

Proposals to Extend Healthy Life Expectancy in Shizuoka Prefecture

— Promotion of Public Health Research —

February 2017

“Public Health” Basic Plan Review Committee

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1. Preface



Japan's population has been aging faster than that of any other nation. In Shizuoka Prefecture, the population started to age rapidly in around 1990. By 2025, it is projected that about one in three residents of the prefecture will be aged 65 or above, and about one in five will be 75 or above. Elderly people will account for the majority of the population, giving rise to various issues.

First, we need to address the serious issues of how to overcome the chronic shortage of medical and nursing care personnel, and how to finance the ever-increasing medical and nursing expenses due to the rapid aging of the population.

The Shizuoka Prefectural Government considers that helping elderly people remain healthy and active is the most effective approach to solving issues associated with the increase in elderly people. Shizuoka has one of the longest healthy life expectancies (i.e. the period for which people can conduct daily activities without difficulty) among prefectures in Japan. The prefectural government has been making efforts to extend healthy life expectancy.

The long healthy life expectancy in Shizuoka is mainly attributed to: (1) a wide variety of local food available for nutritious meals, (2) high daily consumption of green tea among all ages (Shizuoka is the largest producer of green tea in Japan), (3) high prefectural income, (4) high percentage of elderly people who remain in the workforce, and (5) mild climate.

The prefectural government has been promoting various measures for healthy longevity, including: (1) visualizing health issues by analyzing health data, (2) offering tools to promote health at any time, anywhere through the Fuji 33 Program, and (3) proposing the *Shizuoka* age model (a new concept in which people are expected to work actively before the age of 77 [called *kiju* in Japan]) so that elderly people can play an active role in society.

Second, we need to eliminate the gap between life expectancy and healthy life expectancy of the prefecture's residents. For residents of Shizuoka Prefecture, this gap is 8.35 years for males and 10.89 years for females. The period of impaired health, when people's daily activities are limited, is typically about 10 years. Although this period is shorter than the national average, 10 years is an unpleasantly long time. To live with dignity, measures must be taken to minimize, or even eliminate, the gap.

Against this backdrop, the Shizuoka Prefectural Government established the “Public Health” Basic Plan Review Committee in order to: (1) systematize the conventional healthy longevity initiatives from the viewpoint of public health, (2) work on advanced measures and research projects that help extend healthy life expectancy, (3) properly reflect the results and knowledge derived from such measures and research projects on the welfare of prefecture residents, and thereby (4) extend healthy life expectancy.

The committee consisted of 11 individuals from various fields, including persons with relevant knowledge and experience to provide expert opinions and medical professionals, who were invited by the prefectural governor to serve as committee members. The “Proposals to Extend Healthy Life Expectancy in Shizuoka Prefecture” have been compiled based on five meetings. The proposals focus on four areas that the Shizuoka Prefectural Government should work on: research, personnel development, a base, and accomplishments.

We hope that the Shizuoka Prefectural Government will start reviewing issues for embodying these proposals and steadily implement the measures to (1) help extend healthy life expectancy in Shizuoka Prefecture, (2) enable prefecture residents to remain active and lively, and (3) achieve *Fujinokuni*, a land of healthy longevity where elderly people can play active roles in society.

Tasuku Honjo
Chairperson of the “Public Health” Basic Plan Review Committee

February 2017

2. Background of our proposals

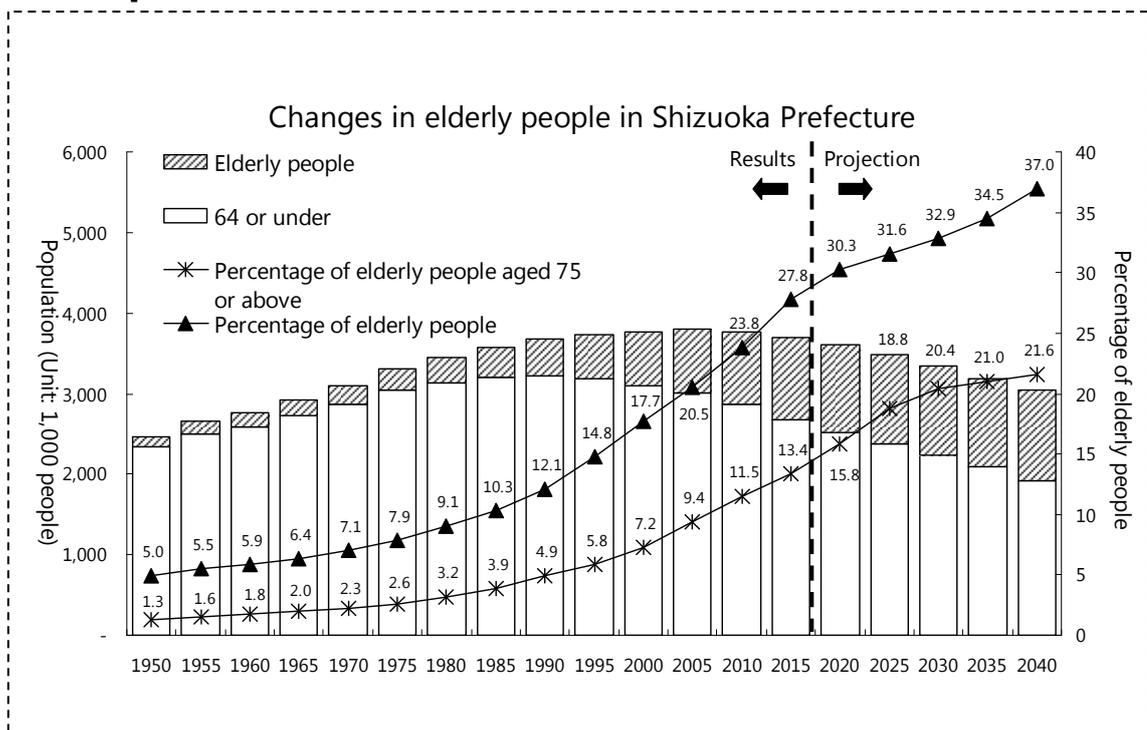
The “Public Health” Basic Plan Review Committee has held discussions to extend healthy life expectancy in Shizuoka Prefecture and achieve *Fujinokuni*, a world-class land of healthy longevity. This section explains the aging population in Shizuoka Prefecture and other matters based on specific data as the background of our proposals.

(1) Aging population and the gap between life expectancy and healthy life expectancy

I. Aging population

In 2015, the number of elderly people aged 65 or above in the prefecture was 1,021,283, accounting for 27.8% of the total population of the prefecture. The percentage of elderly people is expected to increase due to the falling birthrate and aging population. By 2040, the percentage of elderly people is projected to reach 37.0%, while the percentage of elderly people aged 75 or above is projected to reach 21.6%. In other words, about one in three prefecture residents will be elderly people, and about one in five will be elderly people aged 75 or above.

