically rise since the latter half of 2009.

By long-term care grade, Grade 1 increased from 62.6 percent to 79.8 percent, Grade 2 from 62.1 percent to 83.9 percent, and Grade 3 from 60.4 percent to 82.9 percent, respectively, for the same period. In the initial introduction stage, utilization rate was high among Grade 1 beneficiaries who were already using long-term care facilities for the elderly. However, service utilization rate among Grade 1 beneficiaries is recently 79.8 percent only. This means that many beneficiaries use medical institutions such as hospitals, not long-term care facilities.

〈Table 2-6〉 Changes in service utilization rate by long-term care grade (all ages)

(Unit: %)

Category	Grade 1	Grade 2	Grade 3	Total
Dec. 2008	62.6	62.1	60.4	61.2
Dec. 2009	74.4	77.7	76.5	75.9
Dec. 2010	80.9	85.1	83.4	83.2
June 2011	79.8	83.9	82.9	82.5

Note: utilization rate = actual users/beneficiaries

Source: Statistics on Long-term Care Insurance for the Elderly, National Health Insurance Corporation

2. Changes in service utilization rate by age group

As for the utilization rate by age group, it was 51.3 percent among those aged 64 or younger, 54.5 percent among those aged between 65 and 69, 58.2 percent among those between 70 and 74, 60.5 percent among those between 75 and 79, 63.8 percent among those between 80 and 84, and 68.4 percent among those aged 85 or older, as of the end of December 2008. This means that the utilization rate increases with older age group. In particular, those aged 64 or younger showed about 50 percent of utilization rate, suggesting that they are less active than other age groups in utilizing long-term care service.

As of June 2011, the rate was 70.2 percent among those aged 64 or younger, 65.3 percent among those aged between 65 and 69, 73.5 percent among those between 70 and 74, 79.5 percent among those between 75 and 79, 83.4 percent among those between 80 and 84, and 99.5 percent among those aged 85 or older, who represented the largest increase. This can be explained by the fact that the utilization rate rapidly increases due to increased public awareness of the care system and promotion and competition among care providers. As almost all beneficiaries aged 85 or older use the care service, this age group is regarded as those most in need of the care service.

In addition, the needs of those aged 64 or younger also expand, as the number of those who are less than 65 sharply increases even though the utilization rate among this age group is relatively lower than other age groups.

〈Table 2-7〉 Changes in benefit utilization rate by age group

(Unit: %)

Category	Less than 65	65 ~ 69	70 ~ 74	75 ~ 79	80 ~ 84	85 years or older	Total
Dec. 2008	51.3	54.5	58.2	60.5	63.8	68.4	61.2
Dec. 2009	67.5	67.0	72.2	74.1	78.5	84.3	75.9
Dec. 2010	74.5	72.6	76.9	81.4	84.7	93.3	83.2
June 2011	70.2	65.3	73.5	79.5	83.4	99.5	82.5

Note: utilization rate = actual users/beneficiaries

Source: Statistics on Long-term Care Insurance for the Elderly, National Health Insurance Corporation

3. Changes in benefit utilization rate by income level

Benefit utilization rate by income level shows the following pattern. As of December 2008, the rate was 56.0 percent for those with middle & higher income, 79.0 percent for basic livelihood security recipients, and 51.0 percent for low income level, showing that the utilization rate is notably high among basic livelihood security recipients. This is attributable to the fact that basic livelihood security recipients have no economic burden, as they do not have to pay out-of-pocket cost.

As of June 2011, the utilization rate was 81.6 percent for those with middle & higher income, 86.5 percent for basic livelihood security recipients, 76.8 percent for low income level, and 84.3 percent for those with lower income. This suggests that utilization rate increase is largest among those with lower income compared to the initial introduction stage. Still, basic livelihood security recipients represent the highest utilization rate, but those with middle & higher income, low income, and those

with special lower-income also show relatively rapid growth in terms of utilization rate. Ultimately, all income levels show similar utilization rates.

〈Table 2-8〉 Changes in benefit utilization rate by income level (total)

(Unit: %)

Category	Those with middle & higher income	Basic livelihood security recipients	low income	Those with special lower-income	Total
Dec. 2008	56.0	79.0	51.0	-	61.2
Dec. 2009	74.0	84.2	63.4	76.6	75.9
Dec. 2010	82.1	87.3	73.6	86.5	83.2
June 2011	81.6	86.5	76.8	84.3	82.5

Note: utilization rate = actual users/beneficiaries

Source: Statistics on Long-term Care Insurance for the Elderly, National Health Insurance Corporation

Section 3. Analysis on Trends in Long-term Care Benefit Expenditure

1. Changes in total long-term care expenditure (out-of-pocket cost included)

A. Total cost expenditure in general

Total expenditure per beneficiary has steadily risen. It was 1,292,924 won for institutional care benefits according to statistics in December 2008, 1,312,892 won at the end of December 2009, and 1,328,675 won in December 2010. Per beneficiary expenditure

for Grade 1 has increased a little compared to the initial introduction phase, as it was 1,424,439 won in December 2008, 1,408,598 won at the end of December 2009, and 1,481,338 won in December 2010. Per beneficiary expenditure for Grade 2 has been steadily on the rise, as it was 1,261,453 won, 1,299,608 won, and 1,335,555 won, respectively. Per beneficiary expenditure for Grade 3 has dramatically increased, as it was 1,098,304 won, 1,176,287 won, and 1,210,193 won, respectively.

As for home-based benefit, per beneficiary expenditure was 772,684 won according to statistics in December 2008, increased sharply to 915,186 won at the end of December 2009, and sharply decreased again to 792,651 won in December 2010. This seems attributable to the fact that there was a functional shift for short-stay providers. By grade, per beneficiary expenditure for Grade 1 was 954,809 won, 1,108,360 won, and 952,230 won, becoming a little smaller compared to the initial introduction phase. Per beneficiary expenditure for Grade 2 was 824,745 won, 977,890 won, and 851,692 won, respectively, showing a small increase compared to the initial introduction phase. Per beneficiary expenditure for Grade 3 was 692,748 won, 852,279 won, and 754,633 won, respectively, representing a relatively high growth rate.

Overall, expenditure growth is relatively high for Grade 3 beneficiaries. As for the ratio of per beneficiary expenditures of institutional care benefits to home care benefits, it was 1.59 times in December 2008, 1.38 times in December 2009, and 1.60 times in December 2010, representing that expenditure for institutional care benefits is about 66 percent higher than that for home care benefits.

〈Table 2-9〉 Changes in per beneficiary total expenditure by long-term care grade and benefit type (out-of-pocket cost included)

(Unit: persons, 1,000 won, won)

Category		institutional care benefits			home care benefits		
		Number of actual users	Total expenditure	Per beneficiary expenditure	Number of actual users	Total expenditure	Per beneficiary expenditure
Dec. 2008	Grade 1	21,452	30,557,069	1,424,439	14,836	14,165,540	954,809
	Grade 2	20,065	25,311,049	1,261,453	16,617	13,704,784	824,745
	Grade 3	11,916	13,087,386	1,098,304	47,766	33,089,810	692,748
	Total	53,333	68,955,504	1,292,924	78,894	60,960,135	772,684
Dec. 2009	Grade 1	20,191	28,440,999	1,408,598	20,690	22,931,964	1,108,360
	Grade 2	26,373	34,274,559	1,299,608	29,728	29,070,701	977,890
	Grade 3	13,513	15,895,161	1,176,287	110,115	93,848,753	852,279
	Total	59,876	78,610,719	1,312,892	159,368	145,851,418	915,186
Dec. 2010	Grade 1	20,641	30,576,295	1,481,338	17,627	16,784,966	952,230
	Grade 2	34,988	46,728,390	1,335,555	28,469	24,246,821	851,692
	Grade 3	31,375	37,969,796	1,210,193	132,149	99,724,010	754,633
	Total	86,759	115,274,481	1,328,675	177,576	140,755,797	792,651
June 2011	Grade 1	18,350	27,342,620	1,490,061	15,892	14,490,561	911,815
	Grade 2	35,300	48,193,365	1,365,251	26,815	22,159,915	826,400
	Grade 3	36,489	45,239,325	1,239,807	133,594	98,370,672	736,340
	Total	90,005	120,775,310	1,341,873	175,814	135,021,148	767,977

Source: Statistics on Long-term Care Insurance for the Elderly, National Health Insurance Corporation

B. Changes in total expenditure by income level

As for per beneficiary expenditure by income level, it was 1,299,981 won for those with middle & higher income level, 1,303,603 won for those with lower income (those entitled to lower insurance premiums), 1,396,698 won for low income level, and 1,397,814 won for basic livelihood security recipients according to statistics in December 2010. The order of basic

livelihood security recipients〉 low income〉 special lower-income〉 those with middle & higher income level shows that insurance benefit amount tend to increase a little as out-of-pocket cost decreases.

〈Table 2-10〉 Changes in per beneficiary total expenditure by income level and insurance benefit type (out-of-pocket cost included)

(Unit: persons, 1,000 won, won)

Category		institutional care benefits			home care benefits		
		Number of actual users	Total expenditure	Per beneficiary expenditure	Number of actual users	Total expenditure	Per beneficiary expenditure
Dec. 2008	Those with middle & higher income level	30,799	40,730,301	1,322,455	58,025	44,493,626	766,801
	low income level	852	1,114,994	1,308,678	2,355	1,756,226	745,744
	Basic livelihood security recipients	21,712	27,110,209	1,248,628	18,608	14,710,283	790,535
	Total	53,333	68,955,504	1,292,924	78,894	60,960,135	772,684
Dec. 2009	Those with middle & higher income level	34,940	46,038,060	1,317,632	118,805	107,650,423	906,110
	Those with special lower income	4,246	5,563,078	1,310,193	11,796	10,864,702	921,050
	low income level	456	608,243	1,333,866	1,894	1,735,047	916,076
	Basic livelihood security recipients	20,349	26,401,338	1,297,427	27,452	25,601,246	932,582
Total	59,876	78,610,719	1,312,892	159,368	145,851,418	915,186	
Dec. 2010	Those with middle & higher income level	55,802	72,541,528	1,299,981	134,509	105,681,782	785,686
	Those with special lower income	6,797	8,860,592	1,303,603	13,663	10,968,649	802,799
	low income level	786	1,097,805	1,396,698	2,215	1,735,263	783,414
	Basic livelihood security recipients	23,447	32,774,556	1,397,814	27,488	22,370,104	813,813
Total	86,759	115,274,481	1,328,675	177,576	140,755,797	792,651	
June 2011	Those with middle & higher	58,518	77,587,169	1,325,868	133,430	102,267,097	766,448

Category		institutional care benefits			home care benefits		
		Number of actual users	Total expenditure	Per beneficiary expenditure	Number of actual users	Total expenditure	Per beneficiary expenditure
income level	Those with special lower income	7,476	10,000,993	1,337,747	13,643	10,677,752	782,654
	low income Basic livelihood security recipients	800	1,087,559	1,359,449	2,268	1,704,743	751,650
	Total	23,308	32,099,590	1,377,192	26,723	20,371,557	762,323
	Total	90,005	120,775,310	1,341,873	175,814	135,021,148	767,977

Source: Statistics on Long-term Care Insurance for the Elderly, National Health Insurance Corporation

As for those with middle & higher income, per beneficiary institutional care benefits by year has changed little, as it was 1,322,455 won in December 2008, 1,317,632 won in December 2009, 1,299,981 won in December 2010, and 1,325,868 won in June 2011. As for low income, per beneficiary institutional care benefits by year has increased a little with 1,308,678 won, 1,333,866 won, 1,396,698 won, 1,359,449 won, respectively. As for basic livelihood security recipients, per beneficiary institutional care benefits by year has also increased with 1,248,628 won, 1,297,427 won, 1,397,814 won, 1,377,192 won, respectively.

According to statistics in December 2010, per beneficiary home-based benefit expenditure was 785,686 won for those with middle & higher income, 802,799 won for those with lower income (those entitled to lower insurance premiums), 783,414 won for low income, and 813,813 won for basic livelihood security recipients. The order is basic livelihood security recipients > lower income > those with middle & higher income > low income.

Per beneficiary home-based benefit expenditure by year for

those with middle & higher income has remained the same level compared to the initial phase of introduction, as it was 766,801 won in December 2008, 906,110 won in December 2009, 785,686 won in December 2010, and 766,448 won in June 2011. Per beneficiary home-based benefit expenditure by year for low income increased a little from the initial phase of introduction, as it was 745,744 won, 916,076 won, 783,414 won, 751,650 won, respectively. As for basic livelihood security recipients, per beneficiary home-based benefit expenditure increased a little and reduced again with 790,535 won, 932,582 won, 813,813 won, and 762,323 won, respectively.

C. Changes in total expenditure by age group

As for institutional care benefits by age group, per beneficiary expenditure was 1,408,111 won for those aged 64 or younger, 1,396,993 won for those aged between 65 and 69, 1,358,638 won for those between 70 and 74, 1,323,836 won for those between 75 and 79, 1,319,385 won for those between 80 and 84, 1,302,235 won for those between 85 and 89, 1,313,759 won for those between 90 and 94, and 1,308,631 won for those aged 95 or older, according to statistics in December 2010. It was found that per beneficiary expenditure was highest for those aged 64 or younger and lowest for those aged between 85 and 89.

