

and Niigata, and water and soil pollution by cadmium caused renal failure and osteoporosis in Toyama. It took more than a decade to install mechanisms for preventing industrial pollution through tightening environmental regulations. It took another decade for saving the victims through medical and financial compensations following many painful litigation cases.

2.4 Challenges after 1980s

Health care costs in Japan are increasing rapidly, because of the health and demographic transitions that implied increasing non-communicable diseases, declining young population and increasing aged population, as well as development of high-cost medical technologies. The government tried to contain health care costs through modifying the benefit package, standard fees for services, and co-payment amounts. In 1983, the government introduced a separate health care scheme for the aged, based on contributions from employees health insurance funds and the government budget. In 2000, long-term care insurance scheme was started.

As Japanese economy stagnated since early 1990s, the government was obliged to implement an economic structural reform. Health care was one of the targets of structural reform, thus public spending for health and welfare services was revisited and reduced. Traditional long stay in hospitals was not allowed anymore, therefore quite a few small public and private hospitals had difficulties to sustain their business.

Meanwhile, demands for sophisticated medical technologies and high quality of services grew, along with the increase of patients' rights recognition and mass media information. This caused overburden of physicians in hospitals and difficulty to make referral mechanisms function properly, particularly in obstetric and pediatric services.

2.5 Background principles, concepts and views towards public health and medical services in Japan

Before modernization, public health and medical services were regarded as charitable activities, as well as social services to govern people. Although there were not much systematic efforts to introduce modern medical sciences, handful physicians and academics motivated by their curiosity made enormous efforts to bring in new knowledge and skills.

During the period of industrial and military development between late 1800s and early 1900s, the government aimed to improve health of Japanese people, so that they could be productive laborers and strong soldiers. The government systematically imported scientific knowledge and skills from Europe and the

United States by inviting foreign scholars and sending Japanese officials and students abroad. These efforts could be considered as a sort of technical transfer program, however, spending a large portion of their own budgets, the government had strong ownership and motivation throughout the whole process.

After the World War II, the backbone principle of public health and medical services was to protect individual human rights, democracy and freedom. The government took egalitarian approach to cover all Japanese with affordable health services. Equality was more emphasized than efficiency, while the government controlled costs and quality of services. Only minor adjustments had been done to meet the changing social demands, however, major structural reform in the health sector had no been carried out yet.

3 Maternal health care and family planning in the post modern era

3.1 Maternal health care before the World War II and Aiiku-kai activities

Maternal and child health situation had been very poor during 19th and early 20th century. Maternal mortality ratio was about 437 per 100,000 live births, and infant mortality rate was 155 per 1,000 live births in 1900. This poor situation was due to lack of: proper maternal health care systems; well-trained birth attendants; and scientific knowledge among people. Most women delivered many children without spacing, and worked hard until immediately before the delivery. Many women and children were malnourished and infectious diseases were prevalent.

Most deliveries were taken place at home assisted by traditional midwives, called Sanba. Traditional midwives had privately practiced since the medieval era, and were trusted and respected by pregnant women and their families. The Meiji government introduced midwife licensing examination in 1899 and integrated traditional midwives into the new medical system. Qualification and job description of midwives were clarified and standardized. The qualified midwives were allowed to practice privately.

As the country had been deeply involved in wars, the Army strongly advocated for improving health and sanitation of the people, so that they could recruit healthy soldiers. The framework of maternal and child health administration was established through Public Health Center Law and Maternal and Child Protection Law in 1937. The Ministry of Health and Welfare was established in 1938. In 1939, all infants underwent health check-ups in a mass screening program. Public health nurses played important roles for maternal and child health and community health, therefore, qualification and job description were clarified by a law in 1941.

In December 1934, the Imperial Gift Foundation for Mothers and Children (Onshi Zaidan Boshi Aiiku-kai) was established, commemorating the birth of Crown Prince, or the current Emperor of Japan. This was an imperial initiative to improve health and welfare of mothers and children. The Aiiku Survey Society was first established to conduct research on maternal and child health issues, which had revealed very high infant mortality rates in rural villages.