[Future projection of the number and percentage of elderly people in Shizuoka Prefecture]



*Source: “Population Census” (2015) by the Japanese Ministry of Internal Affairs and Communications

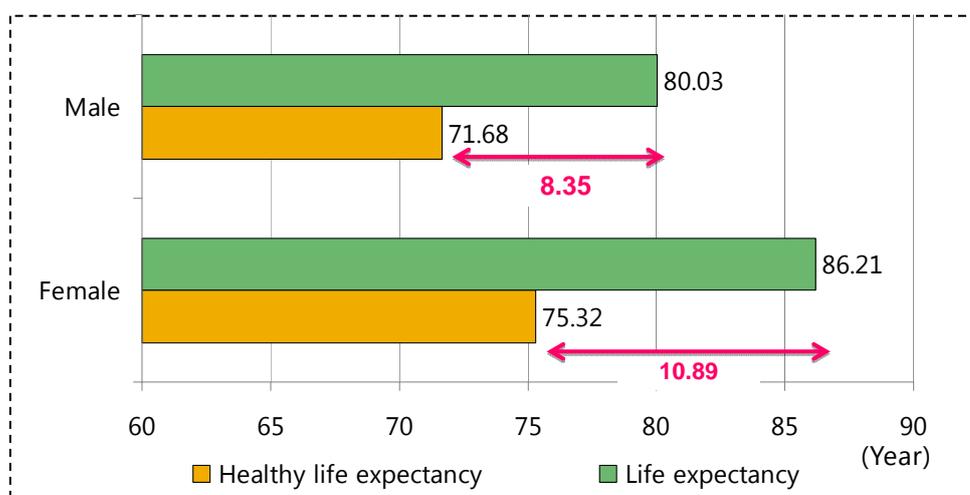
“Regional Population Projections for Japan” (March 2013) by the National Institute of Population and Social Security Research

II. Gap between life expectancy and healthy life expectancy

The concept of healthy life expectancy was advocated by the World Health Organization (WHO). The Japanese Ministry of Health, Labour and Welfare defines life expectancy as the “length of life that an individual lives without limitation in daily activities due to health problems.”

There is a gap between life expectancy and healthy life expectancy in all countries. In Shizuoka Prefecture, the gap (healthy life expectancy subtracted from life expectancy) is 8.35 years for males and 10.89 years for females (in 2010), and is less than the national average (9.22 years for males and 12.77 years for females). Based on a comparison by prefecture, males and females in Shizuoka are ranked sixth and third, respectively, in terms of the shortest gap. Nevertheless, the period of non-healthy life expectancy (i.e. daily activities are limited by health problems) ranges from eight to more than 10 years. The natural desire of prefecture residents to remain active and healthy to the end has not been fulfilled.

[Gap between life expectancy and healthy life expectancy in Shizuoka Prefecture]



*Source: “Forecasts of Healthy Life Expectancy and Research on Cost Effectiveness of Measures against Lifestyle-related Diseases” (May

2012) under the Health Labour Sciences Research Grant (Comprehensive Research on Lifestyle-related Diseases including Cardiovascular Diseases and Diabetes Mellitus) in FY2012

The life expectancy values above were calculated by the Group Responsible for Forecasts of Healthy Life Expectancy and Research on Cost Effectiveness of Measures against Lifestyle-related Diseases, and are different from life expectancy at birth based on the Prefectural Life Tables created by the Japanese Ministry of Health, Labour and Welfare.

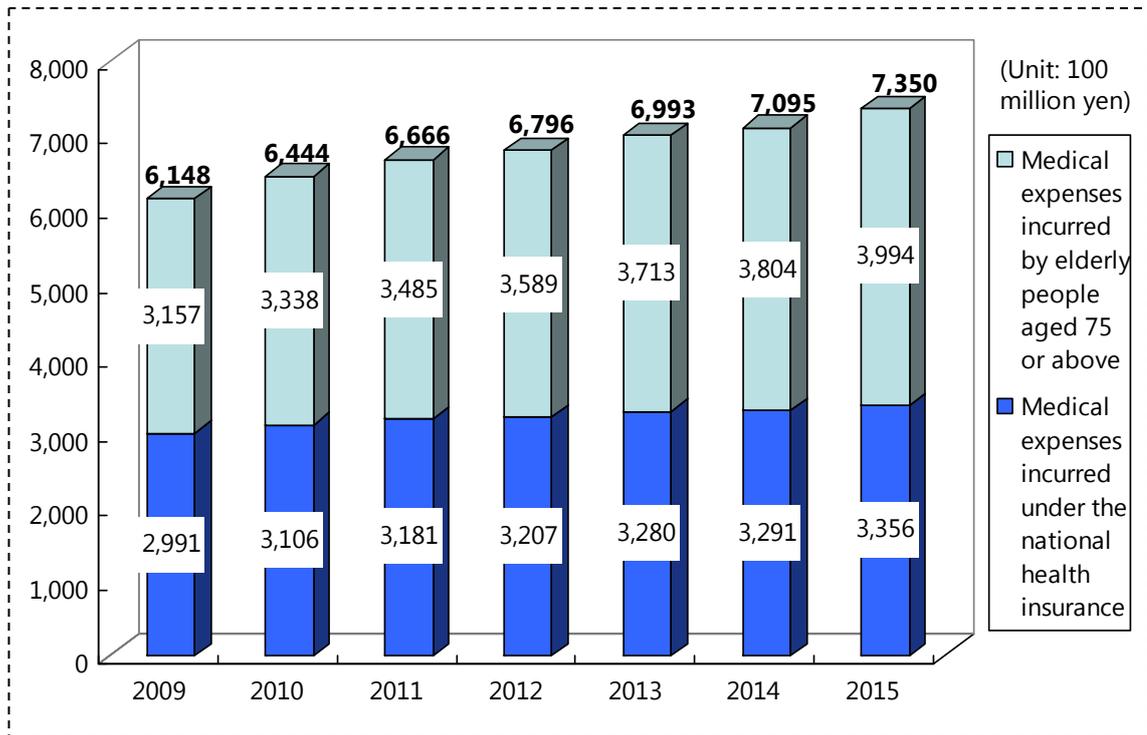
(2) Increasing medical and nursing expenses

The aging population has been pushing up medical and nursing expenses across Japan. The medical expenses (total of medical expenses incurred under the national health insurance and medical expenses incurred by elderly people aged 75 or above) of the Shizuoka Prefectural Government increased from 614.8 billion yen in 2009 to 735 billion yen in 2015 (increase of about 20% during the six-year period). Similarly, nursing expenses increased from 200.1 billion yen in 2009 to 267.2 billion yen in 2015 (increase of about 30% during the six-year period).

Medical and nursing expenses are expected to keep increasing, and may place a burden on the finances of the Shizuoka Prefectural Government. Eventually, the burden on all residents of the prefecture may increase.

