

Health Insurance Systems in Japan: a Neurosurgeon's View

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Abstract

The health insurance system in Japan is compared to the U.S. system from a neurosurgeon's perspective. The Japanese entire population is enrolled in mandatory health insurance without choice based on employment and residence, called "Health-insurance-for-all." Elderly Health Insurance for senior people aged 70 years or older is set within each health organization. As the relative financial conditions are variable among health insurance organizations, financial adjustment is done. The medical fee is set for all the procedures and products that are paid by health insurance which sets the prices. The same fee schedule applies to both private-practice physicians and hospitals. In the U.S. system, there are numerous fee schedules including both doctor fees and hospital fees. Any extra charges (balance billing) for procedures or materials that are not listed in the fee schedule are strictly prohibited. There is an escape clause that is called the specified medical fee system ("Tokutei Ryoyohi" in Japanese). Some designated items can be exceptionally paid by health insurance fee schedule. Many Japanese neurosurgeons express dissatisfaction with the lack of approval for medical materials which have already been used safely in other countries. The retrospective claim review process includes intermediaries, quasi-public organizations that act as payment makers to providers and claim review boards. Peer-review boards consist of about 8,000 physicians. The billing process itself using the same, uniform fee schedule is very uncomplicated, and has helped to diminish the need for well-trained and well-paid managers, and controlled administrative costs in Japan. Most medical expenses were consumed by a few patients who underwent high-cost medical care. Medical expenditure for the elderly is already taking 1/3 of national health expenditure, and is projected to reach 1/2 of national health expenditure by the year 2025. There is catastrophic coverage for high-cost care or a cap on monthly co-payment spending (High-Priced Medical Fee system: *Kogaku Ryoyohi Seido*). To maintain reliable and stable medical insurance systems in the aging society with fewer children in the 21st century, it is essential that fundamental reform is introduced across all systems.

Key words: health care system, health insurance, socioeconomic factor, fee schedule, medical expenditure, professional liability insurance

Introduction

Medicine used to be a one-on-one profession: the doctor and the patient¹³⁾ (Fig. 1). In the old days, doctors treated patients and patients paid doctors for their time and knowledge. There was no middleman. These days, the insurers are middlemen. Health insurance is not a one-on-one business. Healthy persons or their employers pay premiums to the insurers that establish a cash reserve while they are healthy¹³⁾ (Fig. 2). When the healthy individuals get sick, the doctors and/or hospitals provide health care to them, but send the claim ("reseputo" in

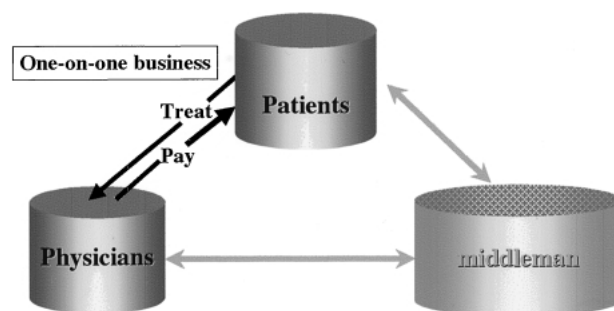


Fig. 1 Relationship between the doctor and patients. Medicine used to be a one-on-one profession. In the old days, doctors treated patients and patients paid doctors for their time and knowledge. There was no middleman.

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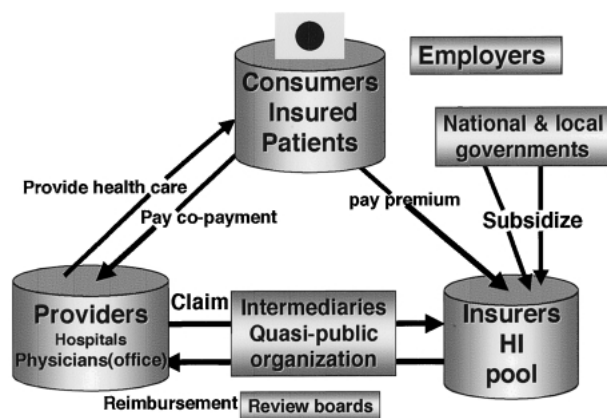


Fig. 2 Relationships between the patients, doctors, and insurers in the health insurance (HI) system in Japan. The patients and employers pay a premium to the insurer, governments subsidize insurers. When the patients are provided health care, they pay a co-payment to the providers. The providers send a claim to the insurers and are reimbursed by the insurer. The claim review process includes intermediaries, quasi-public organizations including review boards.

Japanese health insurance systems) to the insurers. The insurers pay the doctors and or hospitals. The cash reserves are used for claims from a few individuals. There is an administrative cost and everything left over is profit. In Japanese health insurance systems, there are intermediaries, quasi-public organizations including review boards in the middle (Fig. 2). Most Japanese neurosurgeons are hired by the hospital and paid salaries from the hospital. There is no distinction between hospital fees and doctor fees in the medical fee payment system. Neurosurgeons are busy seeing and treating the patients. They do not really care about the health insurance system. Hospital-based specialists including neurosurgeons have lower political power and income, and have been able to choose whatever treatment they think is necessary with little worry about outside interference and to enjoy substantial clinical autonomy within the range of the official costs under the current fee-for-service payment system.^{3,4,10} Recently, however, there is a growing sense of crisis in maintaining the health insurance systems in the face of the economic depression of the Heisei era (1989–) that occurred after the end of the bubble economy. Japan's medical care insurance system is now at a major turning point. Forty years have passed since the establishment of the universal health insurance system, and while Japan is becoming a true aging society with fewer children, the

imbalance between the increase of medical expenditure and economic growth is continuing to grow. We have two major problems with health care finance and service delivery in high-tech acute care and long-term care for the elderly. The author had an opportunity to discuss Japanese health insurance systems with American neurosurgeons at the Japanese-American Neurosurgical Friendship Symposium in 2003. In this paper, the author reviews Japanese health insurance systems with reference to U.S. systems.

