学 術 交 流

Administrative roles in health care in Japanese rural communities

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1. Public health care activities in Japan and the role of local health centers

Health centers in Japan were instituted by the Health Center Law in 1937 and there are now 855 such centers located all over Japan (Table 1). In the early days, the primary tasks of centers were prevention of tuberculosis and mother-and-child health care activities, reflecting the social circumstances of the time. In those days, the mortality due to tuberculosis was about 200 per 100,000 persons, 60 times the present level, and the infant mortality rate was 150 per 1,000 live births, 30 times the present level.

After World War II, the functions of the health center were expanded as the local outposts of the national hygienic administration, and its outstanding achievements in prevention of acute epidemics, tuberculosis, and parasite diseases, mother-and-child health care including family planning, and nutritional counseling contributed greatly to increasing the mean life-span of the Japanese to the highest in the world.

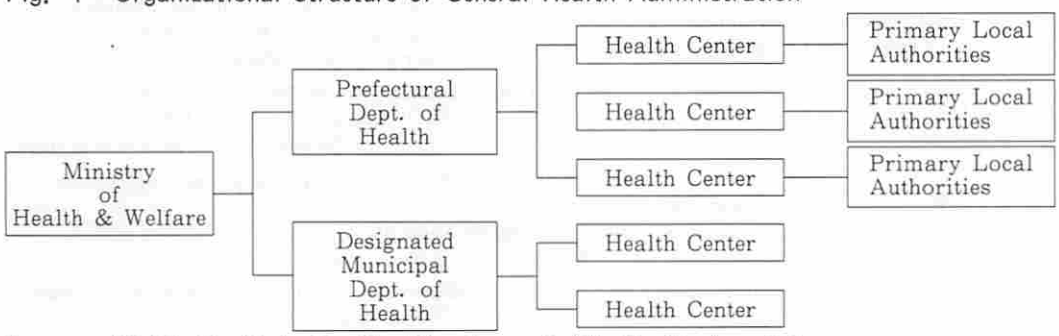
With the progressive concentration of people in cities and changes in the disease structure associated with the rapid economic advancement that began in the 1960's the weight of

Table 1 Number of health centers by size of population covered, 1985

Total	250 thousand and over	250－175 thousand	175－125 thousand	125－75 thousand	75－30 thousand	Under 30 thousand
855	105	128	128	251	208	35

Source ; Health Policy Bureau, MHW

Fig. 1 Organizational Structure of General Health Administration



Source ; "Public Health in the World", Japan Public Health Association

the activities of health centers shifted from those concerned with management of infections to environmental problems, cardiovascular diseases, and cancer. Moreover, health care of the elderly and mental health care have evolved as problems of increasing importance.

Health centers, as the core of local health-promotion activities, are advising as well as assisting public health administration of local governments to advance consistent comprehensive health care for the entire nation from promotion of health to prevention and treatment of diseases, and rehabilitation (Fig. 1). The activities of today's health center is shown in Fig. 2, and its organization, exemplified by Toyama Health Center, is shown in Fig. 3.

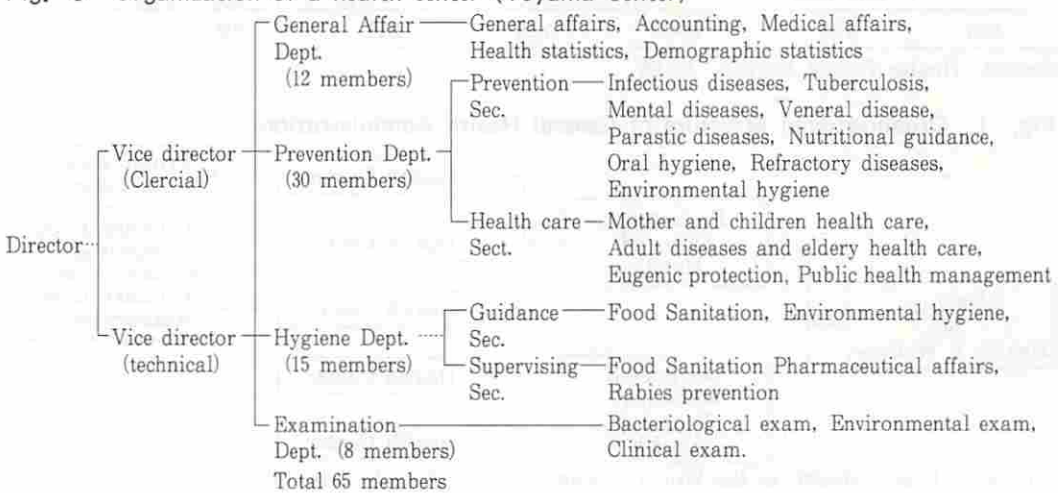
In recent years, differences in health parameter values have widened between rural communities and cities with the efflux of the youth from rural to urban communities and aging of the general population structure (Table 2). In agricultural communities, the birth rate has

