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# Japan's healthcare system and pharmaceutical industry

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**Abstract** Japanese people are enjoying longer and healthy lives at relatively low cost, thanks to well-balanced nutrition, low infant mortality and effective TB drugs. The healthcare system of the country also has made a significant contribution to such good performance. The system is divided into health insurance programs and a special healthcare system for seniors (SHSS), to which Japan's government has been paying money despite having a tremendous financial deficit. The government has tried to slash its financial burden of the healthcare system as much as possible for a better financial condition. Meanwhile, the Japanese pharmaceutical industry has played an important role in the development of the healthcare system under the situation of government having carried out a series of National Health Insurance (NHI) drug price cuts in order to save healthcare costs in recent years. The industry is categorised into three groups such as big players with presence in the US and Europe, other brand drug companies with no presence in these areas and generic drug companies. Price cut pressure from the government will force the big players to intensify their overseas activities and the other brand drug companies to do everything for their survival. On the other hand, generic drug companies will keep a better position in the market because the government has realised that promoting the use of generic drugs is effective for cost saving and changed to the policy favourable to the generic industry.

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## WHY DO JAPANESE PEOPLE ENJOY LONGER AND HEALTHY LIVES?

Japan is apparently overpopulated with 127m people, 1.4 times that of the population of Germany, on four main islands with a total surface area smaller than that of the State of California in the US. Foreigners may be

surprised by the hustle and bustle in Narita International Airport or Tokyo Railway Station and have the impression that Japan is full of vitality and its economy is dynamic.

Table 1 compares the health of Japanese people and healthcare expenditure in Japan with those of other advanced countries. As shown in this table, Japan proves excellent cost performance with people enjoying good health at relatively low cost. The following reasons explain these good results:

### Well-balanced nutrition

Until around 1960, carbohydrate was the main nutrition for Japanese people, who could not

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**Table 1:** Healthy life expectancy and medical expenditure

|               | WHO                     |            |                                   | OECD   |  |
|---------------|-------------------------|------------|-----------------------------------|--|--|
|               | Health achievement      |            |                                   | Per capita gross domestic product (GDP) (1998) | Ratio of total medical expenditure and gross domestic product (GDP) (1998) |
|               | Health                  |            | Overall health achievement rating |  |  |
|               | Healthy life expectancy | Equality   |                                   |  |  |
| Japan         | <b>1st</b>              | <b>3rd</b> | <b>1st</b>                        | <b>5th</b>                                     | <b>18th</b>  |
| Australia     | 2nd                     | 17th       | 12th                              | 17th   | 7th  |
| France        | 3rd                     | 12th       | 6th                               | 12th   | 5th  |
| Italy         | 6th                     | 14th       | 11th                              | 16th   | 14th   |
| Canada        | 12th                    | 18th       | 7th                               | 18th   | 6th  |
| UK            | 14th                    | 2nd        | 9th                               | 14th   | 21st   |
| Germany       | 22nd                    | 20th       | 14th                              | 8th  | 3rd  |
| United States | 24th                    | 32nd       | 15th                              | 4th  | 1st  |

Ranking of eight major WHO/OECD member countries. Healthy life expectancy defined as the age until which an individual enjoys a healthy and independent life. Equality defined as the lack of differences between different age brackets and regions. Source: WHO World Health Report 2000 and OECD Health Data 2000

afford a lot of protein and fat since many Japanese people were poor. Traditional Japanese meals seldom use beef and pork. For this reason, the Japanese people's ability to resist diseases, especially infection, was poor. With rapid economic growth, however, their meals have become much richer with more nutritious Western and Chinese cuisine added to their daily menu at home. The Japanese people's nutritional state has much improved with an increasing intake of fat and protein. The nutritional balance of average Japanese was optimised by around 1980, making a great contribution to raising average life expectancy.

Recently, however, the excessive intake of fat has become a major problem (Figure 1), resulting in an increase in the number of obese people, which in turn has led to a decrease in overall Japanese health.

