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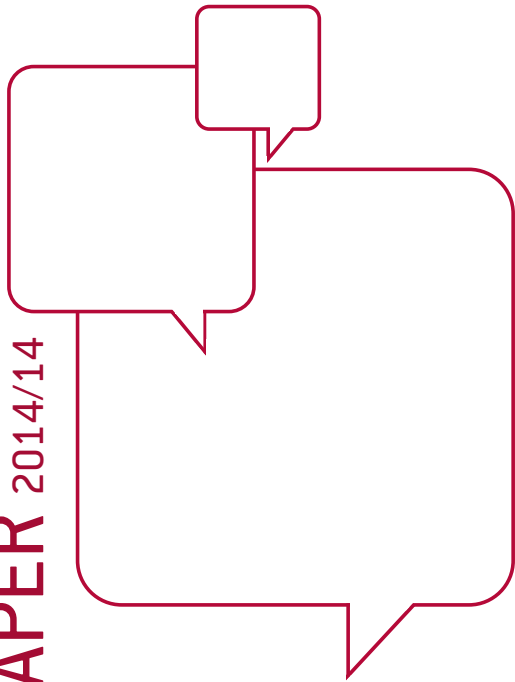
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AGING AND THE GOVERNANCE OF THE HEALTHCARE SYSTEM IN JAPAN

YUKIHIRO MATSUYAMA

Highlights

- Japan is the most rapidly aging country in the world. This is evidence that the social security system, which consists of the pension system, healthcare system and other programmes, has been working well. The population is shrinking because of a falling birth rate. It is expected that the population will fall from 128 million in 2010 to 87 million in 2060. During this period, the ratio of people aged 65 or over will rise from 23 percent to 39.9 percent. Japan's age dependency ratio was 62 in 2013, the highest among advanced nations. It is expected to rise sharply to 94 in 2050 (see Figure 1 on page 4). A total reform of the Japanese social security system, therefore, is inevitable. From the point of view of fiscal reconstruction, reform of the healthcare system is the most important issue. The biggest problem in the healthcare system is that both the funding system and the care-delivery system are extremely fragmented. The government is planning its reform of the healthcare system based on the principle of integration. Other advanced economies could learn from the Japanese experience.

Yukihiro Matsuyama is Research Director of the The Canon Institute for Global Studies (<http://www.canon-igs.org>). The author was blessed with the opportunity to discuss the issues described in this paper with many experts at a research meeting of 22 September 2014 and a roundtable of 23 September 2014, both of which were held at Bruegel. The key issues highlighted at the end of this paper reflect the questions and comments raised at these meetings.



1. Introduction

This paper assesses the governance of Japan's healthcare system in comparison to those of other countries. In general, the relative merits of governance are determined by whether the governed organisation can continue to fulfil its mission in a changing environment. Then, in order to assess the governance of healthcare systems, we take into account the strength of mechanisms to enhance the sustainability and resilience of healthcare systems in the context of the need to change system design because of aging populations and new technologies.

The healthcare system discussed in this working paper is a concept that includes both medical care and long-term care. In the area of medical care, technological progress is accelerating in the twenty-first century, usually leading to better and cheaper goods and services. However, better medical care tends to be more expensive because of the patient's moral hazard caused by insurance and public subsidies, and the unnecessary supply created by doctors against the background of the asymmetry of information between doctors and patients. The cost of medical care for the elderly is several times greater than that of people of working age. Medical care expenses have continued to increase because of the costs of new technologies and also because of an aging population. In addition, aging has led to a rapid increase in the cost of long-term care. This increase in healthcare expenses has a significant impact on the finances of all countries. A reform of public expenditure to take into account the growing costs of healthcare is necessary to maintain healthy national finances. Healthcare systems are made up of a funding system and a care-delivery system, so the governance of healthcare systems can be separated into these two systems. However, the nature of the governance of each part has an effect on the other. As a result, an element of consolidation of core parts of both systems is integral. How strongly the government can control the governance of this core part influences the success or failure of the reform.

When we classify funding systems and care-delivery systems, the question of whether a system is public-based or private-based is often raised. In developed countries, other than Japan and the United States, both systems are public-based. Since the governments of these developed countries control the governance of the core parts of both systems, they can reach political decisions to respond to environmental changes relatively easily, and the reforms tend to penetrate into the system relatively smoothly. In contrast, the US healthcare system has private health insurance for the working population; public health insurance for the elderly or disadvantaged; private non-profit entities holding a large market share; corporation hospital groups with a market share; a free contract system, in principle, for medical fees and drugs which influence healthcare prices; and the huge healthcare market size accounting for 17.9 percent of GDP. If you look at the confusion surrounding the reforms introduced by President Barack Obama, it is apparent that it has taken a great deal of energy to create a consensus for the reforms.