Fig. 2 The function and programs of health centers

1. Control of communicable diseases including preventive vaccination
2. Control of tuberculosis (mass medical examination, detailed examinations, medical aid)
3. Control of venereal diseases
4. Control of other diseases, e.g., trachoma, parasitic diseases, degenerative diseases, etc
5. Promotion of mental health
6. Maternal and child health (health guidance of pregnant women, nursing mothers, babies and infants, medical for the handicapped children, mother's classes and others)
7. Consultation on the eugenic protection
8. Dental hygiene
9. Improvement of nutrition
10. Food, milk and meat sanitation
11. Rabies prevention
12. Maintenance of environmental sanitation (houses, hotels, puplic bathhouses, entertainment facilities like theatres, laundries, barbers shops, beauty parlors, garbage and waste disposal facilities, water supply facilities, sewage and graveyards)
13. Matters concerning environmental pollution
14. Medical affairs (concerning the Medical service Law, Medical Practitioner's Law and others)
17. Public health nursing (home visit, health instruction)
18. Medical social service
19. Health laboratory service
20. Matters concering health and vital statistics
21. Health education for the public

Source; "Public Health in the World," Japan Public Health Association

Fig. 3 Organization of a health center (Toyama Center)



decreased while the general and infantile mortalities have increased as compared with cities. As to the mortality due to individual diseases (Fig. 4), those of cerebrovascular diseases, stomach and duodenal ulcer, kidney disorders (nephritis, nephrotic syndrome and nephrosis), senility without mention of psychosis, and accidents and adverse effects are higher in rural communities. The activities of health centers must reflect the needs and characteristics of each region. In the following sections, major public health care activities in Japan, especially those provided by health centers, are described.

2. Anti-tuberculosis Measures

(1) Changes in the prevalence of tuberculosis

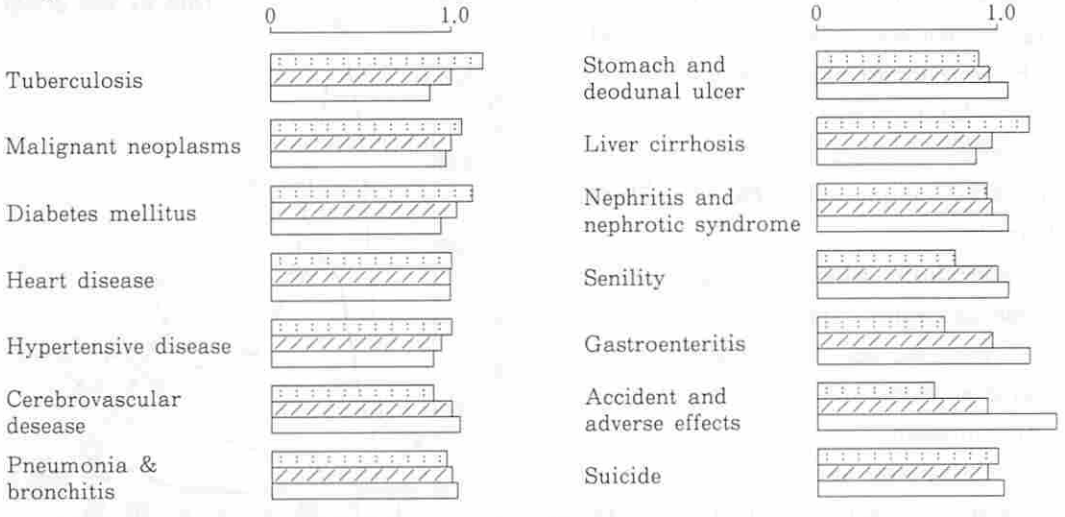
Japan was plagued with rampant epidemics of tuberculosis from late 1800's to relatively recent years to such a degree that the disease was called the ailment of the nation. In the early years tuberculosis was particularly prevalent in major cities,where factories were concentrated, and some rural areas, which provided the work force to these cities. The Hokuriku region including Toyama Prefecture supplied large number of young female workers to spinning mills in large cities such as Osaka and Kyoto. Tuberculosis spread over the entire Hokuriku region from the returnees from the cities who contracted tuberculosis, and the region was referred to as the Tuberculosis Kingdom before World War II. However, themortality due to tuberculosis decreased rapidly after a peak during the war (Fig. 5), and this tendency was particularly notable in younger generations

Tble2 Difference of vital statistics between urban and rural area (1985)

	Metropolitan	Urban	Rural
Birth rate*	11.9	11.9	11.5
Death rate*	5.7	5.7	7.9
Infant mortality rate**	5.2	5.5	5.9
Foetal death rate*	51.1	45.2	43.4

*per 1,000 population **per 1,000 live birth
Source ; "Lecture, Public Health," Igakushoin

Fig. 4 Difference of death rates between urban and rural area (1980)



Source ; "Lecture, Public Health," Igakushoin

(Fig. 6). This was an area in which the Japanese hygienic policy, built primarly on the activities of health centers, achieved a major triumph.

(2) Movements for prevention of tuberculosis in Japan

Since their foundation in 1938, health centers were equipped with X-ray apparatuses and aggressively in anti-tuberculosis activities such as screening and counseling for tuberculosis patiens and their guidance by visiting nurses as well as dietary counseling by nutritionists.

