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Current Status and Future Tasks of Health Insurance Policies

Shin Young-seok

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Korea Institute for Health and Social Affairs

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Shin Young-seok, Director Social Insurance Research Division

Korea Institute for Health and Social Affairs
Jinhungro 28, Eunpyeong-gu, Seoul 122-705, Korea
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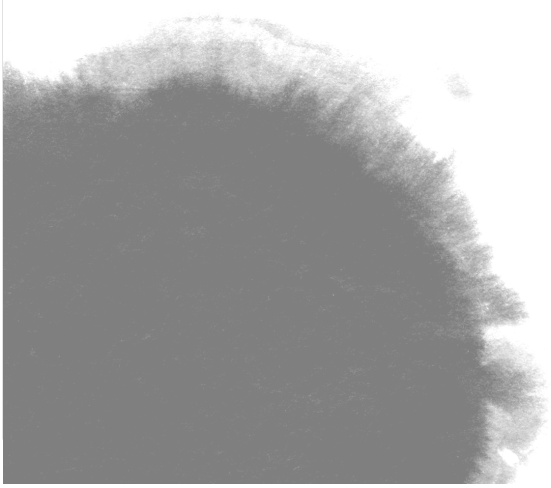

CHAPTER 1
Introduction

1. Research Background and Purposes

Since health insurance was introduced in 1977, it has grown rapidly over the past 30 years. It was expanded to all Korean nationals in 1989 and its coverage has continued to expand. The development of Korean health insurance system is being recognized globally. For example, President Barack Obama of the United States mentioned Korean health insurance as an excellent example during his campaign for health care reform in his country. However, Korean health insurance still has a long way to go, with recent threats to financial stability and much lower coverage compared to leading OECD member countries.

As of 2008, the coverage rate of Korean health insurance was around 62.2%[1], which is markedly lower than the average coverage rate by 80% in major OECD countries. Concerning financial stability, it is in a highly critical situation with accumulated reserve fund at around KRW 880 billion as of the end of 2010 (estimated expense for 2010: KRW 35 trillion). A lot of experts have also been pointing out problems of the medical service fee reimbursement

1) Choi Gi-chun et al, "Research on the Actual Conditions of Medical Service Fee for Patients with Health Insurance," 2009, Health Insurance Policy Research Institute

system. Since health insurance was first introduced in Korea, the country has maintained the fee-for-service (FFS) method, which increases the cost. Although the increase in insurance fee is contained to below 3% each year, the increase in insurance benefit expenditure reaches around 15%[2] due to the rapid increase of the elderly population, development of new technologies and the cost-inefficiency of the FFS payment system. There is ongoing controversy over the appropriateness of insurance fee. While health insurance providers contend that insurance fee is too low compared to the global-level quality of their services, consumers maintain that the amount of insurance fee is excessive. It is the target of fierce disputes during insurance fee negotiation at the end of each year. There is also a continued controversy over the insurance fee contract method[3] (different negotiation method applied for each type starting 2008).

Insurance premium payment system also holds various problems. Health insurance was integrated under a single insurer in 2000, and a complete integration including in finance was made in 2002. However, lack of fairness in insurance premium - for example, the huge increase in insurance premium in the case of transfer between different job categories (self-employed businessmen and employed workers) - is the target of severe complaints.

2) Average annual benefit increase for the last 5 years excluding 2008, the year of global financial crisis.

3) Starting 2001, insurance fee is determined through negotiation between the representative of health insurance providers and the President of the National Health Insurance Corporation (under the guideline of the Health Insurance Finance Committee, one of its affiliates), or, if mutual consent is not reached after the negotiation, is decided by the Health Insurance Policy Review Committee and announced by the Minister of Health and Welfare.

In this relation, the report is aimed at examining the current status of policies on health insurance, drawing future tasks and presenting mid- to long-term direction of health insurance. Problems and tasks will be drawn in each area including increased coverage, financial stability, improved reimbursement system, reform of insurance premium payment system, and search for appropriate insurance fee; and then solutions will be sought. In other words, the report is intended to help build the foundation for advancement[4] of Korean health insurance.

2. Overview

Problems of Korean health insurance are to be drawn based on the data on health insurance benefits. To seek ways to solve these problems, independent analysis will be made on separate issues to draw improvement measures. Then, consideration will be given on necessary coordination of discrepancies between different measures after all improvement measures are put together, and the following result will be presented in the form of a comprehensive research paper on health insurance. Major details of the research are as follows:

First, a system for financial stability and a plan for securing finances are to be developed. That is, a plan for securing income will be developed in consideration of the

4) The vision of advancement of health insurance is to make health insurance to protect the health of all Koreans while creating added value and enabling people to enjoy various levels and types of services.

levels of medical service fee expense and insurance coverage to assure permanent financial stability. Also, measures for seeking financial resources of health insurance in addition to insurance premium and support from the national treasury will be developed.

Second, consideration will be made on the reform of reimbursement system. A reimbursement system that takes into account the price level, degree of population aging, number of the target population and progress of new technologies to help predict insurance benefits is to be conceived. Theoretical evaluation of the DRG system, which is currently being tested, and the problems of relative value will also be carried out.

Third, a mid- to long-term road map for understanding the current status of coverage of health insurance and expansion of the coverage will be set up. Above all, current conditions of the coverage of Korean health insurance will be examined. Status of client charge including legal excess charge and uninsured charge is to be examined through data materials from the National Health Insurance Corporation (NHIC) and those on Korean people's medical expenses. Based on these data, a mid- to long-term road map and the insurance coverage goal will be set up. The mid- to long-term road map will be developed after establishing the ultimate goal for the coverage of Korean health insurance and considering the possibility of securing financial resources. Thus, while focusing on financial stability, reinforcing insurance coverage within the extent of available financial resources will be attempted.

Fourth, separate attention will be paid on the management

of geriatric diseases, or chronic diseases, considering the rapid increase of the elderly population. By linking public health and welfare, a possible measure that can improve the quality of living for consumers and enable effective management of chronic-disease patients for insurers will be suggested. Until the present, there have been limitations for Korean health insurance concerning quality improvement and variety of services in terms of equality of all people. As the demand for healthy living increases, the existing paradigm focused on treatment of diseases is changing to a more comprehensive health care scheme. Reflecting this reality, we will examine measures that link health insurance to welfare.

Fifth, insurance fee contract method will be reexamined. Before 2006, the fixed fee contract method was used for all insurers. However, since 2006, medical institutions were divided into several categories (clinics, hospitals, dental clinics, oriental medical clinics, pharmacies, health centers, maternity nurses) and separate fee contracts have been made after analysis of cost and management profits. According to the maintained system, if NHIC and individual insurers do not reach agreement, the decisions are made by the Health Insurance Finance Committee. However, we will seek a reasonable alternative for the system, because there is rising dissatisfaction from both the insurer and insurance subscribers.

Sixth, separate considerations will be made on the cost of drugs. Although it is related to financial stability, it will be separately examined and improvement will be sought because it casts a large shadow over the financial status of

Korean health insurance. An effective measure is to be developed through comparison with institutional measures of foreign countries.

Seventh, we will examine the possibility of introducing a medical safety net for low-income and underprivileged brackets. Although there exists an independent medical aid system for the low-income bracket (earners of income lower than the minimum cost of living who meet the conditions related to the conversion of property to income and family support), many people have been excluded from benefits due to various restrictions. Therefore, a measure for strengthening medical safety net within the comprehensive framework that combines the medical aid system and health insurance will be sought.

Through this across-the-board examination of health insurance, we expect that the future direction of the development of health insurance for the next 30 years will be presented. By pointing to the direction of future improvement regarding increased coverage, financial stability, reform of reimbursement system and appropriate insurance fee, it will be possible to help promote the internal stability of the health insurance.

3. Prospect of Changes in the Environment Surrounding Health Insurance

The percentage of the elderly population in Korea has continued to rise since it reached 7% - which signifies an aging society - in 2000 and is expected to be 11% in 2010, 14%

(aged society) in 2018 and 20% (post-aged society) in 2020.

Increase in the elderly population leads to steep growth in the number of chronic-disease patients and medical expenses of people, thereby enhancing the burden of family support and posing a major financial threat. As of 2009, 9.9% of the elderly population spent 30.53% of the entire health insurance expenses, and the average medical service fee of an elderly (KRW 2,494,000) was around 3.1 times higher than the total average medical service fee (KRW 811,000).

A sharp rise in the burden of working-age population related to tax and social security spending can cause conflict among different generations and negatively affect social integration. The number of population supporting an elderly is forecasted to drop from 9.9 (2000), 7.0 (2008) and 6.6 (2010) to 5.7 (2015). Until the mid-'90s, Korea's total fertility rate was maintained at around 1.6, but it has dropped drastically since 1997 to reach 1.08 in 2005. This trend is likely to continue for the time being. Although the fertility rate recovered somewhat from 1.13 in 2006 to 1.19 in 2008, it is seen as a temporary phenomenon due to sharp increase in weddings and births during the so-called 'ssangchunnyeon (the year of two springs)' and the 'year of golden pig.' The number dropped again to 1.15 in 2009. The average fertility rate of 30 OECD member countries was 1.73 in 2007 and the rates in France, the U.S. and Japan were much higher than Korea at 2.02 (2008), 2.1 (2007) and 1.34 (2007) respectively.

More and more people are delaying marriage and avoiding child-bearing due to unstable employment, economic burden of marriage and child rearing, and

problems of compatibility of job and family affairs. The average age of first marriage for men rose from 28.6 in 1990 to 31.4 in 2008, while that for women increased from 25.5 in 1990 to 28.3 in 2008.

Working-age population is expected to decrease after peaking at 36,190,000 in 2016, and the average age of working-age population is estimated to maintain its increase reaching 38.7 in 2008 and 41.8 in 2020. In relation to this, the retention of high-quality human resources will determine the country's competitiveness, and the sound management of people's health will emerge as a major socio-economic issue.

Development of medical technology and its convergence with nanotechnology, biotechnology and IT is likely to require fundamental changes in consumer behavior in using medical services and the medical service supply system. The Samsung Economic Research Institute identified the five mega trends in the medical industry as follows: First, personalized medicine based on personalized treatment and prescription for individual patients will be developed. Second, biotechnology including new biomedicine, bioartificial organs and biochips will dominate the medical industry. Third, due to widespread expansion of u-health, IT will be linked with medical services to deal with population aging and increase in chronic diseases. Fourth, medical services will be globalized through supply of telemedicine between different countries, medical consumption in foreign countries and establishment of medical institutions abroad. Fifth, consumerism will be expanded as demand for public disclosure of medical information and medical malpractice lawsuits increase.

In the future, individuals will be able to forecast risk factors to their health by monitoring and analyzing their bio-signals and managing their health in cooperation with doctors. Therefore, medical value chain is expected to be changed and the focus will be put on personalized predictive medical services. In other words, the paradigm of health care is likely to change in the future to reflect genetic traits, physical uniqueness and daily habits of individuals. 'Personalized medicine' may be defined as "prevention, diagnosis and treatment of individual patients in consideration of individual differences related to a disease due to diversified genetic traits, contrary to standard treatment methods based on evidence-based public health statistics." The most important difference between the past and future value chain and paradigm of health care is the degree of active participation of individuals and local communities in the efforts for prevention of diseases and promotion of health.

Westernized daily habits and aging will bring rapid rise in chronic diseases, which require continued management, including high blood pressure and diabetes, and this will lead to a sharp growth in social expenses. Therefore, there is likely to be a growing demand for policy measures that increase responsibility of individuals and society regarding such problems as drinking, smoking and obesity, early detection of disease-related factors and improvement of daily habits. In addition, there will be a rising demand for new types of health care and medical services for mental health to deal with such problems as stress, depression, Internet addiction as well as new epidemics and afflictions/disasters

occurring from climate change.