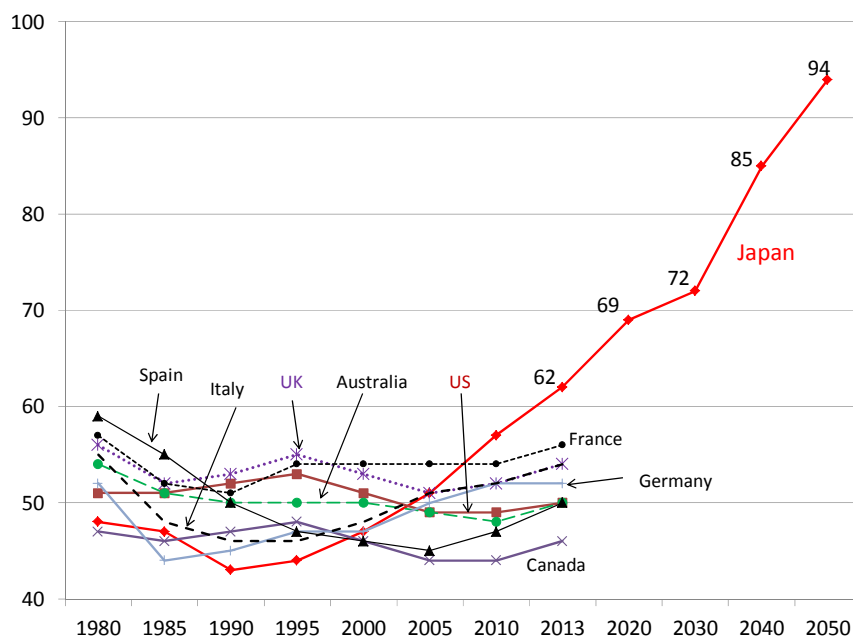
On the other hand, Japan's healthcare system consists of a public-based funding system and

private-based care delivery system. Japanese healthcare was ranked number one in the world by the World Health Organisation in 2000 as Japan achieved the highest life expectancy with relatively low healthcare expenses in terms of the ratio to GDP. This is a result of various factors. For example, the government has controlled healthcare inflation by determining medical fee unit prices and drug prices centrally. There is a devoted core of healthcare workers. The Japanese diet tends to be healthier. However, the Japanese funding system and care delivery system are fragmented. For this reason, Japan has not yet pushed through necessary reforms despite the fact that Japanese national debt is at an unprecedented level – higher than that of Greece which has fallen into financial collapse. Governance of the Japanese healthcare system is not working. This working paper, therefore, considers ways in which the Japanese healthcare system can regain control.

2. Healthcare reform is essential for fiscal reconstruction

According to the baseline scenario in Population Projections for Japan (January 2012) conducted by the National Institute of Population and Social Security Research, the population of Japan, in decline since 2008, is expected to decrease by 32 percent from 128,057,000 in 2010 to 86,737,000 in 2060. The average annual rate of decrease during these 50 years is 0.65 percent. It is notable for the healthcare system and the country's finances that the proportion of people 65 years old or over will increase to 39.9 percent from 23.0 percent during the same period (Figure 1). In addition, the proportion of people 85 years old or over, whose expenses for medical care and long-term care are very high, is expected to rise more than four times to 13.2 percent from 3.0 percent.

Figure 1: Age dependency ratio



Source: The World Bank Data. National Institute of Population and Social Security Research, Population Projection 2012.
 Note: Age dependency ratio is the ratio of dependents—people younger than 15 or older than 64—to the working age population—those ages 15-64. Data are shown as the proportion of dependents per 100 working age population.

The current social security system, including not only healthcare but also pension and various types of welfare programmes, is on the whole achieving its purpose as a safety-net. Without this, the Gini coefficient for Japan would be high at 0.5536. The social security system helps to lower the Gini coefficient to 0.3791. Without the social security system, the Gini coefficient of households containing those 65 years or older would be very high at 0.8091, but is lowered to 0.3728 because of the system. This indicates that the elderly have enjoyed the most benefit from the social security system. Since the ratio of this group will increase rapidly, it goes without saying that it will be very difficult to maintain the social security system in its current state.

The budget for social security payments in FY 2014 is 115.2 trillion yen, which is comprised of pensions: 56 trillion; medical care: 37 trillion; long-term care: 9.5 trillion and others 12.7 trillion yen. Pension payments are the largest share. However, reform of the pension system is not high on the agenda from the point of view of the impact that aging has on public finances, because a mechanism was already introduced in the 2004 pension reform to reduce the pension benefit levels if pension funding proves insufficient. However, politicians facing an election are reluctant to reduce pension benefits in accordance with the rules adopted. As a result, while the working generation has been suffering from a decline in wages in the deflation economy, retirees continue to enjoy the high pension benefit levels of the pre-reform period. This means that the politicians themselves have been compromising the pension system. In addition, the rate of increase in costs of medical care and long-term care will be greater than those of other

social security programmes. Healthcare reform, therefore, has a top priority in terms of fiscal reconstruction.

Japan's general government gross debt ratio to GDP in 1990, just before the collapse of the bubble economy, was a healthy 67 percent, which was similar to those of other advanced countries. However, it soared to 230 percent in 2011. Given that the Greek ratio was 171 percent just after its financial collapse, a level of 230 percent is abnormal. So, why has the Japanese economy not yet fallen into chaos as Greece's has done? One reason is that Japanese household financial assets are 1,645 trillion yen as of the end of 2013, which is more than the general government gross debt of 1,163 trillion yen. In other words, the Japanese people can currently take on the whole government debt in Japan. However, if the reflationary and fiscal reconstruction policy being undertaken by the Abe administration is insufficient, general government gross debt will eventually approach the amount of household financial assets. In this scenario, there would be an acceleration of the transfer of assets to foreign currency-denominated assets. As a result, the Japanese government would be forced to ask foreign investors to buy its bonds to finance budgets. This will lead to a rapid rise in interest rates. Thus, if the Japanese economy plunges into a negative spiral, it is conceivable that the current social security system will collapse.

On the other hand, if Japan can continue to reform the social security system to keep a fair balance of benefits and contributions with the help of these huge household financial assets, it seems possible to achieve a soft landing, which is expected in the near future. In other words, Japan should use the assets as a catalyst for social security system reform and fiscal reconstruction. The age group of 60 to 69 year olds and the age group of those 70 or older own 33.2 percent and 28.1 percent respectively. The majority of household financial assets belong to the elderly who get the greatest benefits from the social security system. This indicates that there is room for reform to make the elderly with sufficient assets pay more for medical and long-term care.