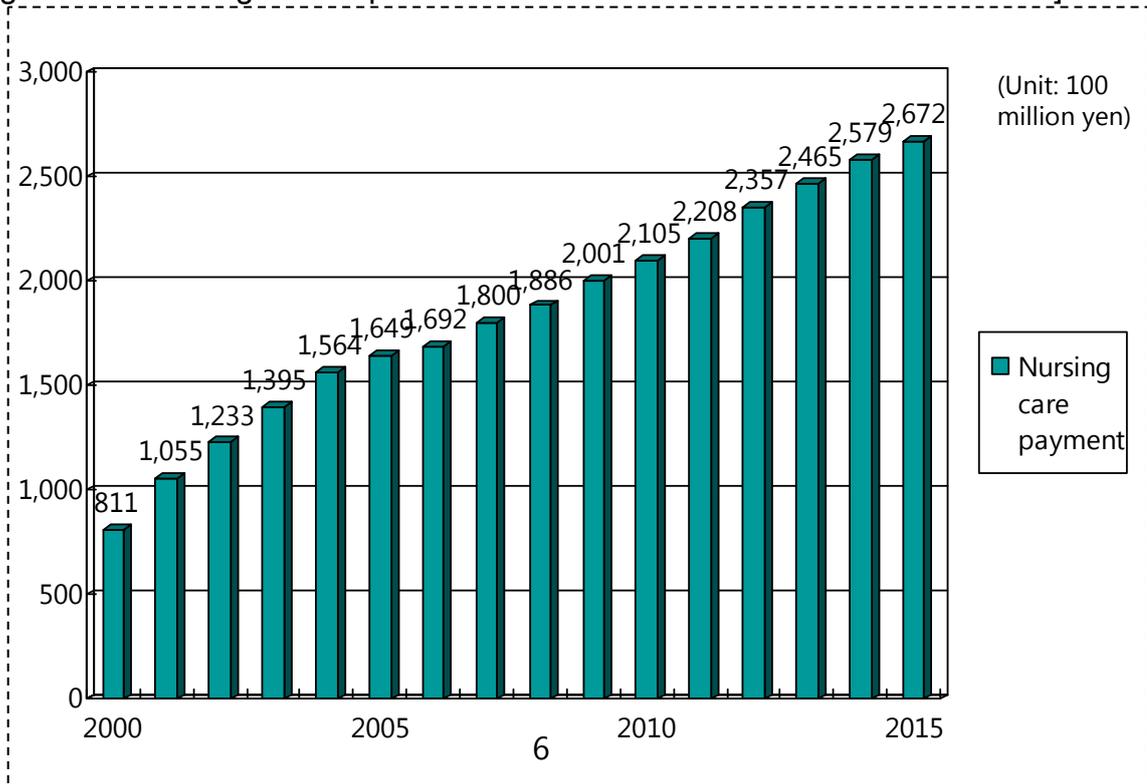
It is necessary to implement measures to curb medical and nursing expenses while maintaining the medical and nursing care services required by the prefecture residents.

[Changes in medical expenses of the Shizuoka Prefectural Government]



*Source: “Status Report on Medical Care for Elderly People Aged 75 or Older” for medical expenses incurred by elderly people aged 75 or above
 “Annual Report on the National Health Insurance Program” for medical expenses incurred under the national health insurance

[Changes in the nursing care expenses of the Shizuoka Prefectural Government]



*Source: Actual amounts of nursing care payments

(3) Gap between the definition and perception of elderly people

The current definition of “elderly people” (aged 65 or above) is based on a UN report in 1956. In 1955, the life expectancy in Shizuoka Prefecture was 64.12 years for males and 68.63 years for females. The definition of “elderly people” was almost equivalent to life expectancy. Today, life expectancy is more than 15 years longer, and the physical abilities of elderly people have improved steadily. In fact, the number of people aged 65 or above who are healthy and active has been increasing. The awareness of elderly people seems to have been shifting from the conventional image of “elderly people = seniority = retirement” to “remaining active in the workforce as long as they are healthy.”

The workforce (i.e. people who are expected to play a leading role in society) has been decreasing due to the falling birthrate. The average number of workers who support each elderly person has been decreasing. The falling birthrate is likely to reduce social vitality due to labor shortages, shrinking economy, etc. and affect the future viability of the social security system.

Elderly people will be expected to take full advantage of their knowledge, experience and skills in society instead of simply retiring at the age of 65. Their active participation in social activities, including work, community activities, and volunteer activities, will benefit their communities and society as a whole; elderly people are expected to fulfill such roles. This will help elderly people live with dignity. It is necessary to change the overall social structure by shifting awareness from “elderly people who need support” to “elderly people who support society.” The Shizuoka Prefectural Government and municipal governments should promote such measures.

An analysis of the Elderly People Lifestyle Survey conducted by the Shizuoka Prefectural Government (for details, refer to pp. 35–37 “II. Analysis results based on the Elderly People Lifestyle Survey”) showed that the mortality of elderly people with a high degree of social participation was lower than that of those who participated less. Thus, social participation is an important factor that promotes the health of elderly people.

[Life expectancy in Shizuoka Prefecture]

Year	Males	Females
1955 (A)	64.12 years	68.63 years
1980 (B)	74.10 years	79.62 years
2010 (C)	79.95 years	86.22 years
(C) - (B)	5.85 years	6.60 years
(C) - (A)	<u>15.83 years</u>	<u>17.59 years</u>

*Source: "Prefectural Life Tables in 2010" by the Japanese Ministry of Health, Labour and Welfare

3. Extending healthy life expectancy

Extension of healthy life expectancy is an important theme for the Shizuoka Prefectural Government, and is a priority issue to be addressed by the prefectural government. Although various measures have been implemented, some issues have yet to be resolved (e.g. measures not properly implemented from a scientific viewpoint). This section explains the vision of measures based on public health knowledge to address these issues.

(1) Need to extend healthy life expectancy

Extension of healthy life expectancy will help reduce the gap with life expectancy. Prefecture residents will be able to continue living a healthy life without difficulty in daily activities, and as a result, medical and nursing expenses will be reduced.

Regarding the increase in medical expenses incurred by elderly people, the period of medical treatment and hospitalization is expected to increase because elderly people often suffer from chronic diseases such as hypertension and diabetes, as well as multiple concurrent diseases. Thus, it is essential to promote initiatives that (1) help keep good mental and physical conditions in daily life and attain healthier conditions (i.e. each individual voluntarily maintains and improves health while receiving medical treatment at medical institutions) and (2) prevent diseases.

Extension of healthy life expectancy will increase the proportion of elderly people in the prefecture who remain healthy and active. This will help maintain the vitality of society and ensure stability of the social security system amid the aging society. Social participation is also expected to promote the health of elderly people.

With this background, the Shizuoka Prefectural Government has been working to extend the healthy life expectancy of prefecture residents., the prefectural government currently faces various issues (for details, refer to p. 10 [items in “I. Need for scientific findings”]). Healthy life expectancy in Shizuoka Prefecture is higher than that in other prefectures and other countries. To extend healthy life expectancy even further, it is essential to continuously implement and improve conventional measures. Prefecture residents and other parties such as medical professionals are expected to make efforts; indeed, the whole of society should work on promoting health.

Today, extension of healthy life expectancy of residents is recognized as an important issue in and outside Japan. Initiatives are underway to reflect the findings of the latest public health studies and research in actual measures (for details, refer to p. 14 “What is public health?”).

The Shizuoka Prefectural Government must continue to address the difficult theme of extending healthy life expectancy, i.e. perennial youth and longevity, as a priority issue and make even greater commitment based on the concept of public health as discussed above, in cooperation with prefecture residents and other parties such as medical professionals in the prefecture.

(2) Issues and solutions to extend healthy life expectancy

I. Need for scientific findings

The Shizuoka Prefectural Government has analyzed factors that contribute to the healthy longevity of prefecture residents by analyzing the health checkup data of 651,789 individuals collected from medical insurers in the prefecture and by conducting the Elderly People Lifestyle Survey on about 22,000 elderly people in the prefecture (for details, refer to pp. 34–35 “(4) Factors that contribute to healthy longevity in Shizuoka Prefecture”).