### Low infant mortality

Healthcare facilities and living situations have improved significantly in parallel with the high growth of economy. As a result, the infant mortality in Japan has fallen to one of the world's lowest levels. Availability of vaccination against infection such as measles

and diphtheria has also greatly contributed to lowering infant mortality (Table 2).

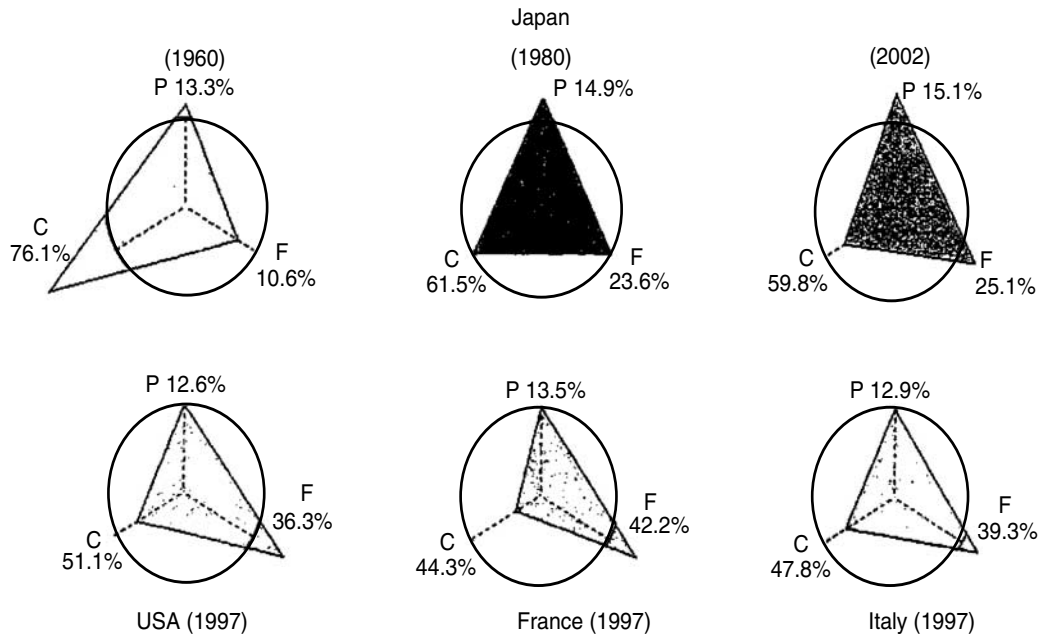
### Effective TB drugs

Until mid-1950s, tuberculosis was feared as a fatal disease by the Japanese because many young people died of this infection. Due to the carbohydrate-based meals, which were insufficient in protein, Japanese people were more vulnerable to the disease than Western people. Without effective TB drugs, the only way for tuberculosis patients to recover was to eat nutritious meals and rest at sanatoria. When TB drugs such as streptomycin and isoniazid were introduced in 1950s, tuberculosis has become a curable disease. These effective TB drugs saved many young people, who subsequently contributed to the economic development of Japan.

## THE HEALTHCARE SYSTEM IN JAPAN

### Its features

Needless to say, Japan's healthcare system has made a significant contribution to raising the nation's healthy life expectancy. The healthcare



**Figure 1:** Changes in PFC energy balance and international comparison. P, protein; F, fat; C, carbohydrate  
 Source: National Nutrition Survey published by the Japanese Ministry of Health, Labour and Welfare and Food Balance Sheets issued by the FAO.

**Table 2:** International comparison of the infant mortality (per 1,000 births) and average life expectancy

|               | Infant mortality<br>(per 1,000 births) | Average life expectancy |                  |
|---------------|--|-------------------------|------------------|
|               |  | Men<br>(years)          | Women<br>(years) |
| Japan         | 3.6                                    | 77.1                    | 84.0             |
| Sweden        | 4.0                                    | 76.2                    | 81.4             |
| U.K.          | 6.1                                    | 74.3                    | 79.5             |
| France        | 4.9                                    | 74.6                    | 82.2             |
| Germany       | 5.0                                    | 73.3                    | 79.7             |
| United States | 7.6                                    | 73.6                    | 79.4             |

Source: WHO World Health Statistics Annual, UN Demographic Yearbook

system is based on a free practice system and a universal health insurance system. In general, practitioners can freely open their clinics. Hospitals are established without restraint, although some restrictions have been introduced in recent years. Because all Japanese are covered by the public health insurance programs, they can receive treatment in any hospital or clinic around the country by

simply presenting their health insurance certificates and with some money for copayment.