〈Table 2-11〉 Changes in per beneficiary expenditure by age group by year
(out-of-pocket cost included)

(Unit: persons, 1,000 won, won)

Category		institutional care benefits			home care benefits		
		Number of actual users	Total expenditure	Per beneficiary expenditure	Number of actual users	Total expenditure	Per beneficiary expenditure
Dec. 2008	Less than 65	2,224	2,894,949	1,301,686	5,110	4,142,489	810,663
	65 to 69	4,150	5,377,888	1,295,877	9,332	7,178,280	769,211
	70 to 74	7,533	9,735,882	1,292,431	14,526	11,057,126	761,196
	75 to 79	10,786	13,970,250	1,295,221	17,249	13,196,300	765,047
	80 to 84	12,224	15,745,956	1,288,118	15,741	12,071,646	766,892
	85 to 89	10,295	13,282,974	1,290,235	10,959	8,611,806	785,820
	90 to 94	4,676	6,053,403	1,294,569	4,530	3,559,460	785,753
	95 or older	1,445	1,894,203	1,310,867	1,447	1,143,026	789,928
Total	53,333	68,955,504	1,292,924	78,894	60,960,135	772,684	
Dec. 2009	Less than 65	2,573	3,397,918	1,320,606	12,060	11,305,007	937,397
	65 to 69	3,904	5,135,015	1,315,321	16,392	15,042,804	917,692
	70 to 74	7,895	10,343,654	1,310,153	26,826	24,376,145	908,676
	75 to 79	11,703	15,388,273	1,314,900	33,476	30,407,148	908,327
	80 to 84	14,055	18,428,182	1,311,148	33,141	30,219,412	911,844
	85 to 89	11,928	15,603,052	1,308,103	23,960	22,011,945	918,696
	90 to 94	5,809	7,626,895	1,312,945	10,280	9,536,919	927,716
	95 or older	2,009	2,687,729	1,337,844	3,232	2,951,537	913,223
Total	59,876	78,610,719	1,312,892	159,368	145,851,418	915,186	
Dec. 2010	Less than 65	3,793	5,340,964	1,408,111	13,926	11,197,479	804,070
	65 to 69	4,953	6,919,307	1,396,993	17,059	13,606,625	797,621
	70 to 74	10,362	14,078,212	1,358,638	28,244	22,411,993	793,513
	75 to 79	16,582	21,951,845	1,323,836	36,939	29,174,761	789,809
	80 to 84	20,651	27,246,611	1,319,385	37,358	29,556,604	791,172
	85 to 89	18,044	23,497,532	1,302,235	27,427	21,663,126	789,847
	90 to 94	9,119	11,980,170	1,313,759	12,344	9,779,979	792,286
	95 or older	3,183	4,165,371	1,308,631	3,912	3,065,111	783,515
Total	86,759	115,274,481	1,328,675	177,576	140,755,797	792,651	
June 2011	Less than 65	3,773	5,180,422	1,373,025	13,034	10,270,425	787,972
	65 to 69	4,365	5,913,309	1,354,710	14,818	11,498,662	775,993
	70 to 74	9,832	13,293,634	1,352,078	26,612	20,370,161	765,450
	75 to 79	16,717	22,417,841	1,341,021	36,581	27,924,552	763,362
	80 to 84	21,217	28,472,582	1,341,970	37,447	28,688,627	766,113
	85 to 89	19,524	26,042,393	1,333,866	28,716	22,005,358	766,310
	90 to 94	10,655	14,221,615	1,334,736	13,819	10,577,480	765,430
	95 or older	3,922	5,233,515	1,334,400	4,787	3,685,884	769,978
Total	90,005	120,775,310	1,341,873	175,814	135,021,148	767,977	

Source: Statistics on Long-term Care Insurance for the Elderly, National Health Insurance Corporation

Changes in per beneficiary institutional care benefits by year show that all institutional care benefits have been on the rise. Per beneficiary institutional care benefits for those aged 64 or younger have increased a little with 1,320,606 won in December 2008, 1,320,606 won in December 2009, 1,408,111 won in December 2010, and 1,373,025 won in June 2011. As for those aged between 65 and 69, per beneficiary institutional care benefits have also been on the rise with 1,295,877 won, 1,315,321 won, 1,396,993 won, and 1,354,710 won, respectively. For those aged between 70 and 74, per beneficiary institutional care benefits have been increasing with 1,292,431 won, 1,310,153 won, 1,358,638 won, and 1,352,078 won, respectively. For those aged between 75 and 79, per beneficiary institutional care benefits have shown a little increase with 1,295,221 won, 1,314,900 won, 1,323,836 won, and 1,341,021 won, respectively. For those aged between 80 and 84, per beneficiary institutional care benefits have been on the increase with 1,288,118 won, 1,311,148 won, 1,319,385 won, and 1,341,970 won, respectively. For those aged between 85 and 89, per beneficiary institutional care benefits have risen with 1,290,235 won, 1,308,103 won, 1,302,235 won, and 1,333,866 won, respectively. Per beneficiary institutional care benefits for those aged between 90 and 94 and for those aged 95 or older have increased with 1,294,569 won, 1,312,945 won, 1,313,759 won, and 1,334,736 won and 1,310,867 won, 1,337,844 won, 1,308,631 won, and 1,334,400 won, respectively.

As for home care benefits, per beneficiary expenditure is 804,070 won for those aged 64 or younger, 797,621 won for those aged between 65 and 69, 793,513 won for those between

70 and 74, 789,809 won for those between 75 and 79, 791,172 won for those between 80 and 84, 789,847 won for those between 85 and 89, 792,286 won for those between 90 and 94, and 783,513 won for those aged 95 or older, according to statistics in December 2010. It was found that per beneficiary expenditure was highest for those who aged 64 or younger and lowest for those aged 95 or older.

Changes in per beneficiary institutional care benefits by year show that per beneficiary home-based expenditure has decreased or remained the same. As for those aged 64 or younger, per beneficiary home-based expenditure has fallen a little with 810,663 won in December 2008, 937,397 won in December 2009, 804,070 won in December 2010, and 787,972 won in June 2011. For those aged between 65 and 69, per beneficiary home-based expenditure has shown changes, but become similar to that in the initial phase of introduction with 769,211 won, 917,692 won, 797,621 won, and 775,993 won, respectively. For those aged between 70 and 74, per beneficiary home-based expenditure has recorded a similar trend with 761,196 won, 908,676 won, 793,513 won, and 765,450 won, respectively. For those aged between 75 and 79, per beneficiary home-based expenditure has been similar with 765,047 won, 908,327 won, 789,809 won, and 763,362 won, respectively. For those aged between 80 and 84, per beneficiary home-based expenditure has decreased a little with 785,820 won, 918,696 won, 789,847 won, and 766,310 won, respectively. For those aged between 90 and 94, per beneficiary home-based expenditure has also fallen with 785,753 won, 927,716 won, 792,286 won, and 765,430 won, respectively.

For those aged 95 or older, per beneficiary home-based expenditure has been on the decrease with 789,928 won, 913,223 won, 783,515 won, and 769,978 won, respectively.

D. Changes in total expenditure by facility type

According to statistics on changes in per beneficiary expenditure by facility benefit type in December 2010, per beneficiary expenditure was 1,105,081 won for elderly care facilities (old law), 1,396,263 won for specialized elderly care facilities, and 1,331,557 won for elderly care group homes. Specialized-elderly care facilities have the highest per beneficiary expenditure because they are granted highest reimbursement.

〈Table 2-12〉 Changes in total expenditure by facility type by year (out-of-pocket cost included)

(Unit: persons, 1,000 won, won)

Category		Number of actual users	Total expenditure	Per beneficiary expenditure
Dec. 2008	Elderly care facilities (old)	17,136	18,530,931	1,081,404
	Specialized elderly care facilities (old)	34,878	48,225,477	1,382,690
	Elderly care group homes	1,611	2,199,095	1,365,050
	Total	53,333	68,955,504	1,292,924
Dec. 2009	Elderly care facilities (old)	12,912	13,936,372	1,079,335
	Specialized elderly care facilities (old)	42,418	58,057,974	1,368,711
	Elderly care group homes	4,886	6,616,373	1,354,149
	Total	59,876	78,610,719	1,312,892
Dec. 2010	Elderly care facilities (old)	12,004	13,265,391	1,105,081
	Elderly care facilities (shifted for short-stay)	9,365	10,590,278	1,130,836
	Specialized elderly care	57,755	80,641,188	1,396,263

Category		Number of actual users	Total expenditure	Per beneficiary expenditure
	facilities			
	Elderly care group homes	8,094	10,777,624	1,331,557
	Total	86,759	115,274,481	1,328,675
June 2011	Elderly care facilities (old)	10,452	11,499,011	1,100,173
	Elderly care facilities (shifted for short-stay)	8,796	10,200,435	1,159,667
	Specialized elderly care facilities	61,902	86,431,364	1,396,261
	Elderly care group homes	9,281	12,644,502	1,362,407
	Total	90,005	120,775,310	1,341,873

Source: Statistics on Long-term Care Insurance for the Elderly, National Health Insurance Corporation

According to statistics on changes in expenditure by case by facility type in December 2010, expenditure per case was 973,535 won for elderly care facilities (old law), 1,273,108 won for specialized elderly care facilities, and 1,214,928 won for elderly care group homes. It was found that expenditure per case was highest for specialized elderly care facilities.

E. Changes in total expenditure by home-based benefit type

According to statistics on changes in per beneficiary expenditure by home-based benefit type, per beneficiary expenditure was 748,285 won for visiting care service, 180,428 won for visiting bath service, 153,632 won for visiting nurse service, 709,386 won for day & night care service, 527,214 won for short-stay service, and 155,817 won for welfare product service.

In sum, visiting care service was most used. In terms of the number of actual users, visiting care service accounted for 64.8

percent with 159,496 users. This represents about a 6 percent increase from December 2008 (58.3 percent).

〈Table 2-13〉 Changes in per beneficiary expenditure by home-based service type by year (out-of-pocket cost included)

(Unit: persons, 1,000 won, won)

	Category	Number of actual users	Total expenditure	Per beneficiary expenditure
Dec. 2008	Visiting care	60,747	42,370,606	697,493
	Visiting bath	16,862	3,122,210	185,162
	Visiting nurse	2,995	535,224	178,706
	day & night care	7,865	5,058,209	643,129
	short-stay	4,659	5,208,720	1,117,991
	Welfare products	11,124	4,665,166	419,378
	Total	78,894	60,960,135	772,684
Dec. 2009	Visiting care	132,913	112,972,745	849,975
	Visiting bath	31,529	6,477,344	205,441
	Visiting nurse	4,277	874,800	204,536
	day & night care	10,183	6,932,102	680,752
	short-stay	10,380	11,310,183	1,089,613
	Welfare products	21,664	7,284,243	336,237
	Total	159,368	145,851,418	915,186
Dec. 2010	Visiting care	159,496	119,348,426	748,285
	Visiting bath	41,124	7,419,938	180,428
	Visiting nurse	3,740	574,584	153,632
	day & night care	11,805	8,374,301	709,386
	short-stay	1,041	548,830	527,214
	Welfare products	28,814	4,489,718	155,817
	Total	177,576	140,755,797	792,651
June 2011	Visiting care	155,520	112,826,704	725,480
	Visiting bath	40,888	7,047,636	172,364
	Visiting nurse	3,321	500,349	150,662
	day & night care	11,515	7,738,266	672,016
	short-stay	1,198	651,527	543,846
	Welfare products	39,073	6,256,667	160,128
	Total	175,814	135,021,148	767,977

Source: Statistics on Long-term Care Insurance for the Elderly, National Health Insurance Corporation

2. Changes in home-based service utilization pattern

As for visiting care service, the number of cases using the service for more than 240 minutes is the highest.

Statistics on visiting care service utilization by year in December 2008 found that service for 240 minutes or more was most used accounting for 30.3 percent, service for 180 to 209 minutes 18.3 percent, and service for 210 to 239 minutes 13.5 percent. In sum, service for three hours or more accounted for 62.1 percent. According to statistics in December 2010, the figures were 29.7 percent, 17.4 percent, and 6.2 percent, respectively. Service for three hours or more accounted for 5.3 percent, representing about 10 percent decrease from the initial phase of introduction. However, share of service for 90 to 119 minutes sharply increased from 10.8 percent in 2008 to 35.8 percent in 2010. This seems attributable to the fact that visiting care service by a family member increased dramatically.

Meanwhile, as of December 2010, Grade 1 accounts for 57.1 percent of service for three hours or more, Grade 2 for 54.9 percent, and Grade 3 for 52.2 percent. Lower-grade beneficiaries use less service for three hours or more. However, more than half of all beneficiaries, regardless of grade, use service for three hours or more. This usage pattern should be re-examined.

Trend in visiting bath service use shows that cases using the service three to four times per month have the largest number. According to statistics on service usage pattern by year in December 2008, "three to four times per month" accounted for 39.8 percent, "five to seven times per month" for 31.0 percent,

and "eight times or more per month" for 13.3 percent. In sum, "once or more a week" accounted for 84.1 percent. According to statistics in December 2010, the figures were 51.5 percent, 13.1 percent, and 24.8 percent, respectively. In sum, twice per week or more increased by more than 10 percent compared to the initial phase of introduction. This suggests that service needs for baths are high.

As of December 2010, Grade 1 accounted for 59.4 percent of service use for eight times per week or more, Grade 2 for 43.6 percent, and Grade 3 for 4.2 percent. This suggests that service needs are high mostly among beneficiaries with serious illness. As for Grade 3, which is a lower grade, service use for three to four times per month accounted for 71.8 percent.