Improvement of the country's economic stance demonstrated by the increase in per capita GNP from USD 11,292 in 2000 to USD 17,175 in 2009 will enhance people's expectation for health care and medical services of higher quality while generating needs for various new health care and medical services.

As information society approaches, the era of u-health will come, through real-time information sharing beyond borders and development of telemedicine using electronic means. In addition, the field of health care will be unable to avoid the market-opening trend at a time when over 50% of global trade is made within the boundaries of free trade agreements.

Localization will also be apparent in the field. Transformation from a centralized and controlled social structure to decentralized social structure based on horizontal cooperation and ties will lead to localized projects in public service including health care. In this relation, the importance of reasonable role sharing and ties between central and local governments and among different local governments will grow.

National medical expenses will keep on rising and sustainability of health insurance is likely to be threatened due to financial instability. Average growth rate of medical expenses in Korea compared to GDP was 4.7% between 2000 and 2007, which is over twice higher than OECD average growth rate of 2.0% between 2000 and 2006. While health insurance benefits has sustained 11% of average annual growth in the 2000s, there is limitation for the expansion of income. Therefore, financial soundness of health insurance is weakening and is expected to deteriorate further if no institutional reform occurs.

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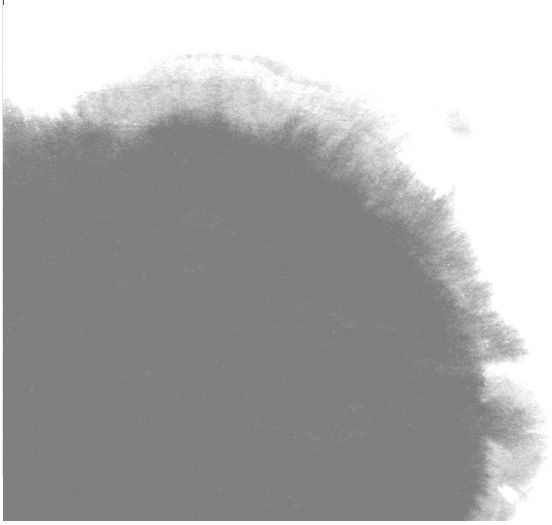
Current Status and Future Tasks of Health Insurance Policies



CHAPTER 2

Current Status and Future Tasks of Health Insurance Policies

1. Financial Status and Stabilization Measures

Health insurance belongs to the category of short-term insurance and it takes on the method of maintaining the balance between income and expenditure by estimating annual spending each year and securing income by increasing insurance premium and expanding support from the national treasury. At the same time, a certain amount of accumulated fund is prepared to handle unexpected environmental or policy impacts.

Concerning the financial changes of health insurance for the last decade, total income grew from KRW 11,600 billion in 2001 to 31,100 billion in 2009 and KRW 22,700 billion in the first 8 months of 2010, whereas total expenditure rose from KRW 14,000 billion in 2001 to KRW 31,100 billion in 2009 and KRW 23,000 billion between January and August of 2010. Health insurance experienced a loss of KRW 1,009 billion in 2001, right after the separation of prescribing and dispensing of drugs, and accordingly, accumulated fund was exhausted and short-term borrowings had to be made. To solve the situation, various emergency measures were implemented in 2001 and 2002 in addition to expansion of

support from government funds. As a result, there occurred a difference of KRW 1,070 billion in 2003 and a surplus of accumulated reserve fund in 2004. However, loss in 2006 and 2007 led to a decrease in accumulated fund once again. Then, a surplus of KRW 1,300 billion in 2008 increased the accumulated fund at the highest level in ten years. With a loss of KRW 3.2 billion in 2009 and KRW 290 billion during the first 8 months of 2010, the accumulated fund maintains a surplus of KRW 1,900 billion as of August 2010.

For the rest of 2010, reduction of income from sources including the national treasury coupled with growth in spending from strengthened coverage for increased benefits for anticancer drugs, MRI (spine and joints) and medicines for rare and incurable diseases as well as increases in assisting devices and consumables for the disabled is expected to weaken its financial strength. In 2010, a short-term loss of around KRW 1,300 billion is likely to occur, leaving only KRW 900 billion of reserve fund at the end of the year. <Figure 1> shows annual changes in financial status of health insurance from 2001 to 2010 (estimation).

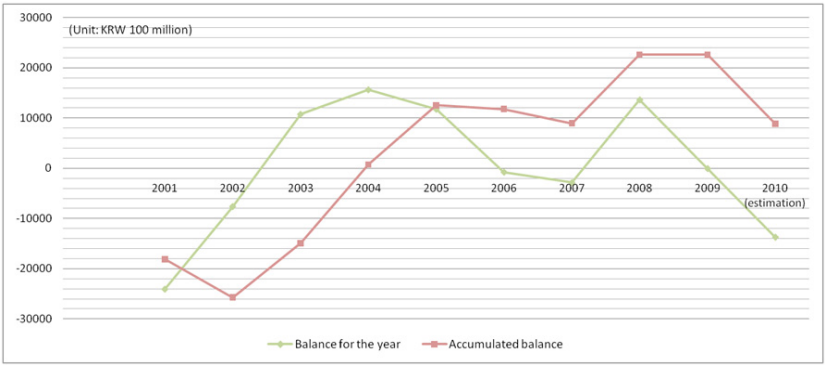
〈Table 1〉 Financial status by year

(Unit: KRW 100 million)

Classification		2001	2002	2003	2004	2005	2006	2007	2008	2009	Up to Aug.2010
Income	Total	116,423	138,903	168,231	185,722	203,325	223,876	252,697	289,079	311,817	227,350
	Insurance premium, etc..	90,173	108,764	133,993	150,892	166,377	185,514	215,979	248,300	263,717	190,644
	Support from national treasury	26,250	25,747	27,792	28,567	27,695	28,698	27,042	30,540	37,838	29,689
	Levy on tobacco consumption	-	4,392	6,446	6,263	9,253	9,664	9,676	10,239	10,262	7,017
Expen diture	Total	140,511	146,510	157,437	170,043	191,537	224,623	255,544	275,412	311,849	230,315
	Insurance benefits	132,447	138,993	149,522	161,311	182,622	214,893	245,614	264,948	301,461	222,338
	Operating expenses, etc..	8,064	7,517	7,915	8,732	8,915	9,730	9,930	10,464	10388	7,977
Balance for the year		△24,088	△7,607	10,794	15,679	11,788	△747	△2,847	13,667	△32	△2,965
Accumulated balance		△18,109	△25,716	△14,922	757	12,545	11,798	8,951	22,618	22,586	19,621

Note: Financial status based on balance of cash flow
Source: NHIC

〔Figure 1〕 Changes in financial balance of health insurance by year



Note: Financial status based on balance of cash flow

Concerning health insurance benefits, it increased by an annual average of 11.74% from 2003 to 2009, and showed even higher increase between 2005 and 2007 while coverage expansion measures were being taken. To handle the continued rise in expenses following the growth of insurance benefit, insurance income also rose by an annual average of 11.40% during this period. However, the rate of insurance was frozen for the first time since the introduction of health insurance system due to a number of reasons including the global economic crisis, and there was an increase of 4.78% in insurance premium earnings from external reasons such as increased income. In 2010, the rate of insurance was increased by 4.9%, and a 7.3% growth (based on cash flow) of insurance premium earnings was made as of the end of August 2010 compared to the same period of previous year, due to the rise in tax collection rate (NHIC, Sept. 2010). Thus, growth rate of insurance premium earnings in 2010 is forecasted to be somewhat higher than 2009.

〈Table 2〉 Changes in health insurance earnings and expenses by item

(Unit: KRW billion, %)

Classification			2003	2004	2005	2006	2007	2008	2009	Average annual growth rate
Earnings	Insurance premium	Amount	13,741	15,579	16,928	18,811	21,729	24,973	26,166	
		Growth rate		13.38	8.66	11.12	15.51	14.93	4.78	11.40
	Support from national treasury	Amount	2,779	2,857	2,770	2,870	2,704	3,002	3,657	
		Growth rate		2.81	-3.05	3.61	-5.78	11.02	21.82	5.07
	Levy on tobacco consumption	Amount	645	626	925	966	968	1,024	1,026	
		Growth rate		-2.95	47.76	4.43	0.21	5.79	0.20	9.24
Expenses	Insurance benefits	Amount	14,893	16,265	18,394	21,588	24,560	26,654	28.916	
		Growth rate		9.21	13.09	17.36	13.77	8.53	8.49	11.74

Note: 1) Levy on tobacco consumption was newly introduced in 2002.
2) In the support from national treasury, support fund for local finance which was allotted from the national treasury until 2006 is being allotted from the total finance starting 2007 due to termination of the Special Act for Financial Soundness.

Source: NHIC, statistical yearbook for each year, major statistics for 2009

Due to rapid population aging, increase in chronic diseases and expansion of health insurance coverage, growth of insurance benefits at over 10% is expected to continue in the future. Moreover, Korea's total medical expenses is much lower than that of other OECD countries, and sustained increase of medical expenses will lead to a rise in health insurance spending.

Shin Yeong-seok (2010) estimated the amounts of insurance benefit expenditure and required premium between 2010 and 2020 based on the amount of expenditure and growth rate of health insurance benefit expenditure from 2001 and 2009 (See <Table 3-4>.) in "Future Strategies for Health and Welfare." Under the assumption that the percentage of population aged 65 or more is around 15% in 2020, coverage rate of health insurance maintains the

current level (estimated at 65% in 2010) and active efforts are made to contain the annual growth rate of insurance benefits to less than 8% by maintaining the expense rationalization measure, health insurance benefits in 2020 is forecasted to reach KRW 80,400 billion, rising 2.68 times compared to 2009 (average annual growth of 9.38%).

Meanwhile, assuming that support from national treasury will be sustained at around 20% of insurance premium earnings as at present, the rate of insurance in 2020 is forecasted to exceed 9%, which means that individual insurance subscribers should pay insurance premium 2.46 times higher than now. However, the upper limit rate of insurance is set at 8% under the current law, and as the special act that assists health insurance finance through the levy on tobacco consumption will be expired in 2011, additional measures have to be developed to obtain financial resources to promote the sustainability of health insurance.

〈Table 3〉 Estimated health insurance benefits

Year	Medical expenses (KRW trillion)	Percentage compared to GDP (%)	Health insurance benefits (KRW trillion)	Health insurance expenses (including operating cost)
2010	77	7.10	33.57	34.68
2011	83	7.38	36.89	38.11
2012	89	7.66	40.36	41.69
2013	96	7.91	44.31	45.77
2014	103	8.07	48.85	50.46
2015	110	8.30	51.76	53.47
2016	118	8.49	57.35	59.24
2017	127	8.84	62.37	64.42
2018	136	9.11	68.00	70.24
2019	146	9.38	74.78	77.25
2020	156	9.60	80.40	83.05

Note: Assumptions ⅰ. Percentage of population aged 65 years or more in 2020: around 15%
ⅱ. Coverage rate maintained at the current level
ⅲ. Sustained implementation of the expense rationalization measure

〈Table 4〉 Estimated health insurance rate

Year	Health insurance benefits	Government support	Required amount of insurance premium	Rate of insurance	
				3% growth	4% growth
2010	33.57	4.98	29.70	5.33	
2011	36.89	6.35	31.76	5.83	5.77
2012	40.36	6.95	34.75	6.19	6.13
2013	44.31	7.63	38.14	6.60	6.54
2014	48.85	8.41	42.05	7.07	7.00
2015	51.76	8.91	44.56	7.27	7.20
2016	57.35	9.87	49.37	7.82	7.74
2017	62.37	10.73	53.69	8.26	8.18
2018	68.00	11.70	58.54	8.74	8.65
2019	74.78	12.87	64.38	9.33	9.24
2020	80.40	13.84	69.22	9.74	9.65

Note: Assumptions
i. Percentage of population aged 65 years or more in 2020: around 15%
ii. Sustained implementation of expense rationalization measure
iii. Support from national treasury (including the health promotion fund) assumed to be provided at the 16.6% level of overall finance even after the termination of the special act in 2011
iv. Basis of insurance rate imposition (income, property, etc.) assumed to be expanded

Source: Future Strategies for Health and Welfare (2010)

In addition, as the above estimations are results of the assumption that the expense rationalization measure is successfully implemented, it is also important to come up with new measures to contain the rapid growth of insurance benefits and medical service expenses to promote financial soundness of health insurance.