Unlike the UK and Germany, Japan has no family doctor system, so people can select any clinic or hospital ambulatory care department they like. Some hospitals do not admit patients unless patients are referred to them by other medical institutions, but such hospitals are very rare. Japanese people can easily access healthcare services, making it possible for them to receive early diagnosis and treatment. This supports them to maintain good health. Naturally, this system leads to excessive consumption of healthcare services and materials. The Japanese government's big challenge is how to control this excessive consumption without adversely affecting quality care.

## OUTLINE OF THE HEALTHCARE SYSTEM

Japan's health insurance system was established after the one of Germany. Major differences

**Table 3: Health insurance programs in Japan**

| Type                                       | Insured persons   | Premium rate       | Cost sharing  |
|--|---|--------------------|---|
| Government-managed health insurance (GMHI) | Employees of small businesses                                   | 8.2%               | 4.1% by employees and 4.1% by employers                                   |
| Employees' health insurance (EHI)          | Employees of large corporations                                 | 7.6% (average)     | 3.8% by employees and 3.8% by employers                                   |
| National health insurance (NHI)            | Self-employed individuals, small farmers, retired persons, etc. | Variable by region | Shared by insured persons and central/regional governments on a 1:1 basis |

from the German system include (1) the Japanese system is a universal health insurance system (while in Germany, about 10 per cent of the nation are not covered by the compulsory health insurance programme); (2) a large amount of government fund is put into the health insurance system; and (3) elderly people aged 75 or older and bedridden patients aged 65 or older (about 16m people) are covered by a special healthcare system for seniors (SHSS), which is separated from health insurance programs.<sup>1-5</sup>

The health insurance programs are classified into three categories shown by Table 3 depending on the type of insured persons.

Under these health insurance programs, patients have to pay 30 per cent of their medical costs (including hospital care, medical consultation, dental care and drugs). If patients receive high-cost treatment, they are reimbursed for 80–90 per cent of the cost.

Under the SHSS, patients can receive all medical care by paying only 10 per cent of the cost (20 per cent for high income brackets) themselves.

### GOVERNMENT'S HEAVY FINANCIAL BURDEN

As shown in the Table 4, the Japanese government paid ¥4,179.7 billion (US\$38 billion), or about one-third of the total health insurance cost in FY 2005. The government will continue to pay huge money mainly to support small farmers and self-employed people with relatively low income covered by National Health Insurance (NHI) program in

**Table 4: Government spending on health insurance programs in 2005**

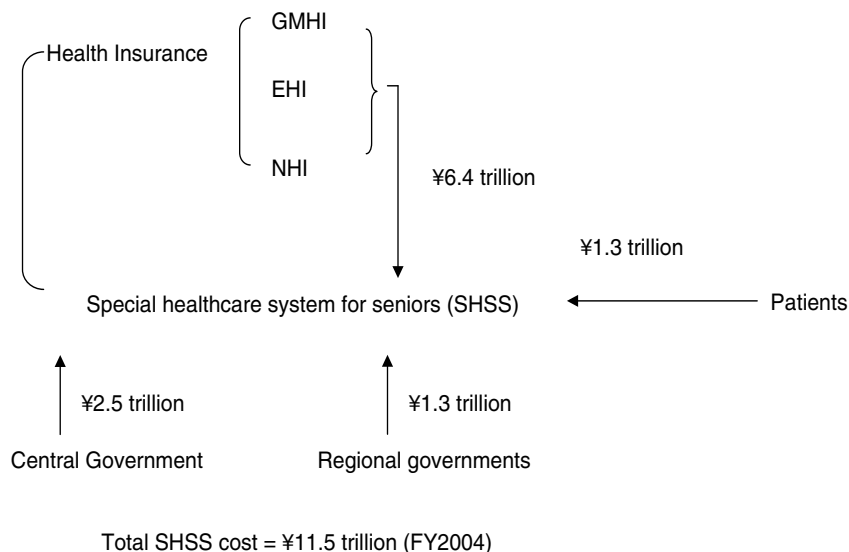
| Type                                       | Governments pending (billion yen) |
|--|-----------------------------------|
| Government-managed health insurance (GMHI) | 796.7                             |
| Employees' health insurance (EHI)          | 11.5                              |
| National health insurance (NHI)            | 3,371.5                           |
| Total                                      | 4,179.7                           |