3. The influence of an aging population on healthcare expenses

As mentioned above, Japan achieved the highest life expectancy with relatively low healthcare expenses in terms of the ratio to GDP around 2000. However, this situation has already changed. To compare the ratio of healthcare expenditures to GDP internationally, we use the SHA (System of Health Accounts) defined by the OECD. According to OECD Health Statistics 2014, Japan's ratio in 2011 was 10.0 percent, which was higher than the 9.2 percent average of OECD countries and of the UK (8.9 percent), Italy (8.8 percent) and Australia (8.6 percent).

So what will happen to medical and long-term care expenses in a future of an increasingly aging population? The older populations become, the greater medical care expenses per capita are. On the other hand, if the population declines, medical care expenses decrease. So we calculated projections of medical

care expenses under the conditions of aging and population decline. In Japan as a whole, medical care expenses will begin to decline around 2030 as the effect of population decline offsets the effect of aging.

In order to forecast medical care expenses more accurately, we should take an additional factor into consideration, which is the increase caused by cases of moral hazard and asymmetry of information. The data relating to the breakdown of medical care expenses which the Japanese Ministry of Health, Labour and Welfare (MHLW) releases annually is useful to estimate how much this factor pushes up medical care expenses (Table 1). The average annual increase rate in medical care expenses for the 21 years between 1990 and 2011 was 3.27 percent. The breakdown is medical fee revision ▲0.06 percent; population growth 0.15 percent; aging 1.63 percent; other factors 1.50 percent. The other factors are believed to include new technologies, wage increases and consumer price index increases. During these 21 years, the increase in the rate of healthcare related wages and the CPI is ▲0.45 percent and ▲0.21 percent respectively. As a result, we can infer that the increase of medical care expenses due to new technologies is at least 1.5 percent.

Table 1: Factors breakdown of medical care expenses increase

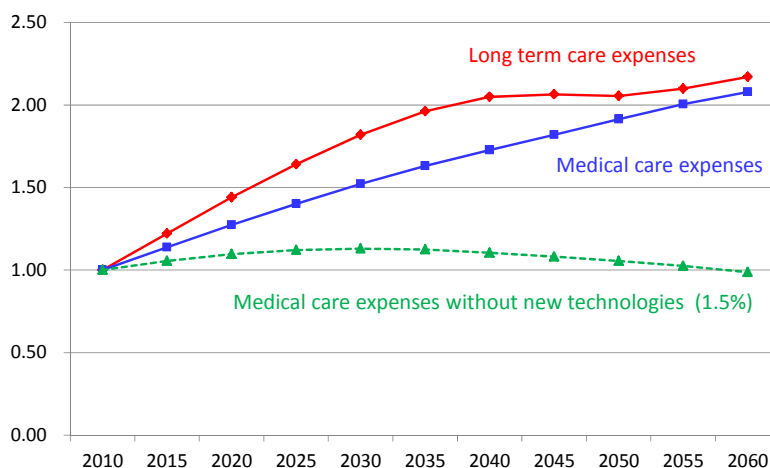
[1990 ~ 2011 annual average]

Medical care expenses increase rate	Factors			
	Medical fee revision	Population	Aging	Others
3.27%	▲0.06%	0.15%	1.63%	1.50%

Source: Ministry of Health, Labour and Welfare, 2011 National medical care expenses overview.

As previously mentioned, the annual average rate of population decrease for the 50 years between 2010 and 2060 is ▲0.65 percent. As the rate of increase for the effect of new technologies (1.5 percent) is greater than ▲0.65 percent, medical care expenses will continue to increase overall in Japan in spite of population decline. Figure 2 shows the future trends of medical care expenses reflecting all factors of aging, population decline and new technologies. In addition, it also shows that the increase rate of long term care expenses will be greater than that of medical care expenses by 2040.

Figure 2: Healthcare expenses forecast

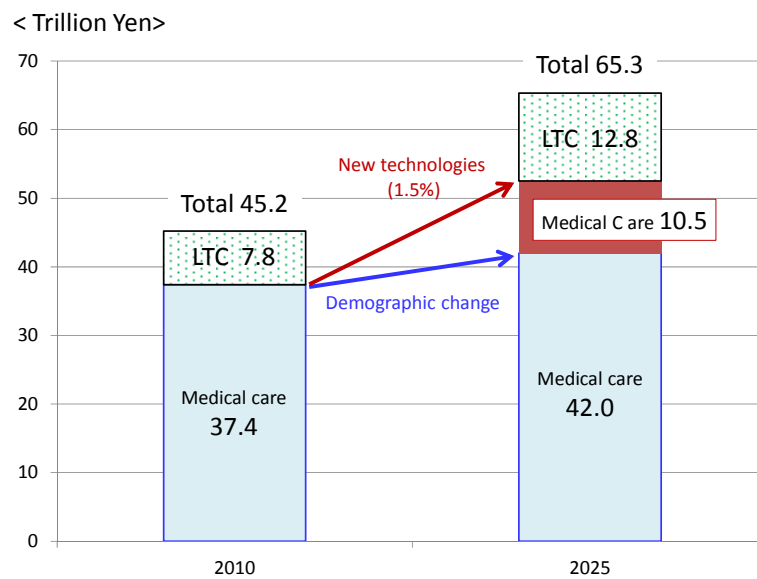


< Reference data >
 2010 --- 2040 Annual average rate of LTC insurance beneficiaries increase = 2.2%
 2010 --- 2060 Annual average rate of population increase = ▲0.65%

Source: National Institute of Population and Social Security Research, Population Projection, January 2012. Ministry of Health, Labour and Welfare, 2011 National medical care expenses overview. Long term care benefits survey October 2013.