In 1936, Aiiku-kai started a community based intervention to improve health of mothers and children through extensive health education 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 executive board oversaw three activities: (a) management of nurseries and public facilities of daily life assistance; (b) literacy and health education programs; and (c) activities of married women's voluntary groups, called Aiiku-groups, for delivering health information and identifying needs through visiting homes. One group covered a primary school zone, with each group member covering about 10 households.

The Aiiku-village activity then spread to more than 1,200 villages in 35 prefectures nationwide. After the World War II, the Aiiku movement was linked to the maternal and child health program by the Ministry of Health and Welfare, contributing to strengthen local organizations concerned with maternal and child health.

Public health nurses played important roles for the Aiiku-village activities. They were based at primary schools, and visited homes by bicycles or by walk to instruct people for improving maternal and child health. For example public health nurses recommended residents in mountainous areas, who were in shortage of animal protein, to keep goats at home, so that pregnant women and children could take milk. Public health nurses opened nurseries during busy farming seasons, checked pregnant women, assisted home deliveries, and provide with postnatal nutrition education and children's growth monitoring.

3.2 Maternal health care after the World War II and the maternal and child health handbook (MCH handbook)

After the World War II ended in 1945, GHQ identified maternal and child health as a priority public health issue in occupied Japan. In 1947, Maternal and Child Health Section of the Children Bureau, the Ministry of Health and Welfare, was established to administer maternal and child health matters. The Child Welfare Law and the New Public Health Center Law were also enacted in 1947. Public health centers started to provide the community with maternal and child health services.

Learning from a German system, pregnant mother's handbook system was launched in 1942 during the wartime. The handbook aimed to register pregnant women and encourage them to have regular antenatal check-ups to reduce the risks. The handbook simply contained guidelines for pregnant women and new mothers, and spaces for recording health conditions of the mother and child and the details of the delivery. These records of the pregnancy and delivery were utilized to plan the next pregnancy and delivery.

The handbook system was re-launched by issuing the mother and child handbook in 1948. Guideline function of the handbook was expanded to include child raising tips. Then the handbook was further revised in 1966 to become the present maternal and child health handbook (MCH handbook). The handbook has become a booklet of about 70 pages, comprising of a common section of medical records of the mother and child and a locally unique section of administration and public health information, prepared by each local administration.

Japanese MCH handbook system is unique in registering all pregnant women. The handbook system offers free antenatal check-ups and vaccinations. It used to provide with extra food and maternity goods, as well. These direct benefits for pregnant women helped spread the handbooks.

In 1954, the Ministry of Health and Welfare issued a directive, Strengthening Health Guidance for Pregnant Women and New Mothers. This aimed to reinforce various antenatal and postnatal programs, and to promote institutional deliveries. In 1958, the Ministry started to establish maternal and child health centers for institutional deliveries in rural areas where medical facilities were scarce. Pregnant women and mothers welcomed the centers as the places for the safe and clean delivery and postnatal care within their villages.

The scope of maternal and child health programs widened progressively. In 1961, nationwide programs of health check-ups of neonates and three year old children were started. Then Maternal and Child Health Law was enacted in 1965. Based on community organizations such as Aikku-groups before the War, the Ministry of Health and Welfare allocated budgets to local administrations to support women volunteers acting as maternal and child health promoters in 1968. Their activities extended throughout the country. Most maternal and child health programs were installed by 1980s.

Following the introduction of universal coverage of health insurance in 1961, many medical facilities were built and access to medical services was improved even in rural villages. As a result, the proportion of institutional deliveries increased from five percent in 1950 to 96 percent in 1970.

In 1947, maternal mortality ratio was 168 per 100,000 live births and infant

mortality rate was 77 per 1,000 live births. Maternal mortality ratio declined to 52 per 100,000 live births in 1970 and nine per 100,000 live births in 1990, and infant mortality rate reached 13 per 1,000 live births in 1970 and five per 1,000 live births in 1990.

3.3 Family planning

Increasing demands for birth control, or family planning, was openly advocated since around 1920 during the economic depression, as a part of the labor movement and the women's liberation movement. Margaret Sanger, the forerunner of the birth control movement in the United States, visited Japan in 1922 and family planning became a popular topic in women's magazines, despite the government ban of her activities. Influenced by Sanger, Shizue Kato founded the Japan Birth Control Research Association in Tokyo to develop contraceptive methods. Following three month 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 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 to have five children per couple.

