Japanese Modernization Lecture Series

# Chapter 15. Public Health and Health Systems in Japan a Historical View

Contents



## Introduction

This classic building used to be the home of the National Institute of Public Health established in 1938. Many public health professionals were trained here, who contributed to the development of public health and health systems in Japan.

Currently Japanese society enjoys the world's longest life expectancy and lowest infant mortality, supported by a universal health insurance coverage system.

In this lecture, I would like to outline the historical process of developing the public health and health systems in Japan in the modern era, to identify their characteristics and the socio-cultural background which enabled such policies, and to explore their lessons for developing countries.

## Section 1: Current health status and characteristics of health policies in Japan

All people living in Japan are eligible for health services of the same quality at a minimal cost, regardless of their age, gender, ethnicity, income, occupation, and location, thanks to the universal health insurance coverage system and other welfare mechanisms. The health systems in Japan have given the country one of the best health outcomes in the world.

This Table compares the health indicators of Japan and other high income countries. You can see that life expectancy at birth is the highest in the world, infant and child mortality rates, maternal mortality ratio, and total fertility rate are at the lowest levels in the world.

This Figure shows the trend of crude birth and death rates in Japan since 1900. The next Figure shows the trend of infant mortality rate and maternal mortality ratio. These indicators rapidly improved after the end of World War II, along with economic development.

However, declining fertility and mortality rates have resulted in an aging population. This Figure shows the population composition trend. The population pyramid was expansive in 1930, stationary in 1970, and constrictive in
2010.

In achieving such a good health status, the development of Japanese health policies was characterized by several unique approaches:
First, an egalitarian approach, emphasizing equality of access to health services rather than accepting individual freedom to pursue the highest quality from the highest cost health services;
Second, emphasizing prevention by installing various screening mechanisms;
And third, a paternalistic approach, although this is fading gradually along with the changes in Japanese society and its individual sense of values.

## Section 2: Before modernization – the socio-cultural background of Japanese health policies

The development of Japanese health policies was characterized by several unique approaches, as I explained in the previous section. I would like to explore their socio-cultural background by overviewing the pre-modern history of Japan.

During the ancient and medieval eras in Japan, medical services were mainly based on Chinese herbal medicine, originally brought in by Buddhism monks and scholars, and various kinds of spiritual prayers. In those days, the provision of medical services was a charitable activity in line with Buddhist beliefs, as well as a tool for ruling people.

The first attempt to establish a public institution providing health services to ordinary people including the poor was probably the foundation of the Seyaku-in in 730 by Empress Komyo. This Buddhist statue of 11-Face-Kannon in Hokke-ji Temple was said to be modelled after the Empress, who opened the institution motivated by her Buddhist beliefs. The Shosoin Warehouse of Todai-ji Temple possesses some of the herbal medicines used in those days.

In the 8th century, the government defined a legal framework and job descriptions for health service providers, such as physicians and midwives.

The medical knowledge of Europe was brought to Japan by Christian missionaries in the 16th century.

During the 17th and 19th centuries, the feudal government banned Christianity and isolated Japan from foreign countries, allowing only minimal contact with the Netherlands and China. However, quite a few Japanese physicians were eager to take up European medical knowledge and skills.

A landmark achievement was Kaitai-shinsho, published in 1774. It was a book on anatomy translated into Japanese from Dutch by a group of Japanese physicians led by Sugita Genpaku.

Physicians who studied European medical sciences tried to introduce a scientific approach to the provision of medical services.

In 1823, Philipp Franz von Siebold arrived in Japan. He was a German physician who served in the Dutch Consulate in Nagasaki. He opened a school called Narutaki-juku and taught European medical and biological sciences as well as clinical skills to well-motivated Japanese students.

However, most people could not afford to consult physicians during the feudal era in Japan. In 1722, the Shogun, Tokugawa Yoshimune, established Koishikawa Yojo-sho, a clinic to serve the poor. It was located within a medical herb garden complex in Edo, or current Tokyo, which is currently the Koishikawa Botanical Garden of Tokyo University. The Shogun was not only motivated by Confucian ethics, but also tried to stabilize society for the growing poor and frustrated population through providing medical care.

These examples present the traditional paternalistic approach where physicians take care of patients with charitable spirit, while patients appreciate their physicians without questioning.

A first large-scale public health intervention in Japan was the smallpox immunization campaign. Dutch physicians introduced a smallpox immunization technique using cowpox in 1848. Following the advice of Japanese physicians who had learnt Dutch medicine, the feudal government established Shuto-sho, a smallpox immunization facility.