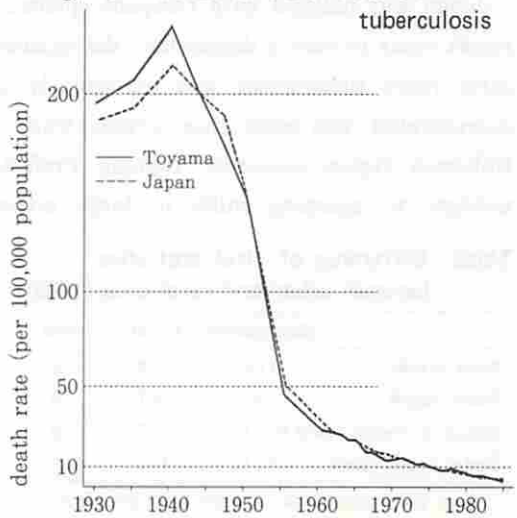
The photofluorograph, developed in Japan in 1935, proved to be useful for mass screening of tuberculosis, and automobiles mounted with the apparatus made rounds to work places and schools for collective radiographic examination. It was not until the end of the World War II that this mass screening by health centers became available widely throughout the nation. In 1951, Tuberculosis Prevention Law required all Japanese 30 years old or below to undergo health check-up, and the to coverage by the law was expanded since 1955 to all Japanese regardless of age. The 1951 amendment of Tuberculosis Prevention Law provided for public coverage of medical expenditure (half the cost of the treatment of tuberculosis and entire cost for hospitalization and treatment of infections diseases), and the nation-wide patient registration system was enforced in 1961.

Protective vaccination against tuberculosis (B.C.G.) was first considered by the administration in 1942 and was instituted nation-wide after the World War II.

Tuberculosis, which once raged both in urban and rural Japan, rapidly subsided with these movements, and health centers played a central role in this anti-tuberculosis campaign.

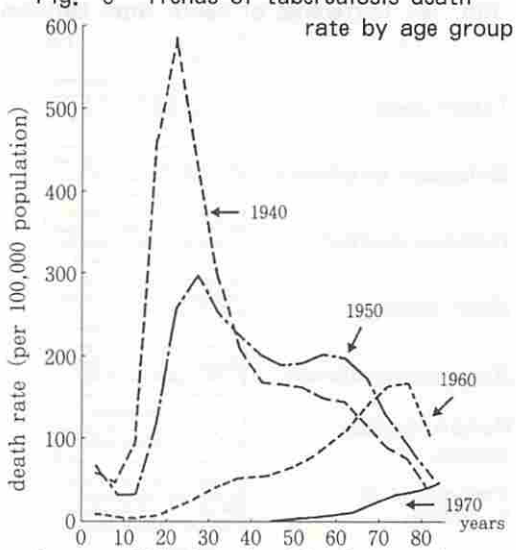
Currently, the anti-tuberculosis system of Japan consists of protective vaccination, screening, and patient care (Fig. 7)

Fig. 5 Trends of death rate of tuberculosis



Source; "Vital statics," Toyama prefecture

Fig. 6 Trends of tuberculosis death rate by age group



Source; "Vital statics," Statistics and Information Department, MHW

3. Mother-and-child health care programs

(1) Evolution of mother-and-child health care in Japan

Changes in the infant mortality rate clearly indicates that mother-and-child health care used to be a major concern of public health in Japan along with tuberculosis.

Around 1930, the infant mortality rate in Japan was about 130 per 1,000 live births but was reduce after World War II to the lowest in the world of 5.5 in 1985 (Fig. 8). As for regional differences, the infant mortality was lower in rural areas with more favorable natural environment than in cities in 1927－1928, but this was subsequently reversed with the improvements in the hygienic condition in cities (Table 3). This difference, however, is narrowing recently due to changes in the life style of rural communities. Until the institution of health centers, mother-and-child health care was supported primarily by private social programs, but the administration began to provide this service through health centers.

(2) Mother-and-child health care system in Japan

The current mother-and-child health care service is provided as in Fig. 9 on the basis of the Child Welfare Law (1947) and the Maternal and Child Health law (1965).

Fig. 7 Tuberculosis management in Japan

1. Registration of paticents	
2. Screening	
PPD skin test	Young children (once between 0 and 4 years) All 7-year-olds and 13-year-olds.
Chest radiography	7-year-olds and 13-year-olds showing positive PPD reaction. 16-year-olds. All aged 19 years or above.
3. Preventive vaccination (BCG)	Young children, 7-year-olds, and 13-year-olds showing negative PPD reaction.
4. Treatment	Cost covered by the government.

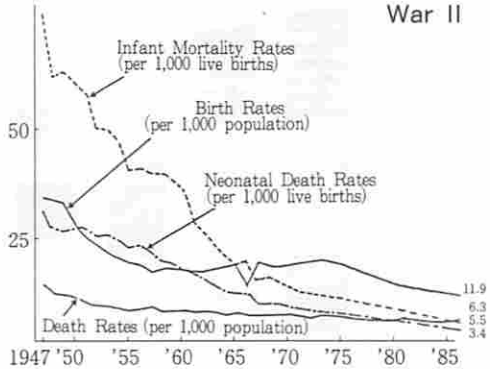
Table3 Differences of infant and neonatal mortality rate between urban and rural area

	Infant mortality rate*		Neonatal death rate*	
	Urban	Rural	Urban	Rural
1955	34.5	45.2	19.6	25.2
1960	26.8	37.3	14.8	20.9
1965	16.4	24.0	10.5	14.7
1970	12.2	15.9	8.1	10.4
1975	9.7	11.4	6.5	7.7
1980	7.3	8.3	4.8	5.4
1985	5.4	5.9	3.4	3.7