Following the end of the War in 1945, Japan's population increased sharply, due to the return of demobilized soldiers and residents in former colonies. The total population was 72.8 million in 1943, and increased to 89.3 million in 1955. The average annual population growth rate was 1.4 percent in 1955.

Unwanted pregnancies increased due to difficulty to obtain contraceptives. Although abortion was regarded as a crime, women sought for illegal unsafe abortions, which often caused deaths or serious complications.

Responding this situation, abortion was legalized under certain conditions in 1948. Then in 1949, economic reasons were added to the conditions, and requirement of official evaluations was removed in 1952. The number of abortions increased markedly from 1949 to 1955. Manufacturing and selling contraceptives were also permitted in 1949.

In 1950 a program of model villages for family planning started in 3 villages. While promoting family planning, suitable methods in Japan were investigated and numbers of averted abortions were estimated. Influenced by the success of the model village program, various companies started family planning guidance to their employees. These programs achieved additional benefits for the companies by reducing the amount of family allowances.

In 1952, the government established a family planning worker system and family planning promotion activities were started. Midwives, as well as public

health nurses and nurses, took training sessions in each prefecture and were accredited as family planning workers. Midwives instructed mothers individually to use a contraceptive device, while public health nurses provided health education including information of family planning to groups. Family planning workers were allowed to sell contraceptives in 1955. This system enabled to deliver contraceptives to the clients upon request, as well as providing additional incentives to the workers by retaining the profit margin.

As the contraceptive prevalence rate rapidly increased, the abortion rate sharply declined. Although contraceptive prevalence rate was less than 20 percent in 1950, it reached over 40 percent in the 1960s, overtaking the abortion rate. The number of abortions declined every year after the highest peak at 1.17 million in 1955. Total fertility rate declined from 4.5 in 1947 to 2.1 in 1965.

Since the rapid economic development period in 1960s, family planning was not a priority issue of the government any more. Business and political communities even advocate not to promote family planning because of shortage of young laborers. Thus, non-governmental organizations (NGOs) took over the major roles of family planning activities.

3.4 Challenges for achieving reproductive health and rights

In 2004, maternal mortality ratio was 4.4 per 100,000 live births, infant mortality rate was 2.8 per 1,000 live births, and total fertility rate was 1.3. Women's life expectancy at birth increased from 54 years in 1947 to 85 years in 2004, which indicates remarkable changes of life cycles of Japanese women.

Although most maternal and child health programs were extended throughout the country by early 1980s, there are growing needs of public support for childrearing in the changing society where community networks diminished and small nuclear families increased, particularly in urban areas.

Because the number of children declined and medical services were always available, women often demanded high quality of obstetric and pediatric care anytime they need. In addition, the litigation cases of obstetric malpractice increased along with recognition of patients' rights.

Meanwhile, many public hospitals closed obstetric and pediatric departments, due to financial difficulties caused by decreasing childbirths and shortage of specialist physicians. Many institutional deliveries in Japan had been taken place in small clinics, however, in some remote areas, it became difficult for a clinic to refer cases of obstetric complications to a referral hospital.

The government started to reorganize the obstetric referral system, particularly in remote areas in northern Japan, to concentrate specialists in the top referral hospital in the region, so that complicated cases could be safely

managed. The government was also revisiting incentive mechanisms of obstetric and pediatric services, as many physicians quit or avoid obstetric and pediatric services because of high physical burden. In addition, roles of private midwives were recognized again, considering them as comprehensive care providers, both physically and mentally, throughout pregnancy and childbirths.

There are very few serious public discussions about family planning, while fertility continues to decline. However, alternative choices of contraceptives and adequate counseling services in accordance with lifestyle of each woman are still very limited in Japan. Condoms are the most popular contraceptive method, while other methods were not widely used. Low-dose oral contraceptive pills and copper-coated IUD were not approved until 1999. The emergency contraception pill has not been approved yet, despite its effectiveness for preventing unwanted pregnancies.

There are no systematic adolescent sexual health education and services. However, there are increasing needs for reaching out young people. Abortions and sexually transmitted infections are increasing among under-twenty age group, while the overall number of abortion is decreasing.