However, the survey results have not yet been properly analyzed scientifically. For example, a survey conducted by the Shizuoka Prefectural Government found that the mortality of people who drank a lot of green tea was lower than that of those who did not. According to a report, the mortality of people who played golf was 40% lower than that of those who did not; the life expectancy of people who played golf was five years longer. Although these results have drawn public attention and are interesting, they have not been subjected to scientific factor analysis, and cannot be regarded as generally applicable proposals based on scientific findings.

To implement truly effective measures that help extend healthy life expectancy, it is important to subject the empirical results above to scientific factor analysis, and to formulate measures based on the analysis.

Notably, conventional measures to extend healthy life expectancy (for details, refer to pp. 32–34 “(3) Measures implemented by the Shizuoka Prefectural Government to extend healthy life expectancy”) and relevant initiatives should be organized systematically and scientifically, including using emerging techniques for collecting and analyzing big data, and the policy and content of various

research and survey analyses should be clearly defined so that scientific findings derived from research can be used to formulate or modify measures and ensure effective implementation.

Universities and public laboratories in the prefecture conduct health-related nutrition and biochemical research, but there is no mechanism for reflecting research results in measures implemented by the Shizuoka Prefectural Government. The initiatives in the prefecture should be systematized in order to implement measures that take full advantage of these results and extend healthy life expectancy.

The reputation of Shizuoka Prefecture as having the top healthy longevity in Japan should be established by systematizing research projects that are implemented separately by universities and public laboratories in the prefecture and producing results through initiatives for extending healthy life expectancy. The series of systematized measures should be established as Shizuoka's healthy longevity model, and should be publicized in and outside the prefecture as initiatives for extending healthy life expectancy.

II. Development of personnel who help extend healthy life expectancy

The Shizuoka Prefectural Government has implemented various measures to extend the healthy life expectancy of its residents, such as (1) implementing the *Fujinokuni* Healthy Longevity Project based on five priorities (e.g. spread the healthy longevity program “health mileage project”), (2) advocating the *Shizuoka* age model in which the age classification up to 76 is called “Maturity” to encourage greater social participation by elderly people, and (3) working on initiatives to visualize the trend of health conditions by analyzing the health checkup data of 651,789 prefecture residents collected from medical insurers and plotting the results on a map by city and town (for details, refer to pp. 32–34 “(3) Measures implemented by the Shizuoka Prefectural Government to extend healthy life expectancy”). In addition to these initiatives, the Shizuoka Prefectural Government has been promoting awareness-raising activities for (1) making prefecture residents more interested in health and health promotion and (2) translating awareness into action by organizing various events (e.g. Healthy Longevity Festival Sports Event).

Medical institutions and local governments in the prefecture have become increasingly interested in medical care data and health data, and are willing to collect and analyze such data and utilize the results in projects and measures.

However, they have few personnel who can analyze such data or implement initiatives and measures to extend healthy life expectancy from a scientific viewpoint.

Efforts should be made to systematically train personnel such as researchers and medical professionals in the prefecture who acquire the techniques and knowledge necessary to extend healthy life expectancy and apply such techniques and knowledge to clinical initiatives, analyses, and medical treatment and who will become future leaders of community medical care in Shizuoka Prefecture.

The initiatives should help extend the healthy life expectancy of prefecture residents over the long term by creating an environment that attracts personnel from outside the prefecture who are interested in assisting, and helping such personnel acquire techniques and promote initiatives in the prefecture.

III. Mechanism for spreading the measures

As discussed in sections I and II above, the Shizuoka Prefectural Government should systematize the conventional measures and implement scientific initiatives such as factor analysis of medical care data to extend the healthy life expectancy of prefecture residents using scientific techniques. It is essential to secure personnel who will undertake the initiatives, such as researchers and medical professionals. It is also important to publicize the initiatives and measures for extending healthy life expectancy in the prefecture, accumulate and analyze relevant data, including big data, required for such initiatives and measures, and monitor the status of such initiatives.

These initiatives are more effective when they are comprehensively promoted by organizations that serve as a base, compared to initiatives that are separately implemented by local governments, medical institutions, universities, research institutions, etc. It is necessary to establish organizations that both serve as laboratories (e.g. implement initiatives based on the theme of extending healthy life expectancy, analyze data used for initiatives, make proposals regarding measures implemented by the Shizuoka Prefectural Government, and raise the awareness of prefecture residents) and develop personnel who work on such activities.

Such organizations are expected to develop into a base that comprehensively undertakes initiatives related to extending healthy life expectancy from a scientific

viewpoint. It is also necessary to review the possibility of developing personnel through regular education curricula equivalent to those of universities and graduate schools, and conferring degrees.

(3) Introduction and promotion of public health

The Shizuoka Prefectural Government has already implemented various measures to extend healthy life expectancy. One possible initiative to extend healthy life expectancy in Shizuoka Prefecture is to introduce and promote a new discipline of public health.

Various initiatives can be promoted in the prefecture by combining projects based on the concept of public health with efforts to develop personnel who undertake the initiatives. Scientific findings and results derived from such initiatives should be reflected in specific measures implemented by the Shizuoka Prefectural Government and municipal governments, such as initiatives that encourage prefecture residents to accept preventive medical care and promote health. Various results related to disease prevention and health promotion will be produced, and can be fed back to prefecture residents in a concrete manner, eventually helping extend healthy life expectancy.

Leading public health research organizations in Japan, such as The University of Tokyo and Kyoto University, conduct comprehensive research and offer extensive education on public health. The Shizuoka Prefectural Government should work on research initiatives that take full advantage of the characteristics of communities in the prefecture. To ensure effective utilization of managerial resources, the Shizuoka Prefectural Government should declare its commitment to public health research focusing on extending healthy life expectancy, select specific fields that contribute to the objective, and conduct research in these priority fields.

To extend healthy life expectancy based on the discipline of public health that encompasses various research fields, the Shizuoka Prefectural Government should work on (1) three priorities in public health research, (2) personnel development, and (3) development of a system to build a base.

○ What is public health?

Recently, public health has attracted public attention as a new comprehensive discipline to prevent diseases or conduct research on communities and environment that help prevent diseases, instead of conducting research on medical treatment of diseases.

In public health, surveys, analyses, research, etc. have been conducted from a scientific viewpoint based on three priorities:

- 1) Medical science as part of pure life science (e.g. genome medicine)
- 2) Clinical medical science (e.g. medical statistics, epidemiology)
- 3) Health care and health promotion through communities and medical institutions (e.g. hospitals)

Public health is based on research on preventive and preemptive medicine, as in the case of conventional public health, and therefore is considered useful to prevent diseases and extend healthy life expectancy. While conventional public health focuses on community health care in research, public health, which is an advanced form of conventional public health, covers the entire society including communities and medical institutions, and is expected to help extend healthy life expectancy in a more specific and practical manner that is readily applicable to medical institutions.

Today, various research projects and education programs on public health are underway in and outside Japan. In Japan, research organizations on public health have been established by graduate schools of the University of Tokyo, Kyoto University, Keio University, etc. that have medical science research facilities, such as the School of Public Health of the University of Tokyo and the Kyoto University School of Public Health, to conduct advanced research based on scientific findings and techniques. At other medical universities in Japan, researchers who work in fields related to conventional public health conduct research and surveys in communities.