〈Table 2-14〉 Changes in visiting care service by usage time by year

(Unit: persons, %)

		30~59 minutes	60~89 minutes	90~ 119 minutes	120~ 149 minutes	150~ 179 minutes	180~ 209 minutes	210~ 239 minutes	239 minutes	Total
Dec. 2008	Grade 1	1,367 (0.6)	2,769 (1.2)	23,650 (10.5)	14,998 (6.7)	11,688 (5.2)	17,764 (7.9)	34,032 (15.2)	117,925 (52.6)	224,193 (100.0)
	Grade 2	924 (0.4)	2,647 (1.3)	24,015 (11.6)	17,985 (8.7)	19,505 (9.4)	32,095 (15.5)	32,870 (15.9)	76,718 (37.1)	206,759 (100.0)
	Grade 3	2,302 (0.4)	8,085 (1.4)	60,977 (10.7)	87,695 (15.3)	101,333 (17.7)	133,689 (23.4)	68,564 (12.0)	109,426 (19.1)	572,071 (100.0)
	Total	4,594 (0.5)	13,504 (1.3)	108,664 (10.8)	120,693 (12.0)	132,541 (13.2)	183,571 (18.3)	135,497 (13.5)	304,159 (30.3)	1,003,223 (100.0)
Dec. 2009	Grade 1	1,021 (0.2)	5,616 (1.3)	122,235 (28.2)	25,993 (6.0)	5,075 (1.2)	33,029 (7.6)	11,352 (2.6)	228,477 (52.8)	432,798 (100.0)
	Grade 2	1,203 (0.2)	7,350 (1.3)	161,286 (29.6)	29,097 (5.3)	11,907 (2.2)	64,421 (11.8)	26,643 (4.9)	242,624 (44.6)	544,531 (100.0)
	Grade 3	4,428 (0.2)	22,135 (1.2)	471,347 (26.1)	163,439 (9.1)	93,984 (5.2)	424,252 (23.5)	131,229 (7.3)	494,625 (27.4)	1,805,439 (100.0)
	Total	6,652 (0.2)	35,104 (1.3)	754,926 (27.1)	218,540 (7.9)	110,969 (4.0)	521,721 (18.7)	169,232 (6.1)	965,823 (34.7)	2,782,968 (100.0)

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		30~59 minutes	60~89 minutes	90~ 119 minutes	120~ 149 minutes	150~ 179 minutes	180~ 209 minutes	210~ 239 minutes	239 minutes	Total
Dec. 2010	Grade 1	747 (0.2)	6,115 (1.4)	149,193 (35.0)	21,954 (5.2)	4,492 (1.1)	28,340 (6.7)	9,998 (2.3)	205,021 (48.1)	425,860 (100.0)
	Grade 2	1,458 (0.2)	7,981 (1.3)	233,781 (37.5)	26,501 (4.3)	11,199 (1.8)	64,033 (10.3)	27,841 (4.5)	249,873 (40.1)	622,667 (100.0)
	Grade 3	5,880 (0.2)	29,963 (1.2)	922,370 (35.5)	178,157 (6.8)	106,166 (4.1)	541,090 (20.8)	188,185 (7.2)	630,059 (24.2)	2,601,870 (100.0)
	Total	8,085 (0.2)	44,062 (1.2)	1,305,417 (35.8)	226,621 (6.2)	121,860 (3.3)	633,480 (17.4)	226,031 (6.2)	1,085,041 (29.7)	3,650,597 (100.0)
June 2011	Grade 1	629 (0.2)	5,271 (1.4)	130,098 (34.6)	17,656 (4.7)	3,977 (1.1)	24,902 (6.6)	8,808 (2.3)	184,186 (49.0)	375,527 (100.0)
	Grade 2	902 (0.2)	7,151 (1.2)	216,499 (37.1)	23,743 (4.1)	10,303 (1.8)	61,217 (10.5)	27,198 (4.7)	237,223 (40.6)	584,236 (100.0)
	Grade 3	4,340 (0.2)	30,373 (1.1)	955,063 (35.8)	189,460 (7.1)	113,238 (4.2)	550,620 (20.6)	181,826 (6.8)	643,116 (24.1)	2,668,036 (100.0)
	Total	5,871 (0.2)	42,795 (1.2)	1,301,6 (35.9)	230,859 (6.4)	127,518 (3.5)	636,739 (17.6)	217,832 (6.0)	1,064,5 (29.3)	3,627,799 (100.0)

Source: Statistics on Long-term Care Insurance for the Elderly, National Health Insurance Corporation

〈Table 2-15〉 Changes in visiting bath service by usage frequency

(Unit: persons, %)

Category		1	2	3-4	5-7	8 or more	Total
Dec. 2008	Grade 1	434 (2.2)	1,712 (8.7)	6,302 (32.2)	7,377 (37.7)	3,743 (19.1)	19,568 (100.0)
	Grade 2	399 (3.1)	1,568 (12.0)	4,872 (37.3)	4,294 (32.9)	1,938 (14.8)	13,071 (100.0)
	Grade 3	1,222 (3.9)	4,902 (15.6)	14,330 (45.6)	8,163 (26.0)	2,822 (9.0)	31,439 (100.0)
	Total	2,055 (3.2)	8,182 (12.8)	25,504 (39.8)	19,834 (31.0)	8,503 (13.3)	64,078 (100.0)
Dec. 2009	Grade 1	365 (1.3)	1,642 (5.9)	8,526 (30.9)	4,062 (14.7)	13,041 (47.2)	27,636 (100.0)
	Grade 2	485 (1.8)	2,208 (8.1)	9,734 (35.7)	5,949 (21.8)	8,918 (32.7)	27,294 (100.0)
	Grade 3	1,664 (2.8)	9,056 (15.3)	38,737 (65.6)	6,180 (10.5)	3,397 (5.8)	59,034 (100.0)
	Total	2,514 (2.2)	12,906 (11.3)	56,997 (50.0)	16,191 (14.2)	25,356 (22.3)	113,964 (100.0)

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Category		1	2	3-4	5-7	8 or more	Total
Dec. 2010	Grade 1	291 (0.9)	1,310 (3.9)	7,700 (22.9)	4,360 (13.0)	19,958 (59.4)	33,619 (100.0)
	Grade 2	422 (1.1)	1,960 (5.0)	11,058 (28.1)	8,734 (22.2)	17,109 (43.6)	39,283 (100.0)
	Grade 3	1,896 (2.0)	11,722 (12.7)	66,452 (71.8)	8,635 (9.3)	3,904 (4.2)	92,609 (100.0)
	Total	2,609 (1.6)	14,992 (9.1)	85,210 (51.5)	21,729 (13.1)	40,971 (24.8)	165,511 (100.0)
June 2011	Grade 1	245 (0.8)	1,176 (4.0)	7,096 (23.9)	3,906 (13.2)	17,273 (58.2)	29,696 (100.0)
	Grade 2	404 (1.1)	2,070 (5.4)	11,053 (28.9)	6,011 (15.7)	18,749 (49.0)	38,287 (100.0)
	Grade 3	2,017 (2.0)	12,876 (12.8)	66,839 (66.2)	16,128 (16.0)	3,066 (3.0)	100,926 (100.0)
	Total	2,666 (1.6)	16,122 (9.5)	84,988 (50.3)	26,045 (15.4)	39,088 (23.1)	168,909 (100.0)

Source: Statistics on Long-term Care Insurance for the Elderly, National Health Insurance Corporation

As for visiting nurse service, the most number of cases using the service for between 30 and 59 minutes is the highest. According to statistics on service usage by year in December 2008, service for 30 to 59 minutes accounted for 61.0%, followed by service for less than 30 minutes 22.2 percent and service for 60 minutes or more 16.9 percent. Overall, service for less than 60 minutes accounted for 83.2 percent. According to statistics in December 2010, the figures were 61.0%, 22.5%, and 16.5%, respectively, suggesting that there had been no change in usage pattern compared to the initial phase of introduction. This trend remains the same regardless of grade. Beneficiaries with serious illnesses tend to use the service for 60 minutes or more.

In terms of usage frequency, once a week accounts for 70 to 80 percent in all years examined, and higher grade has higher

frequency to use the service once a week or more. This means that beneficiaries with serious illnesses have higher medical needs.

As for day & night care service, the number of cases for eight to nine hours per day is the highest. According to statistics on usage pattern by year in December 2008, eight to nine hours per day accounted for 79.3 percent, six to seven hours per day 12.7 percent, 10 to 11 hours per day 4.0 percent, and 12 hours or more per day 2.6 percent. According to statistics in December, the figures were 72.8%, 8.8%, 11.4%, and 5.1%, respectively, representing that night care service was more increasingly used compared to the initial phase of introduction. This trend remains the same regardless of grade. Also, beneficiaries with serious illnesses tend to use more service for 10 hours or more per day.

〈Table 2-16〉 Changes in visiting nurse service utilization

(Unit: persons, %)

		Usage time			Usage frequency				Total
		Less than 30 minutes	30 to 59 minutes	60 minutes or more	1	2	3	4 or more	
Dec. 2008	Grade 1	919 (17.5)	3,147 (60.0)	1,178 (22.5)	131 (2.5)	396 (7.6)	276 (5.3)	4,441 (84.7)	5,244 (100.0)
	Grade 2	604 (26.0)	1,341 (57.8)	375 (16.2)	84 (3.6)	188 (8.1)	174 (7.5)	1,874 (80.8)	2,320 (100.0)
	Grade 3	1,233 (25.4)	3,091 (63.6)	538 (11.1)	190 (3.9)	484 (10.0)	378 (7.8)	3,810 (78.4)	4,862 (100.0)
	Total	2,756 (22.2)	7,579 (61.0)	2,091 (16.9)	405 (3.3)	1,068 (8.6)	828 (6.7)	10,125 (81.5)	12,426 (100.0)
Dec. 2009	Grade 1	1,045 (17.6)	3,392 (57.0)	1,517 (25.5)	170 (2.9)	478 (8.0)	312 (5.2)	4,994 (83.9)	5,954 (100.0)
	Grade 2	695 (22.2)	1,837 (58.8)	592 (19.0)	116 (3.7)	332 (10.6)	225 (7.2)	2,451 (78.5)	3,124 (100.0)
	Grade 3	2,307	4,357	1,056	285	942	573	5,920	7,720

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		Usage time			Usage frequency				Total
		Less than 30 minutes	30 to 59 minutes	60 minutes or more	1	2	3	4 or more	
		(29.9)	(56.4)	(13.7)	(3.7)	(12.2)	(7.4)	(76.7)	(100.0)
	Total	4,047 (24.0)	9,586 (57.1)	3,165 (18.9)	571 (3.4)	1,752 (10.4)	1,110 (6.6)	13,365 (79.6)	16,798 (100.0)
Dec. 2010	Grade 1	792 (15.6)	3,155 (62.1)	1,134 (22.3)	179 (3.5)	500 (9.8)	339 (6.7)	4,063 (80.0)	5,081 (100.0)
	Grade 2	631 (22.1)	1,773 (62.1)	452 (15.8)	103 (3.6)	332 (11.6)	207 (7.2)	2,214 (77.5)	2,856 (100.0)
	Grade 3	1,817 (28.2)	3,852 (59.7)	780 (12.1)	367 (5.7)	958 (14.9)	555 (8.6)	4,569 (70.8)	6,449 (100.0)
	Total	3,240 (22.5)	8,780 (61.0)	2,366 (16.5)	649 (4.5)	1,790 (12.4)	1,101 (7.6)	10,846 (75.4)	14,386 (100.0)
June 2011	Grade 1	681 (15.0)	2,799 (61.6)	1,066 (23.4)	171 (3.8)	448 (9.9)	312 (6.9)	3,615 (79.5)	4,546 (100.0)
	Grade 2	561 (19.8)	1,796 (63.5)	473 (16.7)	121 (4.3)	368 (13.0)	189 (6.7)	2,152 (76.0)	2,830 (100.0)
	Grade 3	1,811 (28.6)	3,743 (59.2)	772 (12.2)	397 (6.3)	924 (14.6)	534 (8.4)	4,471 (70.7)	6,326 (100.0)
	Total	3,053 (22.3)	8,338 (60.9)	2,311 (16.9)	689 (5.0)	1,740 (12.7)	1,035 (7.6)	10,238 (74.7)	13,702 (100.0)

Source: Statistics on Long-term Care Insurance for the Elderly, National Health Insurance Corporation

〈Table 2-17〉 Changes in day & night care service utilization

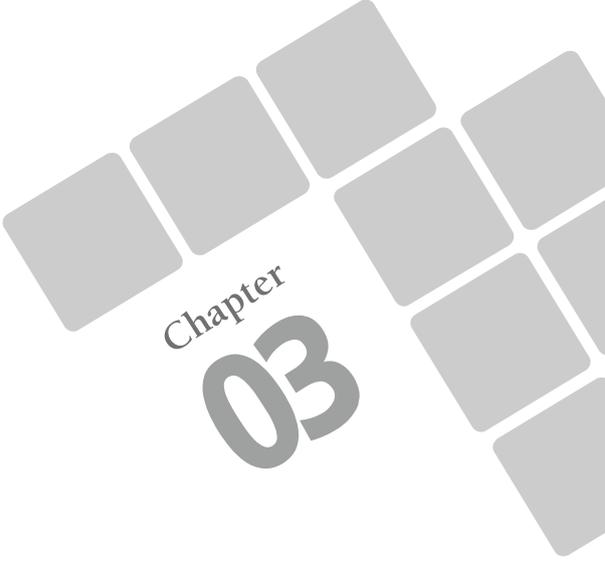
(Unit: persons, %)

		3-5 hours	6-7 hours	8-9 hours	10-11 hours	12 hours or more	Total
Dec. 2008	Grade 1	144 (1.3)	945 (8.7)	8,420 (77.8)	480 (4.4)	834 (7.7)	10,823 (100.0)
	Grade 2	424 (1.3)	4,207 (13.0)	25,508 (78.6)	1,418 (4.4)	913 (2.8)	32,470 (100.0)
	Grade 3	1,607 (1.5)	13,585 (13.0)	83,217 (79.6)	3,970 (3.8)	2,128 (2.0)	104,507 (100.0)
	Total	2,175 (1.5)	18,737 (12.7)	117,145 (79.3)	5,868 (4.0)	3,875 (2.6)	147,800 (100.0)
Dec. 2009	Grade 1	141 (2.1)	508 (7.4)	5,239 (76.2)	656 (9.5)	330 (4.8)	6,874 (100.0)