3.5 Lessons from the Japanese experience

Maternal mortality declined dramatically in Japan during the last century. Fertility declined sharply as well. Key factors of the success of maternal health care and family planning were: (1) mobilization of capable female health professionals such as midwives and public health nurses; (2) involvement of local communities; (3) approaches pursuing individual concrete benefits; (4) complementary roles among various actors including the government, NGOs, health professionals, and communities; (5) commitment and ownership of the government; (6) relatively high education levels of women; and (7) improved life standards along with economic development.

(1) Female health professionals: Traditional midwives were licensed and integrated to the modern health system. Midwives assisted deliveries at home and cared throughout pregnancy and childbirth. Public health nurses were introduced following European and American examples. Then, they played unique roles in rural villages for visiting homes to provide with various services, and for facilitating community activities. The outreach activities of public health nurses were enabled because of their respectable social status, secured career and income, regular supervisions and supports, as well as high motivation of themselves. Midwives and public health nurses were trusted and knew personal lives of community people. Therefore, they could successfully provide with family planning services despite the cultural sensitivities.

(2) Community involvement: Before the rapid economic growth and urbanization, rural communities had mutual support mechanisms. Involving local community networks contributed to improve maternal health through disseminating knowledge and information of health, encouraging health check-ups, improving nutrition, and reducing labor burden of women. Community organizations were often initiated by the government, and facilitated by public health nurses and midwives. In turn, community organizations linked community people to the government. Women who had received guidance from public health nurses participated in community activities. Community organizations for maternal and child health were also mobilized for expanding family planning. Extensive education activities were conducted to deliver knowledge and information of family planning to the community.

(3) Benefit seeking approach: Promoting maternal health was linked to direct benefits such as free antenatal check-ups and supplementary food by the MCH handbook system. Every activity stressed the health and happiness of the individual women and children. Family planning was promoted as a part of maternal and child health, considering individual needs of women. Family planning, which was an issue of deep concern of local women, could contribute to reduce abortions and to mitigate health hazards caused by abortions.

(4) Complementary roles: The government developed policies, regulatory frameworks and infrastructures, while health professionals in both the public and private sectors and NGOs were active in implementation. The government sometimes took initiatives to formulate NGOs and community organizations for implementing various interventions. Professional institutions and academia provided specialized technical advice based on their researches and surveys. NGOs played major roles in promoting family planning, after the government shifted their priorities. NGOs purchased contraceptives in bulk at cheap prices and sold them to family planning workers at wholesale prices.

(5) Government commitment: Since early period of modernization, the government committed strongly to improve health of mothers and children, although this was motivated to achieve industrial and military development. An imperial initiative promoted community based maternal and child health activities. Reducing maternal and child mortalities and providing with preventive services were priority policy objectives during the post-War period. Rapid population growth immediately after the War made the government commit to promote family planning.

(6) High education level of women: Since women's literacy had been relatively high, written health information was easily spread. MCH handbooks had spaces for mothers to record by themselves.

(7) Economic and social development: Along with the economic development, quality of life of people improved remarkably. Environmental sanitation improved, thus infectious diseases decreased. Increasing income and developing technology enabled people to have nutritious food and to reduce burden of physical labor. Access to health services were secured, as health facilities increased and health financing and regulatory mechanisms were installed. Combination of these socio-economic changes contributed to improve maternal health remarkably.

Japanese experience also had negative aspects. Fertility decline and cost containment of health services are threatening sustainability of obstetric referral services. Weakened community networks and increased demands for high quality services caused overburden of hospitals and shortage of obstetric and pediatric specialists. Effective obstetric referral networks need to be re-organized urgently.

Regarding family planning, contraceptive prevalence rate failed to grow much beyond the 50 to 60 percent level. High quality services offering proper counseling and method mix to meet individual needs are in shortage. Adolescent sexual and reproductive health issues are left behind, although, abortions and sexual transmitted infections among young people are increasing. It is yet culturally and politically sensitive to reach out young people.

4 Health financing systems in Japan

4.1 Health insurance systems in Japan

Health financing systems among the industrialized countries can be categorized into three models: (A) tax based national health systems, as in the United Kingdom; (B) social insurance models, as in Germany; and (C) private insurance schemes supplemented by public safety nets, as in the United States. Japan applied a social insurance model, which in principle shares risks, costs and benefits among the participants. Basically, service provision, financial management, and beneficiaries are distinguished one another. A beneficiary pays premium to the insurer, and receives services from health service providers. The insurer evaluates the services provided, and then refunds the fee to the providers. The insurer is usually an independent private organization, which would be the subject of the various forms of government regulation.