The goal year of the implementation of healthcare reform currently conducted by the Japanese government is 2025. Figure 3 shows that in real terms, medical care expenses will increase from 45.2 trillion yen in 2010 to 65.3 trillion yen in 2025. The total of 65.3 trillion yen breaks down as: medical care expenses reflecting only the demographic change, 42 trillion yen; 1.5 percent per annum increase through new technologies, 10.5 trillion yen; and long-term care expenses, 12.8 trillion yen. The long-term care expenses are projected by using population projections, long-term care utilisation by age group and average costs by care level. On the other hand, the government forecasts long-term care expenses at 21 trillion yen in 2025. The difference between 12.8 trillion yen and 21 trillion yen works out at an annual rate of 3.3 percent. This rate of 3.3 percent is larger than the 2 percent inflation rate which the government considers successful under the Abenomics policy. Therefore, we estimate that the government forecast of long-term care expenses of 21 trillion yen is based on the supposition that the proportion of people who will pay a part of the cost and actually use long-term care services among the elderly who received care level certification will increase.

Figure 3: Forecast of healthcare expenses in 2025



Source: see Figure 2.

4. The flaw in the governance of the healthcare funding system

Table 2 is a list of insurers involved in the public insurance system for medical care and long-term care in Japan. The role of insurers is roughly divided into three types: medical care insurance for people aged 74 or younger, the medical care insurance for people aged 75 or older, which is called the late-stage medical care system, and long-term care insurance. Medical care insurance for people aged 74 or younger is classified into health insurance/seamen's insurance for private sector employees, mutual aid associations for public employees and private school employees and national health insurance which all other citizens are obliged to join. The greatest flaw in the governance of the healthcare funding system in Japan is that the provision of national health insurance, which is positioned as a last resort for medical care security, is fragmented into 1,717 municipalities, which provide the insurance. For example, there are 114 with less than 1,000 people insured, 316 with 1,000~2,999 people insured and 222 with 3,000~4,999 insured among 1,717 insurers.

Table 2: Japan's fragmented health insurance system (March 2013)

Type of system		Name of insurer	Number of insurers	Number of subscribers
Health insurance	Small business	Japan Health Insurance Association	47	35,103,000
	Large business	Health Insurance Societies	1,431	29,353,000
	Day laborer	Japan Health Insurance Association	47	19,000
Seamen's insurance		Japan Health Insurance Association	47	129,000
Medical aid associations	National public	Medical aid associations	20	9,000,000
	Local public	Medical aid associations	64	
	Private school	Private school association	1	
National health insurance (NIH)	Farmers, self-employed, etc	Municipalities	1,717	37,678,000
		NIH associations	164	
	Retired persons under employee's Health Insurance	Municipalities	1,717	
Late-stage medical care system for the elderly	75 or older	Wide area unions for the late-stage medical care system for elderly	47	15,168,000
Long term care insurance		Municipalities	1,717	3,094,000

Source: Ministry of Health, Labour and Welfare, Annual Health, Labour and Welfare Report 2014.

Table 3: Fund balance of health insurers

(Billion yen)

	2008	2009	2010	2011	2012	2013
Health insurance association	▲229	▲489	254	259	310	187
Health insurance Societies	▲319	▲523	▲416	▲350	▲297	▲116
National health insurance municipalities	▲238	▲325	▲390	▲302	▲306 Estimation	▲N/A
Total	▲786	▲1,337	▲552	▲393	▲293	

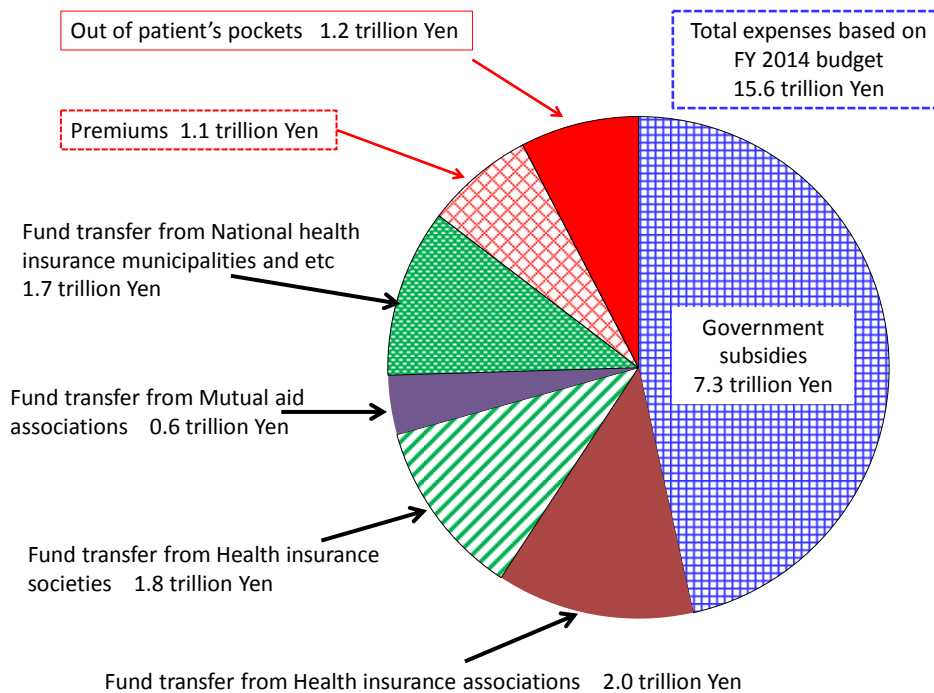
Source: Financial reports of insurers.

