

<Review>

Public Health Policies for an Aging Society

Nobuo ONODERA
(from Saitama College of Health)

1. INTRODUCTION

There has been a rapid change in the population structure in the recent years in Japan. The proportion of the population aged 65 years or more in Japan was 7.8 per cent in 1970, 8.8 in 1975, 10.3 in 1980, 12.0 in 1985 and 14.2 in 1990. It was predicted that this would reach 14 per cent by 1996. However it reached in 1990 with rapid speed within a period of 20 years.

In contrast, in France, where the elderly population reached 14 per cent in 1975, it required 85 years from 7 per cent to 14 per cent, in the U.K. and F.R.G. it required 45 years, and in the U.S.A., where the proportion is expected to reach 14 per cent in 2020, it will have required 75 years.

In addition, total fertility rate reached 1.57 in 1989, and it was more decreasing with 1.53 in 1991.

The environment surrounding public health in Japan has changed substantially with aging of population and with low birth rate in accordance with the advances of scientific technology and information system, the improvement in the national standard of living, and the elevation in the health consciousness of inhabitants.

For the maintenance and promotion of public health in response to those background with socioeconomical and cultural changes, it is necessary both to ascertain the needs of people and to establish public health policies with appropriate

scientific measures.

2. DEVELOPMENT OF PUBLIC HEALTH POLICIES

2.1 Confusion period (1945-1950)

Public health policies during the early confusion period (1945-1950) of post-the second world war with high birth rate of 34.3 and with relative high death rate of 14.6 per 1,000 population in 1947 had to cope with the challenges of such epidemic as small-pox, typhus, chorea and malaria, and with the problems of malnutrition.

Also, the high priorities of the public health policies were tuberculosis control and the promotion of maternal and child health.

The life expectancy at birth of this period was 50.06 years for male and 53.96 years for female according to the 8th life table in 1947 about 15 years less than the average life expectancy in advanced western countries.

2.2. Economic development period

During the following period of rapid economic development (1960-1973) a serious pollution problems arose in Japan as a result of rapid industrial economic development and growth. Also, the population movement from rural areas to urban areas occurred the rapid social changes accompanying modernization and urbanization.

As a response of pollution problems and rapid social changes, the public health policies had various kinds of systematic and organization approaches for environmental problems with employment and training in the public health ser-

小野寺伸夫 (埼玉県立衛生短期大学)
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vices.

Furthermore, the increased incidence of chronic degenerative diseases and problems arising from the aging population and mental health problems had arose the needs of comprehensive public health services with their emphasis gives to the promotion of health, prevention, early detection and treatment of diseases, and rehabilitation with linkages of welfare services. The life expectancy at birth of this period was 69.31 years for male and 74.44 years for female on the 13rd life table in 1970. It was reached the level of western countries by 20 years life prolongation with comparison in 1947 of average life span.

2.3. Socioeconomical steadier development period (1973-1990)

During the period of steadier development following the oil shock. in 1973, there had been expected the well balance among demands, needs and supplies, supports for the development with more efficient and rational public health services as well as the other socioeconomic functions.

It should be taking to promote the public health services with self-control systems and open-systems in regard to the important functions for policy making, decision, planning, operation and evaluation in each levels and fields. The span of public health policies could be more wide and reasonable supported by the different kinds of age groups and the community groups towards 21st century.

Accompanying the rapid socioeconomic development of recent years, remarkable change have been

observed in the public health status of the Japanese people.

The health statistics of Japan have been attained the highest level in the world with 75.92 years for male and 81.90 years for female of the life expectancy at birth by the 17th life table in 1990.

Nevertheless, it remains a fact that many public health problems still exist. The various kinds of public health hazards and diseases are occurring with the rapid coming aging societies.

3. TRANSFORMATION IN PATTERNS OF DISEASES AMONG THE OLD

3.1. Fifty years trend of leading causes death rates in 1940

The improvement of living standard and life expectancy has been remarkable in pass through the confusion period after the second world war.

Also, the principal cause of death was tuberculosis in 1940 with a death rate of 212.9 per 100,000 population, followed by pneumonia and bronchitis with a death rate of 185.8 and cerebrovascular disease with a death rate of 177.7.