*per 1,000 live births

Source ; "Kokumin Eisei no doko," Kosei Tokei kyokai

Fig. 8 Vital Statistics after World War II

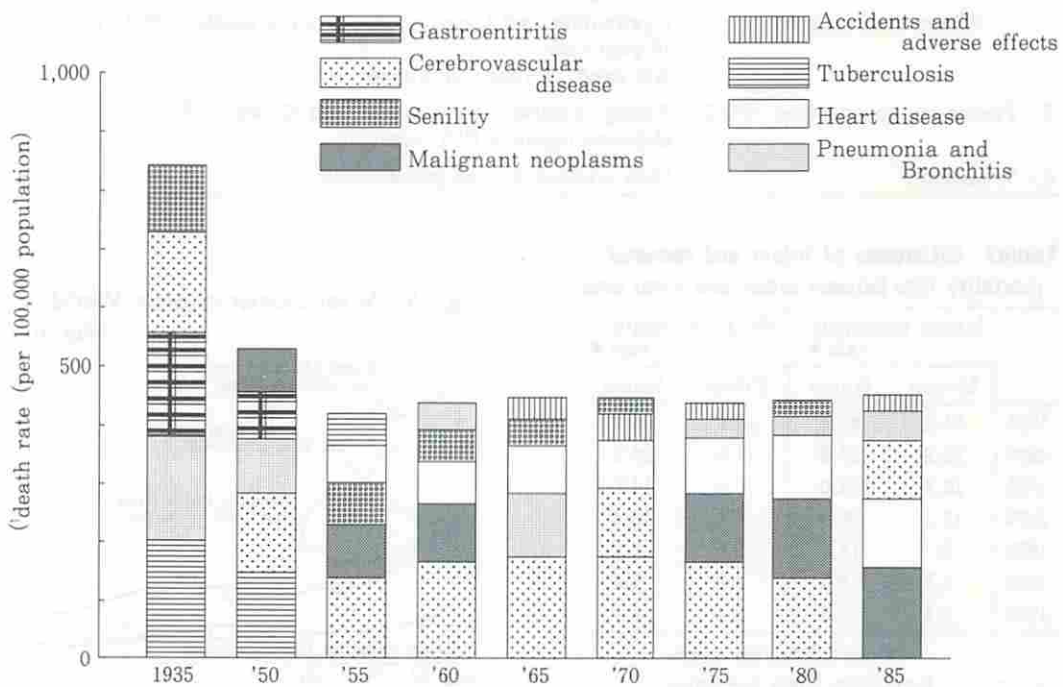


Source:The Ministry of Health and Welfare

Fig. 9 Primary mother and child health care services in Japan

Hygiene guidance	Marriage	
Family planning guaidance (health center, local government)		
	Pregnant	
Guidance of pregnant woman (local government)		Physical chek-up (eary gestination) (obstetric institution)
		Virological examination for type B hepatitis (obstetric institution)
		Physical check-up (late gestination) (obstetric institution)
	Delivery	
House call guaidance of infantile care (health center, local government)		Screenin for congenital metabolic abnormaities (obsetetric institution)
		Screening of neuroblastoma (health center)
	Child (1 year)	
		Physical evaluation for 1-year-6 months old (local government)
	Child (3 years)	Physical evaluation for 3-year-old (local government)

Fig. 10 Trends of death-rates by five leading causes



Source ; "Vital statistics," Statistics and Information Department, MHW

4. Health care programs under the Elderly Health Law

The proportion of the elderly population in Japan is still smaller than in some Western developed countries, but the rapid aging of the population is posing a great social problem.

To assist maintenance of good fiteness standards and assure appropriate medical care for the aged individuals, the Japanese government enacted the Elderly Health Law in 1982.

Since 1981, malignant neoplasms remain the greatest cause of death of the Japanese, followed by heart disease. Cerebrovascular diseases, with ranked first for a long time (1951−1980), places the third at present (Fig. 10).

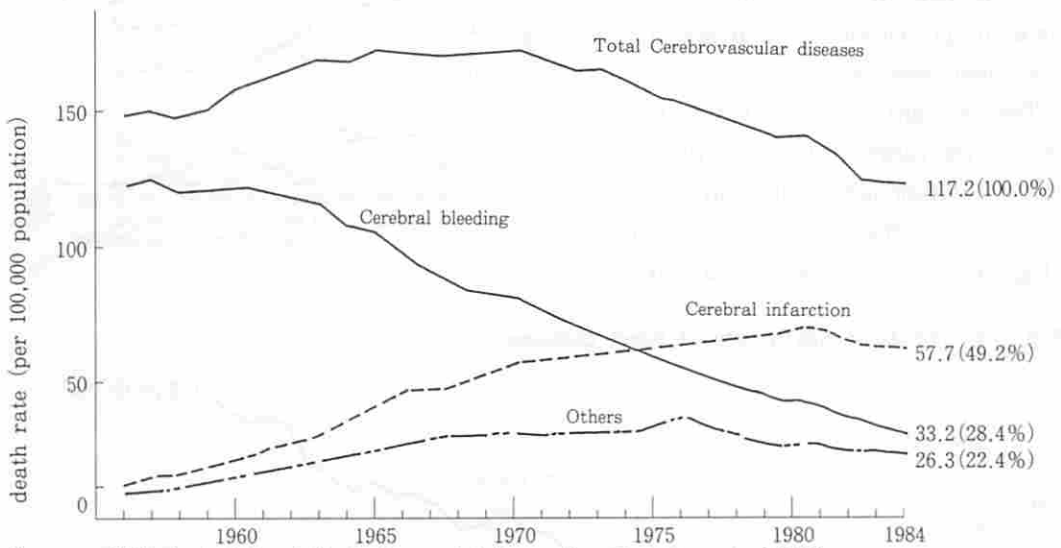
Measures against cardiovasular diseases and malignant neoplasms are, therefore, of the primary importance in Japan.