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		3-5 hours	6-7 hours	8-9 hours	10-11 hours	12 hours or more	Total
	Grade 2	533 (1.7)	2,625 (8.3)	23,740 (75.5)	2,919 (9.3)	1,642 (5.2)	31,459 (100.0)
	Grade 3	3,031 (1.9)	16,179 (10.2)	122,947 (77.2)	11,779 (7.4)	5,236 (3.3)	159,172 (100.0)
	Total	3,705 (1.9)	19,312 (9.8)	151,926 (76.9)	15,354 (7.8)	7,208 (3.7)	197,505 (100.0)
Dec. 2010	Grade 1	105 (2.3)	440 (9.5)	3,075 (66.1)	760 (16.3)	269 (5.8)	4,649 (100.0)
	Grade 2	451 (1.8)	2,097 (8.4)	17,711 (70.6)	3,135 (12.5)	1,693 (6.7)	25,087 (100.0)
	Grade 3	3,840 (1.9)	17,604 (8.9)	145,630 (73.3)	22,036 (11.1)	9,599 (4.8)	198,709 (100.0)
	Total	4,396 (1.9)	20,141 (8.8)	166,416 (72.8)	25,931 (11.4)	11,561 (5.1)	228,445 (100.0)
June 2011	Grade 1	27 (0.8)	277 (8.6)	2,272 (70.3)	596 (18.4)	61 (1.9)	3,233 (100.0)
	Grade 2	390 (1.9)	1,643 (7.8)	14,557 (69.4)	3,019 (14.4)	1,359 (6.5)	20,968 (100.0)
	Grade 3	4,010 (2.0)	16,003 (8.0)	147,760 (74.2)	23,858 (12.0)	7,406 (3.7)	199,037 (100.0)
	Total	4,427 (2.0)	17,923 (8.0)	164,589 (73.7)	27,473 (12.3)	8,826 (4.0)	223,238 (100.0)

Source: Statistics on Long-term Care Insurance for the Elderly, National Health Insurance Corporation



Chapter

03

Analysis on Factors of Fiscal Expenditure of Long-term Care Insurance for the Elderly



Chapter 3

Analysis on Factors of Fiscal Expenditure of Long-term Care Insurance for the Elderly

Section 1. Analysis on determinants to willingness to use long-term care service

There are many factors influencing the usage of long-term care service: individual factors such as gender, age, marital status, household structure; socio-economic factors such as income level; and health factors such as functional condition in daily life and health conditions.

This study examines the impact of household structure and income level of senior citizens on the usage of long-term care service. It is assumed that the possibility of care by a family member and income level are decisive factors to long-term care service for the elderly, when other conditions are the same. Therefore, the possibility of care by a family member is analyzed with household structure, and income level is analyzed with household income level. In this analysis, whether household structure and income level have impact are taken into account by adjusting basic influencing factors. Moderating variables include gender, age, education level, marital status, place of residence, ADL and IADL, and subjective health status.

For the purpose of analysis, long-term care service includes facility service such as elderly care facilities and elderly care

group homes, and home-based service such as day & night care, short-stay, visiting care, visiting bath, and visiting nurse.

Analysis data is obtained from processing the raw data from an elderly life survey conducted in 2008.

1. Determinants to willingness to use long-term care facilities by household structure

〈Table 3-1〉 ~ 〈Table 3-7〉 illustrate how household structure influences usage of long-term care service using the same variables.

First of all, the elderly living alone are more willing to use elderly care facilities than the elderly in other household structures (see Model 3). It is analyzed that elderly couples are less willing to use elderly care facilities than the elderly living with children. The same result is drawn even when the analysis is adjusted with variables of individual characteristics or health status.

Secondly, the elderly living alone are more willing to use elderly care group homes than the elderly in other household structures (see Model 3). They are also more willing to enter elderly care group homes than elderly care facilities. It is analyzed that elderly couples are less willing to use elderly care group homes than the elderly living with children. The same result is drawn even when the analysis is adjusted with variables of individual characteristics or health status.

In sum, the elderly living alone have the highest tendency to enter facilities, followed by the elderly living with children. It is presumed that it is difficult for the elderly living with children to receive care from their children who have jobs.

〈Table 3-1〉 Analysis on willingness to use care facilities and relationship of relevant variables (logistic analysis)

Category	Model 1 Exp(B)	Model 2 Exp(B)	Model 3 Exp(B)
Household structure			
Elderly couple	0.870**	0.637***	0.660***
Elderly living with children	0.869**	0.669***	0.698***
Others	0.775**	0.634***	0.663***
Gender			
Female		1.149***	1.166***
Age			
70~79 years old		0.882**	0.898**
80 or older		0.692***	0.743***
Education level			
Middle and high school		1.209***	1.215***
College or higher		1.529***	1.534***
Marital status			
No spouse		0.808**	0.820**
Place of residence			
Eup·Myeon		0.789***	0.785***
ADL			
1			1.199*
2			1.439**
3 or more			1.545**
IADL			
1			0.665***
2			0.785
3 or more			0.607***
Subjective health status			
Normal			0.963
Healthy			0.791***
Income level			
0.5~1 million won			1.022
1 million won or more			1.179**
df	3	10	20
chi-square	12.732	221.097	299.877
-2LL	19379.771	19171.407	19092.627
Cox & Snell R ²	.001	.016	.021

Note: 1) * p <.05, ** p <.01, *** p <.001

2) Control group: Household structure = elderly living alone, Gender = Male, Age = 60~69 years old, Education = elementary school or less, Income = 0.5 million won or less, Marital status = having spouse, Place of residence = Eastern part, ADL = complete independence, IADL = complete independence, Subjective health status = not good.

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〈Table 3-2〉 Analysis on willingness to use elderly care group homes and relationship of relevant variables (logistic analysis)

Category	Model 1 Exp(B)	Model 2 Exp(B)	Model 3 Exp(B)
Household structure			
Elderly couple	0.939	0.771**	0.801**
Elderly living with children	0.960	0.776***	0.813**
Others	0.913	0.791*	0.825
Gender			
Female		1.090*	1.085
Age			
70~79 years old		0.867**	0.877**
80 or older		0.669***	0.722***
Education level			
Middle and high school		1.202***	1.224***
College or higher		1.355***	1.406***
Marital status			
No spouse		0.933	0.947
Place of residence			
Eup·Myeon		0.688***	0.682***
ADL			
1			0.962
2			1.096
3 or more			1.395*
IADL			
1			0.640***
2			0.876
3 or more			0.637***
Subjective health status			
Normal			0.946
Healthy			0.786***
Income level			
0.5~1 million won			1.087
1 million won or more			1.064
df	3	10	20
chi-square	1.758	204.886	267.254
-2LL	17108.543	16905.415	16843.047
Cox & Snell R ²	.000	.014	.019

Note: 1) * p <.05, ** p <.01, *** p <.001

2) Control group: Household structure = elderly living alone, Gender = Male, Age = 60~69 years old, Education = elementary school or less, Income = 0.5 million won or less, Marital status = having spouse, Place of residence = Eastern part, ADL = complete independence, IADL = complete independence, Subjective health status = not good.

There are other forms of facility service such as day & night care and short-stay care. First, elderly people living alone are more willing to use day & night care service than elderly people in other household structures (see Model 3). Secondly, elderly people living with children are less willing to use day & night care than elderly couples. The same result is drawn even when the analysis is adjusted with variables of individual characteristics or health status.

As for short-stay service, the elderly living alone are also more willing to use the service than the elderly in other household structures (see Model 3). In addition, elderly couples are more willing to use short-stay service than the elderly living with children. The same result is drawn even when the analysis is adjusted with variables of individual characteristics or health status.

As for quasi-facility service such as day & night care and short-stay, lone elderly people show the highest tendency to use the service, followed by elderly couples. It is presumed that the elderly want to be protected by facilities, not quasi-facility service, when they cannot receive care from children who have to do social activities.

Analysis on Fiscal Expenditure of Long-term Care Insurance for the Elderly and Policy Recommendations

〈Table 3-3〉 Analysis on willingness to use day (night) care service and relationship of relevant variables (logistic analysis)

Category	Model 1 Exp(B)	Model 2 Exp(B)	Model 3 Exp(B)
Household structure			
Elderly couple	0.935	0.785**	0.805**
Elderly living with children	0.890*	0.751***	0.775***
Others	0.956	0.847	0.869
Gender			
Female		1.131**	1.132**
Age			
70~79 years old		0.860***	0.863***
80 or older		0.719***	0.751***
Education level			
Middle and high school		1.130*	1.147**
College or higher		1.469***	1.527***
Marital status			
No spouse		0.915	0.924
Place of residence			
Eup·Myeon		0.798***	0.796***
ADL			
1			1.049
2			1.033
3 or more			1.360*
IADL			
1			0.657***
2			0.966
3 or more			0.762**
Subjective health status			
Normal			0.942
Healthy			0.848***
Income level			
0.5~1 million won			1.125*
1 million won or more			1.030
df	3	10	20
chi-square	4.934	151.603	196.407
-2LL	18687.788	18541.119	18496.316
Cox & Snell R ²	.000	.011	.014

Note: 1) * p <.05, ** p <.01, *** p <.001

2) Control group: Household structure = elderly living alone, Gender = Male, Age = 60~69 years old, Education = elementary school or less, Income = 0.5 million won or less, Marital status = having spouse, Place of residence = Eastern part, ADL = complete independence, IADL= complete independence, Subjective health status = not good.

〈Table 3-4〉 Analysis on willingness to use short-stay service and relationship of relevant variables (logistic analysis)

Category	Model 1 Exp(B)	Model 2 Exp(B)	Model 3 Exp(B)
Household structure			
Elderly couple	0.911	0.811**	0.832*
Elderly living with children	0.840**	0.736***	0.755***
Others	0.871	0.796*	0.813*
Gender			
Female		1.131**	1.162**
Age			
70~79 years old		0.837***	0.845***
80 or older		0.723***	0.760***
Education level			
Middle and high school		1.149**	1.162**
College or higher		1.362***	1.396***
Marital status			
No spouse		0.970	0.976
Place of residence			
Eup·Myeon		0.812***	0.809***
ADL			
1			0.999
2			0.966
3 or more			1.489**
IADL			
1			0.638***
2			1.060
3 or more			0.770**
Subjective health status			
Normal			0.944
Healthy			0.839***
Income level			
0.5-1 million won			1.183***
1 million won or more			1.116*
df	3	10	20
chi-square	11.103	140.293	201.300
-2LL	18619.889	18490.700	18429.692
Cox & Snell R ²	.001	.010	.014

Note: 1) * p <.05, ** p <.01, *** p <.001

2) Control group: Household structure = elderly living alone, Gender = Male, Age = 60~69 years old, Education = elementary school or less, Income = 0.5 million won or less, Marital status = having spouse, Place of residence = Eastern part, ADL = complete independence, IADL = complete independence, Subjective health status = not good.

This study also analyzes the willingness to use visiting services. Across all visit services, the elderly living alone show the highest tendency to use services than the elderly in other household structures. The same result is drawn even when the analysis is adjusted with variables of individual characteristics or health status. Except for the elderly living alone, senior citizens in other household structures show similar willingness to use visiting services (see Model 3).

〈Table 3-5〉 Analysis on willingness to use visiting care service and relationship of relevant variables (logistic analysis)

Category	Model 1 Exp(B)	Model 2 Exp(B)	Model 3 Exp(B)
Household structure			
Elderly couple	0.780***	0.672***	0.684***
Elderly living with children	0.726***	0.649***	0.664***
Others	0.642***	0.590***	0.600***
Gender			
Female		1.198***	1.201***
Age			
70~79 years old		0.905*	0.899**
80 or older		0.769***	0.780***
Education level			
Middle and high school		1.134**	1.156**
College or higher		1.267**	1.331***
Marital status			
No spouse		0.880*	0.885
Place of residence			
Eup·Myeon		0.961	0.961
ADL			
1			1.175
2			1.318
3 or more			1.513**
IADL			
1			0.755**
2			1.070
3 or more			0.766**
Subjective health status			
Normal			1.024
Healthy			0.832***
Income level			
0.5~1 million won			1.159**
1 million won or more			1.051
df	3	10	20
chi-square	47.310	120.616	174.970
-2LL	19450.774	19377.468	19323.113
Cox & Snell R ²	.003	.009	.012

Note: 1) * p <.05, ** p <.01, *** p <.001

2) Control group: Household structure = elderly living alone, Gender = Male, Age = 60~69 years old, Education = elementary school or less, Income = 0.5 million won or less, Marital status = having spouse, Place of residence = Eastern part, ADL = complete independence, IADL = complete independence, Subjective health status = not good.

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〈Table 3-6〉 Analysis on willingness to use visiting nurse service and relationship of relevant variables (logistic analysis)

Category	Model 1 Exp(B)	Model 2 Exp(B)	Model 3 Exp(B)
Household structure			
Elderly couple	0.750***	0.653***	0.667***
Elderly living with children	0.721***	0.651***	0.666**
Others	0.659***	0.612***	0.623***
Gender			
Female		1.226***	1.235***
Age			
70~79 years old		0.910*	0.907*
80 or older		0.761***	0.774***
Education level			
Middle and high school		1.100*	1.114*
College or higher		1.224**	1.266**
Marital status			
No spouse		0.875*	0.882*
Place of residence			
Eup·Myeon		0.963	0.963
ADL			
1			1.172
2			1.625**
3 or more			1.600***
IADL			
1			0.764**
2			1.088
3 or more			0.724***
Subjective health status			
Normal			1.014
Healthy			0.850***
Income level			
0.5~1 million won			1.137**
1 million won or more			1.073
df	3	10	20
chi-square	48.397	120.669	173.999
-2LL	19444.051	19371.779	19318.450
Cox & Snell R ²	.003	.009	.012

Note: 1) * p < .05, ** p < .01, *** p < .001

2) Control group: Household structure = elderly living alone, Gender = Male, Age = 60~69 years old, Education = elementary school or less, Income = 0.5 million won or less, Marital status = having spouse, Place of residence = Eastern part, ADL = complete independence, IADL= complete independence, Subjective health status = not good.