Japanese health insurance system achieved universal coverage through a combination of two distinct elements: (a) workplace-based health insurance associations for employees; and (b) national health insurance designed for self-employees including farmers. Employee health insurance schemes

comprised of many individual workplace health insurance associations, and the government managed health insurance for small businesses. The national health insurance is funded by taxes and premiums, of which local municipalities act as insurers. The system is a unique combination of one very large insurer, the government, and a very large number of small insurers. The level of benefits varies according to the insurance plan. The amount of the premium is a fixed percentage of the income, although the premium rate differs among insurers. Employee health insurance associations also contribute to finance the health services for the elderly.

The Japanese system allows clients to access any service providers both in the public and private sectors. The government regulates the services covered by the insurance, their fees, premium rates and user co-payment, following discussions with representatives of health service providers, insurers, and beneficiaries. All insurance plans are regulated by the government to ensure that everyone has access to the same quality of service at the same price. The Japanese system can be regarded as a combination of a social insurance model and a tax-based national health system. The system has an aspect of social welfare, or income redistribution, rather than a social insurance.

The long term care insurance system covers nursing care services at home or in nursing facilities, and other recognized forms of care and support. Long-term care insurance is administered by the municipalities. All Japanese aged 40 and over have to pay the premium. Half of the benefits are funded by the premiums, while the government contributes the rest. Anyone aged 65 years or older can receive the services once they are recognized as being in need of nursing care or other support. Those between 40 and 65 years old can receive services only in case their conditions are associated with aging, such as Parkinson disease.

The health insurance system is complemented by welfare support for the poor and for the disabled and publicly funded medical services. Medical expenses incurred by households on welfare support are paid out of health support without any co-payment. Public funding for medical services comes in many different forms, defined by laws for veterans, tuberculosis control, mental health, narcotics control, and infectious disease control. Public funding is also provided for treatment of 45 listed specific illnesses and 10 listed chronic illnesses of children. Local administrations also provide funding for a range of medical expense plans.

4.2 Toward universal coverage of health insurance

Health insurance schemes started in Japan in 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 villages since late 1800s. Health Insurance Law was enacted in 1922 for building a national system, however, this scheme covered only employees of industries, but not covered farmers who were then majority of the population, and adequate medical treatment was not necessarily guaranteed.

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. In the end of 1943 during the wartime, the national health insurance system had already spread to 95 percent of municipalities throughout Japan.

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

Following the 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, and the universal health insurance coverage was achieved in 1961.

Since those covered by the national health insurance had to pay higher amount of co-payment than those covered by the employee health insurance, adjustments of the system had been continued up to 1980. Co-payment for the national health insurance was reduced and the deficit was covered by the government budget. This improved consultation rates, particularly among the elderly. The government also introduced the elderly medical fees payment system in 1973, allowing public funds to pay for medical costs of the elderly. User co-payment was introduced to employee health insurances in 1984.

4.3 Adjustment to the demographic and economic changes

Due to the rapid increase of the aged population, medical costs for the elderly increased dramatically. Health insurance and social security systems needed to be adjusted to meet the new demands caused by the demographic and economic changes. First, prevention, treatment and rehabilitation of illnesses were standardized. Then, Law for the Health and Medical Services for the Elderly was enacted in 1982, which made the elderly pay a part of co-payments.

Along with the population aging continued, prevalence of chronic illnesses increased and their treatment costs rose. However, health insurance income would not grow due to reduced income growth caused by slowing economic

growth and increasing irregular employment of young people.

In response to this structural deficit of health insurance systems, benefits, co-payments and premium rates were revised in 1997. Contribution to the health services for the elderly was reviewed in 1998, and health insurance for the elderly introduced 10 percent co-payment in 2001. In 2000, the Long-term Care Insurance Law was implemented to accommodate the needs of the rapidly aging society, and a part of the health care costs for the elderly were allocated as welfare services. In 2003, employee health insurance raised co-payment to 30 percent, comparable to the co-payment for national health insurance.