(1) Measures against cerebro-cardiovascular diseases
(cerebrovascular diseases, ischemic heart diseases)

i) Changes in the mortality due to cerebro-cardiovascular diseases in Japan

The mortality rate due to stroke was about 170 per 100,000 of the population before the World War II (it decreased to 118 in 1948 but increased again to 176 in 1965) but

Fig. 11 Trends of death of cerebrovascular disease



Source ; "Vital statistics," Statistics and Information Department, MHW

Table 4 Number of persons taken mass examinations for circulatory diseases, 1970—1982

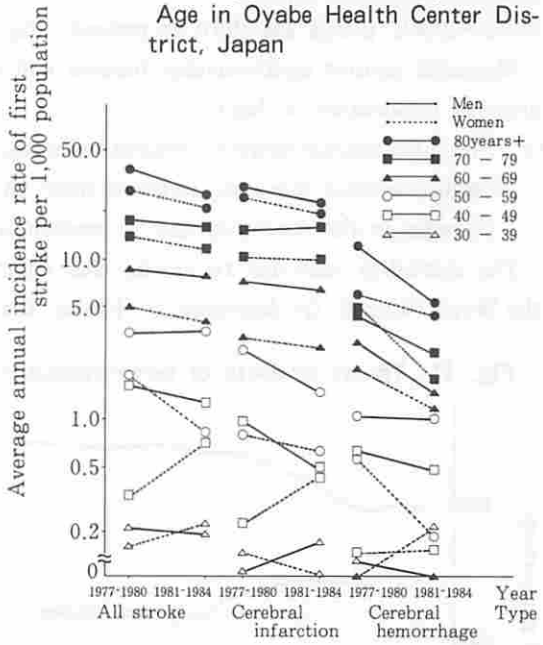
	1970	1975	1977	1978	1979	1980	1981	1982
Measurement of blood pressure	2 371 467	4 445 770	5 389 493	5 871 125	6 822 248	7 160 196	7 260 601	7 616 498
Examination of urine	1 604 390	4 276 545	5 088 722	5 634 045	6 186 631	6 871 178	7 072 204	7 438 053
Examination by electrocardiogram	622 913	1 198 012	1 427 999	1 386 260	1 490 078	1 667 552	1 934 848	2 064 368
Funduscopic examination	173 238	422 807	505 489	592 410	649 486	764 826	859 032	862 801
Others	259 493	830 907	912 415	939 664	1 182 476	1 485 942	1 717 980	1 663 594

Source ; Health Service Bureau, MHW

decreased after 1970 and became 107 in 1986 (Fig. 11). According to the disease types, the reduction in the mortality due to cerebral hemorrhage was remakable.

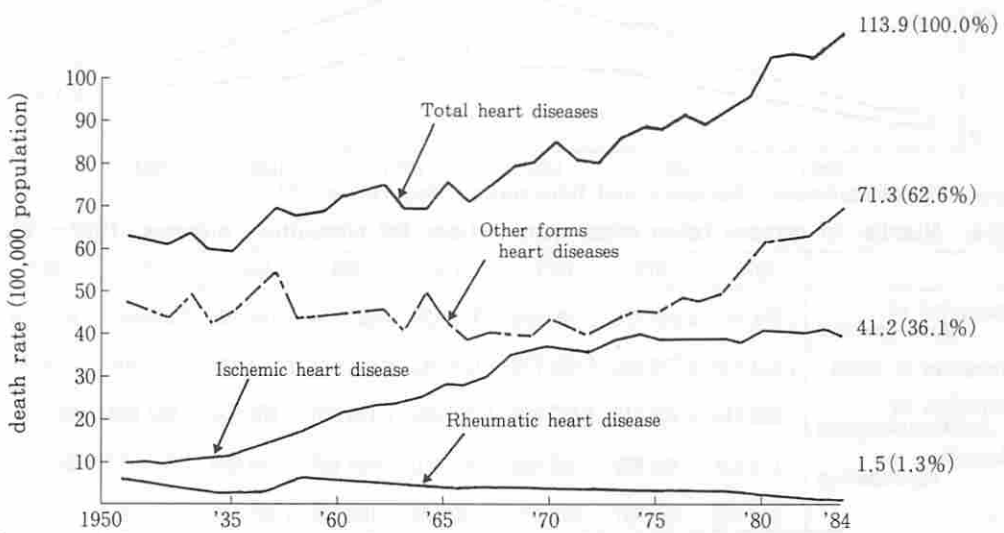
This decrease in the mortality due to stroke owed much to the mass physical check-up consisting mainly of blood pressure measurement carried out by health centers and local governments and a resultant decrease in untreated hypertensive patients (Table 4). In rural communities, the mortality due to stroke was higher than in cities, and greater emphasis was placed on mass screening for hypertension and improvements in nutritional conditions. At Oyabe Health Center, Toyama Prefecture, stroke patients were reported by doctors for registration, and the incidence of stroke was calculated on the basis of this record (Fig. 12). Health centers also provided rehabilitation training and guidance for prevention of recurrence to the registered patients.