I. Three priorities in public health research that the Shizuoka Prefectural Government should introduce

(A) Medical big data

“Big data” refers to data sets that are too large and complex to be processed by general database management tools. The collection and analysis of big data, which are used in various fields, is useful in the fields of medical care and

health. In the field of medical care, the data of health insurance claims, health checkups, etc. are regarded as big data.

Conventional electronic medical record systems have been built to meet accounting needs, such as streamlining of paperwork and applying for health care fees. Health and medical care data are often used only within respective medical institutions. No initiatives have been launched yet to accumulate and integrate the data in a common format or utilize the data in outcome analysis and research, such as on the quality of life during lifetime (including lifestyles and deaths of individuals and effectiveness of local government intervention) and healthy life expectancy, and thereby produce new findings in collaboration with universities and research institutions.

In a report titled “Toward Creating the Next-Generation Health Care and Medical Care System Utilizing ICT” released by the Japanese Ministry of Health, Labour and Welfare in 2016, proposals were made to integrate the personal data of medical care and health, make such data available to respective persons and medical professionals, and utilize such data for various big data analyses.

ICT will help establish an information network among the community medical care system and properly collect and analyze a large amount of digital data such as health insurance claim information and health checkup data, to clarify the mechanism of phenomena that were too complex to understand and to identify the relationship between factors, thus utilizing big data for innovation. The collected data can be anonymized so that researchers can use them in factor analysis of healthy longevity. The accumulated health data based on time series and analysis results can be fed back to prefecture residents to help them manage their own health, including preventive medical care, promote health, and extend healthy life expectancy.

It will become possible to promote health based on community characteristics and personal data and to enhance health management, by visualizing data from a scientific viewpoint and sharing the data with prefecture residents.

As a preliminary step, the health checkup data that have been accumulated in the prefecture should be subjected to scientific analysis to obtain new findings about health and diseases. By ensuring visualization from a scientific viewpoint, health promotion and health management can be enhanced based on community characteristics and personal data. Results that are useful for

extending healthy life expectancy will help establish the Shizuoka model as an example for other prefectures.

▶ Example: Program to prevent worsening of diabetic nephropathy (e.g. Saitama Prefecture)

In June 2015, the Japanese Ministry of Health, Labour and Welfare compiled “Health Care 2035.” In this report, the establishment and utilization of information infrastructure is regarded as essential for a new health care system. The following initiative is underway based on the vision set forth by the national government.

In 2014, the Saitama Prefectural Government, Saitama Medical Association, and other entities created a program to identify individuals at high risk of diabetes based on health checkup data and health insurance claim data in the prefecture. And Insurers recommend individuals who have not consulted a physician or who have stopped receiving medical treatment to take medical advice, or offer health care guidance to those who go to hospital regularly. As a result, the percentage of individuals who consulted a physician after receiving recommendations increased 1.8-fold in FY 2014 and FY 2015. The mean value of HbA1c* of individuals who completed the health care guidance improved 0.3 points.

* HbA1c (hemoglobin A1c): A form of glycated hemoglobin whose N-end of the beta chain of hemoglobin is bonded with glucose. Used as an index to control blood glucose in diabetes management.

(B) Analysis based on epidemiologic research

Epidemiology is the discipline of observing diseases that affect populations and their distribution, and investigating the causes.

To cure diseases, new pharmaceuticals and therapies should be developed. However, it is usually difficult to develop innovative therapies. Thus, the Shizuoka Prefectural Government should implement initiatives that (1) promote epidemiological validation on prefecture residents to quantify risk factors of diseases, determine the priority of preventive medical care, and utilize the results to implement more effective preventive measures and (2) clarify the effectiveness of conventional therapies that have not been accepted by

medical institutions and help introduce such therapies, such as eliminating the gap between evidence and practice.

From the viewpoint of preventing diseases and offering medical treatment, a mechanism should be established to scientifically analyze data accumulated by time, place, and individual; promote initiatives based on the analysis; and reflect the specific results in community health measures.

Epidemiological research on prefecture residents will make it possible to identify the characteristics of communities regarding health, diseases, lifestyle, etc. and promote health in a manner that caters to the needs of respective communities by facilitating intervention from the viewpoint of preventive medical care and improving the treatment results on a clinical basis. If new characteristics (factors) are identified through research, it will become possible to modify the conventional measures or implement new and more effective measures.

The results of epidemiologic research, such as empirical research on the increase in the number of persons rescued and improvement in prognosis due to the spread of automated external defibrillators (AEDs), are useful for verifying the results of conventional measures. These initiatives will help evaluate and modify measures to extend healthy life expectancy.

►Example: Quantitative measurement of risk factors of fractures and falls and application of the measurement results in implementing measures

An overactive bladder, decrease in exercise due to disturbance of motor functions, and cerebral vascular diseases have been identified as risk factors of fractures and falls; these are three of the main factors that reduce healthy life expectancy. Epidemiologic research found that an overactive bladder increases the risk of fractures 2.5-fold compared to subjects without an overactive bladder. The risk ratio is 1.1 for subjects with disturbed motor functions and 1.5 for subjects with cerebral vascular diseases. In the population who experienced fractures and falls, overactive bladder accounted for 41% of the causes, i.e. “population attributable risk.” Quantitative analysis of these risk factors of community residents helps to make decisions on implementing measures, such as prioritizing high-risk individuals for preventive intervention to address specific factors.

(C) Utilization of genome science

Genome science is a field in life science that involves conducting research on the genome (a complete set of genetic information) and genes (genetic information in which codes are arranged in a base sequence using DNA as carriers).

In recent years, rapid progress has been made in human genome analysis. The genome has been analyzed from the viewpoint of genetic predisposition. Measures can be implemented for each life stage or age bracket by determining the risk of disease development, which is different for each individual, based on genetic factors and offering medical treatment and health guidance based on the results. This will contribute significantly to extending healthy life expectancy.

After the complete human genome was analyzed in 2003, research in genome science turned to personal differences in genome and disease susceptibility or personal phenotype (physical characteristics such as height, BMI, skin color, and hair color). In recent years, a new analysis technology called next-generation sequencing has been introduced, making it easy and inexpensive to read a person's genome. Accordingly, research on people's genomes has developed remarkably. With many more individuals undergoing genome reading, research on the disease susceptibility of genes is expected to make further progress.

From the viewpoint of extending healthy life expectancy, the genome represents a critical genetic predisposition that is related to the development of disease. This is an important research field to identify the personal risk of disease development and offer appropriate health guidance based on the identified risk. When analyzing diseases peculiar to Shizuoka Prefecture, it is necessary to conduct research and perform analysis with prefecture residents as a population, while paying attention to the genetic predisposition of each resident.

Progress in the genome cohort study in the prefecture will help identify the risk of disease development of prefecture residents as a population and reveal the cause-effect relationship. The risk of disease development is considered to differ for each prefecture resident because each individual has a different genetic predisposition.

Advances in research on the genome and the risk of disease development as well as identification of personal genetic predisposition will make it possible to offer personalized and specific health guidance based on personal genetic predisposition and risk of disease development, for example: “You have a high risk of developing diabetes. You should change your lifestyle to reduce the risk,” instead of offering conventional, standardized health guidance. Regarding medical treatment for diseases, such advances in research will contribute significantly to achieving personalized medical care and proposing optimal medical treatment to each individual based on personal genetic predisposition.

