

From Recipient to Donor: How Taiwan transformed its healthcare system

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Taiwan is an island, located in the center of the western Pacific rim, south of Japan, north of the Philippines, with population of near 23 million. The island has an area of 36,000 square kilometers, 80% of which is mountainous. Population density is very high, 640/km², and is much higher on the west coast.

In the past half century, Taiwan has gone through remarkable societal transformations in economics, politics and health care. Judging by the life expectancy, infant mortality rate or per capita income, Taiwan can now be considered a developed country. Though we cannot identify which reform precedes the others, a healthy population in a healthy community certainly is a basic stabilizing force of the transformation. It worths mentioning that in year 2000, the Economist Intelligence Unit (EIU) of London ranked the healthiest counties of the world. Many health indicators were used. The results showed Taiwan as No.2 in the ranking, second only to Sweden. (Canada ranked No.3, Japan 4, France 6, UK12 and USA 20)

Public healthcare development actually started about 100 years ago when the Japanese took over the island after the Sino-Japanese War at the end of the 19th century. Due to economic constraints through and immediately after World War II, public healthcare development had been somewhat limited. It was not until the 1950's that we began to see the transition take place. With economic reforms, which elevated per capita income from 800 US dollars to more than 20,000, and ushered in a fully democratic society, Taiwan's health care system has also gone through a fundamental transformation. Life expectancies at birth increased from 57 to 75 years for male, and from 60 to 80 for females. Other demographic shifts accompa-

nied the changes: infant mortality rate had been reduced from 44.7 to 6.1 per 1000 live births, and maternal mortality rate dropped from 125 per 100,000 to 7.9—a 95% reduction!

Medical facilities and personnel have greatly improved as well. Before, there was only one medical institution in the country with only one medical center. The majority of babies were born by nonqualified “helpers,” only 3% by doctors. Now we have 12 medical schools, 20,306 medical care institutions and 20 sophisticated medical centers through out the country. Currently Taiwan has 38,000 physicians, 11,500 dentists, 30,000 pharmacists, and 125,000 nurses, which translates to one doctor for 536 people, one dentist for 2,037, one pharmacist for 1,400 and one nurse for 184. Hospital capacity has become very sufficient, more than 30 beds for every 10,000 people, and a vast majority of babies are born by doctors in the hospital, the main reason for the reduction of more than 95% of the maternal mortality rate.

Significant epidemiological transition also took place. Supported with the WHO funds and working with WHO experts, Taiwan Malaria Control Institute was established in 1948; Mosquito Control Program implemented in 1952 and DDT spraying was carried out from 1954–1956, resulting in drastic reductions of the parasite infection rate from 10% in 1954 to 0.0006% in 1957. In 1956, of the 7.8 million people in the country, 1.2 million had suffered from malaria, but 10 years later, none were reported. WHO thus declared in 1965 Taiwan a malaria-free country, a successful example of international cooperation.

Other communicable diseases were eradicated one after the other: pest in 1953, smallpox in 1955, rabies in 1959, and diphtheria and poliomyelitis both in 1982. No typhoid epidemic was

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recorded after 1970. Hepatitis B infection was a leading cause of liver cancer in Taiwan then, with carrier rate of more than 10% of the population. Therefore in July 1980, Taiwan started a nationwide free neonatal vaccination program that within 15 years effectively lowered the carrier rate to less than 1%, and closer to the target of 0.1% in year 2010. Childhood liver cancer has thus almost disappeared from the medical scene.

Controls of infectious disease indeed quickly changed the pattern of leading cause of death in Taiwan. Infection-related diseases, especially gastrointestinal and respiratory illnesses, used to lead the causes of death; now the leading causes are adult-onset chronic degenerative diseases such as cancers, cardiovascular illness, hypertension and diabetes, a pattern similar to those of other developed countries.

How did we achieve these? Are there any lessons that can be distilled from Taiwan's experience?

First, health issues have to be recognized and signified as an important factor in societal development, by the public and political leaders. Health care developments need to be on the national agenda with full political support in order to generate the social mobilization. Accordingly the Communicable Disease Control Act was passed in 1946. Family Planning was included in National Economic Plan in 1965. Soon after, Regulation Governing the Implementation of Family Planning in Taiwan and The Outline of Population Policy were enacted in 1968 and 1969, respectively; Malaria Control Act, Medical Act, Health Education Act, and Water Clean Act were enacted in 1966, 1967, 1967, and 1973 respectively; and Water Pollution Prevention Law, in 1973. Many other laws and regulations were also implemented.