Fig. 12 4-year Average Annual Incidence Rates per 1,000 population for All First Episode of Stroke by Sex and Age in Oyabe Health Center District, Japan



The mortality due to heart diseases was in the range of 60's per 100,000 of the population until 1960 but increased progressively thereafter to 118 in 1986 (Fig. 13). Westernization of Japanese

Fig. 13 Trends of death rate of heart diseases



Source ; "Vital statistics," Statistics and Information Department, MHW

diet is considered to be a major factor in this increase. This increase in fatal heart disease urges more aggressive stance for their prevention and treatment.

ii) System of management of cerebro-cardiovascular diseases in Japan

The system of management of cerebro-cardiovascular diseases provided by the Elderly Health Law consists of counseling, health examination visiting care for bed-ridden elderly, and instruction of rehabilitation for stroke patients.

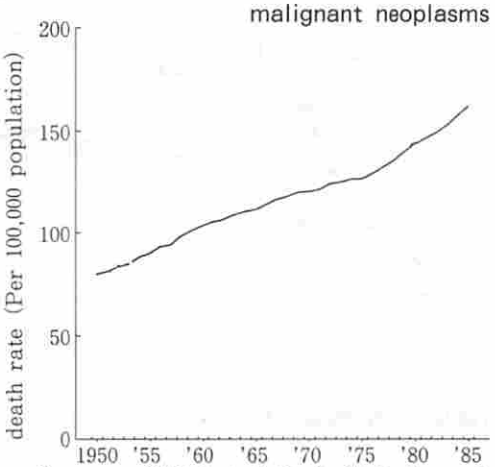
Figure 14 shows the contents of general health examination.

(2) Measures against malignant neoplasms.

i) Changes in the mortality due to malignant neoplasms in Japan

The total number of deaths due to malignant neoplasms is increasing every year in Japan (Fig. 15). The corrected mortality rate increases in males but slightly decrease in females (Fig. 16). According to the site of malignancies, deaths due to stomach cancer are decreasing in both sexes, those due to uterine cancer is decreasing markedly, but sexes, those due to lung cancer and colon cancer are increasing (Fig. 16).

Fig. 15 Trend of death rate of malignant neoplasms



Source ; "Vital statistics", Statistics and Information Department, MHW

ii) Measures against malignant neoplasms in Japan

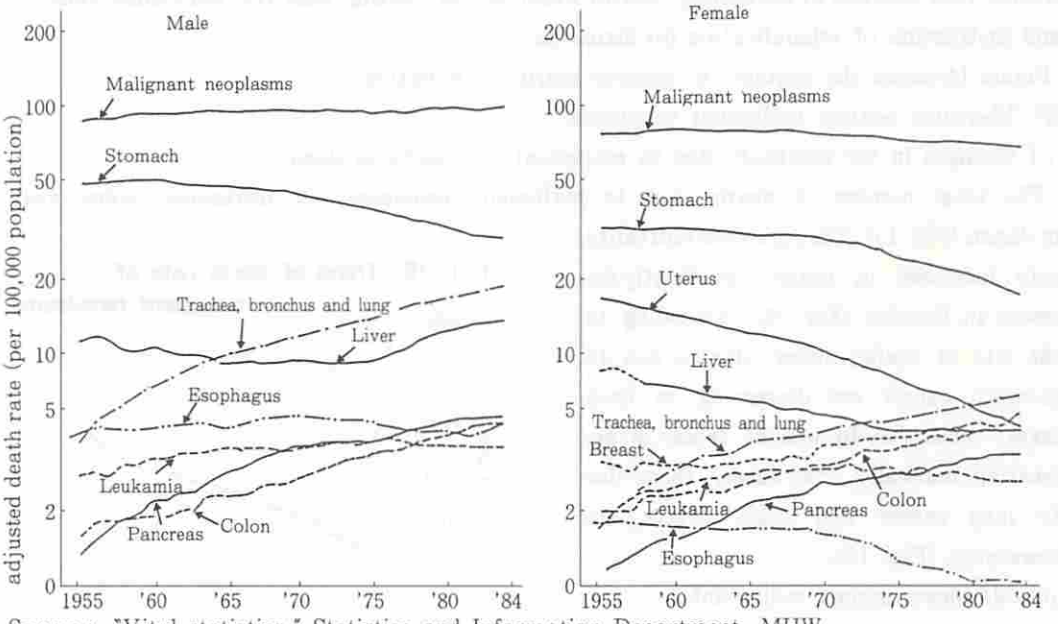
Early detection has been the key objective of the anti-malignancy movements of Japan. Screening for stomach cancer

Fig. 14 Physical examination under the Elderly Health Law

1. General examinations (provided for individuals aged 40 years or above)
   Interview, somatometry, blood pressure measurement, urinalysis
   (1) Cerebro-cardiovascular examinations
   Electrocardiography, funduscopy, serum cholesterol measurement
   (2) Examination for anemia
   Red blood cell, Hematocrit, hemoglobin measurements
   (3) Liver examinations
   GOT and GPT measurements
2. Screening for cancer
   (1) Stomach cancer (provided for individuals aged 40 years or above)
   Stomach photoflurography
   (2) Uterine cancer (provided for individuals aged 30 years or above)
   Physical and cytological examinations
   (3) Lung cancer (provided for individuals aged 40 years or above)
   Chest radiography and sputum examination
   (4) Breast cancer (provided for individuals aged 30 years or above)
   Physical examination

and uterine cancer has been widely instituted under the Elderly Health Law with good results (Table 5), and mass screening for lung cancer and breast cancer was initiated in 1987 (Fig. 14). Such screening is carried out by periodical rounds of examination automobiles.