Then, smallpox immunization activities were extended throughout the country, including the northern island of Ezo, or the present-day Hokkaido. A group of devoted physicians such as Ito Genboku made tremendous efforts to implement this campaign.

Perhaps the broad consensus for the egalitarian approach in Japanese policy making derived from the traditions of the agricultural society. Yui was a mechanism to share labor among families in the village during busy farming seasons. Raising crops such as rice was labor-intensive, therefore, cooperating with each other was more important than insisting on individual freedom.

## Section 3: After the Meiji Restoration- Enrich the country, strengthen the military

The Meiji imperial government, established in 1868, made considerable efforts to catch up with the industrialized countries of Europe and the United States by expanding its economic and military capabilities. The major objective of the government was to defend its territory from invasion by the advanced countries. The government attempted to fulfill the objective through industrialization, accumulation of wealth, and the creation of a strong military force.

One of the government's urgent tasks was to improve the health of the people and their education to increase the number of productive laborers and fit soldiers. Controlling infectious diseases such as tuberculosis and improving maternal and child health were particularly important policy objectives.

The Industrial Revolution in Japan started 150 years after it began in the United Kingdom. As silk threads were important export items, the government established many silk factories.

Young women were recruited from rural villages as laborers of such factories. However, because of poor working conditions and malnutrition, the mortality of the women laborers was as high as 39%. Among those who were fired because of illnesses, 70% died of tuberculosis.

A tuberculosis epidemic took a lot of young lives including a famous novelist, 24-year-old Higuchi Ichiyo. Tuberculosis was called "Kokumin-byo", or the national affliction, at this time.

A Tuberculosis Prevention Act was introduced in 1919, and the Public Foundation of Japan Anti-Tuberculosis Association was established in 1939. However, tuberculosis could not be controlled until anti-tuberculosis drugs were developed after World War II.

The maternal and child health situation was very poor during the 19th and early 20th century. The maternal mortality ratio was about 437 per 100,000 live births, and the infant mortality rate was 155 per 1,000 live births in 1900.

Most women delivered many children without spacing out their pregnancies and worked hard until immediately before the delivery. In addition, many women and children were malnourished, and infectious diseases were prevalent.

Most deliveries took place at home assisted by traditional midwives, called Sanba. Traditional midwives had been privately practicing since the medieval era. They were trusted and respected by pregnant women and their families.

The Meiji government introduced a midwife licensing examination in 1899 and integrated traditional midwives into the new medical system. The qualifications and job descriptions of midwives were clarified and standardized. Qualified midwives were allowed to practice

privately.

The framework of maternal and child health administration was established through the Public Health Center Law and the Maternal and Child Protection Law in 1937. In 1939, all infants underwent health check-ups in a mass screening program.

Public health nurses were introduced, following European and American examples. Their qualifications and job descriptions were clarified by a law passed in 1941.

In December 1934, Onshi Zaidan Boshi Aiiku-kai, or the Imperial Gift Foundation for Mothers and Children, was established to commemorate the birth of the Crown Prince of Japan, the current Emperor Emeritus.

In 1936, Aiiku-kai launched a community-based intervention to improve the health of mothers and children in five pilot villages, or Aiiku-villages.

The executive board of an Aiiku-village was composed of local influential figures, such as schoolmasters, physicians, monks, and police heads. The board oversaw the management of nurseries, literacy and health education programs, and the activities of voluntary groups made up of married women for the purpose of delivering health information and identifying needs.

Public health nurses were based at primary schools and visited homes by bicycles or on foot. They opened nurseries during busy farming seasons, checked pregnant women, assisted deliveries at home, provided postnatal nutrition education, and monitored children's growth.

The Aiiku-village activity then spread to more than 1,200 villages in 35 prefectures.

Birth control, or family planning, was openly advocated around 1920, during the economic depression, as a part of the labor movement and the women's liberation movement.

Margaret Sanger, who was at the forefront of the birth control movement in the United States, visited Japan in 1922. Family planning became a popular topic for discussion in women's

magazines, despite a government ban on Sanger's activities.

Kato Shizue, who invited Sanger, founded the Japan Birth Control Research Association in Tokyo to develop contraceptive methods. She had witnessed the miserable life of women who worked in a coal mine while giving birth to many children. She determined to reduce the burden of such women by decreasing the number of child-bearing. Following three months' training at the Sanger Clinic in New York, Kato established a birth control clinic in Tokyo in 1932.