As Table 3 shows, the total balance of medical care insurers has been in significant deficit. Although health insurance associations had a surplus of 187 billion yen in FY 2013, they would be in the red without a subsidy of 1,219 billion yen. Therefore, they are not self-reliant insurers. Their insured are employees of small and medium-sized companies. On the other hand, the insured of health insurance societies are employees of large companies with relatively high incomes. Nevertheless, the health insurance societies have experienced huge deficits because they are forced to provide financial resources for insured other

than their own. While their revenues from premiums are 7,223 billion yen in FY 2013, they are forced to provide other insurance programmes with 3,274 billion yen (45.3 percent of the premium revenues). This mandatory contribution is not under the control of the health insurance societies.

As described above, national health insurance is intended as a last resort for medical care security. Even if they are in the red, municipalities are not allowed to liquidate these insurance funds. Therefore, the municipalities are forced to take on the burden of non-statutory deficit subsidies of about 350 billion yen every year. Their real balance without these subsidies is in deficit by about 300 billion yen. The biggest source of structural deficit in national health insurance is the fact that municipalities are obliged to insure a large number of unemployed people including citizens under 75 who are about to be covered under the late-stage medical care system. Although the percentage of those unemployed insured by national health insurance was 6.1 percent in 1965, it grew to 39.5 percent as of 2012.

Figure 4: Financial resources of late-stage medical care system for the elderly



Source: Ministry of Health, Labour and Welfare, 75th Medical insurance committee documents.

Figure 4 shows the financial resources configuration (FY 2014 budget) of the late-stage medical care system for citizens 75 years old or over. The cost borne by this group themselves is 2.3 trillion yen (premiums 1.1 trillion yen + out of patient's pocket 1.2 trillion yen) that is 14.7 percent of the total cost of 15.6 trillion yen for the late-stage medical care system. Financial resources for the remaining part are divided into public subsidies (7.3 trillion yen) and contributions from other health insurance for under 75s (6.1 trillion yen). The insurers of the system are the broad coalitions of municipalities that exist in each of the 47 prefectures. In terms of funding, it is self-evident that 47 broad coalitions are better than the

fragmentation of 1,717 municipality insurers. Therefore, as described below, the government has decided to integrate the municipality providers of the national health insurance within each prefecture.

Figure 5 shows the financial resource structure of long-term care insurance. In principle, 10 percent of the total cost is at the expense of the long-term care service user. Under legislative changes adopted in 2014, this will be raised to 20 percent for elderly citizens with an income over a certain level from August 2015. The funding of benefits is equally divided into public subsidies and premiums. The insurers of the long-term care insurance system are the same 1,717 municipalities in the national health insurance system, so its institutional management capability is not good enough.

Figure 5: Financial resource structure of long term care insurance

Financial resources of LTC benefits	Subsidies by tax 50%		
	Municipalities	Prefectures	National Government
	12.5%	12.5%	25%
	Premiums 50%		
	Primary Insured Persons aged 65 or over	Secondary Insured Persons aged 40---64	
	21%	29%	

+

Out of LTC service user's pocket
As a general rule, 10% of LTC expenses

Source: Ministry of Health, Labour and Welfare, Status quo and prospective role of long term care insurance system 2013.

5. The flaw in the governance of the care-delivery system

There were 178,029 healthcare facilities in Japan as of the end of May 2014, comprising 8,508 hospitals, 100,733 clinics and 68,788 dental clinics (Figure 6). The main flaw of the care-delivery system is that its governance is even more fragmented than the healthcare funding system. As a result, function-sharing based on patient information sharing does not improve, overlapping investment in medical care facilities is widespread and the efficiency of care delivery systems relative to technological progress has been inhibited.

Figure 6: The number of medical facilities and beds

(As of the end of May 2014)

	Facilities	Beds
Total	178,029	1,687,246
Hospital	8,508	1,571,490
General hospital	7,443	1,232,359
Psychiatric hospital	1,065	339,131
Clinic	100,733	115,666
Clinic with beds	8,694	115,666
Clinic without beds	92,039	0
Dental clinic	68,788	90

General Beds
895,979

Chronic stage beds
328,177

Tuberculosis beds
6,431

Infectious disease beds
1,772

Source: Ministry of Health, Labour and Welfare, Medical facilities movement survey May 2014.

In addition, there are more than 20 types of hospital institutional structure and most hospitals are operated independently. Table 4 shows the structure of the hospital sector in Japan. 5,720 hospitals, which account for 67 percent of the total of 8,508, belong to private healthcare entities called medical corporations. Most of them are small and medium-sized hospitals so that their share of beds is 54.5 percent. Medical corporations are divided into two types: medical corporations with contribution interest (rights that are similar to stock) and medical corporations without contribution interest. A common point between the two is that dividends are prohibited by medical law. Another difference is that accumulated residual assets of a medical corporation with contribution interest belong to contributors themselves, while in the case of a medical corporation without contribution interest, those assets belong to the nation and municipalities instead of specific individuals. In other words, a medical corporation with contribution interest is a 100 percent private entity, essentially the same as a for-profit corporation. Most medical corporations are classified as medical corporations with contribution interest. In addition, most medical corporations without contribution interest are operated by founder families so that they can decide their own salaries as an alternative to the dividend.