Fig. 16 Trends of adjusted death of malignant neoplasms



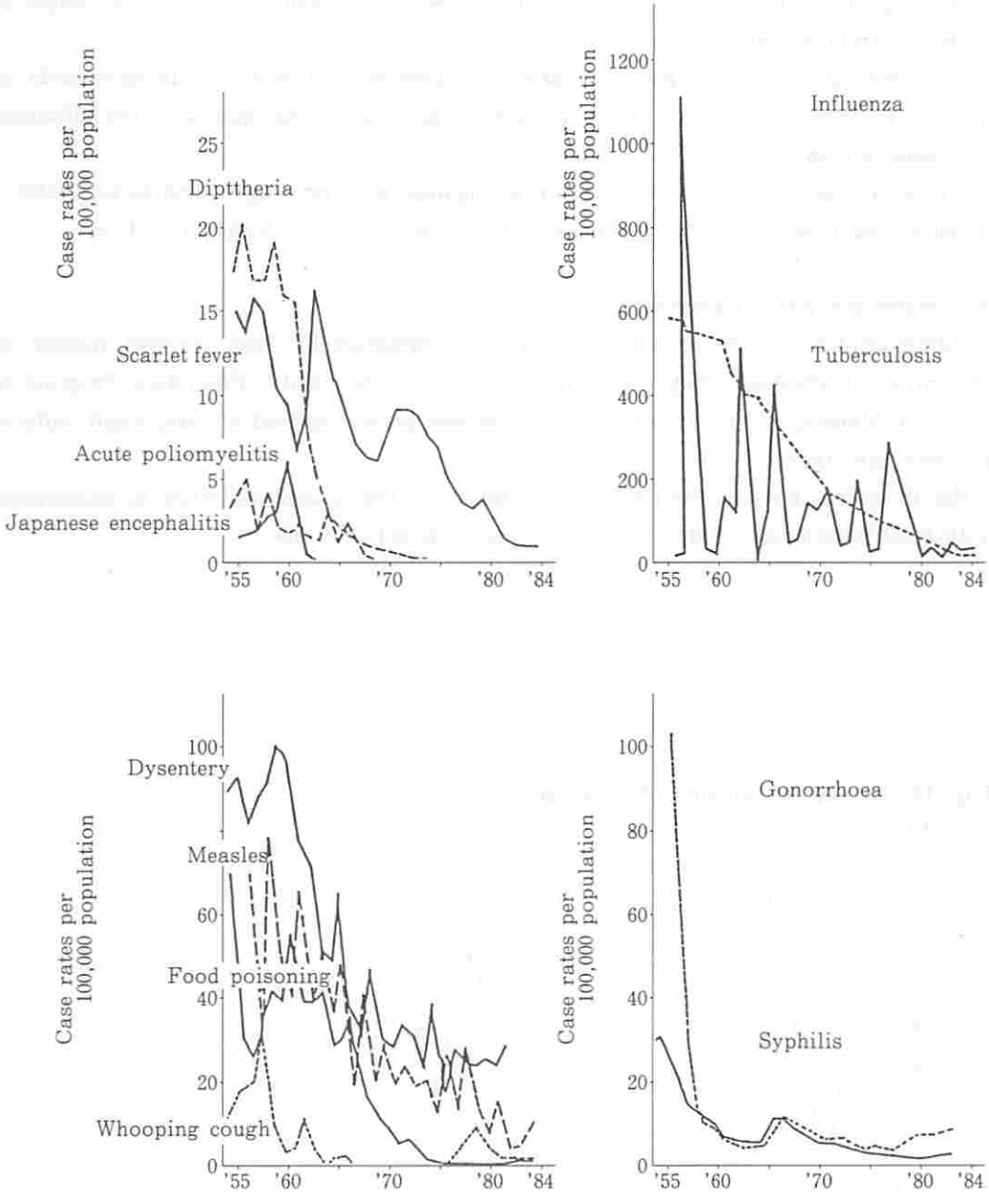
Source ; "Vital statistics," Statistics and Information Department, MHW

Table 5 Number of persons taken mass examination for cancers, 1970-1983

	1970	1975	1980	1982	1983
Stomach caner					
Number of people who underwent examination	2 165 287	2 779 399	3 830 260	4 311 605	4 652 232
Number of those who needed decisive diagnosis	338 581	429 947	588 776	645 594	670 584
Result of decisive diagnosis					
Stomach cancer	2 360	2 804	3 578	3 984	4 374
Gastric polyp	4 393	7 332			
Gastric ulcer	32 719	34 580	215 156	241 247	251 762
Others	93 267	133 144			
Detection rate of stomach cancer (per 1 000)	1.09	1.01	0.93	0.92	0.94
Uterine cancer					
Number of people who underwent examination	748 377	1 524 944	2 443 663	2 660 626	3 032 654
Number of cases of uterine cancer	1 516	2 570	2 818	2 299	2 631
Detection rate of uterine cancer (per 1 000)	2.03	1.69	1.15	0.86	0.87

Source ; "Guide for degenerative diseases", Health Service Bureau, MHW

Fig. 17 Case rates of selected communicable diseases and food poisoning, 1955—1984



Source ; "Statistical report on communicable diseases and hood poisonings"
Statistics and Information Department, MHW

5. Measures against acute infectious diseases

Acute infectious diseases have decreased markedly with no major epidemics in recent years (Fig. 17, 18, 19). The diseases that were noted recently were mostly imported epidemics from Southeast Asia.

This decrease in the incidence of infectious diseases in a result of improvements in hygienic environment, universality of protective vaccination, and increase in the knowledge of disease prevention.