Features of the Health Care System in Japan

Japanese health care systems have served good points. Gross health indices are best in the world with the longest life spans and the lowest infant mortality. The whole population is covered by universal mandatory health insurance covering nearly all-regular health care. Health care costs are roughly half of those in the U.S. All prices are strictly controlled by a fee schedule, so that the income is secured by fee-for-service.^{3,4,10} However, Japanese health care systems include several drawbacks. Long-waiting times are followed by a short-consulting time, which is summed up by the catchphrase, “wait for 3 hours, be seen for 3 minutes,” especially in big hospitals. Systems are in favor of excessive medication and testing. There is a lack of information and accountability. There are fewer incentives for providing top-quality medical care. Hospitals may be run-down and understaffed. Poor quality of professional judgment is sometimes displayed in diagnosis and treatment. However, the above-mentioned features have recently changed dramatically and have become a matter of reform.^{3,4,10}

Socio-cultural Aspects of Medical Care: the Behavioral Pattern of Japanese Physicians and Patients

The socio-cultural tendencies of Japanese patients are closely associated with the current health insurance system in Japan. The rate of visiting doctors per year is 16 in Japan, versus 5.8 in the U.S. The number of computed tomography (CT) scans per one million people is 6.4 times more in Japan (84.4) than in the U.S. (13.2), and that of magnetic resonance (MR) imaging is three times more in Japan (23.2) than the U.S. (7.6).¹⁸ It seems difficult for both patients and physicians to alter their behavioral patterns quickly. For example, Japanese patients

Table 1 Comparison of basic concepts of health insurance systems in Japan and the U.S.

Japanese system	U.S. system
Equality principle	Investment principle
Social solidarity	Individualism
Uniformity	Equality
Community rating	Risk rating
Social insurance	Casualty insurance

with headache expect CT/MR imaging when they first see their physicians. Japanese physicians order CT/MR imaging for patients with headache. The Japanese general public expects “selfless service” from their physicians, although they know it is largely mythical. Japanese physicians have been protecting their individual right to make judgments against interference by bureaucratic rules such as protocol or treatment guidelines. The Japanese Medical Association has emphasized the ideology of professional autonomy. On the other hand, we notice that the American glorification of science justifying higher and higher spending on health care, and bureaucratic interference in medical decisions and protocols are the hallmarks of managed care-style health care.⁴⁾ Generally speaking, the Japanese are not so litigious, whereas Americans are extremely litigious and conscious of personal rights. Malpractice suits have been rare in Japan, and people have not demanded much explanation of medical matters from doctors. However, these tendencies are dramatically and acutely changing.

Enrollment and Selection of Health Insurance

Health care is an indispensable service for people. Everyone should be guaranteed easy access to appropriate health care regardless of level of income.⁷⁾ In social insurance systems that secure equal access to medical services, even high-risk patients can be enrolled because of the compulsory enrollment and income-proportional premiums.³⁾ In contrast, private health insurance has limitations in maintaining equal access to medical care. Low-risk people who exercise and don't smoke do not want to get insurance if both high- and low-risk people pay equal premiums. Consequently, risk-rated premiums must be set to maintain premium revenue. Table 1 shows the differences in basic concepts of health insurance systems in Japan and the U.S.^{3,4,10)} The entire Japanese population is enrolled in mandatory health insurance without choice based on employment and residence. This is called “Health-insurance-for-all.”