〈Table 3-7〉 Analysis on willingness to visiting bath service and relationship of relevant variables (logistic analysis)

Category	Model 1 Exp(B)	Model 2 Exp(B)	Model 3 Exp(B)
Household structure			
Elderly couple	0.756***	0.663***	0.677***
Elderly living with children	0.731***	0.654***	0.670***
Others	0.658***	0.601***	0.611***
Gender			
Female		1.175***	1.185***
Age			
70~79 years old		0.912*	0.909*
80 or older		0.869*	0.889
Education level			
Middle and high school		1.107*	1.125**
College or higher		1.246**	1.305***
Marital status			
No spouse		0.887	0.895
Place of residence			
Eup·Myeon		0.909*	0.909*
ADL			
1			1.081
2			1.330
3 or more			1.633***
IADL			
1			0.673***
2			0.921
3 or more			0.766**
Subjective health status			
Normal			0.995
Healthy			0.841***
Income level			
0.5-1 million won			1.167**
1 million won or more			1.043
df	3	10	20
chi-square	46.343	101.076	161.202
-2LL	19221.288	19166.318	19106.192
Cox & Snell R ²	.003	.007	.011

Note: 1) * p <.05, ** p <.01, *** p <.001

2) Control group: Household structure = elderly living alone, Gender = Male, Age = 60~69 years old, Education = elementary school or less, Income = 0.5 million won or less, Marital status = having spouse, Place of residence = Eastern part, ADL = complete independence, IADL = complete independence, Subjective health status = not good.

2. Determinants to willingness to use long-term care facilities by household income level

〈Table 3-8〉 ~ 〈Table 3-14〉 show how income level influences usage of long-term care service using the same variables.

First of all, the elderly with higher income (1 million won or more) are more willing to use care facilities than the elderly with lower income (0.5 million won or less) (see Model 3).

As for elderly care group homes, income level does not lead to difference in willingness to use service. This tendency can be explained by the fact that the elderly with higher income prefer midrange and high-end care facilities to small ones.

It is analyzed that quasi-facilities services such as day & night care and short-stay show different usage patterns than facility services. It is found that the elderly with mid income (0.5 million to less than 1 million) are more willing to use day & night care service than the elderly with lower income. It can be interpreted that the elderly with higher income tend to use facilities, in particular, midrange and high-end ones providing around-the-clock service. This tendency can be also found in short-stay service.

〈Table 3-8〉 Analysis on willingness to use care facilities and relationship
of relevant variables (logistic analysis)

Category	Model 1 Exp(B)	Model 2 Exp(B)	Model 3 Exp(B)
Income level			
0.5 ~1 million won	1.041	1.026	1.022
1 million won or more	1.239***	1.152**	1.179**
Gender			
Female		1.192***	1.166***
Age			
70~79 years old		0.900**	0.898**
80 or older		0.677***	0.743***
Marital status			
No spouse		1.043	0.820**
Place of residence			
Eup·Myeon		0.810***	0.785***
Education level			
Middle and high school		1.195***	1.215***
College or higher		1.486***	1.534***
ADL			
1			1.199*
2			1.439*
3 or more			1.545**
IADL			
1			0.665***
2			0.785
3 or more			0.607***
Subjective health status			
Normal			0.963
Healthy			0.791***
Household structure			
Elderly couple			0.660***
Elderly living with children			0.698***
Others			0.663***
df	2	9	20
chi-square	25.983	187.838	299.877
-2LL	19366.520	19204.665	19092.627
Cox & Snell R ²	.002	.013	.021

Note: 1) * p <.05, ** p <.01, *** p <.001

2) Control group: Income = 0.5 million won or less, Gender = Male, Age = 60~69 years old, Education = elementary school or less, Marital status = having spouse, Place of residence = Eastern part, ADL = complete independence, IADL = complete independence, Subjective health status = not good, Household structure = elderly living alone.

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〈Table 3-9〉 Analysis on willingness to use elderly care group homes and relationship of relevant variables (logistic analysis)

Category	Model 1 Exp(B)	Model 2 Exp(B)	Model 3 Exp(B)
Income level			
0.5 ~1 million won	1.122*	1.090	1.087
1 million won or more	1.160**	1.044	1.064
Gender			
Female		1.108*	1.085
Age			
70~79 years old		0.874**	0.877**
80 or older		0.662***	0.722***
Marital status			
No spouse		1.078	0.947
Place of residence			
Eup·Myeon		0.701***	0.682***
Education level			
Middle and high school		1.199***	1.224***
College or higher		1.357***	1.406***
ADL			
1			0.962
2			1.096
3 or more			1.395*
IADL			
1			0.640***
2			0.876
3 or more			0.637***
Subjective health status			
Normal			0.946
Healthy			0.786***
Household structure			
Elderly couple			0.801**
Elderly living with children			0.813**
Others			0.825
df	2	9	20
chi-square	13.043	195.460	267.254
-2LL	17097.259	16914.841	16843.047
Cox & Snell R ²	.001	.014	.019

Note: 1) * p <.05, ** p <.01, *** p <.001

2) Control group: Income = 0.5 million won or less, Gender = Male, Age = 60~69 years old, Education = elementary school or less, Marital status = having spouse, Place of residence = Eastern part, ADL = complete independence, IADL = complete independence, Subjective health status= not good, Household structure = elderly living alone.

〈Table 3-10〉 Analysis on willingness to use day (night) care service and relationship of relevant variables (logistic analysis)

Category	Model 1 Exp(B)	Model 2 Exp(B)	Model 3 Exp(B)
Income level			
0.5 ~1 million won	1.146**	1.127**	1.125*
1 million won or more	1.099*	1.009	1.030
Gender			
Female		1.142**	1.132**
Age			
70~79 years old		0.865***	0.863***
80 or older		0.715***	0.751***
Marital status			
No spouse		1.042	0.924
Place of residence			
Eup·Myeon		0.820***	0.796***
Education level			
Middle and high school		1.131**	1.147**
College or higher		1.492***	1.527***
ADL			
1			1.049
2			1.033
3 or more			1.360*
IADL			
1			0.657***
2			0.966
3 or more			0.762**
Subjective health status			
Normal			0.942
Healthy			0.848***
Household structure			
Elderly couple			0.805**
Elderly living with children			0.775***
Others			0.869
df	2	9	20
chi-square	11.349	140.392	196.407
-2LL	18681.373	18552.330	18496.316
Cox & Snell R ²	.001	.010	.014

Note: 1) * p <.05, ** p <.01, *** p <.001

2) Control group: Income = 0.5 million won or less, Gender = Male, Age = 60~69 years old, Education = elementary school or less, Marital status = having spouse, Place of residence = Eastern part, ADL = complete independence, IADL = complete independence, Subjective health status = not good, Household structure = elderly living alone.

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〈Table 3-11〉 Analysis on willingness to use short-stay service and relationship of relevant variables (logistic analysis)

Category	Model 1 Exp(B)	Model 2 Exp(B)	Model 3 Exp(B)
Income level			
0.5 ~1 million won	1.191***	1.183***	1.183***
1 million won or more	1.145**	1.086	1.116*
Gender			
Female		1.170***	1.162***
Age			
70~79 years old		0.854***	0.845***
80 or older		0.729***	0.760***
Marital status			
No spouse		1.071	0.976
Place of residence			
Eup·Myeon		0.839***	0.809***
Education level			
Middle and high school		1.141**	1.162**
College or higher		1.362***	1.396***
ADL			
1			0.999
2			0.966
3 or more			1.489**
IADL			
1			0.638***
2			1.060
3 or more			0.770**
Subjective health status			
Normal			0.944
Healthy			0.839***
Household structure			
Elderly couple			0.832*
Elderly living with children			0.755***
Others			0.813*
df	2	9	20
chi-square	20.006	130.198	201.300
-2LL	18610.986	18500.795	18429.692
Cox & Snell R ²	.001	.009	.014

Note: 1) * p <.05, ** p <.01, *** p <.001

2) Control group: Income = 0.5 million won or less, Gender = Male, Age = 60~69 years old, Education = elementary school or less, Marital status = having spouse, Place of residence = Eastern part, ADL = complete independence, IADL = complete independence, Subjective health status = not good, Household structure = elderly living alone.

It is also analyzed that visiting services show similar patterns with quasi-facility services. In other words, the elderly with mid income (0.5 million to less than 1 million) are more willing to use care services than the elderly with lower income (0.5 million or less) (see Model 3).

The degree of willingness to use service is highest for visiting bath (OR=1.167), followed by visiting care (OR=1.159) and visiting nurse (OR=1.137). The elderly with higher income are less willing to use visiting service than the elderly with mid income. This suggests that the elderly with higher income do not like people from outside to visit their house to provide care service.

In conclusion, it can be interpreted that the elderly with lower income are less reluctant to be visited by people from outside than the elderly with higher income. As discussed in the previous chapter, visiting services are now mostly provided for more than three hours. Considering this, a service model to provide the elderly with higher income with necessary service for shorter hours from time to time should be developed.

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〈Table 3-12〉 Analysis on willingness to use visiting care service and relationship of relevant variables (logistic analysis)

Category	Model 1 Exp(B)	Model 2 Exp(B)	Model 3 Exp(B)
Income level			
0.5 ~1 million won	1.145**	1.156**	1.159**
1 million won or more	1.013	1.016	1.051
Gender			
Female		1.216***	1.201***
Age			
70~79 years old		0.920*	0.899**
80 or older		0.750***	0.780***
Marital status			
No spouse		1.086	0.885
Place of residence			
Eup·Myeon		0.998	0.961
Education level			
Middle and high school		1.136**	1.156**
College or higher		1.295***	1.331***
ADL			
1			1.175
2			1.318
3 or more			1.513**
IADL			
1			0.755**
2			1.070
3 or more			0.766**
Subjective health status			
Normal			1.024
Healthy			0.832***
Household structure			
Elderly couple			0.684***
Elderly living with children			0.664***
Others			0.600***
df	2	9	20
chi-square	10.223	79.976	174.970
-2LL	19487.861	19418.107	19323.113
Cox & Snell R ²	.001	.006	.012

Note: 1) * p <.05, ** p <.01, *** p <.001

2) Control group: Income = 0.5 million won or less, Gender = Male, Age = 60~69 years old, Education = elementary school or less, Marital status = having spouse, Place of residence = Eastern part, ADL = complete independence, IADL = complete independence, Subjective health status = not good, Household structure = elderly living alone.

〈Table 3-13〉 Analysis on willingness to use visiting nurse service and relationship of relevant variables (logistic analysis)

Category	Model 1 Exp(B)	Model 2 Exp(B)	Model 3 Exp(B)
Income level			
0.5 ~1 million won	1.114*	1.136**	1.137**
1 million won or more	1.008	1.041	1.073
Gender			
Female		1.249***	1.235***
Age			
70~79 years old		0.923*	0.907*
80 or older		0.743***	0.774***
Marital status			
No spouse		1.102*	0.882*
Place of residence			
Eup·Myeon		0.997	0.963
Education level			
Middle and high school		1.100*	1.114*
College or higher		1.239**	1.266**
ADL			
1			1.172
2			1.625**
3 or more			1.600***
IADL			
1			0.764**
2			1.088
3 or more			0.724***
Subjective health status			
Normal			1.014
Healthy			0.850***
Household structure			
Elderly couple			0.667***
Elderly living with children			0.666***
Others			0.623***
df	2	9	20
chi-square	6.598	80.940	173.999
-2LL	19485.850	19411.508	19318.450
Cox & Snell R ²	.000	.006	.012

Note: 1) * p <.05, ** p <.01, *** p <.001

2) Control group: Income = 0.5 million won or less, Gender = Male, Age = 60~69 years old, Education = elementary school or less, Marital status = having spouse, Place of residence = Eastern part, ADL = complete independence, IADL = complete independence, Subjective health status = not good, Household structure = elderly living alone.

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〈Table 3-14〉 Analysis on willingness to use visiting bath service and relationship of relevant variables (logistic analysis)

Category	Model 1 Exp(B)	Model 2 Exp(B)	Model 3 Exp(B)
Income level			
0.5 ~1 million won	1.145**	1.166**	1.167**
1 million won or more	0.999	1.014	1.043
Gender			
Female		1.192***	1.185***
Age			
70~79 years old		0.924*	0.909*
80 or older		0.846**	0.889
Marital status			
No spouse		1.110*	0.895
Place of residence			
Eup·Myeon		0.942	0.909*
Education level			
Middle and high school		1.110*	1.125**
College or higher		1.275**	1.305***
ADL			
1			1.081
2			1.330
3 or more			1.633***
IADL			
1			0.673***
2			0.921
3 or more			0.766**
Subjective health status			
Normal			0.995
Healthy			0.841***
Household structure			
Elderly couple			0.677***
Elderly living with children			0.670***
Others			0.611***
df	2	9	20
chi-square	10.605	65.683	161.202
-2LL	19256.789	19201.711	19106.192
Cox & Snell R ²	.001	.005	.011

Note: 1) * p <.05, ** p <.01, *** p <.001

2) Control group: Income = 0.5 million won or less, Gender = Male, Age = 60~69 years old, Education = elementary school or less, Marital status = having spouse, Place of residence = Eastern part, ADL = complete independence, IADL = complete independence, Subjective health status = not good, Household structure = elderly living alone.