A. Measures for expanding financial resources

1) Support through indirect tax

Appropriation of financial resources through higher insurance premium is expected to have limitations. Although the current rate of insurance, which is much lower than

leading OECD countries, may be increased for a certain degree, depending on insurance premium, will pose problems for national competitiveness in the mid- to long-term. As mentioned in the recommendations by OECD, there are limitations in the current way of obtaining financial resources through insurance premium. Therefore, the role of taxation should be gradually increased. This should be done in the form of indirect tax rather than direct tax or higher insurance premium. Some people argue that indirect tax, which has regressive effect, is not suitable for providing fund for social insurance. However, as suggested by OECD, it is much more helpful for income distribution to reduce client charge by expanding coverage through indirect tax earnings than to avoid expanding coverage and letting individual clients to cover medical expenses.

2) Change in the Means of Support from the National Treasury

The current law on the support from national treasury is a temporary one that expires in 2011. According to the law, 14% of insurance premium earnings is provided for health insurance through general accounts and 6% of insurance premium earnings is provided through the health promotion fund (within 65% of the fund). Even after the termination of this temporary law, support from national treasury will be made at least on the current level. This is because raising insurance premium will pose a significant political burden in a situation where there is no realistic alternative. Here is a suggestion for how much and where the support fund

from national treasury should be spent after the termination of the current law. It may be a good idea to revise the law to cover 50% of health insurance benefits for population aged 65 or more from the national treasury (with the exception of medical aid). It has been 21 years since the national health insurance was implemented, but there has been a lack of preparation for the growth of the elderly population, due to continued focus on a low-burden, low-coverage system. Therefore, a legal measure that stipulates 50% of benefits for the elderly to be paid by the subscribers and the remaining 50% to be covered by the government should be institutionalized before the Special Act on the Health Promotion Fund expires in 2011. As of 2009, support from national treasury (including the health promotion fund) covers 15.18% of the total health insurance financing (legally it should be 16.66%). This is 47.00% of insurance benefits for population aged 65 or more, which takes up 32.3% of the overall health insurance benefits. If this suggestion is realized, insurance benefits for population aged 65 or older will be around 43.66% (KRW 35,100 billion) of the total finance in 2020, with the percentage of support from national treasury reaching 21.83% (KRW 17,550 billion). In case the current law is sustained, the amount of support from national treasury is estimated at around KRW 13,840 billion in 2020. We suggest that the amount of support from national treasury should be increased gradually as population aging speeds up.

3) Improvement of the Dependant Status Approval Standards

Another means of securing financial resources for health insurance is improvement of the current standards for dependant status approval. At present, around 750,000 brothers and sisters of subscribers are benefiting from the health insurance without making any contribution. Notably, population between 20 and 49 years of age, who are considered to be able to work, takes up 86.4% of these people. Among them, around 52.6% live with the subscribers and the rest of the people receive insurance benefits while living separately from the subscribers.

It is reasonable to exclude siblings who can live independently from the category of dependants, but from the administrative perspective, a phased approach should be made. First, siblings with ability of livelihood living with the subscribers are to be excluded from dependants, and in the mid- to long-term, siblings are to be excluded from dependants in principle to stress the economic independence of adults.

It is suggested that family members with a certain amount of property should also be excluded from dependants. Dependants with considerable amount of property should be seen as having some economic ability, so they should pay insurance premium based on the principles of social insurance. There are over 150,000 dependants with over KRW 300 million of property. This doesn't accord with the future direction of insurance premium levy system, if the establishment of a unified levy system based on income is set as the final goal in the mid- to long-term. In the case of people who have stocks without any income flow, there

shouldn't be any problem of having to pay insurance premium by selling their property. Thus, we suggest that they should pay insurance premium as long as earnings from their property are subjected to levy of insurance premium.

4) Levy of Insurance Premium on Earnings Omitted from Coverage Ability Criteria

To promote fairness in levying insurance premium, it is suggested to levy insurance premium on earnings excluded from leviable earnings. Pension income, financial income, capital gains, rent income, etc. are not included in insurance premium coverage ability criteria under the present insurance premium levy system.

B. Introduction of Built-in Stabilizer System for Stability of Health Insurance Finance

As discussed above, the financial status of health insurance is quite bad at present. Annual growth rate of insurance fee is contained at around 2%, but that of insurance benefits exceeds 10%. The financial situation continues to deteriorate in terms of sustainability. Thus, we would like to recommend the introduction of a built-in stabilizer system that can ensure the financial stability of health insurance. This means establishment of a mechanism under which, the level of insurance premium is automatically decided according to the scale of coverage and level of insurance fee by linking the levels of coverage,

insurance fee and insurance premium. For the mechanism to be possible, insurance fee (P) should be decided later in connection with the quantity of medical service (Q), rather than being decided in advance as at present. The total amount of insurance benefits (REV=P×Q) is determined in advance. Under the system, the quantity of medical service(Q) is set reflecting the degree of aging, increase in income and expansion of coverage. Prospective level of fee (P) is linked to consumer price index. If the actual quantity of medical service exceeds the previously set quantity, ex post facto level of fee is reduced, and if the actual quantity is smaller than previously set quantity, ex post facto fee is raised. For example, if it requires about KRW 500 billion to increase coverage by 1%, KRW 300 billion to raise prospective insurance fee by 2%, and KRW 600 billion to raise prospective quantity of medical service - reflecting income and population aging rate - by 2%, a total of KRW 1,400 billion will be needed. In this case, the rate of insurance should be raised by 7% (KRW 200 billion secured through 1% rise in the rate of insurance). If actual quantity of medical service increases by 3% after a year to incur KRW 900 billion in spending, ex post facto fee will be sustained at the growth rate of 0, and if actual quantity of medical service increases by 1% to incur KRW 300 billion in spending, ex post facto fee will be raised by 4%. According to ex post facto fee, balance adjustment is made when payment of insurance benefits is made for each institution at the beginning of the following year.

2. Promotion Measures for Health Insurance Coverage

Coverage rate for medical expenses of health insurance subscribers and beneficiaries of medical aid at medical institutions in general including clinics, hospitals and pharmacies was around 65.8%[5] as of 2008. As a result of coverage expansion measures implemented since 2005, coverage rate of medical expenses grew from 62.1% in 2005 to 65.4% in 2006 and 66.4% in 2007. However, it diminished somewhat to 65.8% in 2008.

Percentage of public resources appropriated from social insurance and support from national treasury (general accounts, health promotion fund, etc.), which continued to increase, dropped slightly in 2008 to 65.8%. Concerning client charge, the percentage of client coverage within the limit of legally set benefits appeared to be somewhat higher than the uninsured charge. In 2008, coverage by insurance subscribers and the government rose by KRW 2,100 billion compared to the previous year. However, overall coverage rate dropped slightly due to the growth of legal excess charge for meals of inpatients and hospitalization of children under the age of 6 as well as continued expansion of uninsured charge. In the case of coverage rate for cancers, it grew swiftly to 70% in 2008 from 49.6% in 2004. This is the result of preferential expansion of coverage for cancers, cerebrovascular diseases and cardiovascular diseases that are

5) The figure was gained by calculating the weighted average of medical expenses based on the "Report on Actual Conditions of Medical Expenses of Health Insurance Subscribers" on the coverage rate of health insurance and medical aid by the Health Insurance Policy Research Institute.

serious and require a lot of expenses.

〈Table 5〉 Public resources and percentage of client charge

		2005		2006		2007		2008	
Total		31,671	100.0%	35,559	100.0%	39,990	100.0%	43,494	100.0%
Public resources		19,670	62.1%	23,248	65.4%	26,544	66.4%	28,605	65.8%
Client charge		12,001	37.9%	12,311	34.6%	13,447	33.6%	14,889	34.2%
	Legal	6,278	19.8%	6,868	19.3%	7,774	19.4%	8,510	19.6%
	Uninsured	5,723	18.1%	5,443	15.3%	5,673	14.2%	6,380	14.7%

In spite of continued expansion of coverage, coverage rate in Korea is lower than in major advanced countries. Percentage of public resources compared to national medical expenses has increased steadily, but it is still about 20% lower than the OECD average. Households that had experienced catastrophic health expenditure appeared to be 2.8% of total households in 2007, which was 40 times higher than the United Kingdom and 3 times higher than the United States. Percentage of direct household burden in national medical expenses was 35.0% in 2008 (OECD Health Data 2010). This is relatively high among OECD countries, where the average percentage was 18.3% (OECD Health Data 2010), and it needs to be reduced. Due to low coverage of health insurance, people are not receiving sufficient support in terms of disease-related financial burden.

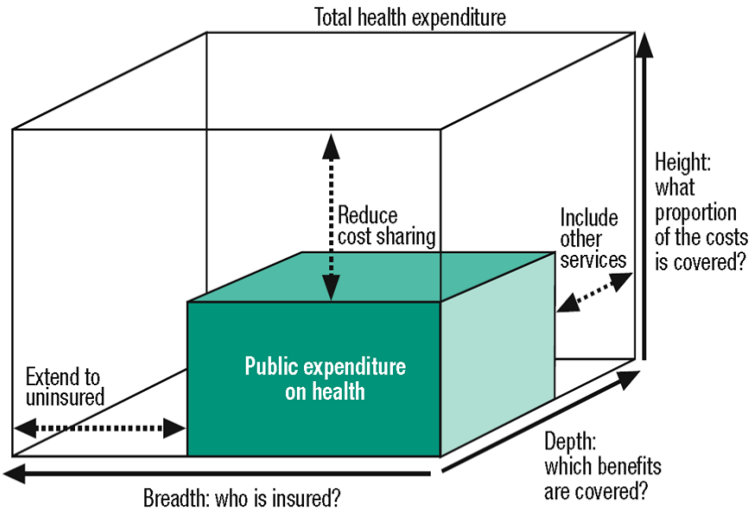
The ironic situation in which coverage rate falls despite continued growth of coverage is due to rapid rise in uninsured medical expenses. Reasonable adjustment of relative value is actually impossible without proper management of uninsured charges. As there is controversy over cost retention rate of insurance benefits, objective

evaluation of this issue should be made first. In relation to this, a research hospital should be selected for long-term collection of cost data, rather than one-time data collection. Also, as the cost changes based on hospital operating rate, the way of managing capital costs, etc., social consensus should be reached on how to calculate the cost.

Concerning uninsured charges, it is necessary to improve the management mechanism to prevent excessive profits from uninsured services. In this respect, uninsured services classified differently in various medical institutions should be identified and standardized. Also, price competition on standardized uninsured services may be induced among different institutions. In the long run, relative value of uninsured services should be calculated, as already done for insured services, and the result should be made public so that consumers can make rational choices about them.