While the government 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 reform, the government had not yet produced a coherent strategy to achieve maximum level of health and welfare services in the matured society. A drastic reform of the system is urgently required for securing financial sustainability and for maintaining quality of services.

4.4 Lessons learned from Japanese health financing systems

Japanese health insurance system achieved universal coverage, which enabled anyone to have access to the same quality of health services in anywhere at any time with affordable amount of co-payment. Although most insurance schemes in other countries could hardly include informal sector workers, the Japanese system successfully covered them through introducing national health insurance.

At first, an insurance system for government workers and employees of major corporations was created, as observed in many other countries. Meanwhile, local insurance schemes that could meet local needs and capacity were set up, based on a form of farming insurance managed by village-based cooperatives. Then, municipalities took over the roles of independent local insurers. Finally, the national health insurance system was introduced to cover everyone.

A key factor that enabled to achieve universal coverage was a strong political commitment. Not only the government but also politicians and the general public shared political consensus regarding the importance of equal access to health services. In addition, local municipalities and the government had stable administrative capabilities to manage public health insurance schemes.

Another key factor was that the whole system was established gradually with a step by step manner. It began with small-scale local insurance plans, gradually broadened the scope of eligibility, and reached universal coverage under the government control. It took over 20 years to build the current form of

health insurance system. Meanwhile, the overall economic growth enabled to generate sufficient taxes to extend the system and increased incomes made people enable to pay premiums. Although there were absolute shortage of health service providers immediately after the War, a network of health service providers, both in the public and private sectors, had been developed along with the economic development, and ensured availability of health services. In addition, the step by step approach allowed local municipalities to build their administrative capacities.

It was also important that the government regulate the whole system to ensure equal access and quality of services, which are not always guaranteed in developing countries. In case of cost escalation, the government put minor adjustment to contain costs, following discussions with representatives of health service providers, mainly physicians' syndicates, insurers and beneficiaries. This was a unique mechanism for regulating and balancing the whole system.

In principle, the Japanese system emphasized equality rather than efficiency. Thus, the system has more tax-based welfare feature than the original principle of insurance.

While the egalitarian approach achieved overall improvement of health status of the people, this system has little space for freedom to receive the highest quality of care beyond the benefit package for those who can afford. Low co-payment also brought moral hazards among the beneficiaries, such as overuse of hospital care and deterioration of referral mechanisms. The fixed fee for service may discourage the health service providers to improve quality of services.

5 Lessons for developing countries from Japanese experience

5.1 Key factors of the success

Reviewing the histories of health policies and interventions as described above, several key factors that contributed to achieve remarkable improvement in health of all Japanese are identified. They are: (1) strong commitment and ownership of the government; (2) broad consensus on egalitarian approach; (3) devotion of motivated health professionals; (4) long term engagement to achieve objectives; and (5) involvement of communities and local municipalities. In addition, factors beyond the health sector contributed substantially to improve health of people. Those factors include: relatively high education attainment among people; improved life standards along with increased incomes; and development of life infrastructures, such as water and sanitation, roads, electricity, and telephone during overall economic development.

(1) Government commitment: Since late 19th century, the government was keen to bring new knowledge and technology, and determined to catch up the advanced countries. Spending a large portion of their own budget, the government invited foreign scholars, and sent officials and students to abroad. The foreigners were regarded as technical instructors to transfer knowledge and skills to Japanese counterparts, but not as simple service providers. The dispatched officials and students returned to Japan after several years and contributed to develop their specialties. Furthermore, there were strong leaderships, such as Nagayo in late 19th century, and Sams after the War. The government also committed to various public health programs including maternal and child health, infectious disease control, and universal coverage of health insurance.

(2) Egalitarian approach: Originating Buddhism charities and farmers cooperatives, and being enhanced by the concept of democracy, general public, as well as politicians and bureaucrats, shared broad consensus that equal access to health services should be guaranteed everyone. Thus, people accepted the concept of sharing risks, costs, and benefits, and supported the efforts to achieve universal coverage of health insurance. In line with this egalitarian principle, basic health services such as maternal and child health and immunization extended throughout the country including remote rural areas.