Thus, the genome cohort study will promote translational research from basic research to applications at medical institutions in communities and will help consolidate and systematize research projects that are currently undertaken separately by universities in the prefecture, in order to extend healthy life expectancy more effectively.

▶Example: Nagahama Phase 0 Preventive Cohort Project (City of Nagahama, Shiga Prefecture, Kyoto University)

A joint research project started in 2008 based on an agreement between the City of Nagahama and the Graduate School of Medicine, Kyoto University. With cooperation from about 10,000 healthy residents (aged 30 to 74), they collect various health information (e.g. lifestyle, living environment, blood and urine tests) and conduct follow-up surveys on health conditions, diseases, life expectancy, etc. in order to identify comprehensive health risk factors including genes. Various analysis results based on the latest medical care research are fed back to residents. The Lively Health Festival, which was started as an event to recruit participants for the research project, is now held every May in Nagahama City. Today, the large festival attracts about 10,000 individuals and other parties, including hospitals that are affiliated with the medical, dental, and pharmaceutical associations in Nagahama City and organizations of community residents. The residents have thus become increasingly aware of health promotion.

II. Personnel development

(A) Personnel who should be developed (targets)

It is necessary to develop personnel who can conduct scientific research and analyze and utilize the results derived from the three research fields that focus on extending healthy life expectancy: medical big data, analysis based on epidemiologic research, and utilization of genome science (discussed in “I. Three priorities in public health research that the Shizuoka Prefectural Government should introduce” [pp. 14–19]). Specific knowledge and techniques required include medical statistics, epidemiologic analysis, data management, and genome analysis. Given the ideal model of healthy longevity that the Shizuoka Prefectural Government aims to achieve, the top priority should be developing personnel who will become leaders at medical institutions in communities in Shizuoka Prefecture, instead of researchers and government officials who conduct purely scientific research. It has been reported that many young medical professionals are interested in preventive and preemptive medical care in recent years. These aspects should be reflected in promoting personnel development.

(B) Personnel who can lead research and personnel development (leaders)

There are no public health research organizations in the prefecture, which indicates insufficient development of personnel who can lead research and personnel development. Excellent personnel in and outside the prefecture should be invited at least in the initial phase. If personnel development can be promoted as described in the previous section, personnel who will be future leaders can be developed in the prefecture.

(C) Policy and technique of personnel development

The Shizuoka Prefectural Government should develop medical professionals who understand the wishes of prefecture residents (i.e. to remain active and healthy to the end) and help extend healthy life expectancy, in addition to offering medical treatment for diseases and life-prolonging treatment. Regarding medical professionals who have worked for communities and helped raise community awareness about issues, the initiatives by the Shizuoka Prefectural Government will increase their motivation to address the issues.

Such personnel should be given opportunities to learn while working at medical institutions. One- or two-year courses (curricula) should be created to help them acquire knowledge of public health and clinical research skills while working at medical institutions.

For personnel development at laboratories, courses should be established to enable medical professionals (e.g. physicians, nurses, pharmacists) to acquire clinical research skills while engaging in medical care at core facilities (e.g. health centers) and medical institutions.

Regarding personnel development by graduate schools, the Kyoto University School of Public Health offers a Master program for Clinical Research (MCR) for training clinical researchers (available for physicians and dentists) and a one-year Master program of Public Health (MPH) (available for personnel who have worked in conventional public health), in addition to regular two-year professional degree programs. With these examples in mind, personnel (who are valuable human resources) should be given opportunities to receive the necessary education while working for their medical institutions.

Also, measures should be implemented to change the awareness of medical professionals at medical institutions in the prefecture, and an environment should be created to conduct clinical research that leads to preventive medical care.

(D) Utilization of developed personnel

In the future, the personnel developed as described in sections (A) and (B) above should be assigned to core facilities and medical institutions engaged in promoting health in the prefecture. Specifically, they should be assigned to core facilities in communities (e.g. health centers, community health centers, hospitals) and work on research, surveys, and analysis of public health at the base to which they are assigned or other relevant organizations in the vicinity or offer guidance on other research projects.

Cross-organizational information sharing and joint research can be promoted by assigning personnel who have acquired knowledge of public health and clinical research skills to different parts of the prefecture. Such personnel are expected to conduct various initiatives and build extensive networks among individuals and organizations. When health care and medical care organizations in the prefecture collect information about clinical research or participate in research projects outside the prefecture, the personnel will be able to conduct research for extending healthy life expectancy through the base that work on public health, thereby helping solve health issues faced by prefecture residents, raise their awareness, and disseminate information in a proper and timely manner.

With the advancement of public health research, the personnel who are directly engaged in these research projects, who play active roles in industrial fields, or who promote joint research with various research institutions are expected to play key roles. Such personnel should be developed and assigned to organizations that serve as the base in the prefecture.

III. System to build a base

The healthy life expectancy in Shizuoka Prefecture is one of the longest in the world. Various community characteristics are considered to contribute to healthy life expectancy, such as an abundance of nutritious food for residents, high consumption of green tea, long hours of sunshine and a mild climate. The Shizuoka Prefectural Government's commitment to public health will lend credence to the results obtained in the prefecture with its world-leading healthy life expectancy, and will enhance the brand of respective communities. Shizuoka Prefecture has the potential to lead the initiatives in Japan to extend healthy life expectancy and serve as the center of research and personnel development.

A mechanism is required to lead public health initiatives, primarily to extend healthy life expectancy. Specifically, a base must be set up to fulfill various functions, including the following.

From the viewpoint of priority research fields discussed in “I. Three priorities in public health research that the Shizuoka Prefectural Government should introduce” (pp. 14–19), data that meet specific requirements must be collected (including big data). The base that consolidate, accumulate, and analyze data in the prefecture will assist the advancement of big data research and epidemiologic research. ICT-based data accumulation, analysis, and research will require the handling of data that includes personal information. Such data should be managed by the base that ensures information security and has a system for managing responsibility (instead of individuals and medical institutions).

In public health research, it is effective to employ cohort study techniques that require cooperation from many prefecture residents in communities. In this context, reliable data should be accumulated with cooperation from municipal governments and medical institutions in communities. A base, such as organization that offers opportunities or fulfills similar functions in the prefecture, can help build such relationships and promote cohort studies in the prefecture, helping accumulate and analyze more accurate data and give more feedback to

prefecture residents.

The base is also expected to serve as a liaison with universities and research institutions that have been working on research in the fields of conventional public health in the prefecture, in order to ensure cooperation in research and share and utilize the results.

The useful information regarding medical care and health derived from public health research should be made available and fed back to all prefecture residents (for details, refer to “(A) Raising awareness of prefecture residents about health” in “II. Accomplishments of health promotion” [pp. 24–25]). To enhance the effectiveness, the base that promotes respective research projects should consolidate and disseminate the information as part of initiatives to extend healthy life expectancy, instead of disseminating information separately from different entities.

Regarding personnel development, as discussed in “(C) Policy and technique of personnel development” (pp. 20–21), it is essential to acquire necessary knowledge and techniques through systematic courses. Education should be offered in an integrated environment at the base in the prefecture. This approach will help the developed personnel or researchers in the prefecture to create or participate in a network, share information or conduct joint research in the prefecture, and collaborate with universities and research institutions outside the prefecture.