In 1990, the death rates were tuberculosis with 3.0 per 100,000, population pneumonia and bronchitis with 60.7, cerebrovascular diseases with 99.4 as showing table 1.

Leading cause of death in 1990 were malignant neoplasms with a death rate 177.2 per 100,000 population, followed by heart disease with 99.4 and cerebrovascular disease with 99.4.

Table 1. Trend of leading causes death rates in Japan (per 100,000 population) Total

	Tuberculosis	Pneumonia and bronchitis	Cerebrovascular disease	Malignant neoplasms	Heart disease
1940	212.9	185.8	177.7	72.1	63.3
1950	146.4	93.2	127.1	77.4	64.2
1960	34.2	49.3	160.7	100.4	73.2
1970	15.4	34.1	175.8	116.3	86.7
1980	5.5	33.7	139.5	139.1	106.2
1990	3.0	60.7	99.4	177.2	134.8

Deaths attributable to these principal causes, so called adult diseases (geriatric diseases), accounted for more than 60 per cent of all deaths.

3.2. Comparison study by age and main causes of death

The transformation in pattern of age and leading causes of death in modern Japanese societies showed in table 2 with the trend comparison study in 1960 and 1990.

Through the comparison study for main causes of death in 1960 and 1990, malignant neoplasm was remarkable increasing at the old age groups of 75 and over years old, in spite of decreasing under 74 years old. Heart disease was also increasing at the over and 80 years old in contrast with decreasing under 79 years old, cerebrovascular disease was almost remarkable decreasing during thirty years except 90 and over years old.

3.3. Age-adjusted death rates by leading causes of death

The transformation in patterns of diseases among the old groups had a great influence to the high old age groups in 75 and over years old for 3 leading geriatric diseases.

By coming of the rapid aging population of aging and occurring of high death rates of the aged, it is very important to calculate the age-adjusted death rates as showing table 3.

The trend of total age-adjusted death rates had remarkable decreasing from total 2061, male 2363.3 and female 1826.3 per 100,000 population in 1947 to total 561.1, male 747.9 and female 423.0 in 1990.

Particularly, the age-adjusted tuberculosis death rates had decreased almost one and 100th with rapid speeds from total 200.0 male 236.5 and female 167.2 per 100,000 in 1947 to total 2.5, male 4.6 and female 1.1 during about half century.

Table 2. Death rates by age and main causes of death in Japan (1960, 1990 per 100,000 population) Total

	Malignant neoplasms		Heart disease		Cerebrovascular disease	
	1960	1990	1960	1990	1960	1990
Total	100.4	177.2	73.2	134.8	160.7	99.4
0-4	7.7	3.5	5.4	5.2	0.8	0.7
5-9	4.2	3.0	2.4	0.9	0.4	0.1
10-14	4.4	3.3	4.0	1.3	0.5	0.2
15-19	5.6	4.2	7.3	2.5	1.3	0.3
20-24	7.2	5.3	10.0	4.1	1.9	0.9
25-29	11.4	7.7	12.4	6.6	3.4	1.6
30-34	22.5	14.4	16.7	8.8	6.6	3.0
35-39	42.2	29.2	21.8	12.1	14.8	6.9
40-44	75.5	49.4	32.2	18.7	38.3	15.2
45-49	131.7	89.3	48.0	32.5	92.0	27.5
50-54	209.4	149.9	79.3	51.5	195.7	44.1
55-59	328.2	272.2	134.8	85.2	369.0	66.6
60-64	478.6	415.7	229.5	140.5	638.7	102.2
65-69	667.7	563.2	391.6	232.0	1104.6	162.9
70-74	845.1	802.1	689.9	451.6	1815.8	334.0
75-79	892.8	1098.1	1169.0	926.8	2706.1	707.2
80-84	782.7	1437.4	1736.7	1834.7	3375.7	1396.9
85-89	643.7	1679.8	2311.7	3430.8	3630.6	2594.1
90-	478.5	1535.3	2849.0	6175.5	3777.9	3991.4

Table 3. Trend of age-adjusted death rates by sex and leading cause of death in Japan