Source: MHLW.

future. In addition, the government has to pay ¥2–3 trillion a year for supporting the SHSS. In total, the government pays ¥6–7 trillion (US\$ 55.0–64.0 billion) for healthcare a year (Figure 2).

The Japanese government, which is struggling with a huge cumulative financial deficit of ¥500 trillion (US\$ 4.5 trillion), has been taking various steps to cut the increasing healthcare costs. Drug cost (¥ 6 trillion) composes about 20 per cent of the national healthcare expenditure (¥30 trillion). Drugs are more likely to be targeted from the government's cost cut policy.

The NHI drug price revision, which is conducted every other year, is one of the most important and effective ways for this purpose. It is designed to control total drug costs by reducing the spread between the reimbursement prices (NHI drug prices) and actual purchase prices of medical institutions (including pharmacies) surveyed regularly, which are otherwise appropriated by them as a profit.



**Figure 2:** Japan's healthcare system and contribution to SHSS

Source: MHLW.

## THE JAPANESE PHARMACEUTICAL INDUSTRY

### The three groups

In 2006, there are 1,347 manufacturing facilities for finished drug products, so the number of pharmaceutical companies is estimated to about 1,000 (few have plural facilities), including manufacturers of OTC drugs. About 400 companies manufacture and market prescription drugs. These companies are classified as follows, excluding about 50 foreign-affiliated companies;

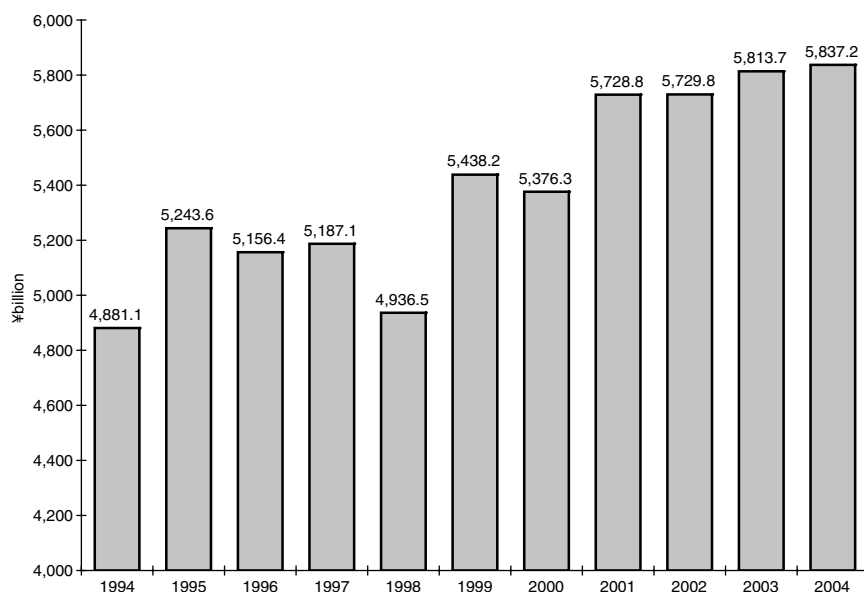
- Four brand drug companies with a presence in the US and Europe (big players): Takeda Pharmaceutical Company, Astellas Pharma Inc. (created through a merger of the former Yamanouchi Pharmaceutical and Fujisawa Pharmaceutical), Daiichi Sankyo (created through a merger of the former Sankyo and Daiichi Pharmaceutical), and Eisai, all Japan Pharmaceutical Manufacturers Association (JPMA) members.
- Brand drug companies with no presence in the US or Europe: about 250 including