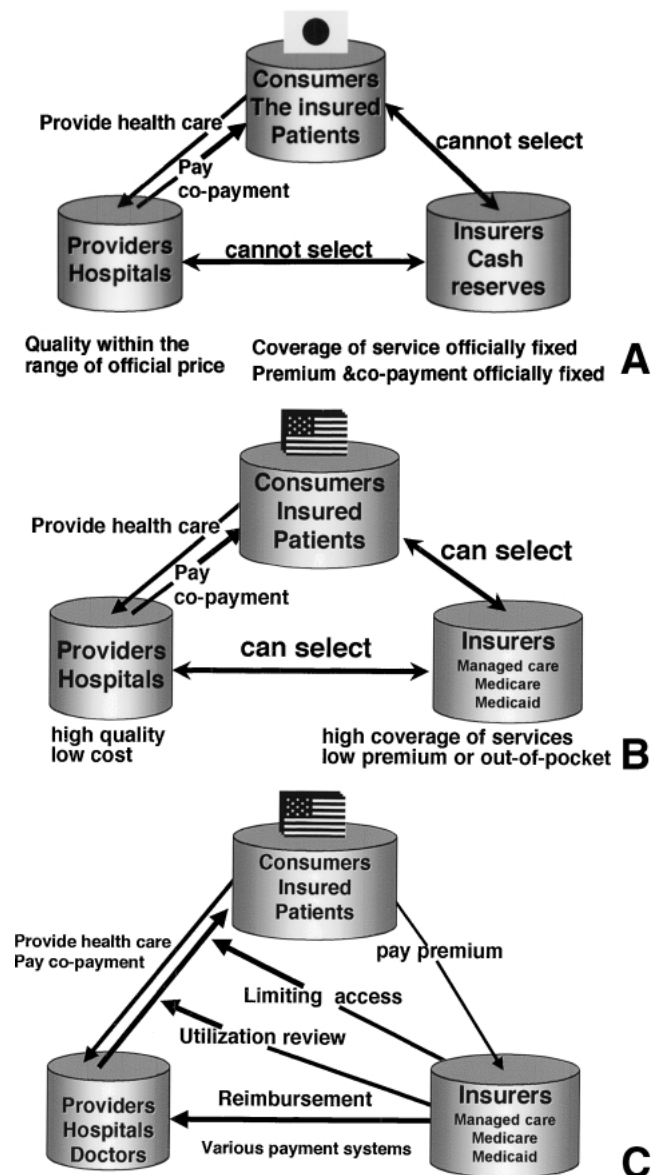


Fig. 3 A: Japanese mandatory health insurance system. The consumers cannot select the insurer. The insurer cannot select the hospital or provider. The coverage of service is officially fixed, and the premium and co-payment are officially fixed. Quality of medical care is limited within the range of official prices. B: The U.S.-style market-based system. There are numerous health insurance plans and numerous fee schedules. The patients can select insurers with high coverage of service, or low premium and out-of-pocket expenses. The insurers can select hospitals or providers with high quality and low-cost services. C: U.S. managed care plan. Managed care organizations limit access and perform strict utilization reviews. Reimbursement systems to both doctors and hospitals are quite variable.

Table 2 Various payment patterns and systems in the U.S.

Hospital fee		Doctor fee	
Pattern	Payment system	Pattern	Payment system
Flat sum system	Capitation Per diem DRG/PPS	Flat sum system	Capitation RBRVS
Discount system	Discount fee for service	Capped fee system	Fee schedule
Fee for service	Fee for service	Discount system	Discount fee for service
		Fee for service	Fee for service
		Employment system	Wages, waged for time

Note that the prospective payment system is not uniformly applied to all insurance systems, mainly to hospital fees. DRG/PPS: diagnosis-related group/prospective payment system, RBRVS: resource-based relative value scale.

In other words, consumers have no choice over the selection of their health insurance plan. All plans offer the same set of medical benefits. In the U.S., non-enrollees or uninsured individuals comprise one seventh of the entire population.

In Japanese health insurance systems, the consumers cannot select the insurer. The insurer cannot select the treatment provider. The coverage of service is officially fixed, and the premium and co-payment are also officially fixed. Therefore, the quality of medical care is limited within the range of the official price (Fig. 3A). U.S.-style market-based systems include numerous health insurance plans and numerous fee schedules (Table 2). Patients can select an insurer with high coverage of service, or low premium and out-of-pocket expenses. The insurers can select hospitals or providers with high quality and low-cost service (Fig. 3B, C).

Access, Quality, and Cost

Three classic standard criteria for assessing health care systems are access, quality, and cost. These are usually seen as tradeoffs or mutually exclusive. It assumed that to maximize any one criterion is to compromise another. In his book, Lee¹⁴⁾ wrote of a framed statement on the wall in an office of the administrative bureau of the Oregon Health Plan stated that “cost, access, quality, pick any two.” In contrast, the advisory committee of economic affairs of the Japanese Cabinet claimed that “we can lower the cost of health care while preserving free access and improving the quality of medicine.” Lee argued that this cannot be theoretically achieved. All Japanese citizens are entitled to health care on an egalitarian basis in terms of service received and financial burdens. The Japanese have put the emphasis on access, whereas the U.S. system seems to value quality.⁴⁾ The U.S. experience until the

mid-1990s indicated that an emphasis on quality made it difficult to control costs and inhibited progress on access. The more recent success in holding down costs seems to be at some expense to quality. However, the Japanese case has demonstrated that universal egalitarian access is compatible with cost control.⁴⁾ In Japan, anyone can go to any provider without making an appointment and get essentially the same treatment. This is often cited as “free access,” but causes the adverse effect that people like to visit large hospitals, where a long waiting time is followed by a short-consulting time. In the U.S. market-based health care system, HMOs (health maintenance organizations) restrict access to medical service. Patients are required to be seen by a designated primary care physician and are not referred to specialists such as neurosurgeons except in urgent cases. However, providers with fewer access restrictions such as PPOs (preferred providers organizations) or POS (point of service) are now surpassing HMOs (Fig. 3C). In the U.S. system, the consulting time of physicians is longer than that of Japan. Nevertheless, the reality is a “long-waiting time to get an appointment with a famous doctor.”

In 1996, the Japanese Ministry of Health, Labour and Welfare introduced a new health care policy to restrict access to big hospitals in order to facilitate the functional differentiation between office-based and hospital-based medical care. An additional fee is reimbursed depending on the referral rate of out-patients. For example, 4,000 yen is reimbursed in university hospitals with a referral rate of more than 80%, and 3,000 yen in those with a rate of more than 60%. Patients who visit a large hospital (more than 200 beds) without referral from a primary care physician are requested to pay a reasonable amount of extra money as co-payment.²²⁾ This is an escape clause of the fixed fee-schedule that is called the

specified medical fee system. This health policy gives large hospitals the incentive of collecting more referred patients and refusing patients without referral. Moreover, this restrains the typical behavior of Japanese patients who visit large hospitals directly without being seen by primary care physicians.

Total medical expenses account for 7.1% of gross domestic product (GDP) in Japan, versus 12.9% in the U.S. and 9.3% in G7 countries, and health care spending per capita (2,214 dollars) is about half the level in the U.S. (4,178 dollars). The GDP tax burden (percent) is three times higher in Japan (4.4%) than in the U.S. (1.5%).¹⁸⁾ Why so much lower in Japan than in the U.S.? Hsiao⁹⁾ suggested five differences: lower incidence of disease, less-aggressive practice styles, lower hospital staffing levels, smaller administrative burdens, and lower income of the majority of Japanese doctors who are on salary (Table 3). This rule of thumb still stands.