Medical corporations compete fiercely with each other so that there is no incentive to share functions through the sharing of patient information in the same healthcare district. In general, competition is a good thing from an efficiency point of view. Competition theory in healthcare delivery, however, is not simple. As long as there are economic conflicts between healthcare institutions, the sharing of patient information does not progress. Regulation cannot change the situation sufficiently. This is one of the reasons why Integrated Healthcare Networks have emerged in US, and the Australian government has set up Local Hospitals Networks.

Table 4: Over 20 types of hospital organisational structure

Type of hospital		Hospitals	Beds	Share of beds	
Total		8,508	1,571,490	100%	
Not For profit	National	Ministry of Health, Labour and Welfare	14	5,635	0.4%
		National Hospital Organization	143	55,288	3.5%
		National universities	48	32,722	2.1%
		Japan Labour Health and Welfare Corporation	34	13,072	0.8%
		National Centre Corporation	8	4,357	0.3%
		Japan Community Health Care Organisation	57	16,292	1.0%
		Others	25	3,805	0.2%
	Local	Prefecture	203	55,233	3.5%
		Municipality	656	140,067	8.9%
		Local Incorporated Administrative Agency	88	33,194	2.1%
	Private	Japanese Red Cross Society	92	36,829	2.3%
		Social Welfare Organization	284	58,122	3.7%
		Koseiren	107	34,102	2.2%
		Private school corporation	110	55,834	3.6%
Mutual Aid Association		46	14,701	0.9%	
Others		289	69,979	4.5%	
For profit	Private	Medical corporation	5,720	856,318	54.5%
		Others	584	85,940	5.5%

Source: see Figure 6.

A bigger problem precluding reform in the care delivery system is attributed to national and public hospitals. For example, the National Hospital Organisation under the jurisdiction of MHLW is an independent public corporation that operates 143 hospitals across the country and generated revenues of 926 billion yen in FY 2013. However, these 143 hospitals are a collection of stand-alone facilities. As a result their collective power is weak. Japan Labour Health and Welfare Corporation hospitals, National Centre Corporation hospitals and Japan Community Health Care Organisation hospitals, all of which are similarly under jurisdiction of MHLW, are within the same structure. Even if some of these hospitals are in the same healthcare district, they have fallen into a competitive spiral of over-investment, using subsidies without mutual cooperation. These hospitals under jurisdiction of MHLW also compete with national university hospitals which are under the jurisdiction of the Ministry of Education, Culture, Sports, Science and Technology.

Table 5: Financial structure of local government hospitals

FY2012, Total of 847 hospitals [Billion Yen]

Total income (1)	3,943
Patient services	3,418
Operating expense subsidy (2)	525
Total expense (3)	3,939
Nominal net profit (4) = (1) – (3)	4
Real net profit (5) = (4) – (2)	▲ 521
Past net loss carried forward	▲ 1,958
Facility construction subsidy (6)	179
Total of subsidies (7) = (2) + (6)	704

Source: Ministry of Internal Affairs and Communications, Situation of profit and loss balance of public hospitals 2012.

Local government hospitals have exacerbated this over-investment competition with subsidies. As Table 4 shows, there are 947 local government hospitals which consist of 203 prefecture hospitals, 656 municipality hospitals and 88 local incorporated administrative agency hospitals. Although the local incorporated administrative agency hospital is a scheme which gives some discretion to top management, it is governed by a local council of local government as well as prefectural and municipality hospitals. Table 5 shows the balance of payments in FY 2012 of 847 hospitals among the 947 local government hospitals. The amount of patient service revenues that those local government hospitals earn by themselves is 3.4 trillion yen. They can break even only after a subsidy of 525 billion yen. The amount of loss carried forward that the local governments could not eliminate is nearly 2 trillion yen. This 2 trillion yen needs to be paid by inhabitants. In addition to the deficit fund, the hospitals are provided with 179 billion yen in capital investment subsidies. On the other hand, prefectural hospitals and municipality hospitals even in the same prefecture do not share functions in order to avoid overlapping investment as they are effectively rivals. There is less cooperation with national hospitals. It has been suggested that one of the main flaws is that the main purpose of hospital construction is not to improve healthcare but to direct tax revenues for construction to local construction companies. Councillors who should be responsible often have interests in local engineering and construction companies.

6. New issues related to aging affecting the care delivery system

Japan lacks a mechanism to optimise healthcare investment on a regional healthcare district basis. This is in contrast to France where the government prevents such overlapping investment by providing capital investment subsidies not only to public hospitals but also to private hospitals. In Japan, there is no mechanism to control the location and field of medicine of about 100,000 clinics operated by independent self-employed medical doctors. The negative consequences of these issues are exacerbated by the aging society.

According to government projections of the number of deaths by age group, gender and cause of death, the number of deaths of people 75 or older will increase 1.6 times from 871,938 in 2011 to 1,231,000 in 2025 and to 1,403,000 in 2040. As a result, there is a growing problem of terminal elderly patients, specifically how to secure the place of death of these patients. While the ratio of deaths at home decreased from 77 percent in 1955 to 13 percent in 2010, the ratio of deaths in hospital increased from 12 percent in 1955 to 78 percent in 2010. However, it will be impossible for the medical insurance system under financial pressure to continue to support hospital-centre terminal care in the event of an additional 500,000 deaths. Therefore, the government advocates that the place of care for elderly terminal patients be moved to places other than hospitals, such as the patient's home or nursing facilities. However, the number of independent medical doctors who manage terminal care is insufficient.

