Health Administration (11:30 ～12:10 Auditorium of East Building)

Session chair: Prof. Takaaki Kondo

Quality Assessment of Stroke Treatment and Pay-for- Performence in Japan and Korea

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Introduction

P4P (Pay for Performance) is considered to be a tool that can enhance health care quality and improvement. Reports show that P4P has been increasingly used in developed countries such the United States[1] and the United Kingdom.[2] Nevertheless there is a lack of reports on formal evaluation of hospital P4P in the literature. Systematic evaluation of hospital P4P is needed to understand the effect and benefits of investing in P4P.[3]

Similar P4P programs are under way in Korea and Japan, too. This study reviews the status and examines the performance in the two countries.

P4P in Korea

In Korea, The cause-specific death rate by stroke and cerebrovascular diseases in recent years has been on the decline, but stroke is still ranked the number one disease killer, accounting for the highest percentage of the global burden of disease such as disability combined and therefore causing incrased medical costs. In consideration of this, an acute stroke assessment tool that has been developed to provide data to care hospitals for promoting their voultary quality improvement acitvities has been used since 2005. Also, the 2006 survey on the status on the medical services for stroke patients was conducted for the similar purpose. Based on these results, a pilot P4P project for acute stroke was undertaken from 2007 throughout 2010.

Amomg the assessment criteria were Documentation of smoking history, Neurologic exam.rate, Screen for dysphasia by end of hospital day two, brain scan within 24 hours of admission, Lipid Profile, T-PA considered, Autithrombotic medication within 48 hours of admission, Discharged on Antithrombotic, Patients with Atrial Fibrillation Receiving Anticoagulation therapy.

P4P in Japan

There have been growing concerns and requirements for health care quality in Japan. The introduction and implementation of P4P (Pay for performance) programs for rehabilitation and recovery in 2008 was a significant advancement in the area of health care service. However, there still remains a gap involving a need for close examination of what factors may critically influence the rehabilitation medical service quality and the degree to which hospitals have made or will make efforts in achieving best practice in rehabilitation. To begin with, the assessment criteria for P4P set forth by the Japanese government are summarized as follows.

In Japan, P4P inpatient rehabilitation among stroke survivors began in 2008 with a primary objective to provide the services needed and improve post stroke patient functional recovery. Despite concerns over the effectiveness and quality of P4P by some stakeholders of the program in Japan,1 three standards were developed for the P4P inpatient rehabilitation program. They included: (1) >60% of participating stroke survivors should be discharged to the community; (2) >15% of newly hospitalized patients should have severe stroke; and (3) >30% of patients under the P4P program should demonstrate an improvement in their daily living functions or functional recovery at the time of hospital discharge.

Result

Korea

The follow-up assessment for the two treatment periods, in 2005 and October to December of 2008, in the categories of 1) promptness in initial diagnosis, 2) responsiveness in initial treatment, 3) secondary preventive measures, and 4) initial assessment of patient conditions, revealed that there were overall improvement in quality compared to the results on 2005, but significant variations in treatment practices across types and care hospitals were observed (Figure1 and 2).

Following this, the third assessment was conducted on the treatment period of January to March of 2010 with a goal of seeking for ways to reduce the discrepancies between hospitals and ensuring enhanced medical service quality for stroke patients. The numbers of subject hospitals were 187 for 2005, 194 for 2008, and 313 for 2010.
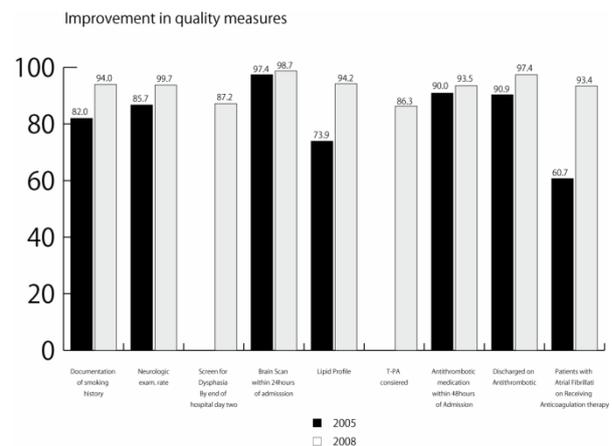