After the objective evaluation of insured and uninsured services are made, social consensus should be reached to correct the unbalanced relationship between the two types of services. The consensus should be drawn among the public (medical consumers), medical institutions and insurers to enable improvement of management mechanism for uninsured benefits and normalization of fee level of insured benefit at the same time.

〔Figure 2〕 Concept framework for expansion of coverage



Source: WHO, World Health Report, 2007

According to WHO, coverage can be defined under three perspectives. First perspective is about which percentage of all members of the society should be covered. Second perspective concerns the extent of benefits. Third perspective concerns how much of medical charges, which are included in the extent of benefits, should be covered by patients themselves.

As Korean health insurance is applied to all nationals, we can decide that it has achieved a complete coverage under the first perspective. Although there are people estimated at around 30,000 - including those whose resident registrations are cancelled - whose whereabouts are uncertain, this doesn't pose any problem in institutional terms. Second, concerning the extent of benefits, further improvement should be made. Uninsured charges still take up around 14.7% of total medical expenses, and considering the client charge rate

(client charge within insurance benefits + uninsured charge) of around 18% for OECD as a whole, it is clear that a sufficient part of uninsured charges should get insured. Third, as client charge within insurance benefits takes up 19.6% of total medical expenses, client charge in this category should gradually be lowered.

Among uninsured charges, preferred medical service charge, difference for using sickrooms of higher grade and ultrasound take up around 46%. In addition, charges related to injection, treatment, surgery and treatment materials take up 25%. We would like to suggest the direction of coverage improvement based on the current status of client charge.

Service items directly related to medical treatment, such as test, treatment, surgery, injection and treatment materials should be included in insurance benefits first of all. Items with which safety and effectiveness are proven are to be included preferentially in insurance benefits, and client charge rate may be reduced gradually according to the financial situation. Then preferred medical service charge can be included in insurance benefits, while the payment method for this type of charge needs to be improved. At present, payment is made to higher-grade general hospitals to reflect differences in facilities, etc., but we propose that this may be offered as an incentive through quality evaluation for medical institutions. Finally, we need to set an upper limit for overall client charge, thereby establishing a practical health care system under which household economy doesn't suffer due to medical expenses.

Restructuring is also required for client charge. For efficient management of the system, a goal of 80% coverage

(61.6% at present) for hospitalization under serious diseases is to be set in the mid- to long-term. In the case of outpatients, the goal shall be 65% (57.8% at present) to prevent excessive medical services in consideration of the soundness of the system. To expand the coverage as above, financial stability is required. While increasing coverage under people's consensus, phased expansion should be made with sustainability of health insurance in mind.

3. Future Direction of Improvement on Medical Service Fee Payment

Insurance fee is a factor that should be discussed in relation to extent of benefits and level of insurance premium. While insurance providers argue that they have management difficulties because insurance fee is too low, subscribers contend that it can still be reduced. There is no consensus on objectivity or appropriateness of insurance fee, but it is a well-known fact that the growth of insurance fee has been contained lower than the growth of consumer price since the integration of health insurance and separation of prescribing and dispensing of drugs in 2000 [6]. However, although the growth of insurance fee is controlled, increase in the income of medical institutions is not maintained at a low level. It is inappropriate to simply compare the changes in insurance fee and medical charge earnings of medical institutions. However, medical expenses of health insurance

6) Consumer price increased 30.92% from 2000 to 2009 while insurance fee increased 19.13% during the same period.

grew much more rapidly than insurance fee, even in view of the change in population structure (degree of population aging), expansion of coverage and increase in medical service usage rate according to income growth. Here, we would like to raise the issue of payment of medical expenses, rather than the amount of medical insurance fee. Since the introduction of health insurance, Korea has maintained the FFS system for payment of medical expenses. While it has many advantages, FFS system has a fundamental problem that it cannot control medical expenses.

A. Necessity for Revision of Medical Expense Payment System

According to a mid- to long-term financial prospect of health insurance[7], national medical expenses will reach KRW 253 trillion in 2020 under the current system and health insurance benefits will exceed KRW 100 trillion. If increase in medical expenses is contained through various mechanisms, health insurance benefits is expected to record KRW 67 trillion in 2020. The most effective method may be to improve medical expense payment system. If estimation and containment of total medical expenses can be made by revising the present FFS system, insurance benefits is seen to be contained at KRW 67 trillion. According to our estimation, health insurance benefits will exceed KRW 80 trillion in 2020 under the present payment system, with insurance premium reaching 10% of income. In other words,

7) "Mid- to Long-term Financial Prospect of Health Insurance and Policy Measures, Jeong Hyeong-seon, cited during a Friday breakfast seminar at NHIC

health insurance cannot be sustained financially under the current FFS system.

In addition, under the FFS system, payment is made later according to the amount of medical services by service providers. Therefore, it is possible to control item-by-item expenses but there's no mechanism that controls total medical expenses. Charging and review operations require hard work and there exists conflict over expertise and autonomy of medical services between review organizations and medical institutions. Also, the selection of high-priced medical services and medicines may be induced according to the level of insurance fee for different items.

There are other reasons that require improvement of the current payment system. Insurance fee is calculated by multiplying resource-based relative value of each service item by conversion factor. The failure of resource-based relative value to maintain balance between different service items leads to distortion of resource distribution. This is caused by the imbalance of relative value itself rather than by the FFS system, but there is no solution at present. Resource-based relative value, which is relatively too high or too low, should be adjusted, but the structure of the system does not easily allow adjustment beyond the boundaries of different categories. Such imbalance leads not only to distortion of medical services and medication but also to income for different medical service items, causing balanced supply of medical specialists[8]. Relative suppression of specialized medical services results in abuse of medicines

8) Due to low relative value, supply of medical specialists in cardiothoracic surgery has been insufficient, and thus, relative value for this field was raised in 2009.

and tests, usage of high-priced treatment materials, etc.

Moreover, there are various problems related to medical expense payment system that should be reexamined in terms of rationality, including application of additional rate[9] according to the size of medical institutions and preferred medical service system[10].

B. Direction of Improvement

The choice for medical expense payment system may determine the framework of management of health insurance, health conditions and financial burden of Korean people, distortion of resource distribution, management environment of medical institutions, etc. Based on the principles of financial sustainability, promotion of people's health and efficiency of resource distribution, following recommendations are presented on the direction of improvement of medical expense payment system. Overall, there are two aspects to be considered.

First, total medical expenses should be manageable within the extent of people's coverage ability. Even while allowing for such factors as progress of population aging, expansion of coverage, increased rate of medical service usage

9) Additional rate for the size of medical institutions has been adopted to reflect the difference in capital costs (facilities investment) of these institutions and to help establish health care delivery system based on price difference. However, price differentiation policy based on additional rate has failed to change patients' preference of large medical institutions, and there is lack of scientific basis for calculation of additional rate. (Tertiary specialized general hospital 30%, general hospital 25%, hospital 20%, clinic 15%)

10) In general hospitals or higher hospitals, designated medical service charge may be added for medical services of medical specialists within 50% of standard insurance fee.

following the growth of national income and development of new technologies, it should be possible to forecast and manage total amount of medical expenses that can be covered by the people. Second, quality of medical service should not deteriorate compared to the present level. In countries that use global budget payment system, waiting time has become longer while quality and quantity of provided services have dropped. Korean clients have been able to meet doctors as they needed with little waiting time. If waiting time increases and less services are provided than required, Korean people will find the situation hard to accept.

These two policy goals seem to be in trade-off relationship with each other. Comparing the characteristics of existing medical expense payment systems, we can see that no system satisfied both goals. In Western Europe, where a change from FFS system to global budget payment system was made to prevent rapid growth of medical expenses, new measures such as performance reward system (P4P) are being attempted due to deterioration of service quality. We need to explore sustainable system suitable for our environment based on former experiences of the West.

We suggest introduction of medical expense payment system that allows sharing of financial risks between the insurer (group) and service provider (group) to ensure efficient management of medical expenses and appropriate medical services. That is, if financial risks are shared, service provider also gets the motivation to minimize the input cost through optimal combination of input factors. Moreover, the insurer (government) intervenes in the medical service process of service provider by the means of insurance fee,

and thus, can avoid inefficiency of medical services. Until now, the insurer (government) merely controlled the price. Therefore, a distorted pattern of increasing the amount of medical services to balance profit structure has been maintained on the part of service providers. If service providers share the responsibility for financial risks jointly with the insurer, they will consider more deeply about the amount of medical services as well as the price.

Concerning outpatient services, it is necessary to examine the possibility of the primary physician system for, in particular, chronic diseases and geriatric diseases. Of course, it may be difficult to introduce the system in full scale considering the present status of medical service provision. In the medical aid system, preferred medical institution system is used for chronic-disease patients who often visit hospitals or clinics, so this may be applied to health insurance too. First, subscribers may be given the choice for the system, and then it can be gradually expanded to help smooth settlement of the system.

Concerning inpatient services, DRG, which is being test-operated at present, should be gradually expanded while areas where DRG application is difficult may be supplemented by FFS system as in Japan. However, if service providers and insurer (government) agree on the amount of inpatient service expenses in advance and introduce a mechanism that allows autonomous management by providers within the amount, both the autonomy of medical services and soundness of insurance finance will be guaranteed. This means that the concept of expenditure cap should be introduced and a system of ex post facto

adjustment of price in the case the expenditure exceeds prior estimation should be developed. Institutionalization of such a system can bring a lot of difficulties during the negotiation on the amount of medical expenses. Nevertheless, consensus may be reached by establishing a separate organization, for example, the health insurance management committee, and through discussions among subscribers, service providers and insurer.

To implement medical expense payment system as described above, following preconditions should be satisfied.

First, objective data on the management status, financial performance and cost structure of clinics and hospitals are required, and especially, accounting standards for hospitals should be established.

Second, functional division among medical institutions and role division between general practitioner and medical specialist should be made through the establishment of health care delivery system.

Third, a blueprint on medical service care supply system should be developed. A mid- to long-term road map on expansion of facilities including sickbeds, provision of medical devices and increased personnel should be prepared. While reducing regional imbalance, efforts should be made to secure financial resources.

Fourth, continued increase in insurance benefits is required, because there is a concern over patient transfer between inpatient and outpatient or among different medical departments.

Fifth, a medical service quality management system is required, and for this to be possible, a medical service

evaluation system should be established.

Sixth, for the stable establishment of the system, insurance fee should be adjusted to allow normal management by service providers. This may mean more budget for the time being, but it will help bring financial stability in the mid- to long-term.

It is impossible to apply the system described above in a short time. It requires the consent of Korean people and other stakeholders, and there are so many issues to be discussed, including factors related to the management status of medical institutions and possible consensus on the amount of medical expenses as well as how to reflect them. First of all, an organization should be set up to collect necessary data materials and materialize the discussion. Sufficient time has to be allowed for the preparation so that major problems may not occur after the system is implemented.

4. Future Direction of Improvement on Insurance Fee Calculation Method

Due to conflict of interests between consumers and service providers and difficulty of drawing appropriate price (insurance fee), decision of insurance fee at the end of each year is a highly troublesome process. In 2009, the growth rate of insurance fee for 2010 was decided by the Health Insurance Policy Review Committee[11] after a lot of

11) It is the supreme deliberative organization for decision making related to health insurance policy, and consists of 8 representatives of subscribers, 8 representatives

difficulties. Insurance fees for seven types of medical institutions[12] increased on an average of 2.01%. Korean Medical Association and Korean Hospital Association agreed on the growth rate of 3.0% and 1.4% respectively, on the condition that drug expense is reduced in 2010. As fierce conflicts are repeated every year in determining insurance fee, there sometimes remains considerable aftereffect.