Section 2. Analysis on Long-term Care Approval Rate and Factors of Difference of Benefits among Regions

1. Difference among cities and provinces in long-term approval rate

Difference in long-term care approval rate among regions might be influenced by various factors. These factors can be divided into those inside the insurance system and those outside it. As for internal factors, they might lead to regional difference according to the level of on-site investigators or members of the Long-term Care Grade Decision Committee, as on-site investigators should first conduct an evaluation for approval of long-term care and the Long-term Care Grade Decision Committee should make a decision. In addition, external factors might also cause regional difference due to socio-economic and policy conditions including demographic composition, public willingness to use the insurance system, and welfare policy of local government authorities.

However, it is presumed that there is no significant regional difference due to internal factors. The long-term care insurance in Korea is governed by a nationwide organization. Therefore, there is no huge technical difference among on-site investigators or members of the Long-term Care Grade Decision Committee that might translate into regional difference. On balance, it is highly likely that regional difference in long-term care approval rate is caused primarily by socio-economic and policy conditions.

According to approval rate for long-term care by region in July 2008, when the insurance system was first introduced, Pusan's was 2.37 percent of total elderly population and Jeju's 4.38 percent, representing that the difference between the highest and lowest was 1.85 times. In April 2011, the difference was reduced to 1.68 times with Pusan 4.51 percent and Jeju 7.59 percent. An analysis using coefficient of variation to examine homogeneity across 16 cities and provinces shows that regions have become homogeneous since the second half of 2009 with 0.170 in July 2008, 0.149 in December 2009, 0.154 in December 2010, and 0.150 in April 2011.

〈Table 3-15〉 Changes in long-term care approval rate by city and province

(Unit: %)

	July 2008				Dec. 2008				Dec. 2009			
	Grade 1	Grade 2	Grade 3	Total	Grade 1	Grade 2	Grade 3	Total	Grade 1	Grade 2	Grade 3	Total
Seoul	0.95	0.68	0.84	2.47	1.09	1.00	1.45	3.53	1.15	1.33	2.53	5.01
Pusan	0.72	0.62	1.03	2.37	0.87	0.97	1.73	3.56	0.77	1.15	2.93	4.85
Daegu	0.97	0.69	0.97	2.64	1.11	1.06	1.83	3.99	0.82	1.11	2.68	4.60
Incheon	1.23	0.97	1.12	3.32	1.37	1.46	2.04	4.87	1.31	1.81	3.71	6.83
Gwangju	1.17	1.03	1.83	4.03	1.29	1.47	3.02	5.78	0.97	1.67	4.40	7.04
Daejeon	1.25	0.98	1.25	3.48	1.42	1.48	2.43	5.33	1.30	1.76	4.28	7.34
Ulsan	1.02	0.85	1.27	3.15	1.12	1.20	2.06	4.38	0.96	1.27	3.18	5.41
Gyeonggi	1.13	0.83	1.10	3.06	1.27	1.21	1.83	4.31	1.28	1.47	3.17	5.93
Gangwon	1.14	0.83	1.18	3.14	1.24	1.16	1.78	4.18	1.29	1.41	2.75	5.46
Chung-buk	1.07	0.77	1.19	3.03	1.17	1.08	1.87	4.13	1.05	1.27	2.64	4.96
Chung-nam	0.88	0.69	0.98	2.56	1.03	1.08	1.80	3.91	0.99	1.44	3.09	5.52
Cheon-buk	1.06	0.95	1.55	3.57	1.11	1.30	2.41	4.82	0.85	1.32	3.50	5.67
Cheon-nam	0.84	0.76	1.42	3.02	0.91	1.12	2.44	4.47	0.71	1.16	3.15	5.02
Gyung-buk	0.98	0.76	1.23	2.97	1.11	1.13	2.17	4.41	0.83	1.10	2.89	4.82
Gyung-nam	0.83	0.68	1.23	2.74	0.95	1.05	2.08	4.08	0.77	1.19	3.35	5.31
Jeju	1.38	1.28	1.72	4.38	1.47	1.61	2.46	5.53	1.27	2.12	3.38	6.77
Total	1.00	0.78	1.14	2.92	1.12	1.14	1.93	4.20	1.03	1.35	3.06	5.44
Coefficient of variation	0.163	0.199	0.210	0.170	0.147	0.156	0.180	0.143	0.208	0.201	0.163	0.149

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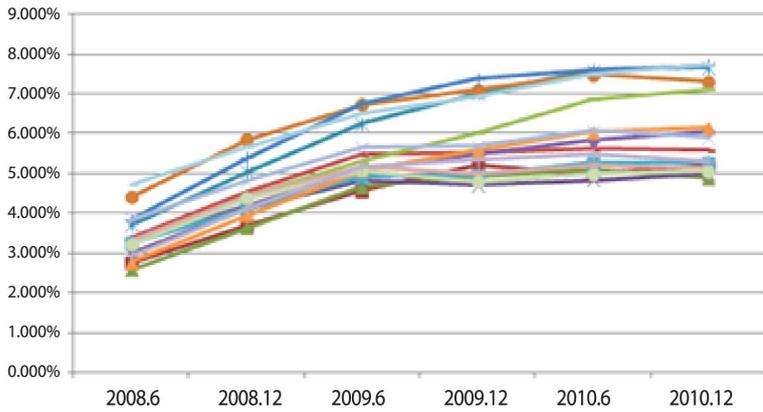
	June 2010				Dec. 2010				April 2011			
	Grade 1	Grade 2	Grade 3	Total	Grade 1	Grade 2	Grade 3	Total	Grade 1	Grade 2	Grade 3	Total
Seoul	1.04	1.43	2.92	5.39	0.99	1.39	3.12	5.50	0.91	1.34	3.20	5.44
Pusan	0.68	1.15	3.15	4.99	0.60	1.02	3.08	4.70	0.52	0.98	3.01	4.51
Daegu	0.72	1.14	2.87	4.73	0.70	1.16	2.98	4.84	0.67	1.18	3.17	5.02
Incheon	1.19	1.88	4.26	7.33	1.09	1.74	4.44	7.27	0.94	1.67	4.54	7.16
Gwangju	0.83	1.72	4.85	7.40	0.73	1.53	4.82	7.08	0.65	1.43	4.80	6.88
Daejeon	1.10	1.75	4.69	7.54	1.01	1.58	4.93	7.52	0.87	1.57	5.08	7.52
Ulsan	0.86	1.34	3.53	5.73	0.79	1.19	3.75	5.73	0.69	1.15	3.77	5.61
Gyeonggi	1.09	1.64	3.72	6.46	1.06	1.56	3.97	6.59	0.95	1.51	4.07	6.53
Gangwon	1.20	1.50	3.13	5.83	1.20	1.45	3.33	5.98	1.12	1.47	3.47	6.05
Chung-buk	0.99	1.37	2.92	5.28	0.93	1.33	2.99	5.25	0.90	1.35	3.09	5.34
Chung-nam	0.92	1.53	3.57	6.02	0.88	1.49	3.74	6.11	0.83	1.54	3.89	6.26
Cheon-buk	0.76	1.30	3.91	5.97	0.63	1.18	4.00	5.81	0.57	1.15	4.13	5.85
Cheon-nam	0.64	1.24	3.49	5.37	0.60	1.24	3.49	5.32	0.54	1.24	3.56	5.34
Gyeong-buk	0.72	1.15	3.15	5.02	0.68	1.15	3.29	5.12	0.66	1.19	3.47	5.32
Gyeong-nam	0.68	1.18	3.66	5.52	0.60	1.09	3.63	5.32	0.54	1.05	3.63	5.23
Jeju	1.30	2.21	3.96	7.47	1.21	2.04	4.34	7.58	1.17	1.85	4.56	7.59
Total	0.92	1.43	3.45	5.80	0.86	1.36	3.59	5.81	0.79	1.33	3.68	5.80
Coefficient of variation	0.226	0.201	0.163	0.154	0.246	0.188	0.163	0.154	0.255	0.170	0.161	0.150

Source: Data from National Health Insurance Corporation

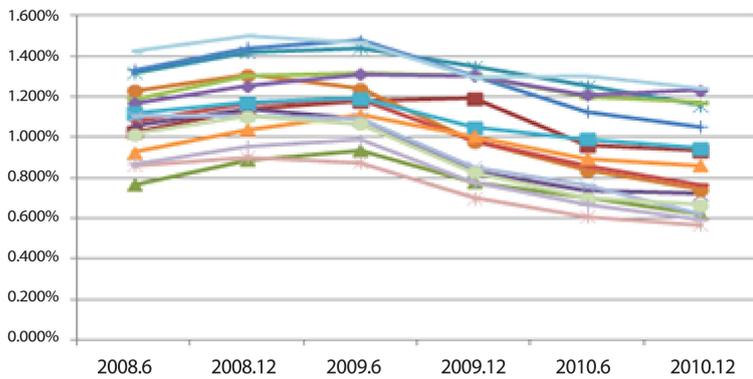
As for trends in long-term care approval rate by city and province, Grade 1 is on the decrease and Grade 2 and Grade 3 are on the rise across all cities and provinces. However, they suggest that there are regional differences.

The figure below describes that regional difference in Grade 2 and Grade 3 has become larger since the initial phase of introduction. Furthermore, Grade 1 also shows large regional difference, which has not been reduced.

[Figure 3-1] Changes in long-term care approval rate by city and province
 (Total)



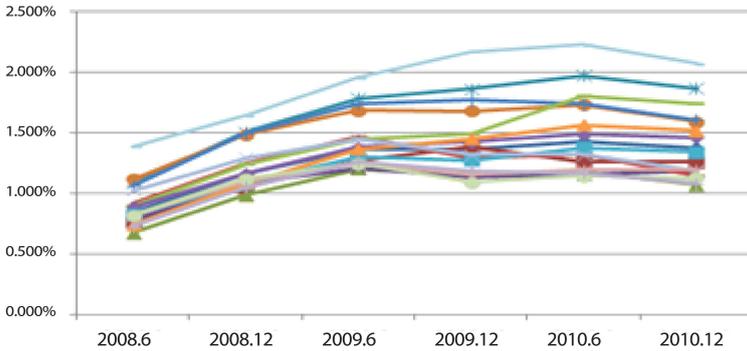
(Grade 1)



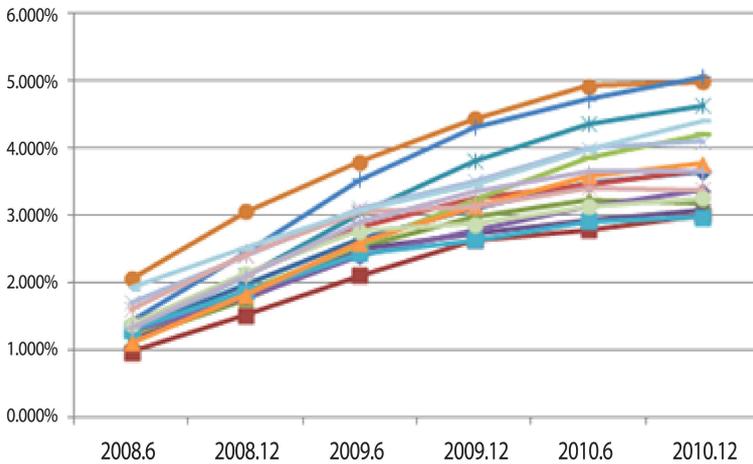
Analysis on Fiscal Expenditure of Long-term Care Insurance for the Elderly and Policy Recommendations

[Figure 3-1] Changes in long-term care approval rate by city and province_ continued

(Grade 2)



(Grade 3)



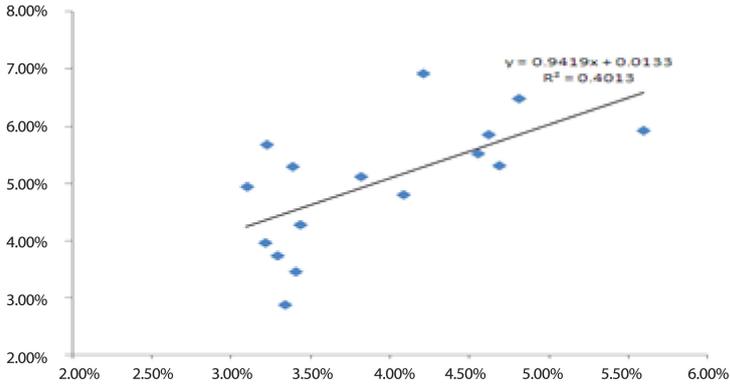
Source: Calculated using Statistics on Long-term Care Insurance for the Elderly, National Health Insurance Corporation

An analysis on the relevance of the ratio of the old-old (75 years or older) and long-term care approval rate shows that R^2 is 0.401, which is not that high.

What is interesting is that Jeju has the highest approval rate, but is ranked 6th of all cities and provinces in terms of the ratio of the old-old. In addition, even though they have similar ratio of the old-old (3 to 3.5 percent of total population), big cities and the Seoul metropolitan area including Gwangju, Daejeon, Incheon, Pusan, Daegu, Seoul, and Gyeonggi show significant regional difference in terms of long-term care approval rate.

Therefore, it can be presumed that long-term care approval rate is significantly influenced by factors other than the ratio of the elderly. Big cities and the Seoul metropolitan area have lower ratio of the elderly, but high long-term care approval rate. This suggests that they have higher dependency prevalence of the old or any other reasons.