However, the rise of militarism in the 1930s called for a population increase. The birth control movement was suppressed and the clinic was closed in 1938. In 1941, the government prohibited contraception, lowered the legal age of marriage, and promoted the practice of a couple having five children.

## Section 4: After the Meiji Restoration- Development of public health, health systems, and health professionals

To propel industrialization, there was also an urgent need to bring in European and American science and technology. The government invited European scholars to teach Japanese academics and students in the imperial universities and public schools. The salaries of these foreign scholars were sometimes as high as those of high-ranking government officials and prefecture governors.

For example, Albrecht von Roretz was invited to Japan by the government in 1874. He was a 28 years-old graduate of the Medical University of Vienna. He practiced medicine in various places in Japan.

Between 1876 and 1880, he worked for Aichi Public Medical School, current Nagoya University School of Medicine. There, he taught surgical operation skills to students, including Goto Shinpei. His monthly salary was 300 yen, 60 times higher than that of primary school teachers.

The government also sent capable young officials and students to European countries such as Germany and the United Kingdom to learn medicine, science, law, and so on.

These students returned to Japan after several years and worked for the government to develop the areas of their specialization in Japan.

For example, a Navy physician, Takaki Kanehiro, studied in the United Kingdom between 1875 and 1880. He improved the nutritional status of sailors, introduced modern nursing education, and established a private medical college upon his return.

The government thus systematically imported scientific knowledge and skills from Europe and the United States. This could be looked at as a sort of technical transfer program; however, since it was spending a large portion of its own budget, the government had ownership of and strong motivation for the whole process.

The concept of public health and hygiene was developed by Nagayo Sensai and Goto Shinpei.

Nagayo was a physician who had learnt Dutch medicine. He was sent to Europe as a member of the government study team between 1871 and 1873. He came back to Japan to be the Director General of Medical Services. He introduced the concepts of public health and hygiene and developed public health policies and legal frameworks for medical services.

Goto, a prominent statesman, was originally a physician who learned surgical operation skills from Roretz. He became the Director of Aichi Hospital, the present-day Nagoya University Hospital, at 24 years old. After studying in Germany between 1890 and 1892, the then-35-year-old Goto was appointed by Nagayo as the Director General of Hygiene for the Ministry of the Interior.

In 1874, there were about 5,200 physicians who had learnt European medicine and about 23,000 physicians who had learnt traditional herbal medicine. Since the estimated total population of Japan then was about 35 million, there were about 80 physicians per 100,000 population.

However, their qualification and capabilities were varied, and hardly any physicians were available in rural areas.

Thus, the government established qualification and licensing mechanisms for physicians, called I-sei. By 1877, medical schools had been established in most prefectures as affiliates of public hospitals. A Medical Practitioners' Law and Dental Practitioners' Law were introduced in 1906.

Lacking specific technical knowledge in public health and medicine, the Ministry of the Interior and local police offices could not manage the growing demands of public health services. The Ministry of Health and Welfare was therefore established in 1938, integrating functions of public health and hygiene, quarantine, infectious disease control, food safety control, pharmaceuticals, social insurance, and welfare in the Ministry of the Interior and other bureaus.

The modern concept of public health was brought to Japan from the United Sates. The Rockefeller Foundation supported the establishment of model health centers, including the Kyobashi Metropolitan Health Center in 1935. These actions were followed by the enactment of a Public Health Center Law in 1937.

In 1938, the Rockefeller Foundation supported the establishment of the National Institute of Public Health, which I showed at the beginning of this program. It was the first school of public health in Japan. The six storied Gothic style building that housed it had an auditorium of 340 seats, classrooms, a library, hygiene laboratories, and a dormitory for female trainees. It introduced flush toilets, which were rare in Japan in those days, and instructions for using them. The institute contributed to the training of many physicians and public health nurses, conducted public health research and surveillance, and helped to develop public health policies.

Health insurance schemes were first launched in Japan in the early 1900s, when some governmental agencies and large private companies introduced mutual benefit associations. In addition, organizations resembling health insurance cooperatives had existed as mutual-aid organizations in rural areas since the late 1800s.

The Health Insurance Law was enacted in 1922 for the purpose of building a national system; however, this scheme covered only industrial employees and left out farmers, who were then the majority of the population.

The government introduced the National Health Insurance Law in 1938 to extend this system to cover those not formally employed, particularly farmers.