First, we would like to examine the insurance fee decision structure. The point is whether fair rules are applied during the negotiation. During the insurance fee negotiation, the President of NHIC who represents one of the two negotiating parties should receive the review of the Health Insurance Review Committee, an affiliate the corporation's. At the 2010 negotiation, the Health Insurance Finance Committee suggested an upper limit average of 2% and the President of NHIC had no choice but accept it. As the basis for less than 2% growth, the finance committee pointed to changes in expenses (personnel expenses and price), changes in profits (health insurance and medical aid), changes in overall and institutional supplies (number of institutions, number of sickbeds, etc.) and changes in health insurance finance, based on the result of its research. The President of NHIC had to negotiate with representatives of each type of institutions within the limit of 2%, and reached agreement with representatives of five among seven types. However, he failed to agree with representatives of hospitals and clinics, which take up around 70% of total medical expenses. NHIC

service providers and 8 public welfare delegates.

12) Unified insurance fee was imposed regardless of types of medical institutions until 2007, but different insurance fees have been imposed for different types of institutions since 2008.

had to present the plan that was accepted through the review of the Health Insurance Finance Committee, and the representatives of service providers could either accept or reject the plan. As the finance committee consists of the representatives of subscribers, it is highly difficult to reach agreement with all types of medical institutions through negotiation. There is almost no room for the intention of service providers to be reflected. Insurance fee for the types of medical institutions that failed to reach agreement should be determined by the Health Insurance Policy Review Committee, but there is a problem. The review committee consists of subscribers, service providers and public welfare delegates. Here, as agreement between subscribers and service providers can hardly be attained, public welfare delegates have to present mediation proposal. Then the acceptance of the proposal is decided through a vote. Thus, there are limitations in developing a proposal that represents public interest. Public welfare delegates have to develop their own proposal after considering the claims of subscribers and service providers in a neutral position. They can refer to the details of the initial negotiation at NHIC, but they are not bound by it. They can maintain neutral position under unified insurance fee system, but as contracts are concluded by types of institutions, consideration should be made of institutions that have already concluded contracts. If the final insurance fees of certain types of institutions submitted to the review committee is higher than those presented at the initial negotiation, it will be a bad precedence for the intial negotiation of the following year. As a result, insurance fees of majority of types of institutions will be submitted to the

Health Insurance Policy Review Committee. If such a realistic consideration is made for development of mediation proposal by public welfare delegates, the proposal may hardly stray from the standards of proposal presented by the Health Insurance Finance Committee. Although negotiation on insurance fees are made twice, once at NHIC and once at the review committee, the demands of service providers are rarely accepted whether they are justifiable or not.

Concerning insurance fees (conversion factor) for 2010, an agreement was made on insurance fees of five types of institutions (dentists, oriental doctors, pharmacies, midwife service centers and health centers) among seven types in the first negotiation between NHIC and relevant institutions. However, for two types (clinics, hospitals), they failed to reach an agreement and their insurance fees were passed on to the Health Insurance Policy Review Committee. There, agreements were made finally on the condition of reduction of drug expense. During the process determining insurance fees, several problems emerged.

〈Table 6〉 Result of conversion factor contracts and decisions

	Conversion factor presented for contract		Decision		
	NHIC	Health Care Benefit Expense Council	Adjustment	Decided conversion factor	Result
2001	-	-	+ 7.08%	KRW 55.4	-
2002	KRW 50.7	KRW 66.7	- 2.9%	KRW 53.8	Review Committee
2003	KRW 50.0	KRW 66.4	+ 2.97%	KRW 55.4	Review Committee
2004	1st: KRW 51.5 2nd: KRW 52.15	1st:KRW 66.7 2nd: KRW 57.0~60.5	+ 2.65%	KRW 56.9	Review Committee
2005	Contract by types/ KRW 55.7 on average	KRW 61.9	+ 2.99%	KRW 58.6	Review Committee
2006	Contract by types/ -2.68% reduction on average	8.7% increase	+ 3.58% (contract)	KRW 60.7	Contract
2007	Contact by types/ 1.65% increase	5.1% increase	+2.3%	KRW 62.1	Review Committee
2008	Within overall average of 2%		Overall average +1.94%	Clinic(including health center): 2.3%, hospital: 1.5%, pharmacy: 1.7%, dental clinic: 2.9%, oriental medical clinic: 2.9%, midwife service center: 30%	Agreed contract & Review Committee
2009	Within overall average of 2.36%		Overall average +2.20%	Clinic: 2.1%, hospital: 2.0% pharmacy: 2.2%, dental clinic: 3.5%, oriental medical clinic: 3.7%, midwife service center: 9.3%, health center: 2.6%	Agreed contract & Review Committee
2010	Within overall average of 2%		Overall average +2.01%	Clinic: 3.0%, hospital: 1.4% pharmacy: 1.9%, dental clinic: 2.9%, oriental medical clinic: 1.9%, midwife service center: 6.0%, health center: 1.8%	Agreed contract & Review Committee

Note: Hospitals and clinics concluded contract in 2010 on the condition of reduction of drug expense.

As seen in Table 6, before the method of contract by types was introduced in 2008, conversion factor was decided between the proposal of NHIC and that of service providers. Conversion factor decided from 2002 to 2007 averaged KRW 3.37 higher than the NHIC proposal and KRW 5.33 lower

than service providers' proposal. In 2002 and 2003 - in the early years of conversion factor contract - there were large differences between proposals of the two parties, but the gap has narrowed down since. In 2004 and 2006, the decided conversion factor was closer to the service providers' proposal, while in 2005 and 2007, it was closer to NHIC's proposal. Even in years when an agreement was not reached, decision was made through negotiations wherein the opinions of both sides were reflected. However, since 2008, the final conversion factor was decided at a level lower than the proposal of NHIC, which reflects the opinion of subscribers.[13] There is no rule that the finalized conversion factor should be between the rates proposed by the two sides. However, the fact that NHIC's opinion has been reflected 100% since the method of contract by types was introduced seems to result from the decision making structure, rather than the question of the level of insurance fee. If this structure is maintained, insurance fee will continue to be decided according to the will of subscribers. Insurance subscribers as consumers will naturally prefer low expense, and if this phenomenon continues, resource distribution will be distorted in the end, and subscribers will suffer, too. Thus, improvement of insurance fee decision structure is required.

Then, there is the problem of verification of objectivity of various data materials referred to in the negotiation process. Health Insurance Finance Committee and service providers

13) As described above, contract was concluded for hospitals and clinics on the condition of drug expense reduction (KRW 400 billion) in 2010. Thus, the final growth rate was 2.01%, which is higher than 2.0% proposed by the Health Insurance Finance Committee.

both present proposals based on the research results on conversion factor, and changes in consumer price, financial condition, population structure, coverage and supply. Since the conversion factor contract method based on relative value was introduced, both sides have presented research results jointly or independently. However, there have been too many controversies over the research methods, used data and reliability of data to accept the research results. It was difficult to bring agreement between the two parties because they had different interpretation of changes in consumer price or supply and there was limitations in calculating elasticity on the coverage change. The two parties have remained apart and this is not likely to change under the current condition.

Therefore, the insurance fee decision structure should be revised to present fair rules for both parties. Under the method of contract by types, the result of the initial negotiation at NHIC always rules that of the second negotiation at the Health Insurance Policy Review Committee. According to the current structure, only the subscribers' opinion is reflected in the initial negotiation and that of service providers is neglected. The second negotiation is dependant on the results of the initial negotiation because there should not be any disadvantage to institutions that have already concluded contracts. Thus, it is necessary to have just one opportunity of negotiation under the contract by types method. Service providers and subscribers should be allowed to express their opinions and compromise on an equal basis.

In addition, there should be a consensus on data used as reference materials of the negotiation. Each year, decision on

insurance fee has been made politically amidst distrust of the results of researches repeatedly carried out annually, and this should be stopped. Conversion factor may be drawn much more easily, if subscribers and service providers agree on setting up a joint research team, reach mutual consent on the research method, required data and method of data collection and decide to accept the research results.

Finally, we would like to recommend the necessity to develop a formula that can automatically calculate future insurance fees and insurance premiums at the same time. By reflecting various factors that affect insurance fees and premiums, such as changes in coverage, consumer price, population structure, technology and supply, we can and need to end the controversies that have recurred each year. We propose a method under which the insurance fee is calculated by identifying factors that affect insurance fees, and then insurance premium is automatically calculated based on the insurance fee.

5. Drug Expense Containment Measures

As the percentage of drug expense approaches 30% of the medical expenses of health insurance, reduction of drug expense has become one of the key health insurance policy goals. Recently, the Korean government introduced an incentive program for outpatient prescription at clinics and a measure that links drug expense reduction and insurance fee negotiation, although it is unclear whether this is a one-time measure or will be maintained, along with the market-based actual

transaction price (ATP) system. In addition, we would like to propose a policy measure which downsizes the registered drug list reorganization program, which had been carried out from the past; and at the same time, reduces the prices of products - with ingredients for which late-mover products have emerged after patent expiration - sold at over 80% of the level of highest-priced goods to less than 80% of the level.

There are various measures for containing drug expense, including those newly introduced and those that have been implemented for a long time. Policy measures currently being implemented can be divided as in <Table 7> based on whether registration has been made or not, or which major factor for determination of drug expense the measure is focused on. DUR, which emphasizes safety management of medicine and medical supplies, rather than management of drug expense, has been excluded here.

〈Table 7〉 Present drug expense management policy measures

	Price	Structure	Amount	Total expense
Before registration	Introduction of positive list system Drug expense negotiation			
After registration	Market-based ATP system Drug expense revaluation Usage amount-price linkage Price reduction after patent expiration Registered drug price reduction	Drug appropriateness evaluation (percentage of high-priced drugs) Prescription incentive system	Drug appropriateness evaluation (number of prescribed drugs) Rebate prevention measures including dual punishment system	Drug appropriateness evaluation (total expense) Prescription incentive system Drug expense reduction-insurance fee linkage

However, in spite of various institutional measures, drug expense still remains high. It may be too early to identify how these relatively new measures - mostly on drugs newly being registered - have influenced drug expense. Meanwhile, some people continue to assert the necessity of introducing new measures, while others criticize that existing measures may already be redundant and that too much focus has been put on price management. Thus, we need to reexamine the overall drug expense management system.

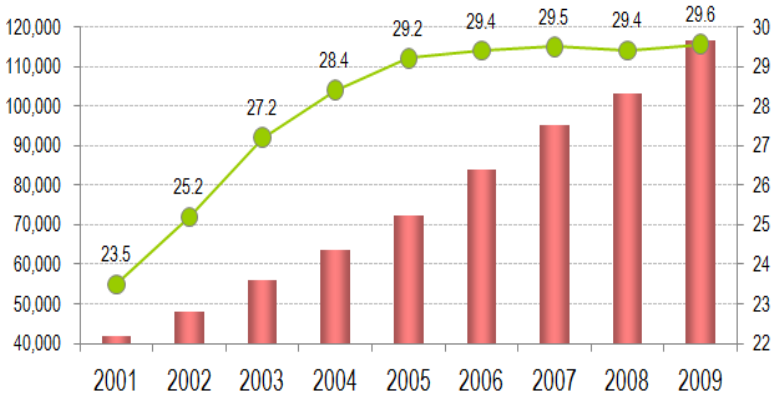
If we put together what have been announced on the status of drug expense in Korea, we can see that drug expense per person is not higher than the OECD average, but that Korea has significantly high percentage of drug expense in health and medical expenses and growth rate of drug expense compared to other countries. <Table 8> below shows the status of drug expense based on health insurance claim data. It shows that percentage of drug expense in health insurance medical expenses was 23.5% in 2001, but it has maintained growth since then. After 2006, although drug expense has been growing, its percentage increase in medical expenses has been stabilized.