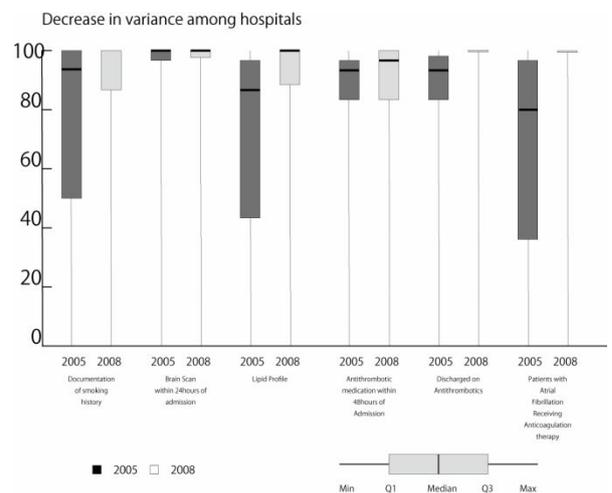Figure 1. Improvement in quality measures

Figure 2. Decrease in variance among hospitals in Korea

Japan

The comparison of the data before and after the introduction of P4P showed that for FIM during hospital stay, the score after P4P (68.85) was slightly higher than that before P4P (65.82) without any statistical significance. On the other hand, the Rankin Scale score was found to be lower after P4P (3.28) than before P4P (3.78), showing higher scores for patients with light disability (p<.001). With respect to FIM at hospital discharge, the scores were not significantly different between before (90.46) and after (91.86) P4P. Also, in the case of patients whose actual FIM was deteriorated from estimated FIM, the percentages were about the same with 34.8% and 34.4% for before and after P4P, respectively. The home return rate was 80.0% after P4P, compared to 73.0% before P4P, showing an increase of 7.0% point (p<. 05) (table 1).

Also the therapeutic results were compared between hospitals. We estimated the expected value of levels of ADL at discharge for rehabilitation patients using regression analysis. Furthermore, we identified the distribution of the expected improvement levels in ADL by hospitals.

The results showed large differences between hospitals (Figure 3).

Table 1. State of patients before and after P4P in Japan

| State of patients	Before P4P 2006.4-2008.3 (N=295)		After P4P 2008.4-2010.3 (N=295)		p
	Mean	SD	Mean	SD	
Home return rate	0.73	0.44	0.80	0.40	P<.05
Age	67.22	12.41	67.22	14.27	n.s.
# of days since onset	28.27	27.69	27.88	19.30	n.s.
Rankin Scale at hospital admission	3.78	1.03	3.28	1.26	P<.001
FIM at hospital admission	65.82	31.35	68.85	32.07	n.s.
FIM at hospital discharge	90.46	32.56	91.86	32.04	n.s.
Length of stay in days	95.91	49.96	94.09	45.06	n.s.
PT exercise (hrs.)	60.64		40.26		71.77
OT exercise (hrs.)	61.37	37.42	70.48	44.63	P<.05
ST exercise (hrs.)	41.40	34.46	49.23	40.64	P<.05
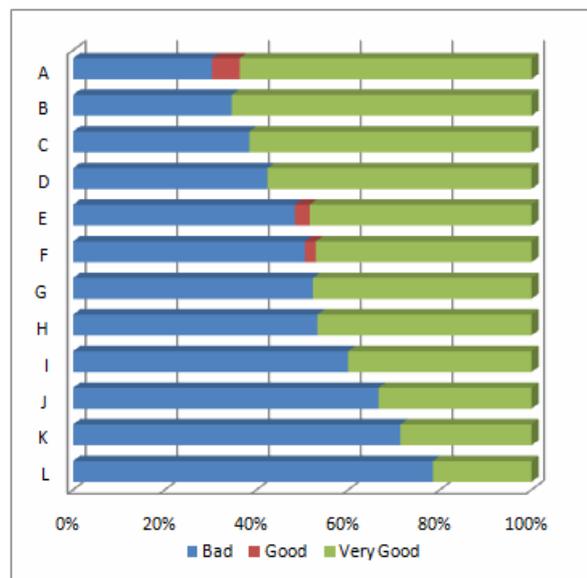
Figure 3. Decrease in variance among hospitals in Japan

Discussion

Many reports suggest that improvement in Korean medical services has been confirmed over the course of the three years of the P4P pilot project implemented in Korea. However the judgment of the quality of medical services can vary depending on which criteria are used or which compound values are taken into account 4. This holds for the case of Japan.