In 1939, the Employees Health Insurance Law and Seamen's Health Insurance Law were enacted, further expanding the coverage of health insurance. By the end of 1943, during the war, the national health insurance system had already spread to 95 percent of municipalities throughout Japan.

## Section 5: After the World War II- Radical reform and fine adjustments of health systems

Following the end of World War II, Japan was occupied and administered by the GHQ, or General Headquarters of the Supreme Commander of the Allied Powers.

Colonel Crawford F. Sams of the United States Army was responsible for rehabilitating and rebuilding public health and medical services in occupied Japan between 1945 and 1951.

The backbone of public health and medical services was the principle of protecting individual human rights, democracy, and freedom.

Sams instructed his Japanese counterparts in the Ministry of Health and Welfare to control infectious diseases through various measures such as improving sanitation and hygiene, immunizing children, and spraying DDT.

DDT was a pesticide which was believed to be harmless to humans in those days, therefore, it was directly sprayed on the body. It was used for controlling epidemic typhus through eliminating body lice, the vector of the disease.

He also tried to improve the nutrition of children by introducing school feeding programs.

Sams brought a scientific and evidence-based approach into Japanese public health and medical services. His team established model public health centers to assist health policy makers and administrators to learn the concepts of epidemiology, public health and hygiene. The public health centers also provided people with basic health services by public health

nurses.

Japan was allowed to join the World Health Organization in 1951, and returned to the international community.

The Japanese economy took off in the mid-1950s. The prevalence of infectious diseases was dramatically reduced through various public health measures and the improvement of living conditions.

However, along with economic development and lifestyle changes, the prevalence of non-communicable diseases increased. While the major causes of deaths had previously been tuberculosis and pneumonia, in the mid-1950s, strokes, cancers, and cardiac diseases became the top killers.

Japanese life expectancy also dramatically increased: in 1947, life expectancy at birth was 50 and 53 years for men and women, respectively, but by 1987, it had reached 76 and 81 years for men and women.

Rapid industrialization between the 1950s and 60s resulted in environmental pollution, which caused serious health problems for residents of affected places. For example, air pollution from sulfur dioxide caused asthma in Yokkaichi, water contamination with methyl mercury caused neurological disorders in Minamata and Niigata, and water and soil pollution from cadmium caused renal failure and osteoporosis in Toyama.

It took more than a decade to tighten environmental regulations and install mechanisms for preventing industrial pollution. It took another decade to improve the condition of the victims by means of medical and financial compensation, following many painful cases of litigation.

The national health insurance system was very near to collapse in the period of post-war economic and social deterioration. About one-third of the population, mostly farmers and the self-employed, were not covered by any health insurance. To rebuild the health insurance finances, the average monthly wage was revised, premiums were increased, and the number of eligible people was increased.

Following recommendations by the Social Security System Committee in 1956, a new National Health Insurance Law was enacted in 1958. With considerable public support, a nationwide compulsory participation mechanism was installed.

Universal health insurance coverage was achieved in 1961.

The system continued to be adjusted up to 1980. Co-payments for the national health insurance were reduced, and deficits were covered by the national budget.

The government also introduced an elderly medical fees payment system in 1973, allowing public funds to pay for the medical costs of the elderly.

The government took an egalitarian approach to providing affordable health services covering all of the Japanese population. Equality was emphasized more than efficiency, while the government controlled the costs and quality of services.

Health care costs in Japan rapidly increased as a result of the health and demographic transitions that included increasing non-communicable diseases, the declining population of the young, and the increasing population of the elderly, as well as the development of high-cost medical technologies.

In response to the cost escalation, a Law for the Health and Medical Services for the Elderly was enacted in 1982, making the elderly pay a part of the co-payments. In 1983, the government introduced a separate health care scheme for the elderly based on contributions from employees' health insurance funds and the national budget.

As the Japanese economy stagnated after the early 1990s, the government was obliged to implement economic structural reforms. Health care was one of the targets of this structural reform; public spending for health and welfare services was revisited and reduced. In response to the continuing structural deficit in the health insurance systems, benefits, standard fees for services, co-payments, and premium rates were further revised.

In 2000, the Long-term Care Insurance Law was implemented to accommodate the needs of the rapidly aging society. A part of the health care costs for the elderly were allocated as

welfare services.

In 2008, the health care scheme for the elderly was revised and a new scheme for the elderly over 75 years old was installed. It was mostly funded by the national budget but in-part by contributions from various public health insurance funds.