(3) Health professionals: Even in the feudal era, some devoted physicians were eager to learn new knowledge and skills from abroad. 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. Qualification mechanisms of physicians were in place and traditional midwives were also licensed and integrated into the new health system. Midwives were mobilized for not only maternal care but also for family planning. Public health nurses, as well as midwives, devoted to improve health of women and children in rural communities. They kept motivated even they were deployed to remote rural areas, as they enjoyed respectable social status, had secured income and career, and were supervised properly.

(4) Long term engagement: It took over 20 years to achieve universal coverage of health insurance, as the government gradually introduced various mechanisms. Even after the system was installed, modifications and amendments were continued to adjust demographic and social changes and to contain costs.

(5) Community involvement: When resources were scarce and health problems were abundant in rural areas, it was important to mobilize local communities. The government sometimes took lead to initiate and organize

community activities, such as maternal and child health activities. Community involvement was also useful to identify local needs and to implement proper interventions. Local municipalities were mostly responsible for implementing public health policies, including management of the national health insurance. Municipalities are closer to the people than the central government, therefore, they can intervene effectively according to local needs.

5.2 Experience of negative aspects

Although Japanese has achieved one of the best health status in the world, there were also experience of negative aspects which should be shared with developing countries.

When the health financing system was designed, population was young and economic growth was powerful. Since the situation changed much faster than expected, no suitable solutions have not yet found to sustain the health system, despite rapidly aging population and stagnated economic growth. Several developing countries such as Thailand and China are now facing the population aging problem, so they may learn lessons from Japanese experience.

Equality was so emphasized that efficiency was often left behind. This contributed a lot to improve overall health status. However, quite a few public funded services and hospitals could not be sustained when economic situation changed. While public regulations were important to ensure equality and quality, management skills of the private sector should have been introduced to improve efficiency.

During the period of rapid economic growth, industrial environment pollutions caused serious health problems among the local residents. It took very long time and required heavy financial burden for both the government and the industry to compensate victims and to clean the environment. This experience encouraged to develop environment regulation frameworks and environment protection technologies. Developing countries under rapid economic growth should not repeat the same mistakes and should install environment protection mechanisms urgently.

5.3 Japanese experience applicable to developing countries

Japanese experience in maternal and child health may be applicable to low income countries and poor areas in middle income countries. High maternal mortality and high prevalence of infectious diseases are still major issues in those countries. Their financial resources are scarce and management capacities are weak. Health service delivery systems are not yet established and qualified health professionals are in shortage. The situation is similar to

that of Japan before and immediately after the World War II.

In those days, community based approach in maternal and child health was effective. Existing female health professionals such as midwives and public health nurses were mobilized for the outreach services. The government sometimes took initiatives to organize communities, and the local health professionals facilitated community activities. Benefits of individual women and children were emphasized, as seen in the MCH handbook that provide with visible benefits such as food. These are the experience applicable to maternal and child health activities in developing countries.

Japanese experience indicates the importance of the commitment of the government. Although the government commitment in developing countries is often weak, countries such as Thailand and Vietnam committed firmly to improve basic health services. The government of these countries had relatively strong administrative capacities, and had achieved favorable results.

Technical assistance funded by the own government budget, or loan, may strengthen ownership and motivation of the country, as seen in Japan in Meiji era. It sometimes happens that technical assistance funded by donor grant would not achieve sustainable results as expected. It is not unusual that donor-funded technical experts provide with professional services directly, while there are no counterparts learning from them. In addition, professionals of developing countries often do not return the country after studying abroad.

The commitment and ownership of the country may be enhanced by sharing the burden. Technical assistance by own expense would be possible for the middle income countries with sufficient administrative capacities. For example, in 2007, Egyptian government contracted a British university for improving nursing education and paid for the technical assistance by their budget. The government initiated the process and kept motivation and commitment.

Although universal coverage of health insurance may not be always applicable to other countries, lower-middle income countries may learn from Japanese experience to develop health financing systems. Japanese system is a combination of social insurance and tax-base welfare, each aspect may be applicable to developing countries according to their social and economic situation. It is a difficult issue to include informal sector workers in the health financing system in developing countries, thus a publicly managed health insurance may be a useful option. Developing countries can also learn lessons from the procedures of licensing and regulation, as well as the efforts to contain costs.

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