Table 3 Hsiao's rough-and-ready estimates of lower health-care costs in Japan

Contribution factors	Percent contributions
Lower incidence of disease	25
Less aggressive practice styles	15
Lower hospital staffing levels	15
Smaller administrative burdens	10
Lower income of doctors who are on salary	15
Other causes	20

Health Insurance Organizations in Japan: Multiple-Payer System

There are a number of health insurance systems in Japan, roughly classified into two types: Employees' health insurance; and National Health Insurance to which self-employed people, farmers, and jobless people subscribe (Table 4). Japan has an extraordinary numbers of insurers, 5,244 insurance carriers, versus 420 in Germany, 13 in France, and 643 in the U.S. National Health Insurance includes the small insurers with less than 3,000 enrollees comprising about 38%. The Japanese government itself is by far the largest single insurer, Government-Managed Health Insurance.¹⁶⁾ Therefore, the Japanese system can be said to be a hybrid of single-payer and all-payer types. There are single-payer systems as in Europe and multiple-payer systems as in the U.S.⁶⁾ Japan is a cross between single-payer and all-payer systems in that there are many insurance carriers, but the Japanese government itself is the largest single insurer, the National Health Insurance.³⁾

I. Employer-based health insurance^{3,4,21)}

Government-Managed Health Insurance mainly covers the employees of small to medium companies (37 million, 29%). The insurer is the national government with a single insurance pool with one contribution for all. It is run by the Ministry of Health, Labour and Welfare (Health Insurance Bureau) that estimates overall medical expenditure and negotiates a fee schedule with providers. Therefore, their financial condition can be assessed as a whole. The Health Insurance Bureau adjusts Government-Managed Health Insurance spending to match revenues by manipulating the fee schedule which applies to all the other health insurance systems.

Table 4 Health insurance organizations in Japan

Health care plan	Insurer	Sector	Proportion	Subsidy	Proportion of the aged
Employer-based health insurance					
Government-Managed HI	1*	small business employees	37 million, 29%	14%	5.6%
Union (Society)-Managed HI	1780	large firms employees	32 million, 25%	some	2.8%
Seaman's HI	1*	seaman	228,000	some	7.7%
Mutual Aid Association	24	government employees	10 million, 8%	none	4.2%
Mutual Aid Association	54	local government employees			
Mutual Aid Association	1**	private school staff			
Self-employed-based HI					
National Associations	166	physicians, builders, pharmacists	4254	32-52%	24.1%
Residence-based HI					
National (Citizens) HI	3246	self-employed	48 million, 38%	50%	
HI for the aged					

*Government, **organization. HI: health insurance.

Therefore, the Government-Managed Health Insurance functions as the leader and/or regulator for overall health-care spending. Union (Society)-Managed Health Insurance covers employees of large firms (32 million, 25%) who are generally well paid and not old. There are 1,780 insurers. Mutual Aid Association (10 million, 8%) covers government or quasi-public employees who are generally well paid and not old. The last two organizations are financially rich health insurance organizations. In addition, there are medical care insurance systems designed for seamen, national public service employees, local public service employees, and teachers and staff employees of private schools. There are also self-employed-based health insurance (National Associations) for office-based physicians, lawyers, builders, beauticians, and pharmacists.

II. Residence-based health insurance

National Health Insurance covers self-employed, farmers, shopkeepers, and jobless people and pensioners who generally are not well paid and older. The insurers (3,242 + 166) are municipalities.

III. Other insurance organizations (plans)

Retired Health Insurance covers the retired within the National Health Insurance. Elderly Health Insurance for senior people over 70 years of age is set within the each health organization. The proportion of the aged to each health insurance organization is listed in Table 3. Health insurance for the poor and mentally disabled (0.9%) is not financed by a health insurance system but from the welfare system.

Cross-subsidization in Health Insurance: Healthy and Wealthy Subsidize the Poor and Sick

The funds to pay for health care from Japanese citizens and employers come from three sources: general tax revenues (30%), health insurance premiums (55%), and co-payment or out-of-pocket contributions (15%) (Fig. 4).^{3,4)} There are a multiplicity of financial sources and health insurance carriers. Payments from insurers to providers nearly all flow through a single faucet (Fig. 4). Union-Managed Health Insurance is subsidized by employer and employee premiums averaging 8.3% of covered wages, with half or more paid by the employer. Government-Managed Health Insurance has a fixed premium rate of 8.5% nationwide, shared equally by employer and employee. Fourteen percent is provided from government general revenues. Premiums of National Health Insurance vary but are based on household income, assets, and number of members.

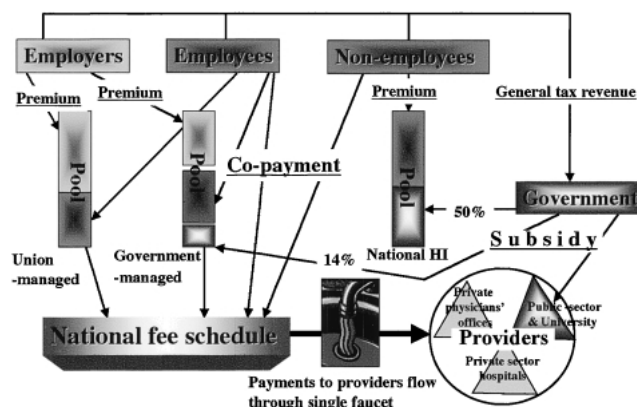


Fig. 4 Flow of money in health care. Three forms of the funds to pay for medical care from citizens and employers. HI: health insurance. Modified from [Basic Medical Care Problems], Copyright © 2003, Nihon Keizai Shinbun.