About three quarters of deaths of those aged 75 or older are from causes other than cancer. This means that the number of ambulance call-outs for reasons of cerebral infarction and heart attack will increase with longer life expectancy. The ratio of ambulance requests by the elderly rose from 40 percent in 2002 to 53.1 percent in 2012. The severity of the condition of elderly ambulance patients is clearly greater than that of the group aged 20 to 64. A problem experienced by the ambulance service in Japan is that incidents of patient admission rejection sometimes occur in urban areas where there are many hospitals. In contrast, such incidents are unheard of in rural areas where there are fewer emergency hospitals. As the only option, emergency hospitals in rural areas have no choice but to accept an ambulance patient even if they do not specialise in the patient's particular condition or they are at full capacity. Governance of emergency hospitals in urban areas is not good as a whole and they are reluctant to accept the role of provider of 'last resort'.

The number of long-term care workers was 550,000 in 2000 when Japan introduced long-term care insurance as a public system. Its success was proven by the fact that the number of long-term care workers grew to 1,490,000 in 2012. The problem lies in the future when the number of people aged 75 or over will soar. The government has estimated that Japan needs to secure one million more long-term care workers by 2025 (Table 6). However, the average wages of long-term care workers are about 30 percent lower than those of all industries. Accordingly, it is difficult to recruit an additional 1 million workers from

Japan alone. Although the government has attempted to recruit applicants from Southeast Asia, this has been largely unsuccessful because of the language barrier. In addition, opposition against a policy to actively accept immigrants is also strong.

Table 6: Lack of long-term care workers

<Thousand>

	2000 LTC insurance system started	2012	2025 Necessary staff
The number of LTC staffs	550	1,490	2,370~2,490

Source: Long Term Care Insurance Group of Social Security Council, Opinions on review of long term care insurance system, December 2013.

There is another serious problem facing the long-term care insurance system: a rapid increase in dementia patients (Table 7). According to government estimates, the number of dementia patients at level 2 or worse was 2.8 million in 2010, or 9.5 percent of the 29.48 million people aged 65 or older. Level 2 is defined as a patient that can live with assistance, even if they have some difficulty in behaviour and communication. The government predicts that this number of dementia patients will soar to 4.7 million (12.8 percent of those 65 or older) in 2025. As a result, people have become more interested in the plight of dementia patients.

Table 7: The number of dementia patients in Japan

	2010	2025
The number of the elderly with dementia <Thousands>	2,800	4,700
The ratio to the population of 65 or older	9.5%	12.8%

Source: See Table 6.

7. The key point for governance reform is integration

Thus, the flaw in Japan's healthcare system is that both the funding system and the care-delivery system are badly fragmented, that conflicts of interest over the system are complicated and that governance of the whole system is not functioning. The key to solving these problems is integration. Integration will help to address the previously described new issues that the aging society is bringing to the care-delivery system.

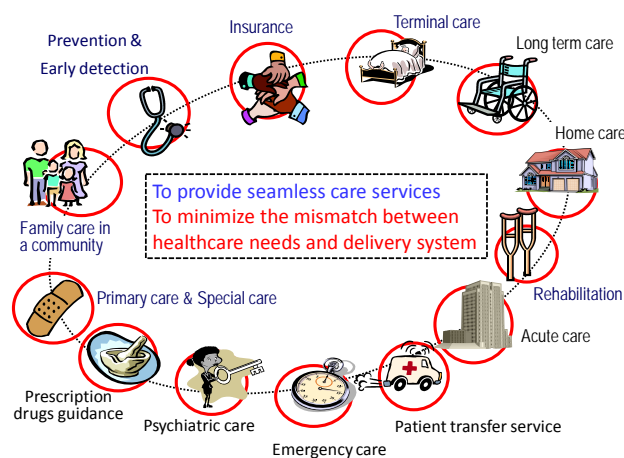
The government has decided to integrate 1,717 municipality providers of the national health insurance by each prefecture. However, there is a large disparity, not only among prefectures but also among municipalities in the same prefecture, with respect to per capita annual premiums. The highest premium per capita is Gifu prefecture with 89,605 yen which is 67 percent higher than the 53,608 yen of Okinawa

prefecture. Although the premium per capita of Okinawa prefecture is the lowest in the nation, there is a disparity of 2.1 times between the municipalities. This disparity between municipalities is 2.9 times in the Tokyo Metropolitan Area and 4.3 times in Miyagi prefecture. If the government implements a policy of national health insurer integration by prefecture with such a large disparity between municipalities in each prefecture, there will be residents with increased premiums and residents with reduced premiums. Strong opposition is expected from the residents of municipalities with increased premiums. Therefore, the government is planning to give a grace period of implementation to prefectures where the disparity between municipalities is substantial.

There is also a large disparity in terms of healthcare system management knowledge from prefecture to prefecture. The Regional Difference Index illustrates this disparity. The factor with the greatest effect on the per capita medical care expenses of a prefecture is the age structure of the population. The Regional Difference Index is created by indexing the per capita medical care expenses after adjusting differences between prefectures in the age structure. The index sets the national average at 1 so that a prefecture with an index greater than 1 is deemed to be engaging in an over-consumption of medical care. The highest: 1.184 of Saga prefecture is 33 percent greater than the lowest: 0.888 of Ibaraki prefecture. Prefectures with a score of greater than 1 often have an overabundance of hospitals relative to their population.

The government has started to consider the introduction of a medical care expenses budget system as well as the integration of national health insurers on a prefectural basis. It is essential that the national government conducts a reallocation of financial resources adjusted to factors outside the prefectures' control, such as age structure differences and income inequality. The introduction of the budget system means that prefectures should take responsibility for any disparities in medical care expenses arising from other factors. This mechanism is also applied to long-term care insurance. In other words, a new era of competition in management knowledge of healthcare funding is around the corner.