It should be mentioned that in the 1940's, after years of Chinese Civil War, the National Government retreated from mainland China to Taiwan with 6 million immigrants, one tenth of which were armed forces. The defense overburdened the country. Furthermore, Taiwan was forced to leave WHO in 1972, followed quickly with cessations of most, if not all, of the international aid. Under such adverse circumstances, national awareness, political determination and self-sufficiency became the most fundamental of all.

Second, public-health-based infrastructure

was built and became the foundation of the development of health care system. Laurie Garrett in her book "Betray of Trust—The Collapse of Global Public Health" elegantly pointed out that a sound public health system is vital to societal stability and development. Our basic infrastructure was very simple and direct: at least one health station/unit in every township, "Hsiang," to bring health services as close to the people as possible. All together 368 stations were established, each led by a physician, staffed with nurses, a public health worker, a midwife, a laboratory technician, a sanitation worker, and administrative staff. The station provided primary health clinic, vaccination, maternal and child care, family planning, school children nutrition, environmental and epidemic control, and most importantly, health education emphasizing on disease prevention rather than disease treatment. Rapid eradications of communicable diseases must unquestionably be credited to the health workers at those stations.

The infrastructure alone is not enough. Systemic public health manpower development was another key to the success. With the help from WHO, UNICEF, JCRR, ABMAC, Rockefeller Foundation Population Council of NYC, hundreds of community health workers and "neighborhood" nurses (each covered about 500 families) were trained. Institute of Public Health, National Taiwan University, was first established in 1954, and several similar institutes such as Taiwan Malaria Institute followed. In less than a decade, hundreds of public health leaders and workers were trained, more than 400 of them abroad. Another important organization was the International Training Center for Family Planning, established in 1969, which effectively checked and controlled the population explosion of the country, providing a sound basis for societal reformation. Our family planning program has thus been ranked number one in the world three times in a row, as evaluated every five years by Population Crisis Committee of the Washington DC in 1987, 1992, and 1997.

After the basic healthcare infrastructure was built, efforts were made to guarantee universal healthcare coverage. Health insurance for laborers and civil workers was implemented around 1960, farmers insurance in 1985, and insurance for low income people in 1990. But most significant of all, the national health insurance pro-

gram was implemented in 1995, covering more than 96% of the total population and successfully enjoying more than 70% popular approval. Healthcare service in Taiwan was recently ranked second among developed countries by Economist Intelligence Unit of UK, in December 2000, Sweden being the first.

Finally, perhaps most important of all, Taiwan has received significant aid from various international organizations, for which we are indeed very grateful. The aforementioned health stations were largely funded and professionally assisted by Sino-American Joint Commission of Rural Rehabilitation (JCRR) (1950–1959). Before then, Rockefeller Foundation and Chinese Agriculture Rehabilitation Committee helped build Taiwan Malaria Control Institute (1948); WHO, Mosquito Control Program (1952) and DDT spraying program (1954–1956); UNICEF, WHO, University of Michigan, and NYC Population Council assisted Maternal and Child Health Center (1952) and Maternal and Child Research Center (1959), just to mention a few. Without international assistance, Taiwan's health transformation would not have taken place.

In January 2000, under the directorship of Dr. Brundtland of WHO, a "Commission on Macroeconomics and Health" was established, headed by Professor Jeffrey Sachs of Harvard University. The report was released in December 2001, in which it asked rich countries to increase the aid

of extra 0.1% of their GDP, totaling 38 billion US dollars a year by 2015, an initiative we applaud. But we further believe that "good donors" alone are not sufficient; to succeed one needs to have "good recipients" as well. Taiwan is one such excellent example of a good recipient. In the past decade, Taiwan donated 120 million US dollars in humanitarian and health aid to 78 countries. Right now we have four medical teams working in Africa. We have helped train public health leaders from 27 countries in Africa, Central America and South America. Over the past half century, Taiwan has gained enormous experiences as good recipients working together with good donors. We are now ready to reciprocate, help the needy, and become a good donor.

In conclusion, Taiwan in the past half century has gone through a major societal transformation, from an under-developed country to a developed country with a full democratic society. It has healthy people in healthy communities, most of these achievements assisted by international organizations, for which we are very grateful. Though we are facing new hosts of health problems such as caring for an aging population, new infectious agents and dealing with mental health problems brought on by the new society, we believe, with good will and close international collaborations, we can jointly take up the challenges not only in Taiwan, but also in many other areas around the world.