The study in Japan focused on patients in recovery in the rehabilitation ward using a sample of 680 patients from 12 different hospitals after adjusting for triage at admission obtained from the databank (issued in September, 2009) in Japan and compared the therapeutic results between hospitals. The comparison found that there were statistically significant differences in the results of therapeutic achievement in each hospital.

Thanks to advances in the assessment of health care quality and wider publication of results from studies conducted in a number of first world countries such as the US and the UK, it is expected that health care providers will put a voluntary effort to improve their future health care services. Nonetheless, prior to such efforts of medical providers, it is essential to develop appropriate criteria for assessing health care quality and verifying the validity.

Conclusion

Donabedian (1980)5 mentions that those who have no experience with the complicated system of medical practice, are likely to think that assessing the quality of medical services would be as easy as weighing a bag of potato chips, but in the actual settings the task is not so easy as it appears. In quality assessment of medical services quality, there are not a few elements involved. Indeed, it should be insured that in designing the structure and process for targeted outcomes, the relevance to the therapeutic objective, the validity of the causality, the sensibility, the appropriateness of timing, costs, and the patient satisfaction, among others, are properly taken into consideration. Since these requirements are also applied to P4P, putting P4P in right place will be a rewarding but also challenging task.

References

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Total Health Expenditure and its structure in two Asian OECD countries, Japan and Korea

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Introduction

Improvement of economic and progress of aging increase not only a personal concern but also social interest about health. Beyond this, it is required to make a rational policy for operating a health care system efficiently and allocating the resources at the national level. However, to fulfill those needs, it is necessary to build a statistical infrastructure and health spending is regarded as one of the most important statistics. Total Health Expenditure(hereafter THE) is a core index showing health spending and a National Health Accounts (hereafter NHA) gives us clear information of tendency of THE.

The NHA does clearly organize the flow of health spending by tri-axial(Health care functions, Health care service provider industries and Sources of financing health care). The NHA is proceeding according to the SHA(System of Health Accounts, hereafter SHA) guideline published by Organisation for Economic Co-operation and Development (hereafter OECD) in 2000. Each economy collects the data and implements SHA in order to develop comprehensive and enhance a consistency. Moreover, this concept is based on the consensus on what element should be included or not, so the result is to ensure the comparability of health care expenditure estimated by different nation.

Those three kinds of element(Comprehensiveness, Comparability and Consistency) could be a strength and a main goal of SHA. Recently, OECD, EROSTAT and WHO have collaborated in the joint OECD-EROSTAT-WHO Health Accounts Data collection, they have also been engaged in projects to develop a methodology. Nevertheless, there are lots of problems harmonizing the criteria in several aspects such as an experience, a limitation of data and a cultural difference.

The paper begins by presenting the meaning of the SHA briefly which is used for collecting a data internationally, and examining the structure of THE in two countries, Japan and Korea. Additionally, this paper aims to provide a detailed review of THE in both countries comparing with other OECD economies.

A concepts and development of SHA

As noted above, The System of Health Accounts(SHA) proposes an integrated system of comprehensive and internationally comparable accounts and provides a uniform framework of basic accounting rules and a set of standard tables for reporting health expenditure data(Orosz and Morgan, 2004). It proposed in three dimensions, ICHA-HF, ICHA-HC and ICHA-HP. Firstly, ICHA-HF is related to financing sources. THE mainly comprises public financing(HF.1.) and private financing(HF.2.), and its composition determines the characteristics of health care system. Secondly, ICHA-HC is a classification of Function (e.g. Inpatient, Outpatient) which is the crucial element of the SHA. Consequently, health policy-making refers to it on the national level. Lastly, ICHA-HP shows information of providers; hospitals, nursing and residential care facilities etc.