[Figure 3-2] Relationship between ratio of the old-old and long-term care approval rate (2009)



Source: Calculated using Statistics on Long-term Care Insurance for the Elderly, National Health Insurance Corporation

2. Difference in long-term care benefit expenditure by city and province

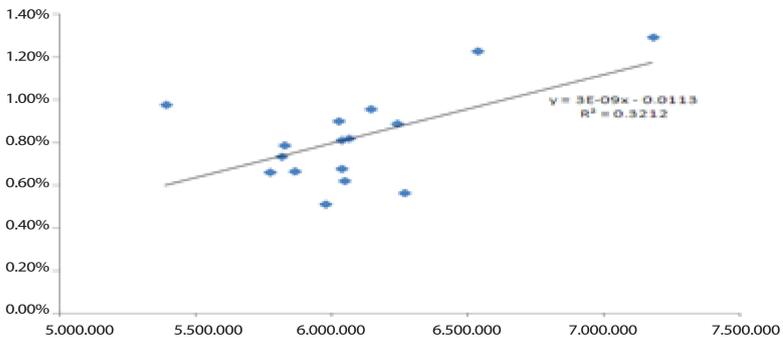
There is regional difference in per beneficiary care benefits. Overall, Jeju has the highest per beneficiary benefits, followed by Gangwon. The two regions had implemented a pilot project for Long-term Care Insurance for the Elderly. With pilot projects implemented three times, public awareness of the Long-term Care Insurance for the Elderly is presumed to be relatively high in two regions, leading to increased utilization of insurance service.

An analysis on the relationship between care benefits per beneficiary and ratio of beneficiaries with serious illness suggests that benefits have correlations with Grade 1 and Grade 2, but not with Grade 3. As for the degree of relevance, it is not high with R^2 of 0.30~0.32.

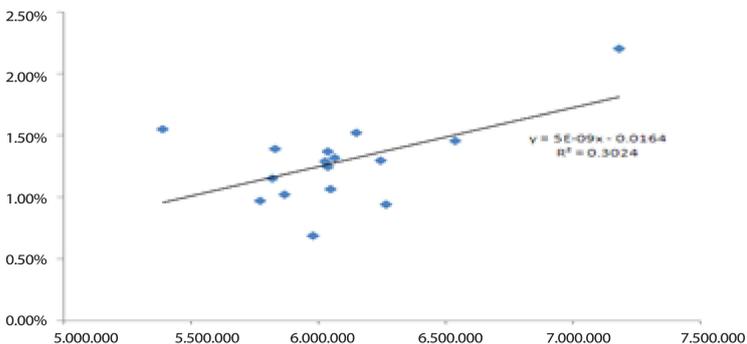
This study also analyzes relevance between care benefits per beneficiary and capacity of long-term care facilities. It is found that regions with higher capacity of long-term care facilities for the elderly show higher benefits per beneficiary. In particular, Jeju has highest capacity of facilities and highest benefits per beneficiary. In sum, it suggests that Jeju has an insurance system focusing on institutional care benefits.

[Figure 3-3] Relationship between ratio of long-term care grades and per beneficiary benefits (2009)

(Grade 1)

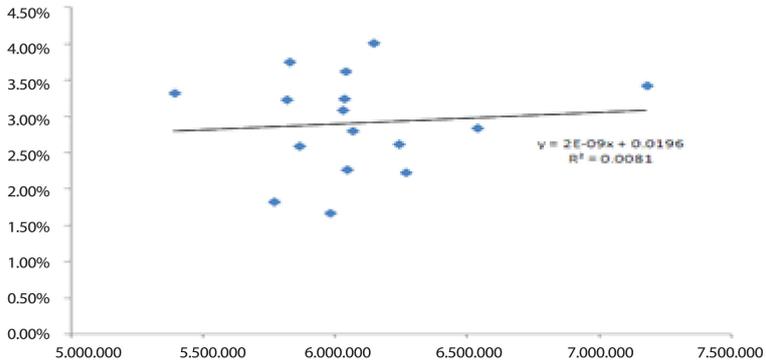


(Grade 2)



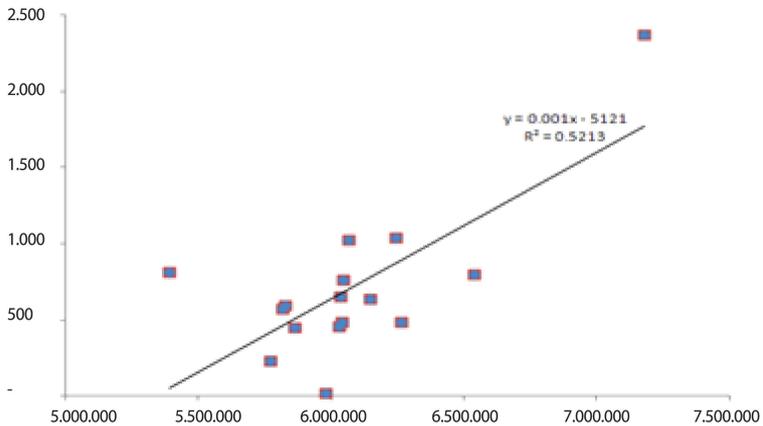
Analysis on Fiscal Expenditure of Long-term Care Insurance for the Elderly and Policy Recommendations

(Grade 3)



Source: Calculated using Statistics on Long-term Care Insurance for the Elderly, National Health Insurance Corporation

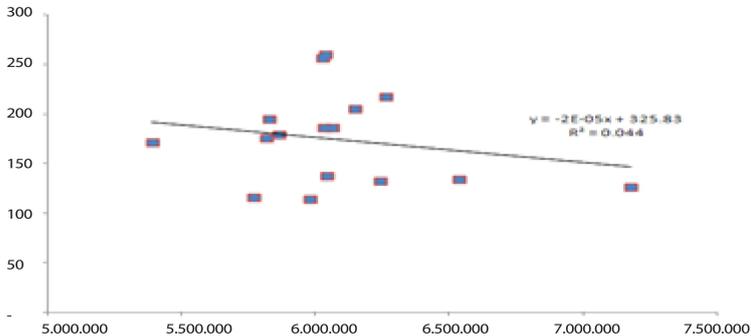
[Figure 3-4] Relationship between capacity of long-term care facilities for the elderly and per beneficiary long-term care benefits (2009)



There are no clear correlations between expenditure on home-based care services, such as home-help, visiting bath and visiting nurse, and the number of care facilities. However, there are correlations between expenditure on quasi-facility services such as day & nightcare and short-stay and the number of facilities.

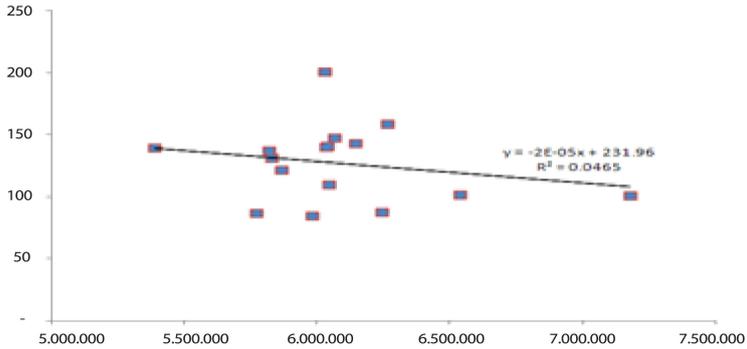
The reason why there are no relations between the number of home-help facilities and care benefits is that there is a significant number of long-term care facilities that are not operated in reality or are operated poorly. On the other hand, day & nightcare and short-stay facilities are continuously operated after being established, as they require huge initial investment and are more difficult to open than home-help facilities.

[Figure 3-5] Relationship between the number of home-help facilities and per beneficiary long-term care benefits (2009)

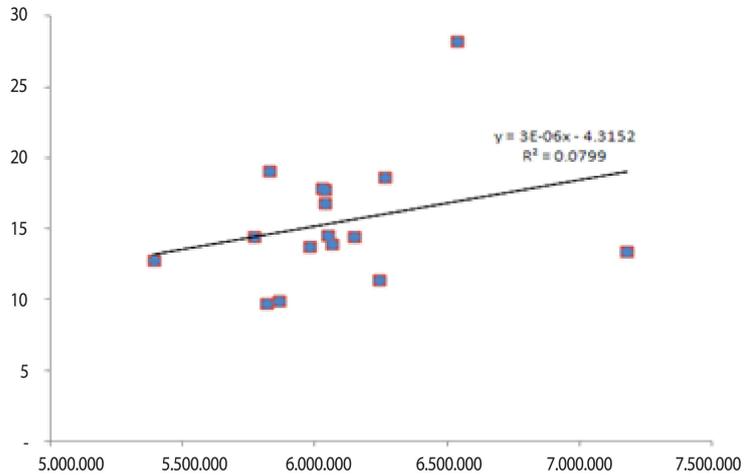


Analysis on Fiscal Expenditure of Long-term Care Insurance for the Elderly and Policy Recommendations

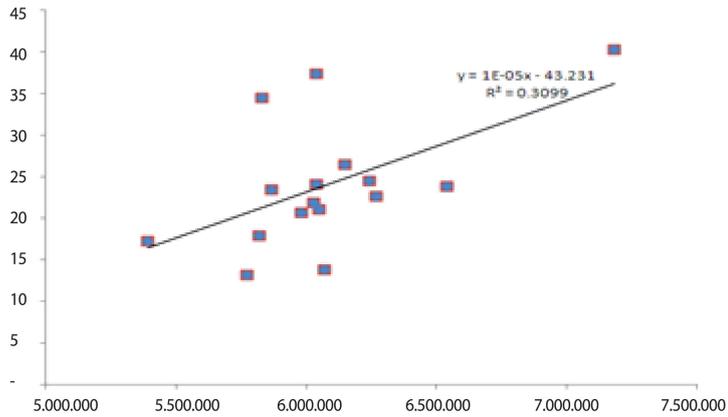
[Figure 3-6] Relationship between the number of home-visiting bath facilities and per beneficiary long-term care benefits (2009)



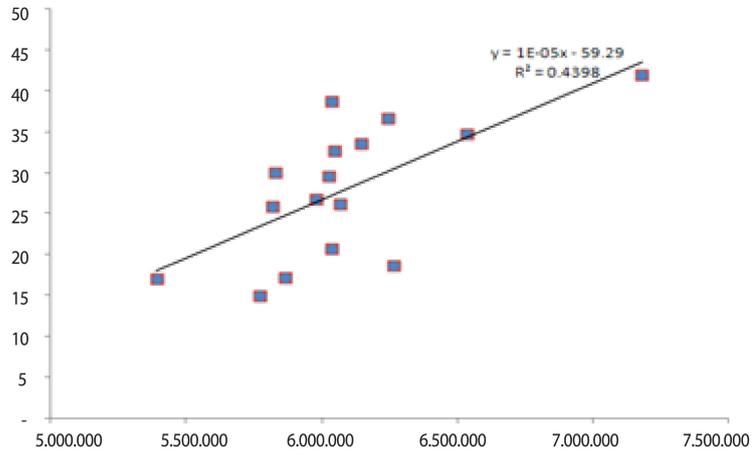
[Figure 3-7] Relationship between the number of home-visiting nurse facilities and per beneficiary long-term care benefits (2009)



[Figure 3-8] Relationship between day & night care facilities and per beneficiary long-term care benefits (2009)



[Figure 3-9] Relationship between the number of short-stay facilities and per beneficiary long-term care benefits (2009)

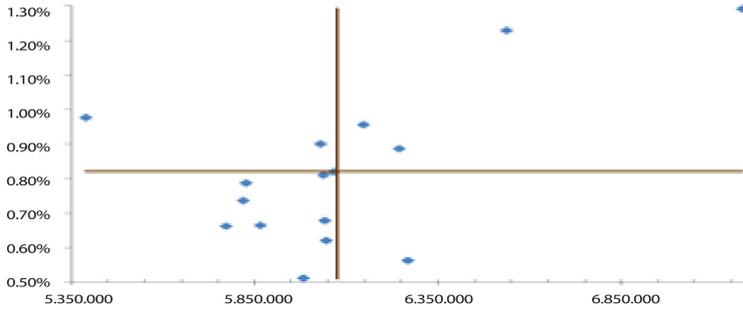


Source: Calculated using Statistics on Long-term Care Insurance for the Elderly, National Health Insurance Corporation

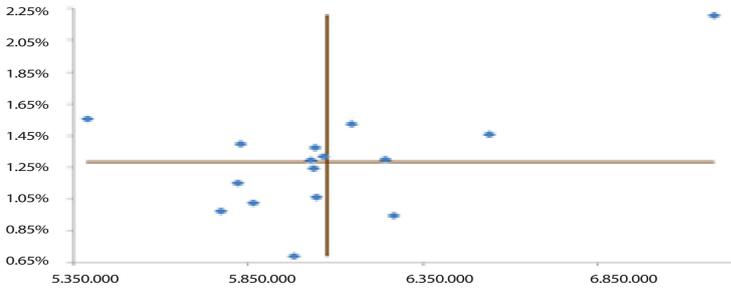
This study also explores regional characteristics by comparing regional difference in terms of care benefits and long-term care approval rate. Chungnam has higher long-term care approval rate than other cities and provinces, but the lowest care benefits. On the other hand, Jeju shows both high approval rate and high care benefits. Therefore, there is a need to analyze factors to differentiate between the two regions from various angles.

In relation to Grade 1 and Grade 2, Jeju, Gangwon, Cheonbuk, and Chungbuk have both high long-term care approval rates and benefits. These regions have one thing in common: the pilot long-term care insurance system had been implemented there. Therefore, there is higher public awareness about the insurance system in those regions. This might have had a big impact on service utilization.