Today, protective vaccination is performed against hooping cough, diphtheria, polio, measles, and rubella by local governments under the Preventive Vaccination Law.

6. Health promotion measures

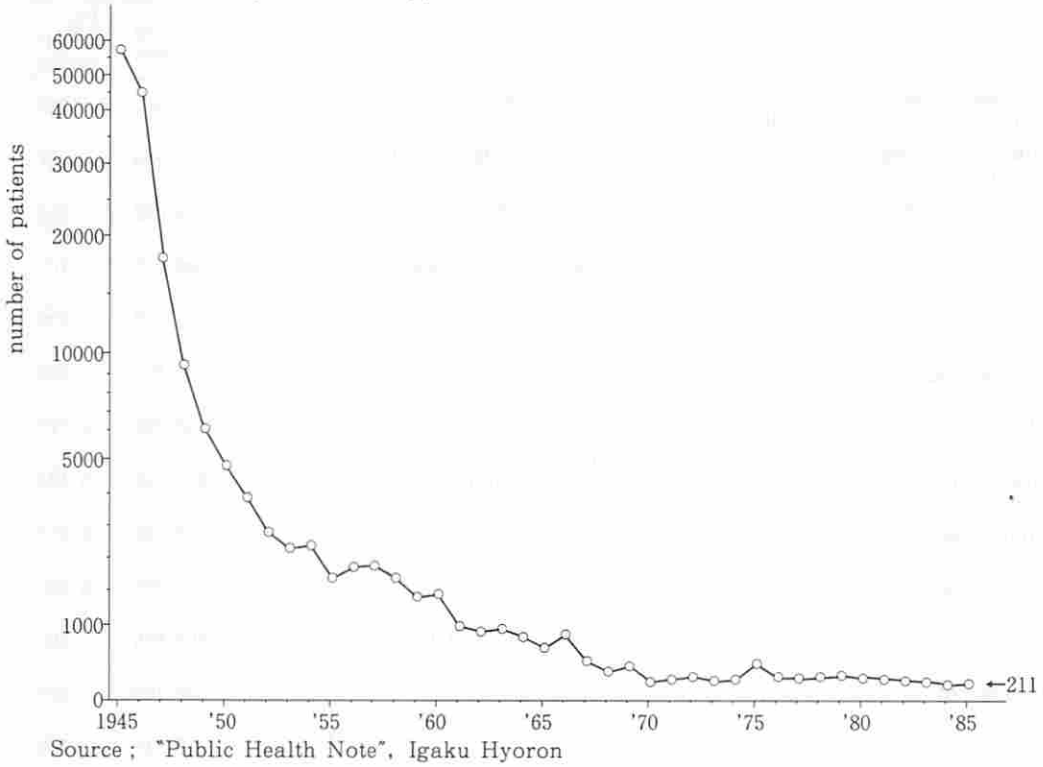
Administrative actions of public health has conventionally been directed mainly to prevention of diseases. But, with the issuance of the Health Promotion Program in 1977, the Ministry of Health and Welfare has been promoting health management tailored for each life stage.

Health centers have energetically performed those health care activities in cooperation with local governments and reached achievements listed in Table 6.

Fig. 18 Number of patients of Dysentery

Source ; "Public Health Note", Igaku Hyoron

Fig. 19 Number of patients of Typhoid fever



Source ; "Public Health Note", Igaku Hyoron

Table 6 Reported major activities of health center, 1984

	Absolute numbers	Per 1 health center
Number of group health examination	370 730	434
In health center	251 577	294
Out of health center	119 153	139
Number of people who underwent health examination (multiple count)	13 869 721	16 222
In health center	6 773 999	7 923
Out of health center	7 095 722	8 299
Number of pregnant women and expectant mothers who were given health guidance (multiple count)	581 827	680
Pregnant women	306 230	358
Expectant mothers	275 597	322
Number of infants and children who were given health guidance (multiple count)	3 563 838	4 168
Infants	1 557 240	1 821
Children	2 006 597	2 347

Table 6 (Continued)

	Absolute numbers	Per 1 health center
Number of pregnant women and expectant mothers who were given visiting guidance (multiple count)	315 462	369
Number of pregnant women who were given visiting guidance on toxemia	20 259	24
Number of newborn babies who were given visiting guidance (multipe count)	429 022	502
Number of mothers who were given guidance on bringing up children	89 817	105
Number of people who were given dental examination or guidance	2 974 727	3 479
Individually	606 331	709
In group	2 368 396	2 770
Number of people who were given guidance on nutrition	4 645 922	5 434
Individually	1 583 621	1 852
In group	3 062 301	3 582
Number of people who were given guidance on mental health	592 655	693
Number of consultations about medical social work	184 198	215
Interview	110 117	129
Visit	74 081	87
Number of meetings about health education	276 175	323
In health center	119 470	140
Out of health center	156 705	183
Total number of houses which were visited by public health nurse	1 184 535	1 385
Total number of people who were guided by public health nurse except visit	16 961 899	19 838
Total number of people who were immunized	6 417 170	7 505
Number of tests about dysentery, typhoid fever and paratyphoid fever	6 343 931	7 420
Total number of staff who inspected food	670 729	784
Number of inspected food	305 857	358
Milk	89 286	104
Except milk	216 671	253
Number of inspected materials	36 369 646	42 538

Note : Number of health centers is 855 in 1982

Source : "Statistics on activities of health centers" Statistics and Information Department, MHW