117 rubric IISO code	Causes of death	Sex	per 100,000 population			
			1947	1960	1975	1990
	Total	T	2061.6	1232.9	839.9	561.1
		M	2363.3	1476.1	1036.5	747.9
		F	1826.3	1042.3	685.1	423.0
5, 6	Tuberculosis	T	200.0	46.9	12.1	2.5
		M	236.5	64.5	19.6	4.6
		F	167.2	32.2	6.5	1.1
28-37	Cancer	T	117.2	157.3	154.6	153.2
		M	127.4	188.2	198.9	215.6
		F	110.3	132.0	121.1	107.7
46, 51-52, 54-56	Heart dis.	T	104.4	129.2	125.2	110.2
		M	113.3	153.3	150.0	139.1
		F	97.8	111.9	106.3	88.5
48-49	Hypertens. dis.	T	—	30.4	26.3	5.9
		M	—	34.6	28.2	5.9
		F	—	27.3	24.8	5.8
58-60	C.V.D	T	269.7	286.0	218.3	81.1
		M	318.7	341.1	265.0	97.9
		F	235.3	242.7	183.0	68.6
62, 63, 66	Pneu. & Bronch.	T	195.1	74.2	47.2	48.4
		M	238.0	92.0	62.0	73.4
		F	162.0	62.2	37.1	32.9
69	Ulcer of st. & du.	T	54.5	19.8	8.4	2.4
		M	84.7	30.2	12.4	3.3
		F	27.8	11.4	5.2	1.7
73	Liver cirrhosis	T	10.2	15.8	16.8	12.1
		M	13.4	21.9	26.5	18.3
		F	7.5	11.0	8.7	6.5
76-77	Nephritis	T	104.4	26.2	8.0	11.4
		M	109.0	29.0	9.0	14.2
		F	101.7	24.2	7.2	9.5
88	Senility	T	335.2	140.8	45.3	14.5
		M	361.3	148.8	43.2	14.4
		F	320.1	136.4	46.2	14.5
4, 72	Gastroenteritis	T	148.0	35.5	8.2	1.0
		M	155.3	35.4	8.0	1.1
		F	142.0	35.3	8.2	0.9
E104-E114	Accident	T	52.6	47.5	33.4	24.0
		M	76.3	74.9	51.2	36.5
		F	31.1	22.7	17.0	12.9
E115	Suicide	T	23.9	25.1	19.7	15.3
		M	30.4	30.0	24.1	20.0
		F	18.5	20.6	15.6	10.8

However, the age-adjusted cancer death rates were increasing on male with 127.4 in 1974, 188.9 in 1960, 198.9 in 1975 and 215.6 in 1990. The age-adjusted death rates of cerebrovascular disease were decreasing both male and female, but the age-adjusted death rate of heart disease were decreasing from 1960 on contrary of increasing from 1947 to 1990.

3.4. Medical care status of death-time by age groups and leading causes of death.

According to the Socioeconomic Survey for Vital Statistics (Death of the high age groups) in 1987 by Ministry of Health and Welfare in Japan, the highest ratio of medical care status was in-patient at death-time with 59.8 per cent, followed out-patient with 26.5 per cent and Non medical care with 4.1 per cent as follows Table 4.

The medical care of in-patient at death-time by the age groups reduced ratios accompanied with higher age groups.

The ratio of medical care with home consultation

at 70-74 age group was 26.5 per cent, but there reduced 9.5 per cent at 75-79 age group accompanied with gradually increasing of home consultation at higher age groups.

The highest ratio of out-patient at death-time was 75-79 age group with 17.2 per cent.

On the aspects of leading death causes on the table 5, Cancer accompanied with decreasing of higher age groups was the highest ratio of in-patient with 86.7 per cent.

On the other hand, the ratio of home consultation for senility accompanied with increasing of Home consultation was 73.6 per cent.

3.5. Status of morbidity at the rapid aging society

The status of diseases morbidity in Japan were ascertained by annual National Health Survey integrated with a Comprehensive Survey of Living Condition from 1986, annual Patient Survey and Insurance Medical Survey etc.