〈Table 8〉 Percentage of drug expense in health insurance medical expenses

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009
Drug expense (KRW 100 mil.)	41,804	48,014	55,831	63,537	72,289	84,041	95,126	103,036	116,546
Percentage of drug expense in health insurance medical expenses	23.5	25.2	27.2	28.4	29.2	29.4	29.5	29.4	29.6

Source: Kim Bo-yeon, 2010

〔Figure 3〕 Changes in percentage of drug expense in health insurance medical expenses



Source: Kim Bo-yeon, 2010

The Korean price level of original medicine and medical supplies is lower compared to A7 countries based on exchange rate standard, but it was around in the middle when compared based on purchasing power parity. However, the comparison was made on final retail price, and when the difference in distribution system in various countries is considered, Korean drug expense is likely to be appraised even higher (Bae Eun-yeong et al., 2007).

In 2010, Gweon Sun-man et al. (2010) reported on the comparison of generic drug prices in different countries. Eighty-two drug items that they compared were chosen from ingredients registered in five or more countries among 300 ingredients that belonged to the high-price group of registered generics in the insurance benefit list, considering sample soundness and comparability. This takes around 23% of registered generics based on claims. Countries cited for comparison were the U.S., France, the U.K., Germany, Italy, Japan, Switzerland, Austria, the Netherlands, Sweden, Norway,

Belgium, Australia, etc. The source for price and usage amount data was ex-factory price of 2008 surveyed by IMS, a multinational institution that provides drug market information.

The result of comparison showed that countries with higher generic/original price ratio than Korea (0.695) were the Netherlands (0.774), Norway (0.702) and Taiwan (0.715) in terms of arithmetic mean. Based on weighted average, only the Netherlands (0.748) had higher price ratio than Korea (0.725). Countries with the lowest price ratio based on arithmetic mean was the U.S. (0.338), Sweden (0.456) and Japan (0.498), while those with the lowest price ratio based on weighted average were the U.S. (0.261), Sweden (0.424) and Japan (0.495). Also, the result of calculation of price index based on price of generics and usage amount, price of Korean generics was at the highest level among the countries included in the comparison.

Considering the number of drugs per prescription, the number in Korea is known to be higher than major advanced countries. The table below shows the comparison of drugs per prescription of Korea and A7+3 countries. It is clear that the Korean number of drugs per prescription is much higher than that of advanced countries, although separation of prescribing and dispensing of drugs was realized in the early 2000s.

〈Table 9〉 Number of drugs per prescription of major countries

Country	U.S.A.	Germany	Italy	Australia	Spain	Switzerland	Japan	U.K.	France	Korea
Drugs per prescription	1.97	1.98	1.98	2.16	2.20	2.25	3.00	3.83	4.02	4.16

Source: IMS Health Korea & Health Insurance Review and Assessment Service, A Study on the Assessment of Prescription Behaviors of Foreign Countries for Appropriate Usage Management of Medicine and Medical Supplies, Sept. 2006

Until the present, drug expense management measures in Korea have mainly depended on price control. However, two factors that have brought increase in drug expense since 2001 are usage amount and relative percentage changes of low-price and high-price products, rather than the price itself. It is a phenomenon commonly found in other countries, too. This means that price control alone isn't enough to achieve the goal of containment of drug expense at an appropriate level. Even if price is lowered successfully, growth in usage amount and prescription of high-price drugs can induce increase in drug expense. Therefore, when introducing a new price management measure, it is necessary to predict and prepare for strategic behaviors of market subjects to follow.

We have examined the details and limitations of drug expense containment measures currently being implemented in the above. It is true that separate measures all have their own limitations, but a bigger problem is that they lack understanding of the process of achieving the goal of drug expense containment, and that they are not arranged in harmony with one another to help accomplish specific policy objectives.

For example, market-based ATP system seems to be intended to lower market transaction price by inducing medical institutions' motivation to buy low-price products and as a result, achieve the goal of reducing drug price and drug expense. However, it doesn't seem to provide sufficient explanation on the immediate economic interests of various market subjects, their influence in the market, and whether their strategic behaviors will move in the direction that

benefits consumers. We believe that it is important for pharmaceutical companies that manufacture goods for which there are a lot of substitute goods to enter large hospitals even at a price below marginal cost. Although there is the risk of price drop, upper limit of reduction rate is established, and it would be possible to minimize the reduction rate if outpatient prescription drug market is managed well. In the outpatient prescription drug market, the incentive of low-price purchase is not effective as prescribers do not buy drugs. Also, it is likely that the generic market may be further discouraged due to stronger penalties for rebates including dual punishment system. In this situation, products of companies with a certain degree of brand value may get selected instead of those of price-competitive companies. Also, in the outpatient prescription drug market where rebates are banned, preference of high-price drugs that appeared right after the separation of prescribing and dispensing of drugs may be repeated.

Current methods of determination and management of the price of generic products should also be reexamined. The drug market after patent expiration is a place where numerous companies compete over products made of same ingredients and where full-scale price competition can be waged. Although original products that have acquired brand loyalty during the patent period often maintain their market share even at higher prices compared to generic products, the market can benefit from full-fledged competition in general. However, in Korea, price competition is hardly seen after patent expiration. Manufacturers of generics registered

earlier than other products do not lower the price even if other generics get registered at a much lower price later. They think they should maintain higher price to maintain their market share. This is because their high price enables them to invest in promotional activities. Tiered price structure plays the role of blocking the entry of new competitors and is maintained even after the price of original products is reduced by 20% after patent expiration. The structure is evident in the triennial revaluation of drug price.

The reason for emphasis on price competition in the market after patent expiration is because no one knows the price level that can bring efficiency in the market. It may be possible to artificially lower the price and see if supply is made smoothly under the given price, but this may accompany such side effects as suspension of supply.

Then, how can the environment for price competition be fostered? First, it is necessary to make products with lower final consumer price be welcomed in the market. Mandatory replacement with bottom-priced goods in Sweden and client charge exemption for products priced over 30% lower in Germany are measures that promote this environment. What is important is that these measures should be applied equally in all markets. The problem of market-based ATP system is that incentive structure only works in the hospital market.

If we seek ideas from experiences of foreign countries to facilitate price competition in the market after patent expiration, we may consider the following alternatives:

First, we can allow free price change in the market after patent expiration, sort products by price from lowest to

highest, acknowledge those that can supply a certain percentage of the market based on sales volume of the previous year, and enforce obligatory replacement with one of these drugs at the time of prescription. If patients insist on using high-price drugs, they will be made to cover all drug expense if there is no other medical reason recognized by the doctor who made the prescription.

Second, we can introduce reference price system, while reducing or exempting client charge for drug price if products are a certain percentage cheaper than reference price.

There is a concern that intense price competition after patent expiration may lead companies to strengthen promotional activities in the patent market, thereby shrinking the market after patent expiration and enlarging the patent market. Thus, a countermeasure is required in this respect. Although it is possible to promote usage of generics within a single component through reinforcement of market function or other policy measures, it is difficult to discourage patients' tendency to choose more expensive drugs. There needs to be a policy to manage total drug expense, whether it may involve risk sharing measure or active intervention in doctors' prescription. The action measure linking insurance fee and reduction of drug expense, which was attempted at the end of 2009, was a meaningful step toward the management of total drug expense. However, as seen in the insurance fee negotiation process in 2010, establishment of a collective reduction goal doesn't mean that prescription behaviors of individual doctors will change. Individual people should be presented with specific reduction goal, and development of a system

that gives incentive or disincentive based on the degree to which they reduced problematic prescriptions should be developed. According to some studies, incentive is more direct and influential when it is given on personal level than collective level (Lee Seung-mi et al., 2008). Until now, evaluation of the appropriateness of insurance benefit on drugs has been held to promote the quality of prescription, but the impact has been limited due to lack of direct linkage to financial incentive. However, introduction of the outpatient prescribing costliness index and incentive program for reduction of drug expense on October 1, 2010, seems to have opened a new era for management of drug expense. It is necessary to thoroughly assess the changes in the behaviors of prescription doctors and take effective actions. The newly proposed plan focuses only on the rate of change, but we need to consider giving incentive or disincentive based on whether budgetary goals for various areas of specialization and disease have been fulfilled or not.

In the medicine and medical supplies market, inpatient and outpatient prescription drug markets have distinctive characteristics. In the inpatient prescription drug market, prescriber can also be the one who buys the drug. However, in the outpatient prescription drug market, the prescriber and those who buy or sell drugs are different. The plan to give incentive to purchase of low-price drugs may influence the inpatient prescription market, but not the outpatient prescription market.

It would be better to deal with the problems in the inpatient prescription market along with the reform of overall reimbursement system rather than introducing a

separate measure for drugs. The decision whether to use drugs or medical techniques should depend on patient conditions, not on policy measures applied separately to different areas. The best option will be to develop comprehensive reimbursement criteria on all expenses spent on treatment of patients, based on DRG, lump-sum budget, etc., and leave medical institutions to make choices about individual areas.

6. Introduction of Medical Safety Net for Low-income and Underprivileged Brackets

Over the 30 years since health insurance was introduced for workers in businesses with over 500 employees in 1977, the Korean medical security system has shown rapid development. Universal coverage of public medical safety nets - health insurance and medical care - has gradually expanded, promoting internal stability of medical security system. For areas that the current public systems can't cover, there are ten types of additional public medical expense support programs (eg. patients of rare diseases). While various programs are being carried out for public health including health insurance, medical care, medical expense support program for low-income bracket, etc., there are people who are neglected due to insufficient benefits and limited target population. Some people give up medical treatments or fall into poverty due to excessive medical expenses including uninsured charge. Considering the speed and extent of coverage expansion in medical care and health

insurance, it is difficult to relieve their burden related to uninsured charge, etc. in the short term.

Korean economic crisis in 1998 escalated income inequality and this trend continued even after the economy recovered. The global financial crisis that occurred in late 2008 also affected Korean economy, inducing series of bankruptcies for independent small business owners, business closures and sharp increase in unemployed population, raising the number of population that requires social support. It seems that we have overcome the financial crisis to some extent, but low-income and underprivileged brackets are still suffering from its impact.

According to some reports, people's medical needs and fulfillment of medical needs differ according to income, education and job stability, and thus, there occur differentiation in maintenance of basic health level and substantial gap in prevalence rate of diseases. In this relation, the issue of inequity of coverage burden for different income brackets has been highlighted. Notably, the number of people who are likely to fall into poverty due to medical needs is rising, but medical security system fails to prevent or deal with the situation. When some members of these households get sick, they easily fall into poverty in the process of covering excessive burden of medical expenses (including legal excess charge and uninsured client charge). Also, blind spots in medical service is increasing due to lack of separate medical scheme for underprivileged people such as the elderly, disabled and children as well as low coverage for patients of serious conditions such as chronic diseases and rare diseases. Therefore, the necessity

to develop a medical expense support measure that covers uninsured client charge for low-income bracket[14] - who are facing crisis due to medical expenses - is being raised.