Shionogi and Tanabe Seiyaku, among which about 50 are JPMA members

- Generic drug companies: 38 members of Japan Generic Pharmaceutical Manufacturers Association (JGPMA) and about 60 non-members

### Short history of the industry

The Japanese pharmaceutical industry cultivated its R&D and manufacturing capability through efforts to domestically manufacture antibiotics and create active-type vitamin B<sub>1</sub> derivatives (tonics) after World War II and achieved rapid growth since the universal health insurance system was introduced in 1961. Companies actively licensed in new drugs from foreign companies and invested much money for factories to meet increasing demand for drugs. However, the industry growth has slowed down since the 1980s due to the above-mentioned biannual NHI drug price cuts as the economic growth slowed down and the government's financial condition worsened. In particular, the market for prescription drugs has shown very low growth over the last



**Figure 3:** Sales of prescription drugs

Source: MHLW.

decade due to repeated cuts of NHI drug prices. The recent history of Japanese pharmaceutical industry is pretty close to the history of its struggles with a series of NHI drug price cuts (Figure 3 and Table 5).

To review development of the pharmaceutical legislations and regulations, 1975 marked adoption of the product patent system and 1980 saw introduction of the GMP regulations. This was followed by a series of regulations including GLP and GCP. Research-based companies have enhanced their R&D efforts in parallel with introduction of these infrastructures. These efforts have brought many innovative drugs such as Sankyo’s HMG-CoA reductase inhibitor ‘pravastatin’, Takeda Pharmaceutical’s angiotensin II receptor antagonist ‘candesartan’ and insulin resistance-improving agent ‘pioglitazone’, and Eisai’s anti-Alzheimers ‘donepezil’. These big players will make greater efforts to expand their business in the foreign markets because the domestic market is hardly expected to grow steadily.

The former Ministry of Health and Welfare (MHW) developed the basic policy for new drug approval in 1967, clearly differentiating

between new drugs and generics for the first time. This policy opened the door for the generic drug industry in Japan. After the introduction of the NHI drug price listing by brand name in 1978, however, the growth of the market for generic drugs slowed down until the end of 1990s, when the government realised that its conventional drug price cut policy focused on the control of the price and sales volume of brand drugs was no longer as effective for saving as before, and began taking a series of steps to promote the use of lower-priced generics for reducing drug cost in the health insurance system. Recently, the government introduced various incentives for prescribing and dispensing generics, as well as measures to allow generic substitution (¥20 to doctors for generic prescribing per prescription and ¥120 to pharmacists for generic dispensing and information provision per dispensing in 2002, and ¥20 to doctors for allowing generic substitution per prescription in 2006). As of 2004, the market share of generics was still only 16.8 per cent on a volume basis and 5.2 per cent on a sales basis, but its share is going to increase thanks to the government’s steps

**Table 5:** NHI drug price cuts (%)

| 1994 | 1996 | 1997 | 1998 | 2000 | 2002 | 2004 | 2006 |
|------|------|------|------|------|------|------|------|
| 6.6  | 6.8  | 4.4  | 9.7  | 7.0  | 6.3  | 4.2  | 6.7  |

Source: MHLW.

to encourage the use of generics. At present, the four generic drug companies (Taiyo Pharmaceutical Ind., Towa Pharmaceutical, Sawai Pharmaceutical, and Nichi-iko Pharmaceutical) have annual sales of over ¥20 billion.

In short, the prospects for brand drug companies other than the big players (Takeda, Astellas, Daiichi Sankyo and Eisai) are gloomy. In order to survive, these companies, except for those specialising in unique formulation technologies or Chinese herbal drugs, will be forced to carry out various plans such as mergers among them for entering the US and European markets or being bought by foreign companies over the decade. Biggest change will occur in this sector. Generic drug companies will outgrow these brand drug

companies with the support of the government; however, they also will intensify M&As among them for survival.

### References and Notes

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