While the government has tried to contain health care costs, repeated minor adjustments did not lead to an overall reform of the system built in the past century. Since these adjustments were implemented within the context of economic structural reforms, the government has not yet come up with a coherent strategy to achieve the maximum level of health and welfare services in the mature society of Japan.

## Section 6: Public health and health systems in Japan- Lessons for developing countries

The five key factors that contributed to achieving the remarkable improvements in the health of all Japanese are identified in this section.

In addition, factors beyond the health sector substantially contributed to the improvements: that is, relatively high educational levels; improved standards of living along with increased incomes; and the development of infrastructure, such as clean water supplies and sanitation, roads, electricity, and telephones, in the process of overall economic development.

The 1st key factor: Strong commitment and ownership by the government.
Since the late 19th century, the government has been keen to bring new knowledge and technology into Japan. The government spent a large proportion of the national budget on inviting foreign scholars to Japan and sending Japanese officials and students abroad. The foreigners were regarded as technical instructors, not as simple service providers. The dispatched officials and students returned and contributed to the development of their fields of specialization.

The 2nd key factor: Broad consensus on the egalitarian approach.
The general public, as well as politicians and bureaucrats, shared a broad consensus that equal access to health services should be guaranteed to everyone. This might be derived

from the traditional values of Buddhist charities and farmer cooperatives, enhanced by the concept of democracy. Thus, people accepted the concept of sharing risks, costs, and benefits, and supported the
efforts to achieve universal health insurance coverage.

The 3rd key factor: The devotion of motivated health professionals.
Even in the feudal era, some devoted physicians were eager to gain new knowledge and skills from foreign countries. During the period of modernization, government technical officials, scholars, physicians, and other health professionals worked very hard to import advanced medical sciences and to establish new health systems. Public health nurses and midwives were dedicated to improving the health of women and children in rural communities.

The 4th key factor: Long-term engagement to achieve objectives.
It took over 20 years to achieve universal health insurance coverage, as the government gradually introduced various mechanisms for the purpose. Even after the system was installed, modifications and amendments continued to adjust to demographic and social changes and to contain costs.

The 5th key factor: Involvement of communities and local municipalities.
When resources were scarce and there were many health problems in rural areas, it was important to mobilize local communities. Community involvement was also useful in identifying local needs and conducting appropriate intervention. Local municipalities were mostly responsible for implementation of public health policies, as they were closer to the people than the central government and could intervene more effectively.

Developing countries may learn lessons from the Japanese experience.

The Japanese experience in terms of maternal and child health may be applicable to low income countries and to poor areas in middle income countries. The situation in those countries is similar to that of Japan before and immediately after World War II. At that time, the community-based approach was effective in Japan. Existing female health professionals were mobilized for the outreach services.

Technical assistance funded by its own national budget or a loan may strengthen the

ownership and motivation of a country, as seen in Japan in the Meiji era. However, it is not unusual to find donor-funded technical experts providing professional services directly in developing countries, with no counterparts learning from them. The commitment and ownership of the country may be enhanced by sharing the burden.

Although universal health insurance coverage may not always be possible, the Japanese experience of developing health financing systems could provide useful lessons. The Japanese system is a combination of social insurance and tax-based welfare; each aspect may be applicable to developing countries according to their economic and social situation.

Developing countries may also learn lessons from the negative aspects of the Japanese experience.

During the period of rapid economic growth, industrial pollution caused serious health problems among the residents of affected places. It took a very long time and both government and industry bore a huge financial burden to compensate victims and to clean up the environment.

This experience encouraged Japan to develop environmental regulation frameworks and environmental protection technologies.

Developing countries experiencing rapid economic growth should not repeat the same mistakes and should install environment protection mechanisms as a matter of urgency.

When the Japanese health financing system was designed, the population was young and economic growth was powerful. Because the situation changed much faster than expected, no suitable solutions have yet been found to sustain the health system. Several developing countries are now also facing the population aging problem.

## Conclusion

I have presented the historical process of developing the public health and health systems of modern Japan and the several unique approaches that characterized Japanese health policy development. The key factors in Japanese achievements in health were: a broad

consensus on an egalitarian approach; the devotion of motivated health professionals; and the commitment, ownership, and long-term engagement of the government.

Currently Japan faces many challenges such as a population that is aging and shrinking, low economic growth, and changing values from egalitarianism and paternalism to respect for individuality and diversity. Learning from other countries and using various available resources, Japanese public health and health systems were developed in difficult times. I think the current challenges will bring tremendous opportunities to create further innovative approaches.