According to the law, all Korean nationals excluding beneficiaries of medical care (beneficiaries of the National Basic Livelihood Security System, human cultural assets, other beneficiaries including those recognized by the government to have been injured while trying to save others, special case beneficiaries under the law on special cases) are health insurance subscribers. Therefore, in terms of the right to receive benefits, Korean medical security system is quite solid. Meanwhile, around 1,580,000 households with health insurance policy that have failed to pay insurance premium for 6 months[15] or longer are not included in the medical security system, because their benefits are restricted. Also, there are about 30,000[16] people who have been taken out of the boundary of medical care, such as wayfarers, runaways and those with cancelled resident registration.

If we apply the result of NHIC survey on the number of households that have failed to pay insurance premium for 6 months or longer, among the total 1,580,000 households, 740,000 (46.7%) belong to the category of default due to poor livelihood and remaining 840,000 belong to the category of voluntary default. In terms of the rights to benefits, 740,000 households (1,770,000 persons)[17] and

14) There can be various definitions, but 130% of the minimum living expense appears to be the boundary of deprivation in terms of medical service usage, so we will mainly target those under this level.
15) The period was lengthened in 2008 from 3 months to 6 months.
16) Internal data from NHIC

around 30,000 people with cancelled resident registration can hardly deal with urgent medical needs.

In Korea, medical aid system is implemented as a benefit system under the National Basic Livelihood Security System, which is a public assistance program. However, medical aid system is operated separately from health insurance system. This is a system aimed at reducing the burden of medical insurance by selecting and supporting groups of people who can hardly bear the burden of health insurance, as the actual rate of health insurance benefits is low (this means subscribers' burden is high).

It differs somewhat among researchers, but it is generally known that the percentage of client charge in health insurance is around 37% including uninsured charge, while those of medical aid type 2 is 14% and medical aid type 1 is 8%[18]. It means that considering coverage rate (=1- client charge), the present medical aid system appears to provide medical protection for the low-income bracket. On the average, there still remain a lot of households suffering due to existence of numerous uninsured services - including tests - in the case of hospitalization that requires high cost. Particularly, poor non-beneficiaries[19], people right above the lowest income group (120% or less of the minimum living expense) and those with 130% or less of the minimum living expense are faced with serious threat to their health.

17) Estimation based on family support rate of 1.4

18) Choi Gi-chun et al., "2008 Survey on Medical Service Fee of Patients Subscribing to Health Insurance", Health Insurance Policy Research Institute, 2009.

19) People whose income is below the minimum living expense, but cannot be beneficiaries due to problems related to family support responsibility, conversion of property to income, etc.

This reality is in stark contrast with advanced foreign countries. Most European countries provide medical protection to low-income bracket without any difference in the method of taxation or insurance premium payment, and in the U.S., which doesn't have public insurance, gives Medicaid benefits to an extended low-income population that reaches over 14% of its people. Compared to these cases, Korean health security system needs improvements as follows: First, coverage of health insurance, which is the first medical safety net, should be strengthened. Second, if there are limitations in promoting health insurance coverage immediately, it is necessary to increase the number of beneficiaries of medical aid system, which targets low-income and underprivileged brackets, through alleviated beneficiary requirements, while broadening the actual extent of coverage for severe, high-cost diseases by revising client charge structure. In other words, medical safety net should be rebuilt more tightly and systematically.

Social insurance is based on the principle of social solidarity. Moreover, as health insurance is a term insurance, it needs to be more faithful to the solidarity principle. Korea's medical expense took up 6.5% of GDP in 2008, which is much lower than the OECD average of 8.9%. In addition, the percentage of public sector remains at around 55%, and thus, the role of medical security system (health insurance and medical aid system) should be further strengthened in the future. Measures for strengthening its role should be developed according to following principles: First, sufficient coverage should be given within the limit of resources. Second, resources are limited, so they should be

used efficiently. Possibility of wasteful leak and abuse should be fundamentally eliminated. Maintenance of equity among target beneficiaries is also an important principle. Provision of benefits should be done under fair principles. Fourth, all measures should be relatively easy to manage.

We would like to suggest choosing between one of the two following options for promotion of medical welfare for low-income bracket. First option is to deal with the medical needs of these people through the creation of a medical safety net fund. Establishment of the fund, selection of support targets and management can be done as follows. The fund can be established using national resources including the lottery fund. Support targets are to include households in critical situations including unemployment, bankruptcy and natural disaster, those under certain income level with default on insurance premium and those with client charge (including uninsured charge) surpassing a certain amount (eg. KRW 200,000 per month). Support method is subrogation payment that can be made in installments and households judged to lack the ability to repay after a certain period (eg. 3 years) are to be written off.

Second option is to introduce a support program package including the following measures. First is to alleviate client charge in medical expenses. We propose a more segmented application of health insurance client charge ceiling (within legal benefits) for different income groups. At present, client charge ceiling is uniformly applied to those who belong to the lower 50% income group, but this can be further segmented by lowering the ceiling to KRW 1,000,000 for those who belong to the lower 30% income group. At the

same time, a graded system for different income brackets can be introduced for client charge to relieve the medical expense burden of low-income bracket (KRW 454 billion in 2009). For example, in the case of hospitalization of those who belong to the lower 20% income group, the charge can be reduced from the current 20% to 15%, while their outpatient service charge is lowered from the current 30% to 20%, to ease their excessive medical expense burden.

〈Table 10〉 Revision proposal for client charge ceiling

Present	Revision (proposed)
- Lower 50% income group: KRW 2,000,000 - Higher 50%-80% income group: KRW 3,000,000 - Higher 80% or above income group: KRW 4,000,000	- Lower 30% income group: KRW 1,000,000 - Lower 30%-50% income group: KRW 2,000,000 - Higher 50%-80% income group: KRW 3,000,000 - Higher 80% or above income group: KRW 4,000,000

Second, we propose exemption of insurance premium for the underprivileged bracket. It is to exempt health insurance premium (around KRW 220 billion) for non-beneficiaries of medical aid with ordinary income lower than the minimum living expense (around 5% of the total population). Those who are not receiving medical aid benefits due to family support responsibility, conversion of property to income, etc., even though their income is insufficient for basic livelihood, should be relieved of their economic burden and provided with better medical accessibility.

Third, client charge rate under the medical aid type 2 scheme (KRW 11,900 million for 210,000 persons per year) may be applied to those who have transferred from medical

aid benefit to health insurance subscription temporarily for two years. This is intended to reduce their willingness to maintain medical aid benefits (poverty status) due to medical needs and promote their self-reliance. Currently, medical aid beneficiaries (type 2) pay a client charge of 10% for hospitalization and 15% for outpatient services. However, when they become health insurance subscribers, client charge increases to 20% for hospitalization and 30% for outpatient services. Thus, they may be tempted to maintain their status of medical aid beneficiary. To encourage them to be self-reliant, we suggest temporary client charge reduction program for these people.

Fourth, we would like to suggest introduction of a reimbursement program for uninsured charge. For uninsured charge exceeding a certain amount (eg. KRW 300,000 per 30 days), with the exception of difference for using sickrooms of higher grade and preferred medical service charge, 50% reimbursement is to be made after payment is made by the relevant subscribers. Concerning the reimbursement, it is to be made immediately for medical aid beneficiaries and to be decided based on the level of insurance premium (eg. people who belong to lower 20% of the whole population) for health insurance subscribers. Meanwhile, the reimbursement program should be implemented only in the case of medical services at public medical institutions for the time being. This is because uninsured services differ among various medical institutions. After first applying the program to public medical institutions and when the relative values for different types of uninsured services are determined, then application to private sector will become possible. For

private sector, reimbursement rate may be set lower than 50% (eg. 30%).

It is necessary to introduce client charge ceiling to uninsured charge to expand coverage. However, client charge ceiling may aggravate moral laxity in terms of both service providers and beneficiaries, leading to unnecessary treatments and hospitalization longer than required. Thus, this should be considered later after reviewing future trends.

References

Gang Gil-won, “Problems and Improvement Direction of DRG Payment System,” Health Security Policy, 2010; 9(1): 25-36.

Gang Gil-won, “Increase in Chronic Diseases and Reform Plan for Medical Service Expense Payment System,” Lecture Collection from the 43rd Conference of the Korea Society of Health Policy and Administration, 2009.

Gang Gil-won, “Direction of the Introduction of New Diagnosis Related Group System,” Annual Journal of the Korean Society of Insurance Medicine, 2010; 5(1): 111-120.

Gang Hye-gyu ed. (2008), Prospects and Tasks of Local Health and Welfare Services Following the Introduction of Long-term Care Insurance for the Elderly, Ministry for Health, Welfare and Family Affairs & Korea Institute for Health and Social Affairs.

Goh Il-seon, Lee Tae-hwa, Lee Gyeong-ja, Lee Jeong-ryeol, Choi Jae-seong, et al.(2006), Establishment of Linkage System for Case Management of Various Areas to Promote Efficient Health Management of Low-income Bracket, Health Promotion Business Agency under the Nursing Policy Research Institute of College of Nursing in Yonsei University.

NHIC, 「Health Insurance Statistics Yearbook」, yearly.

NHIC/Catholic University of Korea College of Medicine, “Research on the Plan for Implementation of Primary Care Physician System for Chronic Diseases,” 2009.

NHIC/KIHASA, “Plan for Improvement of Health Insurance Benefit Payment System,” 2007.

NHIC/KIHASA, “Plan for Improvement of Payment Reimbursement System,” 2004.

NHIC/Seoul Nat'l Univ. Graduate School of Public Health, “Long-term Improvement Plan for Payment System,” 2006.

Health Insurance Review & Assessment Service, “Result of Evaluation and Management of Appropriateness of Pharmacy Benefit in Latter Half of 2009,” Mar. 2010.

Health Insurance Review & Assessment Service & IMS Health Korea, A Study on the Assessment of Prescription Behaviors of Foreign Countries for Appropriate Usage Management of Medicine and Medical Supplies, 2006.

Health Insurance Review & Assessment Service, Overview of Insurance Fee System (last updated in July 2010).

Health Insurance Review & Assessment Service (2010), HIRA Policy Trend, No.1, Vol.4.

Goh Su-gyeong, 『Hospital Budget Decision Making System and Application Measures for Implementation of Independent Budget System for Each Hospital』, NHIC Health Insurance Research Center, Dec. 2002

Gwon Sun-man, 「Comments on Global Budget System for Medical Expenses」, 『Health Economics Research』, No.5, Korean Association of Health Economics, 1999.

Gwon Sun-man, 「Consideration on the Plan for Implementation of Health Care Benefit Expense Contract System for Health Insurance」, 『Health Economics Research』, No.6, June 2000.

Gwon Yong-jin (2010), Plans for Linkage of Long-term Care Insurance for the Elderly and Establishment of Integrative Care System, Yun Hi-suk ed., Current Status and Tasks of Long-term Care Insurance for the Elderly. KDI.