The SHA has two major aims; one is to provide a framework for international data collection and the other is to suggest a possible model for redesigning and complementing NHA to aid policy-makers(Jeong, 2010). To achieve this, a lot of health accounts expert meeting have been holding since 1990s and 'A system of Health Accounts' (version 1.0) was published by OECD in 2000. During the last decade, most of the OECD economies are able to implement basic tri-axial(ICHA-HF, ICHA-HC, ICHA-HP) according to this manual. There was a demand for systemizing accounting system among developing countries, and the World Health Organization(WHO) published NHA Producers Guide to response those needs in 2003. Since then, a number of OECD and non-OECD countries have undergone SHA framework and have provide a data regarding health spending. In 2004, three international organizations build a cooperative system for harmonizing National Health Accounts and collecting a standardized health statistics. Such interests in Health Accounts are also spreading to across Asian-Pacific countries like Sri Lanka, India and China etc. Recently, the 6th APNHAN (Asia-Pacific National Health Account Network) expert meeting was held in Korea in last July 2010 and more than 50 experts participated from approximately 20 economies. As a result, the SHA manual(OECD, 2000) is used in a large and growing number of OECD and non-OECD countries as the standard accounting framework for statistics on health expenditure and financing.

A structure of THE in Japan and Korea

Prior to comparing the major findings of THE, it is required to close look at the characteristics of the structure of health spending and the data sources. Although many OECD and non-OECD economies are currently undertaking the OECD/SHA manual, some countries(including Japan) continuously use domestic standard. However, this makes lots of confusions.

In Japan, there are two types of representative index showing health spending statistics, one is Japanese National Medical Expenditure(*KokuminIryohi*, hereafter NME) published by 'Department of Statistics and Information(Japanese Ministry of Health, Labor and Welfare)', and the other is OECD's Total Health Expenditure(THE) estimated by 'Institute for Health Economics and Policy(Japan, IHEP)'.(Jeong, 2001) The former is the total medical payment limiting its scope to medical service covered by the health insurance scheme, while the latter includes not only NME statistics but also other items like OTC drugs, health promotion services, Japanese long-term insurance(*Kaigo Hoken*), administrative finances and capital formation etc. In other words, the NME is a subset of THE. In considering the health spending to GDP ratio, there is a 2.6%p gap between THE(8.1%) and NME(6.5%) in 2007. In the case of THE, it is based on the number of statistics(around 40 kinds of statistical data) including NME statistics.(Mitsutake, 2010)

In Korea, estimation of health expenditure was attempted since 1976. Initially, many scholars tried various methods, but OECD's concept was accepted right after joining the OECD in the late 1996. Eventually, SHA-based health accounts have been reported annually by Jeong(focal point designated of OECD-WHO-EUROSTAT) since 2004. Recently, a Health Accounts Forum was organized to spread its concepts and to

develop a method. For calculating THE, a variety of sources can be used individually or in combination.