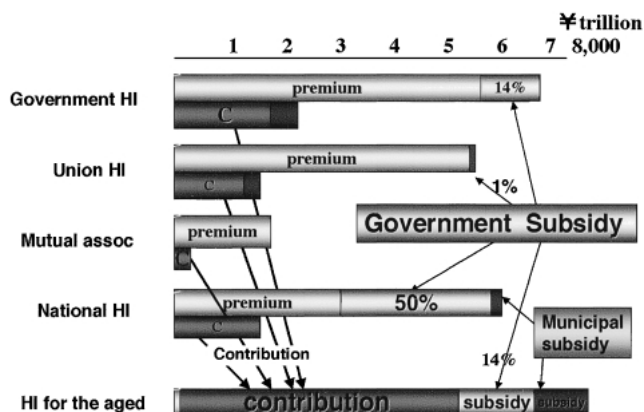


Fig. 5 Cross-subsidization in health insurance organizations. C: contribution, HI: health insurance, lower column: output, upper column: input. Modified from [Medicine in Japan], Copyright © 1996, Chuo Koron-sha.

Fifty percent of outlays are provided from general tax revenue. The effect of this subsidy, though not its stated purpose, is that the government makes up for the lack of an employer (Fig. 4). Recently, the number of policy holders of National Health Insurance has increased because retired, aged people have moved from Union-Managed Health Insurance and the number of low income households has increased. The rate of premium over annual income has gone up to 10.2%, which is much higher than that of Union-Managed Health Insurance. The deficit finance of the National Health Insurance is caused by an increase in subsidy for health insurance for the aged of 4.2% since 2002. The unification and

reorganization of small insurers of National Health Insurance was proposed during a Cabinet meeting.

As the relative financial conditions vary between health insurance organizations, financial adjustment is necessary (Fig. 5). Government mainly subsidize financially poor organizations, that is, the National Health Insurance or self-employed and health insurance for the elderly. Four major National Health Insurance organizations contribute to National Health Insurance for the elderly. National Health Insurance for the elderly is run by contributions from other National Health Insurance organizations and subsidies from the national and local government (Fig. 5). This illustrates the structure: The healthy and wealthy subsidize the poor and sick.¹⁰⁾

Claim Review Process in the Health Insurance System in Japan

Figure 2 illustrates the claim review process of health insurance systems in Japan. Figure 3C illustrates the U.S. system. Patients and employers pay premiums to the insurers, and governments subsidize insurers. When the patients are provided with health care, they make co-payments or pay out-of-pocket to the providers. The providers send a claim to insurers and get reimbursement from the insurer. But in Japanese health insurance systems, there are intermediaries, quasi-public organizations that act as payment makes to providers and claim review boards. The organizations consist of the Payment Fund (*Shiharai Kikin*) for the employment-based insurance system and the National Health Insurance Federation (*Kokuho Rengokai*). As the Japanese health insurance is social, a desirable review board may well be public or quasi-public.

Peer-review boards consist of about 8,000 physicians. Appropriateness is judged just by collation of the disease name with health care contents. It is not unusual to find several diagnoses listed on the claim form added by the physician in order to justify the diagnosis. Of course, there is an audit system for fictitious claims.³⁻⁵⁾ The claim review process is a retrospective one. The claims are subject to after-the-fact reviews that can result in denial of payment. But the denial of payment (reimbursement) is only 0.95% of whole bills. Thus, Japanese physicians are supposed to enjoy substantial clinical autonomy and never have to get pre-approval for any procedures or medication. Americans tend to believe that the appropriateness of care can only be evaluated on an individual basis, with the support of an elaborate database and/or well-defined protocols. The claim review process in Japan does not fulfill these condi-

tions, being ad hoc and impressionistic, but to a surprising extent, it does not serve its primary purpose of promoting self-policing by professionals.^{4,5)} It is noteworthy that the billing process itself is very uncomplicated because everyone uses the same, uniform fee schedule. This has helped diminish the need for well-trained and well-paid managers and reduced administrative costs in Japan.

Uniform and Fixed Fee Schedule With Escape Clause

The medical fee is set for all the procedures and products that are paid by health insurance which sets the prices.⁵⁾ The same fee schedule applies to both private-practice physicians and hospitals. The fee schedule is divided into two sections: a basic section on doctor's consultations and hospitalization; and specific sections on home-care visits, diagnostic tests, imaging, prescribing and dispensing, injections, rehabilitation, psychotherapy, treatment, surgery, anesthesia, and nuclear therapy. The conversion rate is a point system. Each point is equivalent to 10 yen. It has remained constant since 1958. Fees are paid to the hospitals but not to the doctors because historically most hospitals evolved from office-based physicians. Hospital-based physicians are hired by the hospital. The Japanese fee schedule system makes expensive, high-tech medical care relatively unprofitable, and cheap outpatient primary care relatively profitable. In the U.S. system, there are numerous fee schedules including both doctor fees and hospital fees (Table 2).⁸⁾