According to the Patient Survey in 1990, the rates

Table 4. Medical care status at death-time by aged groups (per cent)

Medical care Status	Total	Age groups				
		70-74	75-79	80-84	85-98	90-
Total	100.0	100.0	100.0	100.0	100.0	100.0
In-patient	59.8	78.6	67.5	58.9	44.6	40.4
Home consultation	26.5	9.5	17.2	28.2	39.2	49.0
Out-patient	8.4	6.6	10.8	7.2	8.5	8.2
others	1.3	1.6	1.2	1.8	0.9	0.5
Non medical care	4.1	3.7	3.3	3.9	6.8	1.9

Table 5. Medical care status at death-time by leading causes of death (per cent)

Medical care status	Cancer	Heart	Age group		
			C.V.D disease	Pneu. & Bronch.	Senility
Total	100.0	100.0	100.0	100.0	100.0
In-patient	86.7	46.6	55.0	66.7	10.4
Home consultation	10.3	24.0	34.0	23.8	73.6
Out-patient	2.1	18.3	5.2	6.0	6.6
Others	0.5	1.8	2.3	1.8	0.9
Non medical care	0.5	9.2	3.5	1.8	8.5

of in-patients per 100,000 population by age group were increasing accompanied with higher age groups. For example, the rates of in-patient were total 4.652, male 4415 and female 4818 per 100,000 population at 65 and over years old, and total 5.803, male 5339 female 6098 at 70 and over years old in contrast with 154 at 10-14 age group and 1,214 at total age groups.

On the rates of out-patients per 100,000 population by age groups, the lowest age group was 15-19 years old age group with 2,183. The highest rates was 75-79 years old age group with 15,553.

The trends of in-patients at 65 and over years old were 2.142 per 1000,000 population in 1970, 4057 in 1980 and 4652 in 1990, and at 70 and over years old were 2098 in 1970, 4965 in 1980 and 5803 in 1990.

4. AMENDMENT OF JAPANESE STANDARD POPULATION

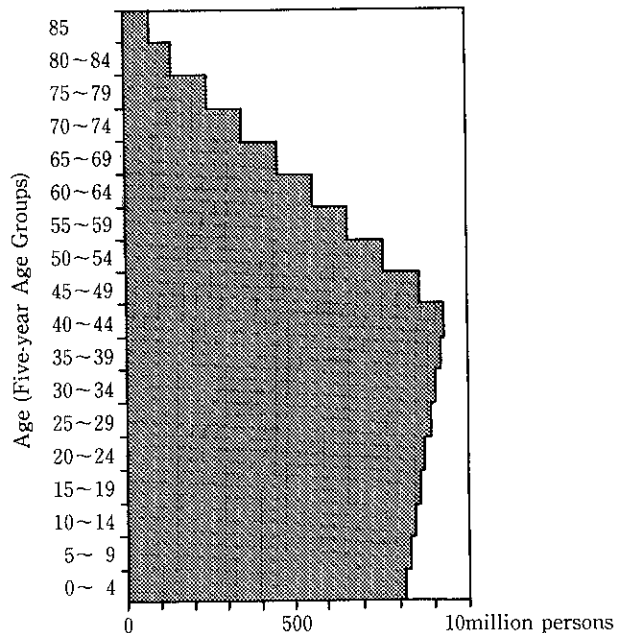
The adjusted death rate is very important index for the comparison studies of death situation in various kinds of levels and groups. On the way with the consequences of increasing populations elderly persons, such index should be formulated with regard to changes in the overall age structure.

On the occasion of calculation for age adjusted death rate, there was used Japanese standard population in 1935 for annual comparison in all Japan, and also in 1960 for comparison among prefectural death rates in Japan.

The proportion of elderly persons per total population were very lower levels either in 1935 too in 1960 than the proportion in recent aging societies.

The ministry of Health and Welfare in Japan set

Age	Standard Population
0~4	8,180,000
5~9	8,338,000
10~14	8,497,000
15~19	8,655,000
20~24	8,814,000
25~29	8,972,000
30~34	9,130,000
35~39	9,289,000
40~44	9,400,000
45~49	8,651,000
50~54	7,616,000
55~59	6,581,000
60~64	5,546,000
65~69	4,511,000
70~74	3,476,000
75~79	2,441,000
80~84	1,406,000
85 and over	784,000
Total	120,287,000



Note: The Japanese Standard population is calculated based on 1985 national census to aimed adjustment for extreme increases/decreases due to the babyboom and so on and rounded up to the unit of 1,000 persons.