Shizuoka Prefecture may become the center of public health research if the base in the prefecture actively accepts personnel from outside the prefecture, mainly to secure and develop personnel in the prefecture.

(4) Results of public health initiatives and feedback

I. Results in medical care

(A) Improvement in the medical care standards in the prefecture

If medical professionals who have knowledge of public health and clinical research skills can pursue issues in clinical research at their medical institutions which lead to useful research themes, and the research results produce better clinical outcomes, this virtuous cycle will help train physicians, nurses, pharmacists, etc. who underpin the community medical care in the

prefecture, improve knowledge and initiatives about preventive and preemptive medical care, and improve the medical care standards at medical institutions in the prefecture, thereby building momentum to improve the community medical care.

A base will help develop personnel who have knowledge of public health and clinical research skills and who play active roles at medical institutions in the prefecture. The knowledge of public health and clinical research skills can be fed back to prefecture residents through physicians, nurses, pharmacists, etc. who underpin the community medical care. This is expected to improve the standards of community medical care.

(B) Establishment of the research environment for physicians

The communities in Shizuoka Prefecture serve as the fields for public health research. Initiatives may be implemented to build a research database and accumulate data. Establishing an environment that enables medical professionals (including physicians) to actively conduct clinical research helps build momentum to improve the community medical care. If incentives are provided to establish an environment that promotes research by taking into account communities that face the issue of providing medical care or that are considered to have difficulties based on health indices in the prefecture, greater progress can be made toward improving community medical care and health conditions.

Establishment of a clinical research environment as discussed above is highly attractive for physicians who are keen to conduct research in public health and other fields (including those who currently work on clinical research or who wish to work on research in the future). If these local initiatives are properly publicized, excellent physicians from outside the prefecture will be attracted to medical institutions in the prefecture and will settle in Shizuoka Prefecture.

II. Results of health promotion

(A) Raising awareness of prefecture residents about health

Extension of healthy life expectancy requires both efforts by other parties such as medical professionals, as well as the involvement and action of prefecture residents as stakeholders.

The results (data) derived from advanced examinations in cohort studies

should be properly fed back to the participating prefecture residents to help arouse their interest, increase their motivation to be involved in research, and raise their health awareness. The data related to health and medical care should be consolidated based on common IDs such as “Individual Number (My Number)” so that the data can be compared over time for each individual. This helps reveal personal health trends and issues that cannot be identified based on the data of a single year. These initiatives will motivate the prefecture residents to improve their health and will raise their health awareness.

Personnel development will promote the health of communities and enable medical professionals who have knowledge of public health at medical institutions to play active roles. Information and advice for preventing diseases and nursing care and promoting health can be offered from a scientific viewpoint in an understandable manner to prefecture residents. Also, the base for research and education in the prefecture should disseminate information and knowledge about medical care and health derived from public health research to raise the awareness of prefecture residents to voluntarily work on health management.

Notably, medical institutions recognize that many residents are indifferent to health and do not follow the instructions or advice of medical professionals about health management and disease prevention, causing health conditions to worsen. The problem is how to change the attitude of such residents. Awareness-raising activities are expected to help these residents take an interest in their health and health improvement, thereby encouraging them to take action.

Thus, promotion of public health research will significantly contribute to promoting health, preventing diseases, and increasing the satisfaction of prefecture residents.

(B) Building systems and organizations that support health promotion of prefecture residents from a scientific viewpoint

Personnel who have knowledge of public health and clinical research skills should be assigned to the base in the prefecture such as government organizations and medical institutions, to play active roles. This will help create a system for promoting the health of prefecture residents based on scientific findings in Shizuoka Prefecture. If the base plays a key role as a training center in developing personnel, more personnel can be attracted to the prefecture.

Such personnel will help establish systems and organizations to extend healthy life expectancy on an ongoing basis and ensure the successful attainment of goals in Shizuoka Prefecture.

(C) Reflecting the results in healthy longevity measures

The characteristics that are considered to contribute to healthy longevity in Shizuoka Prefecture should be analyzed from a scientific viewpoint, such as the correlation between geographical conditions including long hours of sunshine and a mild climate, and health conditions, and the correlation between the effectiveness of specialty products including green tea and satsumas and cerebral vascular diseases. The cause-effect relationship and measures for utilizing the results should be presented. The results can be reflected in formulating measures to extend healthy life expectancy or ensure healthy longevity in Shizuoka Prefecture.

(D) Curbing medical and nursing expenses

The medical expenses of the Shizuoka Prefectural Government (total of medical expenses incurred under the national health insurance and medical expenses incurred by elderly people aged 75 or above) increased by about 20% during six years from 589.8 billion yen in 2008 to 709.5 billion yen in 2014. During the same period, nursing expenses rose by about 40% from 188.6 billion yen to 263.7 billion yen. Extension of healthy life expectancy will help curb rising medical and nursing expenses and thereby reduce the financial burden of social security on the Shizuoka Prefectural Government and municipal governments. Financial resources can be invested in projects that contribute to the development of communities such as social infrastructure and industrial promotion. Conventional measures to extend healthy life expectancy can be implemented on a larger scale, and new measures can also be employed. More effective measures can be implemented to extend healthy life expectancy.

III. Other results

(A) Publicizing the attractive features of Shizuoka Prefecture

Shizuoka Prefecture covers a long distance from east to west. Due to the geographical characteristics, the dietary habits and lifestyles slightly differ by area (Izu, eastern area, central area, western area) or by community (municipal governments) in the prefecture. The data obtained in Shizuoka Prefecture and research results derived from such data are likely to enhance

the uniqueness of community-based research. The results obtained in Shizuoka Prefecture, which consists of communities, are likely to increase the value of research that is worth being shared with the rest of Japan and around the world.

By publicizing the initiatives to extend healthy life expectancy across Japan, Shizuoka Prefecture will become more attractive and admired, motivating residents in other prefectures to settle in Shizuoka and helping maintain and increase the vitality of communities.

(B) Developing the healthcare industry

Various initiatives to extend healthy life expectancy and results derived from such initiatives will help develop the health and medical care industries and create clusters in the prefecture. Private companies and various groups can harness various advantages, such as enhancing the brand of their products, by participating in cooperative and collaborative research projects and by utilizing various research results produced in the prefecture as well as personnel and the mechanisms of public health. Development of the healthcare and medical care industries and the creation of clusters in the prefecture will significantly contribute to the prefecture's economy and increase the satisfaction of prefecture residents. The results of research projects, initiatives, analyses, etc. should be made available to the Pharma Valley Project, which is being led by the Shizuoka Cancer Center and Pharma Valley Center in eastern Shizuoka Prefecture, to promote industrial development.

IV. Feedback of results

The findings and results derived from public health initiatives will help significantly increase the satisfaction of prefecture residents in terms of medical care services, health promotion, and improvement in daily activities.

As described in "I. Results in medical care" (pp. 23-24), preventive and preemptive medical care will be offered at medical institutions such as hospitals and clinics, to ensure health management and offer medical care guidance before developing diseases, thus helping prefecture residents avoid having to consult a physician after developing diseases. Such arrangements will help prevent diseases earlier than before and advance the health promotion measures.