Any extra charges (balance billing) for procedures or materials that are not listed in the fee schedule are strictly prohibited.³⁻⁵⁾ The implied mixture of approved care with health insurance and unapproved care is always cited as "mixed medical care." For example, prescribing new unlisted medicines (e.g. chemotherapy) or the use of new diagnostic tools (e.g. intraoperative MR imaging), and performing new treatments that are not approved by the Ministry of Health, Labour and Welfare are prohibited. Payment at their expense is prohibited. No reimbursement by insurers is ensured. When an unapproved medicine is prescribed, all medical expenses including consultation and tests should be paid by the patient. Viagra® (Pfizer, New York, N.Y., U.S.A.) for erectile dysfunction is not covered by health insurance. If paid by health insurance, physicians would prescribe Viagra® to people with physiological erectile dysfunction if asked by their patients. Nimodipine is used widely for the treatment of vasospasms associated with aneurysmal subarachnoid hemorrhage,¹⁾ and Japanese neurosur-

geons recognize its efficacy. However, nimodipine has not been approved and is not set in the fee-schedule for some reason, so not prescribed in Japan. Medicines or procedures that are proved to be effective and safe should be listed in the fee schedule as soon as possible, but the administrative procedures of approval take time. If "mixed medical care" is permitted, unapproved medicine or procedures can be given only to the people who can afford to pay, and consequently the egalitarian health insurance system would break down. Medical care that has not been proved to be effective and safe should not be provided nor paid for by the fee-schedule. However, it is difficult to determine effectiveness of medicines and procedures.

There is an escape clause called the specified medical fee system ("*Tokutei Ryoyohi*" in Japanese) that was introduced in 1984. Fees for beds incurring an extra charge, high-level advanced medical care, special materials such as dentures and some other items can be exceptionally paid for by the health insurance fee schedule. This special payment system for highly advanced medical care is only adopted by designated hospitals. There are 84 items such as heart or liver transplantation, deoxyribonucleic acid diagnosis, sensitivity test of anticancer drugs, navigation-guided surgery, and so on.

There is also a special fee-schedule system for specified health insurance-approved medical materials, "*tokutei hoken iryo zairyo*" in Japanese. The fee for pacemakers, titanium plates or cages for spinal surgery, shunt systems with programmable valves, aneurysm clips, and some other medical materials are set in the fee schedule. Furthermore, fees are reimbursed according to the price which reflects the market price paid by the provider. As many Japanese neurosurgeons prefer to use foreign surgical materials, the considerable sums of money for the cages, clips, etc., are actually paid to U.S. or German manufacturers. Although these constitute only 2.5% of total medical expenditure, the growth rate has been nearly twice the average.^{4,5)}

Despite the wide approval of medical procedures and products that are paid for by health insurance, it is not possible to catch up with the rapid progress in medical art and technology. Many Japanese neurosurgeons express dissatisfaction with the lack of approval for medical materials such as the self-expandable stent for the carotid artery, tissue-plasminogen activator for thrombolysis of patients with cerebral embolism, and some new drugs, all of which have already been used safely in other countries. For example, etoposide, a cisplatin not approved for brain tumor patients, will finally be approved soon as a chemotherapy agent for brain

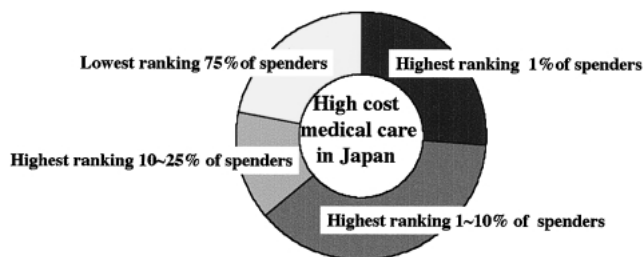


Fig. 6 High cost medical care in Japan. The highest ranking 1% of spenders of medical expenses spent 26% of the total medical expenditure. The highest ranking 25% of spenders spent 75% of the total medical expenditure.

tumors.

Recently, the fixed fee for individual surgical operations has changed. The fee for some designated surgeries changes depending on the annual number of cases of the operation at the concerned institutions, years of experience and board certification of the surgeons, and the difficulty of the surgical procedures.²²⁾ These requisites are determined at individual institutions. The differential setting of the medical fee for special operations is thus employed for selecting the hospitals in which experienced and board-certified surgeons are performing a sufficient volume of surgery.

High-Cost Medical Care in Japan and Catastrophic Coverage

A few patients who underwent high-cost medical care consumed most of the medical expenses. As shown in Fig. 6, the highest ranking 1% of spenders of medical expenses spent 26% of the total medical expenditure. The highest ranking 25% of spenders spent 75% of the total medical expenditure.¹²⁾ For health care reform, the effect of increase in co-payment is cancelled out by a cap system on monthly co-payment spending. The number of cases with costs over 10 million yen was 81.¹⁷⁾ The highest cost was 40,073,310 yen for 1 month for a 17-year-old boy with hemophilia A.¹⁶⁾ Figure 7 showed the estimated annual premium payment and annual medical fee spending of each age group in 2000. Seniors over 70 years of age pay premiums much lower than younger people, whereas they spend much more on medical fees.¹⁵⁾ Per capita medical expenditure for the elderly (age 70 years or older) is five times greater than that of non-elderly people (age under 70 years), and with the progress of aging in this society the medical expenditure for the elderly is increasing

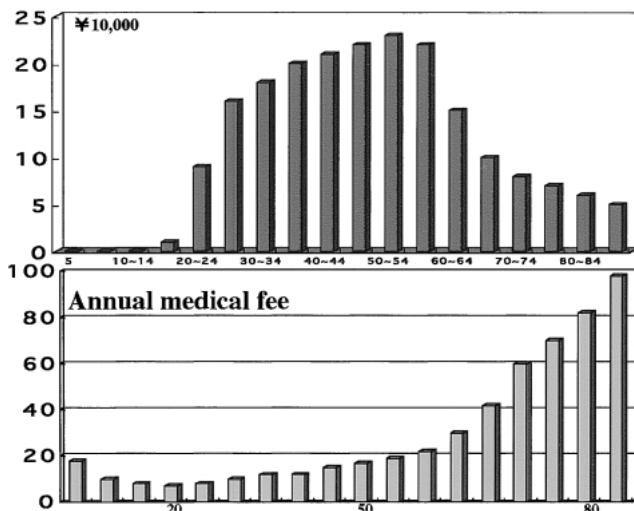


Fig. 7 Estimated annual premium payment and annual medical fee spending of each age group in 2000. Over 70-year-old seniors pay much lower premiums than younger people, but consumed much greater medical costs.

rapidly.