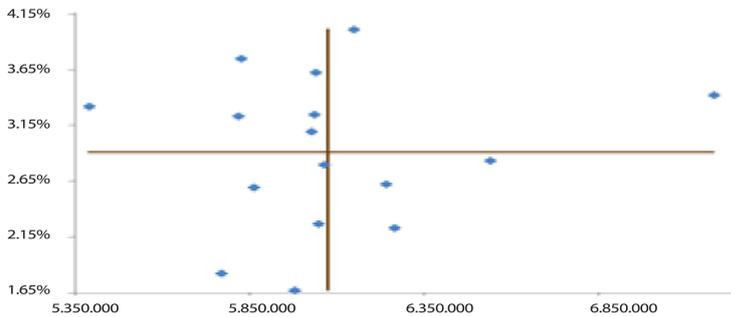
[Figure 3-10] Relationship between ratio of long-term care grades and per beneficiary long-term care benefits (2009)
(Grade 1)



(Grade 2)



(Grade 3)

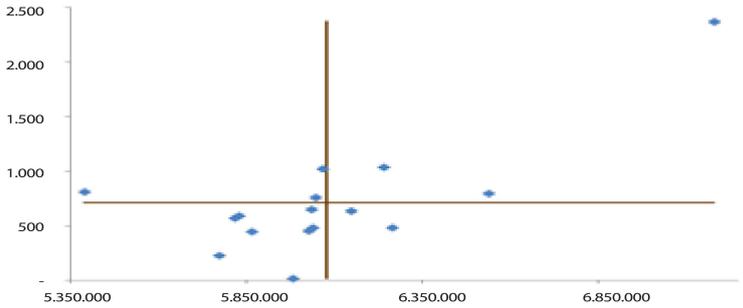


Source: Calculated using Statistics on Long-term Care Insurance for the Elderly, National Health Insurance Corporation

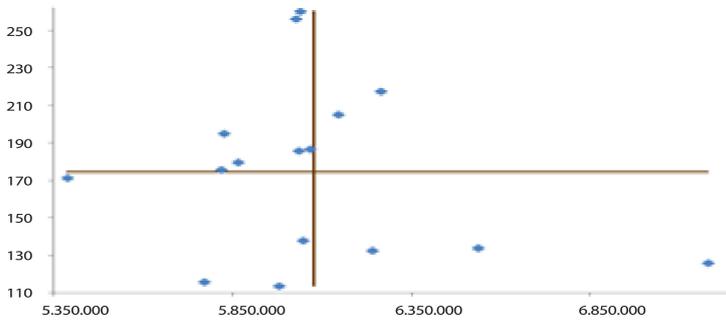
This study also examines regional characteristics by comparing regional difference in facility capacity and long-term care approval rate. Chungnam has the lowest level of care benefits even though it has higher facility capacity than other cities and provinces. On the other hand, Jeju shows both high facility capacity and high care benefits. Therefore, there is a need for in-depth analysis on factors that lead to the difference between the two regions.

Regarding the relationship between capacity of home-help and visiting bath services and care expenditure by region, Chungnam shows the same result with facility-based service. However, Jeju has a very high level of home-help expenditure even though it has less capacity for home-help facilities than other cities and provinces. Therefore, it is inferred that Jeju might have induced service demand.

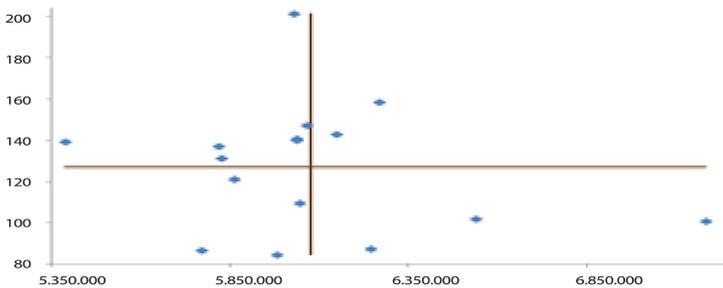
[Figure 3-11] Relationship between capacity of long-term care facilities and long-term care benefits (2009)
(Long-term care facilities for the elderly)



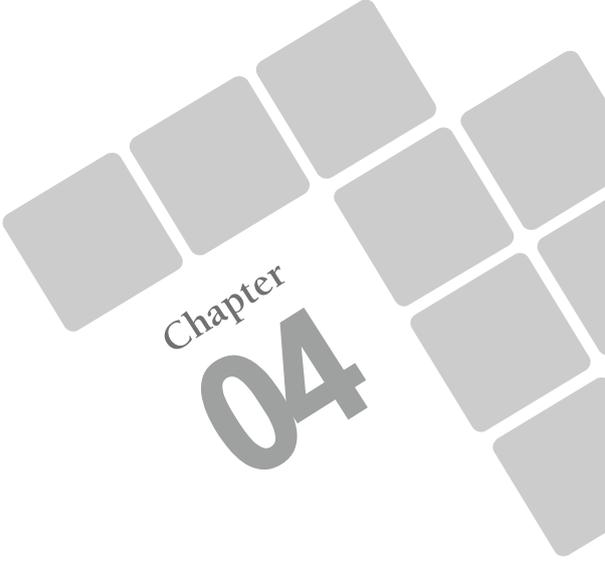
(Home-help service facilities)



(Home-visiting service facilities)



Source: Calculated using Statistics on Long-term Care Insurance for the Elderly, National Health Insurance Corporation



Chapter

04

Policy Recommendations and Conclusion



Chapter 4

Policy Recommendations and Conclusion

Section 1. Policy Recommendations

It might be premature to analyze fiscal expenditure only three years after Long-term Care Insurance for the Elderly was introduced. It takes at least five years to stabilize the insurance system. In particular, there might not be accurate statistical data, as the focus is on stabilization in the initial phase.

Under these circumstances, this study analyzes trends in fiscal spending using available data and factors to fiscal expenditure to a limited degree. Based on the analysis, this study makes the following recommendations.

1. Changes in the number of long-term care beneficiaries suggest that the growth rate had been high in the initial phase and then has been stabilized since the second half of 2009. This means that those who are currently off-grade have lower demand for long-term care, as a significant portion of off-grades has already obtained grades. This can be proven by the fact that the number of Grade 3 beneficiaries has significantly risen. As Korea does not yet have a seriously aging population, the old-old have lower demand for long-term care than those in other developed countries. The adjustment process through long-term care grade decision is now quite stabilized compared to the initial phase. Currently, there might be some people who are off-grade, but have higher

needs for long-term care such as physical assistance or house chore assistance service. Also, people with dementia or stroke have higher long-term care needs, even though their symptoms are mild. Therefore, policy improvement in relation to long-term care approval should be made to ensure that those with higher long-term care needs receive legitimate long-term care service. In other words, measures might be considered to ensure that those with mild dementia or stroke who are off-grade, but have higher needs for long-term care service are given extra scores when an evaluation and decision is made. Also, measures to lower or adjust minimum score for Grade 3 approval can be considered.

2. Long-term care service can be utilized by those who have been approved as beneficiaries only. Also, not all beneficiaries utilize the service. Therefore, it is hard to think of a utilization rate of 100 percent. In Japan, as 10 percent of total care expenditure should be borne by beneficiaries, utilization rate of long-term care service is maintained at about 70 to 80 percent. As for Korea, utilization rate was about 60 percent in the initial phase of introduction, but increased since then. Recently, the rate is up to 90 percent, which is higher than that of Japan. This suggests that beneficiaries actively exercise their right to use long-term care service. The problem is that the rate is far higher among basic livelihood security recipients who do not pay out-of-pocket cost. This means that long-term care service might be excessively used more than needed. In particular, utilization rate among basic livelihood security recipients who are 65 years or older stands at as much as 97 percent. This means that if a person is approved as a beneficiary, she or he uses service in any form whether

they want to or not. This requires more in-depth study. Also, it suggests that a support system to guide beneficiaries to use the appropriate level of service is needed.

3. An analysis on total expenditure of long-term care service including out-of-pocket cost finds that institutional care benefits are about 60 percent more than home care benefits. By income level, per beneficiary expenditure is highest for basic livelihood security recipients in institutional care benefits, and for those with middle & higher income in home care benefits. This suggests that basic livelihood security recipients should be effectively managed in relation to institutional care benefits. To this end, there should be a standardized management system for basic livelihood security recipients who do not pay out-of-pocket cost.

4. An analysis on utilization patterns of home care benefits finds that there are serious problems with home-help service. On average, it takes three hours to provide one session of home-help service. This suggests that there is a waste of time in physical care and house chore assistance. This seems attributable to the fact that there is no standardized service or manuals on service provision. Long hours of service for one visit should be avoided and more frequent visits with limited time should be provided. In addition, long-hour home-help for those in lower grades might lead to expenditure waste and worsen the functional status of beneficiaries. Instead, daytime protection facilities should be used to meet those needs.

5. Long-term care service tends to be expanded by users themselves. Also, it can be induced by the will of service providers, regardless of the will of users. In particular, over-capacity of

facilities might induce over-utilization of service, as facilities compete to recruit beneficiaries. The facility protection rate in Korea is still lower than developed countries. However, considering the number of long-term care beneficiaries, the current capacity exceeds the appropriate level. What's worse is that excessive capacity is mostly found in small-scale facilities whose capacity is less than 50 beneficiaries. As it is difficult for small-scale facilities to deploy the appropriate number of staff and provide quality service, expansion of small-scale facilities has negative effects on fiscal stabilization of the long-term care insurance system. Therefore, strict evaluation standards for small-scale facilities, which are mostly owned by individuals, should be developed to ensure that facilities at a certain size or more are established. Also, separate long-term facilities suitable for small-scale use (e.g. small-scale group homes for those with senile dementia) can be taken into account.

6. It is a concern that there are too many home-help service providers in relation to home care benefits. There are already home-help organizations for profit in the market. A more thorough evaluation is required to ensure that efficient long-term care organizations are not affected.

7. An analysis should be conducted to identify factors to willingness to use long-term care service for the elderly in order to develop necessary measures to improve the insurance system. The analysis conducted in the study finds that the elderly living alone have greater willingness to use the service, the elderly with higher income are more willing to use facility service, and elderly people with middle and higher income are more willing

to use home-based services. This suggests that those living alone feel security from visits from people outside, and those with higher income are afraid of visits from people outside. Therefore, there should be alternatives that provide service for a limited time to those with higher income.

8. An analysis on long-term care approval rate and benefits by region finds no consistent patterns. The current insurance system should be improved, considering that the ratio of the old-old does not significantly influence long-term care approval rate. Also, regional difference in terms of benefits suggests that a high long-term care approval rate does not necessarily lead to high expenditure, and that high capacity of long-term care facilities does not necessarily translate into high expenditure. Therefore, a mechanism should be developed to adjust the facility infrastructure level among regions. The mechanism might be an aggregate facility capacity by several regions or facility approval system by local authorities.

9. As statistical analysis proves positive correlations between total facility capacity and expenditure for benefits, there must be a mechanism to control total facility capacity.

10. An analysis on whether long-term care facility providers induce utilizations of service finds that per beneficiary service expenditure is relatively high when competition among providers is more intense. It suggests that long-term care facility providers induce utilizations of service to a degree. However, as for admission facilities, the statistical analysis shows little induction by providers. This can be explained by the fact that only Grade 1 and 2 beneficiaries are admitted to facilities, limiting demand increase.

11. Lastly, the study examines fiscal stabilization measures of Germany and Japan, which have introduced and operated a long-term care system as social insurance similar to that in Korea. In sum, Japan has established a separate benefit system for those with mild illness and continuously increased premiums, and plans to introduce a comprehensive care system by region, considering that explosion in the number of those with mild illness has adversely affected fiscal stability. On the other hand, Germany has excluded those with mild illness from the start. Even though it has problems similar to those facing Japan, it has been improving its system by fixing problems with care support measures or service quality. Korea's long-term care system has both the demerits of the Japanese system and merits of the German system. Therefore, Korea should set its future direction by taking into account trials and errors in Germany and Japan. It should develop a model to provide service to those with mild illness at the local government level and an effective and efficient support system for those with serious illness. The current care support system cannot be maintained. Therefore, Korea should develop a community-based support system, if not the same with the care management system of Japan.

Section 2. Conclusion

An analysis on fiscal expenditure of long-term care insurance first requires credibility in statistical data. It is not possible to conduct an in-depth analysis using statistical data currently available. Only

superficial analysis can be made. However, a close analysis on service utilization pattern by beneficiary should be conducted, and then what is effective service utilization pattern should be identified.

There are limitations to this study, as this study analyzes fiscal expenditure using only basic statistical data. However, it is very significant in that policy improvement areas are identified using overall trends.

The current long-term care insurance system was introduced five years ago. Under the law, a basic plan for long-term care should be developed every five years. This study is very significant in that it can be used for the basic plan as necessary basic data.

Korea can learn lessons from Japan and Germany, which introduced long-term care systems eight to 12 years earlier than Korea. In particular, Japan's case means a lot to Korea, as it faces fiscal difficulties due to the explosive increase in the number of those with mild illness. However, some still argue that the insurance system should be significantly expanded to include those with mild illness. At a time when the number of beneficiaries is successfully reduced to an appropriate level despite some difficulties and consequently, the insurance system is now being stabilized, Korea should be prudent in expanding the scope of beneficiaries. In addition, there are still service providers that do not fulfill their role as long-term care facilities due to poor management conditions, but are not eliminated from the market. They have adverse impacts on fiscal expenditure and management of other functioning long-term care providers. Therefore, the insurer, users, providers and administrative authorities should explore alternatives to ensure that the long-term care insurance system is properly operated.

References

Annual Long-term Care Insurance Statistics 2009, National Health Insurance Corporation (2010)

Annual Long-term Care Insurance Statistics 2010, National Health Insurance Corporation (2011)

Long-term Care Insurance Statistics, Ministry of Health and Welfare (2010)

Population Predictions, Statistics Korea, http://kosis.kr/abroad/abroad_01List.jsp.