A comparative analysis of THE in Japan and Korea

Total Health Expenditure accounted for 8.1% of GDP in Japan, slightly less than the OECD average(8.6%) in 2007. Although it increased 15.7% in the past 10 years, that is still below the OECD level. Meanwhile, Korea increased 53.7%(annually 10.4%) at the same period and it reached to 6.3% of GDP in 2007, even though it ranks(28th) at the bottom of OECD members. The United States is the country which spends tremendous amount of money on healthcare with 15.7% of GDP in 2007. Besides, 6 countries like France, Switzerland, Germany, Austria, Canada and Belgium followed with more than 10% of their GDP. Overall, health spending as a share of GDP has been increased during this period, but both of two countries level is significantly lower than the OECD average.(Figure1)
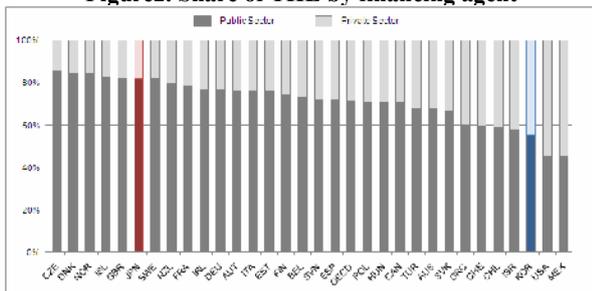
Figure1. Total Health Expenditure in Japan and Korea as a share of GDP
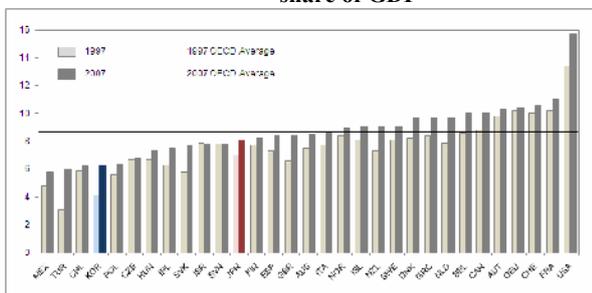
1) Source: OECD Health Data 2010(2010)
2) Excluding Luxembourg and Portugal.(2007 not available data)

As shown by Figure2, most of the OECD countries, there is generally close agreement on the THE mainly financed by public sector with 71.2%. In Japan, 81.9% of THE is funded by public side in 2007 and this figure is almost similar to 10 years ago(81.5%). On the other hand, the share of public spending in Korea is obviously lower than that of OECD economies except the USA and Mexico. Although Social security scheme and government(public part) play an important role in Japan and Korea, there is a big different composition in financing sources.

Figure2. Share of THE by financing agent

1) Source: OECD Health Data 2010(2010)
2) Excluding Luxembourg and Portugal.(2007 not available data)

Table1 gives details of health spending by Function in Japan and Korea. The allocation of health spending across the various service and medical goods shows the characteristics of health care system. The table shows that Korea and Japan report a relatively low proportion of expenditure for in-patient services(29.4%, 38.3% respectively) comparing to OECD average level(55.6%). On the other hand, spending for In-patient and Medical goods is high. Furthermore, large differences remain between Korea and Japan in Long-term nursing care. The ratio of Long-term nursing care accounted to

15.7% in Japan, notably higher than Korea(1.7%) where care tend to be provided in informal sector such as family.

In terms of hospital expenditure, out-patient care is around 27.5% of current health expenditure in Korea where hospitals maintain large out-patient department.(excluding a table because of restricted paper)

Table1. Total public and private health expenditure by function (US$ PPP Per capita)

	Japan(2006)		Korea(2008)		OECD*	
	US$PPP	(%)	US$PPP	(%)	US$PPP	(%)
In-patient Ser.	987	(38.3)	530	(29.4)	1,663	(55.6)
Out-patient Ser.	823	(31.9)	593	(32.9)	373	(12.5)
Other Ser.	52	(2.0)	10	(0.6)	123	(4.1)
Medical goods	548	(21.3)	463	(25.7)	537	(18.0)
Prevention	60	(2.3)	42	(2.4)	76	(2.5)
Health Admin.	61	(2.3)	56	(3.1)	143	(4.8)
Etc.	49	(1.9)	107	(5.9)	75	(2.5)
Total	2,580	(100)	1,801	(100)	2,991	(100)

1) * Source: Jeong, Lee, Shin and Song(2008) , 17 Countries average including AUS, CAN, USA, ESP, PRT, DNK, NOR, CHE, NLD, KOR, JPN, DEU, FRA, LUX, CZE, SVK and POL.

Discussion & Conclusions

The major goal of SHA is to provide a set of international standard aggregating NHA. Estimating THE using common boundary such as OECD/SHA makes it possible to compare the level of health spending, as well as health care system. The SHA manual(ver. 1.0) is scheduled to be revised in several year for further development.

This paper explained about a concept of international classification named OECD/SHA and examined total health expenditure in two Asian countries. Although both of them are based on a same prototype (NHI), it presents the variations in terms of financing sources and allocation of resources. However, the analysis using international data like this is expected to provide some evidence to assess health system performance and to aid policy making.

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