If this condition continues with the current health care system, the burden on younger generations of medical expenditure for the elderly will expand further. In order to realize fair sharing of medical expenditure for the elderly by all citizens, it is necessary to improve the efficiency of medical expenditure for the elderly and to balance the burden on non-elderly and elderly people.

The current health service system for the elderly has the following problems have been pointed out.¹⁵⁾ National health expenditure is increasing every year, and exceeded 30 trillion for the first time in fiscal 1999, and the ratio to the national income reached 8%. In particular, medical expenditure for the elderly is growing at the rate of about 9% annually, and is already taking 1/3 of the national health expenditure. It is projected to reach 1/2 of the national health expenditure around 2025. In recent years, this has been the key driver for the increase in medical expenditure. Comparing the medical examination fee per person, the fee for the elderly is five times greater than that for the non-elderly. Considering these factors, it is necessary that we continue to promote the improvement and management of lifelong health as well as to offer adequate medical care for the elderly in an efficient manner.¹⁵⁾

There is catastrophic coverage for high-cost care or a cap on monthly co-payment spending (High-Priced Medical Fee system: *Kogaku Ryoyohi Seido*). Suppose that the monthly medical fee of the clipping

of a ruptured aneurysm is 2,500,000 yen. As the co-payment of a regular enrollee of National Health Insurance is 30%, the co-payment is supposed to be 750,000 yen. However, the actual payment is 142,640 yen. The cap or ceiling of payment is set at 139,800 yen + (medical expense - 466,000 yen) × 1% for higher income households, 72,300 yen + (medical expense - 241,000 yen) × 1% for general households, and 35,000 yen for low income households in April 2003. The same cap of co-payment for the elderly over 70 years of age and for infants and young children is set separately.²¹⁾

Professional Liability Insurance Crisis in the U.S. and Health Insurance

Considering the present situation in the U.S., neurosurgeons should participate in the debate concerning federal medical liability reform legislation. According to a recent survey by the Council of State Neurosurgical Societies, neurosurgeons in nearly all 50 states have had increases in their professional liability costs. Approximately 50% of respondents have had at least a 20% increase in costs from 2000 to 2002, with some neurosurgeons paying nearly 300,000 dollars per year. The growing costs are not simply a market trend, they are a reality for medical professionals. It is a devastating reality when patient care is compromised, as quality physicians are moving, retiring, or restricting their practices in reaction to these skyrocketing insurance premiums.¹⁹⁾ The standardized physician payment schedule of Medicare is based on the resource-based relative value scale (RBRVS). In the RBRVS system, payments for service are determined by the resource costs needed to provide them. The cost of providing each service is divided into three components: physician work 52.6%, practice expense 44.2%, and professional liability insurance (PLI) 3.2%. Thus, the increase in PLI premium influences the medical fee payment.²⁰⁾ In Japan, the PLI premium is not included in the health insurance system.

The proposed Patients' Bill of Rights has been stalled in the U.S. Congress conference committee since the tragic events of September 11, 2001. The bill has been accused of providing a financial bonanza for the denizens of the sue-for-profit litigation industry, creating chaos in medical care. The Patients' Bill of Rights was dubbed a "lawyers' bill of delights." If implemented, the bill will increase the number of uninsured by making insurance premiums less affordable. Studies performed by the Health Insurance Association of America have previously shown that for every 1% increase in premiums, the number of uninsured increases by

300,000 people. The Employment Policy Foundation estimates that the Patients' Bill of Rights could very well increase the number of uninsured by a staggering 9.2 million Americans, suddenly increasing the proportion of the uninsured to a quarter of the population. Also, this organization estimates that about 56,000 new lawsuits will be filed annually, with a cost burden to employers and health care plans of up to 16.3 billion dollars.²⁾ The French Supreme Court affirmed the right of the patient to give informed consent, and placed the burden of proof on the physician. Charbel⁶⁾ claimed that the court's decision, although it is not yet final, serves to highlight the wide differences in people's mentality and expectations on either side of the Atlantic.

Future Realignment and Reorganization of Health Insurance Systems in Japan

To maintain reliable and stable medical insurance systems in this full-fledged aged society with fewer children in the 21st century, it is essential that we realize fundamental reform across all systems. The discussion on reforms started in late 1997.¹⁵⁾ Japanese health care has been characterized by excessive medication and testing that is ridiculed as "pickled in drugs and tests." The principle of fee-for-service adopted in the current system is creating problems such as excessive medical treatments.¹⁶⁾ In addition, most physicians were directly providing medical care in their own offices when the current fee schedule was introduced, but hospitals now have a heavier weight as medical care providers. The current fee schedule no longer evaluates the overall functions of medical institutions sufficiently.¹⁶⁾ Considering these issues, it is pointed out that the evaluation should be based on the characteristics of diseases and on the function of individual medical institutions with consideration of changes in disease patterns.¹⁶⁾