Fig. 1 Japanese Standard Population based on 1985 National Census and over

up the committee for standard population of age-adjusted death rates in 1990 (Chairman: N. Onodera). The committee made a proposal as following contents with availability of standard population.

- (1) To adopt the standard population of model population based on 1985 National Census. (Fig. 1)
- (2) To use same standard population for comparison of annual and prefectural death rates.
- (3) To have official announcement for the operation of new standard population from 1990 vital statistics.
- (4) To retrace the statistic data of annual comparison until 1947 and prefectural comparison until 1947.

The new Japanese standard population was decided officially on the advice by the Council for Health and Welfare Statistics based on a proposal of committee.

The comparison of proportional age structure in 1935, 1960, 1980 and 1985 was showed by Fig. 2.

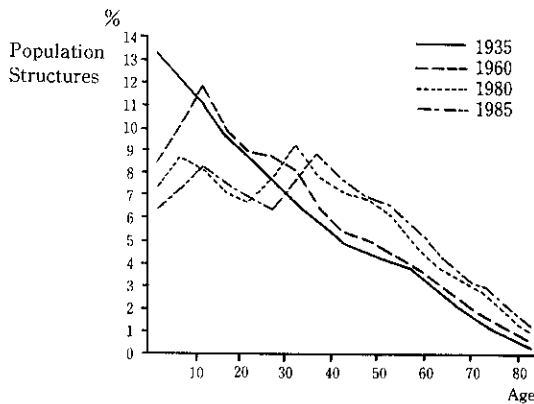


Fig. 2 The comparison of population structures

5. PLANNING OF PUBLIC HEALTH POLICIES IN JAPAN

Public health services for an aging society should be taken towards services with a focus for elevation

of quality of life which enable people to live their entire life and in good health.

On the establishment of policies based on public health mind and human respected idea, it is a quite necessary to take the comprehensive intentions and approaches with systematic policy scientific studies of norm, human, contingency, organization, comparison and efficiency on primary, secondary and tertiary public health care levels on each age groups.

In February 1983, the Law on Health and Medical Services for the Aged was enforced to promote health and medical services programmes, such as health note, health examination, health education, home visiting, rehabilitation services and support of medical expenses for the aged.

These programmes had the concrete intention with emphasis on the prevention of diseases and disability so that people would be able to enjoy old age in good health.

Furthermore, every local autonomies so called city, town and village should be made up the health and welfare services plan for aged until 1993 by the amendment of law of Welfare Services for the aged and the law of Health and Medical Services for the Aged in 1990.

The guide line of these plan was proposed by the study group of local health and welfare plan for the aged (Chairman W. Ohmori).

The fundamental concepts of a guideline were as follows.

- (1) To make up the integrated plan for health and welfare services on the aspect of linkage promotion between welfare functions and health-medical care functions.
- (2) To take a high priority for home care systems on the stage of planning.
- (3) To take the leading roles for planning by the responsibilities of cities, towns and villages.
- (4) To consider the proposal of appropriate information for services, and the arrangement of environment and infrastructures on

the more available use by inhabitants.

6. CONCLUSIONS

With the rapid increase in aged societies and the changes in life-style in recent years, public health policies have been increasing the more important roles and higher responsibilities for the development of reasonable and available services based on the implication with human ecological, epidemiological, social and economical approaches.

To cope with the increase in various kinds problems in aging societies, such as high mortality and morbidity for the age, increasing of frail older people and impaired elderly, shortage of intersectorial collaboration and appropriate data, increasing of care expenses, shortage of care staff and low fertility, public health policies should be promoted to create systematic approaches in accordance with the individual's life cycles and community activities.

Although the public health service have been operated with great efforts at the rapid aging societies, public health policies have been agonized as a part of comprehensive function.

There have existed many difficult problems on public health policies with high complexity of elevation of popular health consciousness and with behavior of increasing in various kinds of demands.

In the development of future public health policies and strategies, it is very important factors to appreciate the scientific essence of public health, and to reorganize dynamic functions by using of potential energy of public health.

The public health policies for the aged societies will be extremely valuable and useful in comprehen-

sive policy making and decision with the global human service network from community to community in the world.

These policies should be taken the well balance of socioeconomical development and scientific technological progress, especially to take the top priority formula adjusted in each levels with the provision of future prospects for stability, steadily continuity and entire humanity services.

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