Figure 5: Concept of integrated care



Source: Sentara Healthcare, Norfolk, VA, USA.

The government is planning to encourage the formation of an Integrated Healthcare Network (IHN), which is expected to play a central role in community comprehensive care, and grant a holding company function to it. Community comprehensive care is a framework that has become a common goal of health reforms in developed countries, where the goal is to provide efficiently the healthcare services needed by local residents (Figure 5). While community comprehensive care is a literal translation of the Japanese term, 'integrated care' is often used in the English-speaking world.

The author published *Breakthrough of Japan's Economy under Half-Population* in 2002 to recommend that Japan should create safety net entities as a core of the healthcare delivery system based on regional population units of 0.5 million to 1 million. Since then, I have continued to research IHN in advanced countries. The biggest advantage of IHN is that the waste caused by overlapping investment does not occur because decision making on healthcare facility investment is centralised in a wide area unit. In other words, the mechanism works to minimise mismatches between care delivery systems and healthcare needs arising from technological progress and changes in demographics. Therefore, the mechanism of IHN is incorporated into the healthcare reform in each country regardless of whether its funding system and care delivery system are public sector-centred or private sector centred. In the United States, more than 500 IHNs built around private non-profit hospitals and around public hospitals have been created. Most exceed \$1 billion in size, while some IHNs generate as much as \$10 billion in one healthcare district. In order to promote a policy that encourages IHNs to be created in Japan, it is beneficial to learn from the Local Hospital Network in Australia, the Health Authority in the Province of British Columbia in Canada and the Local Health Integration Network in the Province of Ontario in Canada.

In fact, there are many IHNs in Japan. Typical examples are Nagano Kouseiren (FY 2013 revenues: 90 billion yen) and Seirei Social Welfare Community (FY 2013 revenues: 97 billion yen). The business structure of both organisations is almost the same as that of IHNs built around private non-profit hospitals in the United States. Any hospital among national and local government hospitals cannot perform its safety net function more than Nagano Kouseiren and Seirei Social Welfare Community. In addition, there are many entities similar to IHNs with revenues from 100 million yen to 300 million yen formed by medical corporations. However, the main target of the IHN promotion policy is national hospitals, local government hospitals and national university hospitals. As stated repeatedly, the biggest flaw in the care-delivery systems in Japan is the disjointed management of these tax-subsidised hospitals. If they are privatised and integrated by healthcare district and independent medical doctors are given the right to use their facilities, the efficiency of care-delivery systems through patient information sharing should improve dramatically.

The key determinant of the success or failure of the healthcare reform the government has been promoting with the goal of 2025 is the Data Health project. This is a scheme that aims to simultaneously achieve

healthy life extension of the people and make healthcare cost savings by focusing on prevention, called 'Population Health' in foreign countries. For example, in Nagano prefecture, the Regional Difference Index is 0.890. Even though the average medical cost in Nagano Prefecture is 11 percent less than the national average, Nagano Prefecture is well known for longer healthy life expectancy. This is considered to be the result of the dietary guidance and prevention activities that Nagano Kouseiren has been providing to residents for many years.

In conclusion, some comments can be provided on key issues:

Do the elderly accept a greater burden of medical and long-term care costs?

The greatest barrier to reform described in this policy brief is the political influence of the elderly who are also the biggest beneficiaries of the healthcare system. While the turnout in elections of voters in their 20s and 30s has been low, the turnout of the elderly has remained relatively high. As a result, Japan's politicians have been putting off drastic reforms. However, given that Japan will face a full-scale crisis in the near future, neither the people nor politicians have any other choice. The Abe administration has begun working on healthcare system reform with a strong will to ensure a soft-landing from the crisis. The use of financial resources for the social security system should be shifted from the elderly to the younger generation. Given that the elderly own more than 60 percent of household financial assets, it should be possible for the government to persuade the elderly to assume a greater burden of medical and long-term care costs through increased premiums and out-of-pocket expenses. The saved financial resources can be used for measures to boost the birth rate.

Should the privatisation of public hospitals leave governance of management in public sector hands?

The Japanese government has the same thought. The 2006 medical law reform defined a basic scheme for it, which is called Social Medical Corporation. This is useful for the privatisation of public hospitals. The scale of healthcare delivery organisations should be expanded by encouraging the formation of IHNs as a core entity in regional healthcare districts with 0.5 ~ 1 million population. These IHNs must be non-profit. They should contribute to improving the productivity of healthcare delivery.

Is Japan's Data Health Project really feasible?

Prevention should be more focused instead of care. Japan has recently built up three types of national health database, and is now developing ways to use them. Since healthcare expenses in 2014 are estimated to be about 50 trillion yen, Japan could save about 5 trillion yen in addition to extending the healthy life expectancy nationwide if all prefectures follow the example of Nagano. The potential effect of the Data Health Project is very significant.

Can Japan increase the number of working women to contribute enough to relieve the financial pressure on the social security system?

It is apparent that the government should support working women by providing less expensive day care for children of working mothers, establishing a quota system for hiring women and so on. However, the government cannot force women to go out to work. It depends on their sense of values.

Can human society overcome the aging by technology?

This is the most challenging research thesis for all of us. Robots for long-term care or living assistance might be one of the answers.

EU countries are also relentlessly moving towards the so-called super-aged society like Japan. EU countries will be able to prepare for this inconvenient truth by learning from Japan's experience.

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