The prospective (comprehensive) payment system (PPS) has been introduced to designated university hospitals and national cancer and cardiovascular centers in 2003, and is gradually going to be introduced to other general hospitals. In Japanese diagnosis-related group/PPS, which is called DPC (diagnosis procedures complex), the basic medical fee is calculated as basic reimbursement for hospitalization and examinations for each diagnosis complex multiplied by the relative coefficient of individual institutions. Exceptionally, the expense of surgical operation and endoscopic tests are paid by the current "fee-for-service" system. The success in wide adaptation of DPC (PPS) to other many hospitals in Japan depends on the establishment of

accurate disease classification. However, documentation and filing of medical records is still insufficient for accurate classification of each disease in city hospitals. In the U.S., the prospective payment system is not uniformly applied to all insurance systems, but mainly to Medicare hospital fees (Table 2). It is not applied to the physician's fee.¹⁶⁾ The active introduction of the prospective payment system is considered to create the following incentives. Reduce the cost and the length of hospital stay by promoting case management to secure early discharge home or to intermediate institutions such as rehabilitation hospitals by introducing the clinical pathway. Increase outpatient care, including preoperative and postoperative care. Increase the number of inpatients by widening the indication for hospitalization, hospitalizing the less severe patients, and by refusing severe and/or very aged patients and transferring them to higher institutions. Reinforce the control of physicians. Cut unprofitable sections down by reducing the staff and closing the wards.

The direction of the future reform of health insurance systems has been proposed by the Japanese government, and decided in a Cabinet meeting on March 28, 2003. The basic policy consists of: Reorganization and unification of 5,244 insurers, and integration into prefectural units; establishment of independent insurance for the aged; realignment of the fee schedule. Japan has an extraordinary number of insurers. There are 5,244 insurers in Japan, versus 420 in Germany, 13 in France, and 643 in the U.S. The small insurers with less than 3,000 enrollees comprise about 38%. Each insurer is to be integrated into prefectural units (Fig. 8). Fee-for-service is to be left for primary care and special outpatient clinics in offices and small hospitals, and surgery and endoscopic diagnosis in large, acute phase hospitals as a "doctor fee" element (Table 5).¹⁶⁾ The difficulties with the establishment of independent insurance for the aged are financial resources. The proportion of medical expenses (premium and out-of-expense) that aged people can pay by themselves is only 10% of the total medical costs. If the rest of the cost is subsidized by tax revenue, the amount of tax should be increased or subsidized by the insurers.

Recently, the medical insurance system reform proposed by the advisory committee of economy and finance included the combination of medical care covered by social health insurance and that paid by patients, "mixed medical care." However, the following controversial points are suggested by Ikegami¹¹⁾: patients who cannot afford to pay the fee for the mixed medical care at their own expense

cannot receive this medical service; the effectiveness of the designated mixed medical care cannot be inspected because of no obligation of reporting the medical data in contrast with highly advanced medical care (*kodo-senshin-iryo*) in which medical data is obligated to be reported; it is difficult to determine the physicians and hospitals that can provide “mixed medical care.” Thus, Ikegami¹¹⁾ did not approve of the introduction of mixed medical care, but rather proposed reform within the current medical health insurance system.¹¹⁾

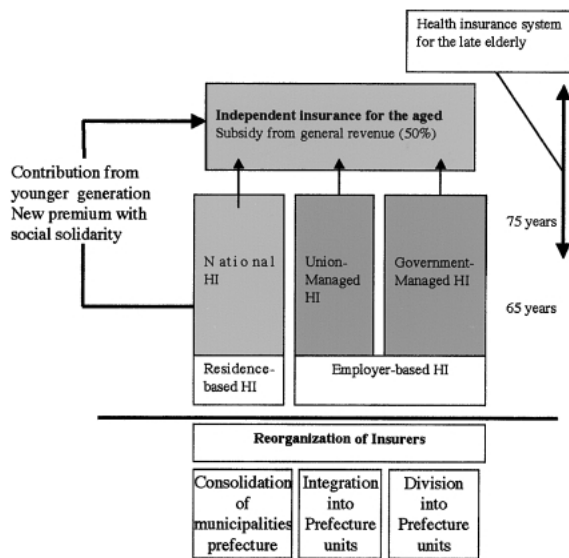


Fig. 8 Direction of the future reform of health insurance (HI) system.

Conclusion

The author reviews the health insurance system in Japan from a neurosurgeon's perspective. Recently, medical expenditures have increased along with the rapid increase in the aging population and with the advancement of medical technology, and also economic trend changes. The imbalance between the increase in medical expenditures and economic growth is expanding. While it is difficult to expect high economic growth in the future at the level that we experienced previously, continuing expansion of the imbalance will lead to the rise of the national burden of medical expenditures, particularly on younger generations. This may result in the universal medical care insurance system itself losing its credibility. It is unfortunate that the discussion of Long-Term Care Insurance for the elderly in Japan that was recently introduced is beyond the scope of this paper.

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Table 5 Direction of the future reform of health insurance system

Outpatient care		Inpatient care	
Office and small hospitals	Large hospitals	Acute hospitals (large and university hospitals, and national centers)	Chronic hospitals (rehabilitation hospitals)
Primary care	Special care	Acute medical care	Chronic medical care (recovery phase)
Technical cost: doctor's fee element	Technical cost: doctor's fee element	Administrative cost: hospital fee element	Administrative cost: hospital fee element
Fee-for-service payment system	Fee-for-service payment system	Prospective payment DPC (DRG/PPS)	Prospective payment
—	—	Fee-for-service only for surgery and endoscopic diagnostic procedures	Fee-for-service only for surgery and endoscopic diagnostic procedures

Estimation of technical aspect of medical care as “doctor's fee” element. Estimation of administrative aspect of medical care as “hospital fee” element. DPC: diagnosis procedures combination, DRG/PPS: diagnosis-related group/prospective payment system.

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