Kim Dong-suk, Byeon Jin-ok, Kim Su-gyeong, Lee Byeong-ran, Jang Seon-mi, Park Chun-seon, Jang Seong-je, Research on Improvement Plan for Evaluation of Appropriateness of Pharmacy Benefit: with Focus on Prescription Index, Health Insurance

Review & Assessment Service, 2009.
Kim Deok-jin (2009), Systematic Problems and Improvement Plans for Long-term Care Hospitals for the Elderly, Korean Hospital Association Journal 321(Sept.-Oct.): 9-16.
Kim Bo-yeon, Health Care Reimbursement Decision-making in Korea: Pharmaceutical Reimbursement, presented at the 4th ISPOR Asia-Pacific Conference, 2010.
Kim Seong-ok & Kim Yeong-suk, Plan for Rationalization of Drug Pricing System under Health Insurance: Based on the Examination of Drug Pricing Systems in Japan and Germany, NHIC, 2009.
Kim Seong-ok, Han Jun-tae, Lee Su-yeon, Choi Sang-eun, Suggestions for Improvement of Drug Pricing System under Health Insurance: Plan for Promotion of Drug Price Negotiating Power with Focus on Application of Risk Sharing Method, NHIC, 2009.
Kim Ok-hi(2006), Research on the Role of Care Managers in Regional Comprehensive Care System in Japan: with Focus on Health Care, Medical Welfare and Role of Linkage.
Kim Eui-suk et al. (2007), 『Status of Medical Service Usage by Patients under Long-term Medical Aid Benefits and Suggestions for Improvement』, Ministry of Health and Welfare & Nursing Policy Institute at the College of Nursing of Yonsei University.
Kim Jin-hyeon et al., "Plan for Determination of Conversion Factors for Medical Institutions Considering Their Characteristics," NHIC, 2006
Kim Tae-seong & Lee Ju-yeol (2008), Research on the Mid- to Long-term Development of NHIC's Health Support Program.
Kim Chan-woo (2005), Research on the Changes in Long-term Care System in the U.S. and Emergence of Care Management, Social Welfare Research, 26 (Winter), 91-122.
Kim Chan-woo (2008), Establishment of Integrative Social Service System on Health and Welfare of the Elderly: Future Direction of Assistance and Long-term Care Services for the Elderly, a statement made at the autumn conference of the Korean Academy of Social Welfare.

Kim Chan-woo (2010), Identifying and Filling Gaps in the Long-term Care Insurance, Korean Academy of Social Welfare.

Roh Yong-gyun (2009), Establishment of Medical Welfare Service Delivery System for the Elderly, Lecture Collection from the 43rd Spring Conference of the Korean Geriatrics Society.

Dailypharm News, 'Reappraisal of Drug Prices Likely to Be Abolished: No Reappraisal for This Year,' Sept.2, 2010.

Park Jong-yeon, Lee Jeong-seok, Goh Min-jeong, Lee Ae-gyeong (2007), Plan for Chronic Disease Management by Health Insurer (NHIC-CDM): Mid- to Long-term Road Map (2008-2012), NHIC.

Bae Seung-jin, Lim Ji-hye, Choi Sang-eun, Bae Eun-yeong, Research on the Plan for Adjustment of Drug Price under Health Insurance, Health Insurance Review & Assessment Service, 2009.

Bae Eun-yeong & Kim Jin-hyeon, Suggestions for Improvement of Drug Price Management System under Health Insurance, Korea Institute for Health and Social Affairs, 2001.

Bae Eun-yeong & Jeong Yeon, Research on Medical Product Registration Price Determination Process and Improvement Measures, Health Insurance Review and Assessment Service, 2007.

Bae Eun-yeong, Jeong Yeon, Lee Byeong-ran, Research on Insurance Drug Registration Price Determination Method and Improvement Measures, Health Insurance Review and Assessment Service, 2007.

Seonu Deok, Song Hyeon-jong, Hwang Na-mi, Gang Eun-jeong, Seo Yeong-jun, Kim Tae-il, Kim Dong-jin (2005), Plan for Establishment of Health and Medical Service Delivery System for the Elderly in an Aging Society, Korea Institute for Health and Social Affairs.

Seonu Deok (2009a), Establishment of Medical Welfare Service Delivery System for the Elderly, Lecture Collection from the 43rd Spring Conference of the Korean Geriatrics Society, 19-24.

Seonu Deok (2009b), The Roles of Elderly Care Facilities for Long-term Care and Protection of the Elderly, Lecture Collection from the 43rd Spring Conference of the Korean Geriatrics Society, 35-40.

Seonu Deok (2008), Reform of Long-term Care Service and Health and Medical Service Supply System for the Elderly, Gang Hye-gyu ed., Prospects and Tasks of Local Health and Welfare Services Following the Introduction of Long-term Care Insurance for the Elderly.

Shin Yeong-seok, 「Direction of Revision of Medical Service Expense Payment System of Health Insurance」, internal report from Korea Institute for Health and Social Affairs, June 2010.

Shin Yeong-seok, 「Strategy for Financial Stabilization of Health Insurance」, internal report from the Korea Institute for Health and Social Affairs, June 2009.

Shin Yeong-seok et al., 「Research on the Improvement of Health Insurance Premium Levy System and Obtainment of Financial Resources」, Korea Institute for Health and Social Affairs, Dec. 2007.

Shin Yeong-seok et al., 「Suggestions for Establishment of Medical Safety Net」, Korea Institute for Health and Social Affairs, Dec. 2006.

Shin Yeong-seok et al., 「Plan for Financial Stabilization of Health Insurance」, Korea Institute for Health and Social Affairs, Dec. 2000.

Shin Yeong-seok et al., 「Analysis of Increase Factors for Medical Service Expenses of Health Insurance」, Korea Institute for Health and Social Affairs, Dec. 1999.

Shin Yeong-jeon & 11 others, "New Searches for Health and Medical Reform", Hanul Academy, 2006.

Shin Hyeon-ung et al., "Research on Conversion Factor for Contract on Health Care Benefit Cost," Korea Institute for Health and Social Affairs, 2009.

Ahn Tae-sik et al, "Research on Conversion Factor for 2007 Contract on Health Care Benefit Costs (Dentists, Oriental Medical Doctors, Pharmacies)," Seoul Nat'l University Institute of Management Research, 2006.

Eom Gi-uk (2008), Establishment of Long-term Care Insurance for the Elderly and Local Care System, Gang Hye-gyu ed., Prospects and Tasks of Local Health and Welfare Services following the

Introduction of Long-term Care Insurance for the Elderly, Ministry for Health, Welfare and Family Affairs & Korea Institute for Health and Social Affairs.

Yun Hi-suk (2010), Estimation of Long-term Care Insurance Cost and Search for the Direction of Expansion of the System, Yun Hi-suk ed., Current Status and Tasks of Long-term Care Insurance for the Elderly, KDI.

Yun Hi-suk, Park Neung-hu, Jeon Byeong-yu, Gwon Yong-jin (2001), Problems and Improvement Plan for Long-term Care Insurance for the Elderly, KDI FOCUS Serial No.3.

Lee So-yeong, Medical Product Price Management under Health Insurance, Pharmaceutical Policy Research, No.2, Vol.3, 2008.

Lee Seung-mi, Kim Nam-sun, Kim Gwang-hi, Suggestions for Introduction of Incentive System for Drug Prescription, Health Insurance Review & Assessment Service, 2008.

Lee Jae-ho (2009), Research on the Plan for Implementation of Primary Care Physician for Chronic Disease Management, NHIC & Catholic Univ. of Korea College of Medicine.

Lee Tae-hwa (2008), Plan for Effective Linkage between Long-term Care Services and Regional Health Care Programs for the Elderly, Gang Hye-gyu ed., Prospects and Tasks of Local Health and Welfare Services following the Introduction of Long-term Care Insurance for the Elderly.

Jang Seon-mi, Choi Yun-jeong, Park Chan-mi, Development of Total Amount Payment Model for Inpatient Drug Expense, Health Insurance Review & Assessment Service, 2008.

Jeon Chang-bae, Goh Su-gyeong, ed., transl., Status and Issues on Management of Global Budget System in Major Countries, NHIC Social Security Research Center, 2001.

Jeong Gyeong-hi (2010), Introduction Process and Issues of Long-term Care Insurance for the Elderly, Yun Hi-suk ed., Current Status and Tasks of Long-term Care Insurance for the Elderly, KDI.

Jeong Hyeong-seon (2008), Health and Medical Service Areas and

Appropriate Services in Long-term Care, Gang Hye-gyu ed., Prospects and Tasks of Local Health and Welfare Services following the Introduction of Long-term Care Insurance for the Elderly.

Cha Heung-bong et al., 「Future Strategy for Health Insurance」, NHIC, Aug. 2007.

Choi Gi-chun et al., (2009), 2008 Survey on Medical Service Fee of Patients Subscribing to Health Insurance (Research paper 2009-07). NHIC.

Choi Byeong-ho, 「Search for the Direction of Health Insurance Fee System Revision」, 『Health Economics Research』 (Vol.4), Korean Association of Health Economics, May 1998.

Choi Byeong-ho et al., "Development of Conversion Factor Calculation Model on Resource-based Relative Value of Medical Services: Calculation of Conversion Factor Based on SGR," Korea Institute for Health and Social Affairs, Nov. 2003.

Choi In-deok, Park Jong-yeon, Lee Eun-mi (2009), Plan for Establishment of Efficient Delivery System for Linkage of Medical Service for the Elderly and Long-term Care Service," NHIC Health Insurance Policy Research Institute.

Korea Institute for Health and Social Affairs, "Determination of Conversion Factors for Medical Institutions Considering Their Characteristics: Reference Material for Expert Panel," 2007.

Korean Association of Health Economics and Policy, "Appropriateness of Health Insurance Fee," Reference Collection for Conference for Second Half of 2007, 2007.

Heo Sunim et al., 「Research on Global Budget System in Major Countries」, Korea Institute for Health and Social Affairs, Dec. 2009.

Kim Jin-hyeon & Choi Byeong-ho, "Plan for Determination of Conversion Factors for Medical Institutions Considering Their Characteristics," NHIC & Seoul Nat'l University, 2006.

Bank of Korea, 「National Income」, 2010.

Abel-Smith, B. Mossialos E. Cost containment and health care reform: a study of the European Union, Health policy, 1994: 89(2), 89～134.

Ashby, J. and T. Greene, "Implications of a Global Budget for Facility-Based Health Spending," Inquiry 30, 1993.

Busse R. and C. Howorth, Cost containment in Germany: twenty years experience, In: Mossialos E. and Grand J.(Eds), Health Care and Cost Containment in the Europian Union, Ashgate, 1999.

de Pouvourville G, Pharmaceuticals in France: Controlling for use and expenditures, presented at International Symposium Celebrating the 10th Anniversary of HIRA, 2010.5.

EGA Health Economics Committee, How to Increase Patient Access to Generic, 2009.

European Generic Medicine Association. http://www.egagenerics.com/

Hurley, J., J. Lomas and L. Goldsmith, “Physician Responses to Global Physician Expenditure Budgets in Canada: A Common Property Perspective,” Milbank Quarterly, 75:3, 1997.

IMS health, IMS Pharmaceutical Pricing & Reimbursement 2007.

Li Chang and Jung-Hung, “The effects of the global budget system on cost containment and the quality of care: experience in Taiwan”, Health Services Management Research 21, 2008.

Marchildon GP, "Health systems in transition", WHO regional office for Europe, 2006.

Medicines in European Healthcare, EUROPEAN GENERIC MEDICINES ASSOCIATION, 2009.

Nolte, E., Knai, C., and Mckee, M. (2008) Managing Chronic Conditions: Experience in eight countries. European Observatory on Health Systems and Policies.

OECD Health Data, 2009.

Pharmaceutical pricing and reimbursement information, Germany pharma profile final version, 2008. 5.

Sandier S, Paris V, Polton, “Healthe care systems in transition, France”, European Observatory on Health Systems and Policies, 2004.

Schlottmann N., The implementation of DRG's in Germany, In; Proceeding

of the 18th international case mix conference, Austria, 2002.
Stargardt T. The impact of reference pricing on switching behavior and healthcare utilization: the case of statins in Germany. Eur J Health Econ 2010, 11:267-277.
Wiley, M. H., Hospital financing reform and case-mix measurement: and international review, Health Care Financing Review, 13(4): 119-33, 1992.