Analysis of medical big data and results derived from such analysis will lay the

foundation for promoting the health of prefecture residents, facilitate behavior modification, and improve the daily activities of prefecture residents.

Epidemiologic research will reveal the characteristics of communities in terms of health, diseases, lifestyle, etc. and promote health in a manner that caters to the needs of respective communities and prefecture residents.

The genome cohort study will identify the personal genetic predisposition and achieve personalized medical care to help respective prefecture residents better cope with their risk of developing diseases.

As discussed above, healthy life expectancy of prefecture residents can be extended by promoting research, personnel development, and creation of a mechanism for properly feeding back the results to the residents.

The results of initiatives should be publicized in and outside Japan to make Shizuoka Prefecture more attractive and globally admired as *Fujinokuni*, a land of healthy longevity.

4. Proposals

Based on the reviews in the above sections, we make the following proposals to extend healthy life expectancy in Shizuoka Prefecture.

[Proposal 1] Research

To extend healthy life expectancy in Shizuoka Prefecture:

- big data in medical care should be utilized;
- measures should be systematized, and epidemiologic research for clinical research should be promoted; and
- genome cohort studies should be advanced.

[Proposal 2] Personnel development

To promote public health research:

- education should be offered primarily to medical professionals such as physicians, nurses, and pharmacists; and
- personnel (experts) who understand public health and serve as community leaders should be developed.

[Proposal 3] Base

To promote public health research and train personnel in Shizuoka Prefecture:

- a system should be created to build a base for research and education.

[Proposal 4] Accomplishments

To extend healthy life expectancy in Shizuoka Prefecture:

- results derived from public health initiatives should be fed back to prefecture residents; and
- *Fujinokuni*, a land of healthy longevity that is admired by the rest of the world, should be achieved by publicizing the results of initiatives in and outside Japan.

5. References (past initiatives to extend healthy life expectancy)

(1) “Healthy longevity” that the Shizuoka Prefectural Government should achieve

In our proposals, “health” and “healthy longevity” that the Shizuoka Prefectural Government should achieve are defined as follows.

I. “Health” that the Shizuoka Prefectural Government should achieve

In the Third *Fujinokuni* Health Promotion Plan formulated by the Shizuoka Prefectural Government, “health” is defined as stated below. This definition applies to our proposals.

Health is defined as the “optimal condition for individuals to fully exert their capabilities and live a fulfilling and meaningful life based on their values regardless of diseases or disabilities.” Health is considered not as the purpose of living but as the means to enhance the quality of life of all prefecture residents regardless of their age or sex.

II. “Healthy longevity” that the Shizuoka Prefectural Government should achieve

In our proposals, we define “healthy longevity” that should be achieved by the Shizuoka Prefectural Government as described below, based on the descriptions in the Phase 2 Action Plan (of the Master Plan) formulated by the Shizuoka Prefectural Government in March 2014, while taking into account definitions by international organizations and making revisions based on the committee discussions.

The Shizuoka Prefectural Government will aim to achieve healthy longevity so that all prefecture residents can lead a healthy, lively, fulfilling, and secure life in their home communities. Arrangements will be made to offer social support so that residents can lead a better life by taking full advantage of available daily functions even if they suffer diseases or disabilities, and thereby prevent such diseases and disabilities from causing disparities in life.

To further achieve healthy longevity, it is necessary to work on initiatives to formulate specific measures from a scientific viewpoint, in addition to practicing the three factors for healthy longevity of exercise, dietary habits, and social participation. Also, the prefectural government should work on initiatives to share the benefits such as findings and research results in medicine and other relevant disciplines, including public health and preventive medical care, with prefecture

residents.

(2) Healthy life expectancy in Shizuoka Prefecture

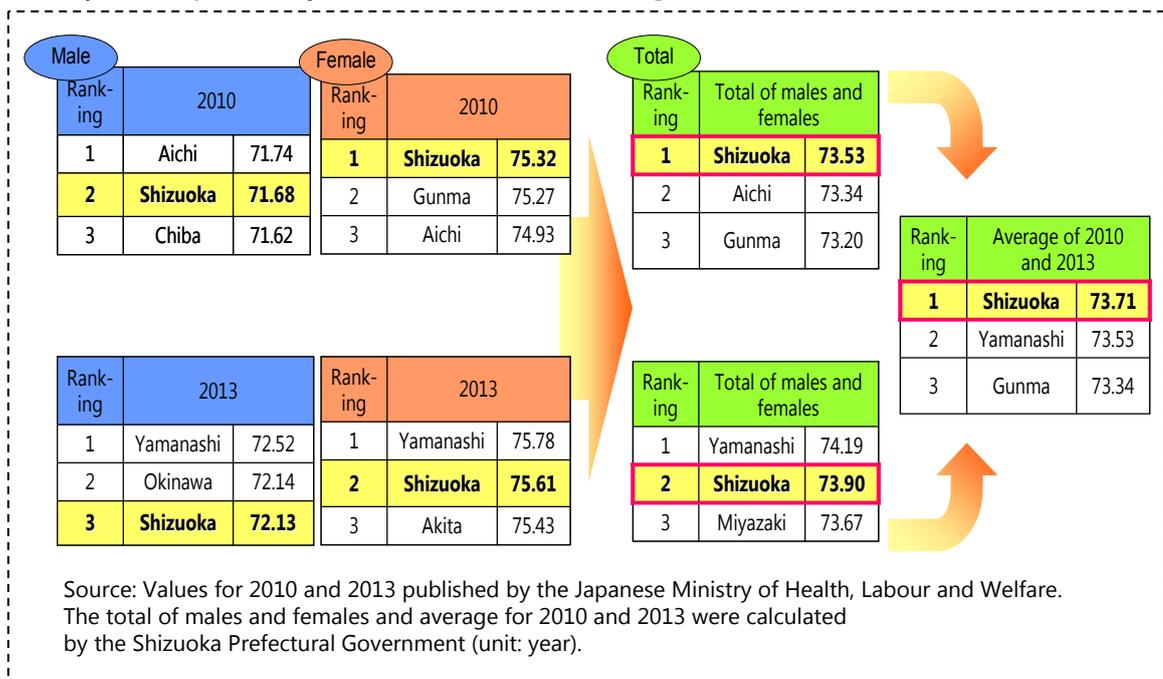
I. Status of life expectancy

The life expectancy in Shizuoka Prefecture in 2010 was 80.03 years for males and 86.21 years for females. By prefecture, Shizuoka was ranked 10th and 32nd for males and females, respectively, in Japan (based on data obtained by the Group Responsible for Forecasting Healthy Life Expectancy and Research on Cost Effectiveness of Measures against Lifestyle-related Diseases). In 2010, the life expectancy of the Japanese people was ranked top in the world (79.64 years for males, 86.39 years for females).

II. Status of healthy life expectancy

Healthy life expectancy in Shizuoka ranked among the top three by prefecture in Japan in 2010 (71.68 years for males, 75.32 years for females) and 2013 (72.13 years for males, 75.61 years for females). Meanwhile, healthy life expectancy in Japan (71.1 years for males, 75.6 years for females) (in 2015) is among the longest of all countries. Thus, healthy life expectancy in Shizuoka Prefecture is considered to be very long in the world.

[Healthy life expectancy in Shizuoka Prefecture]

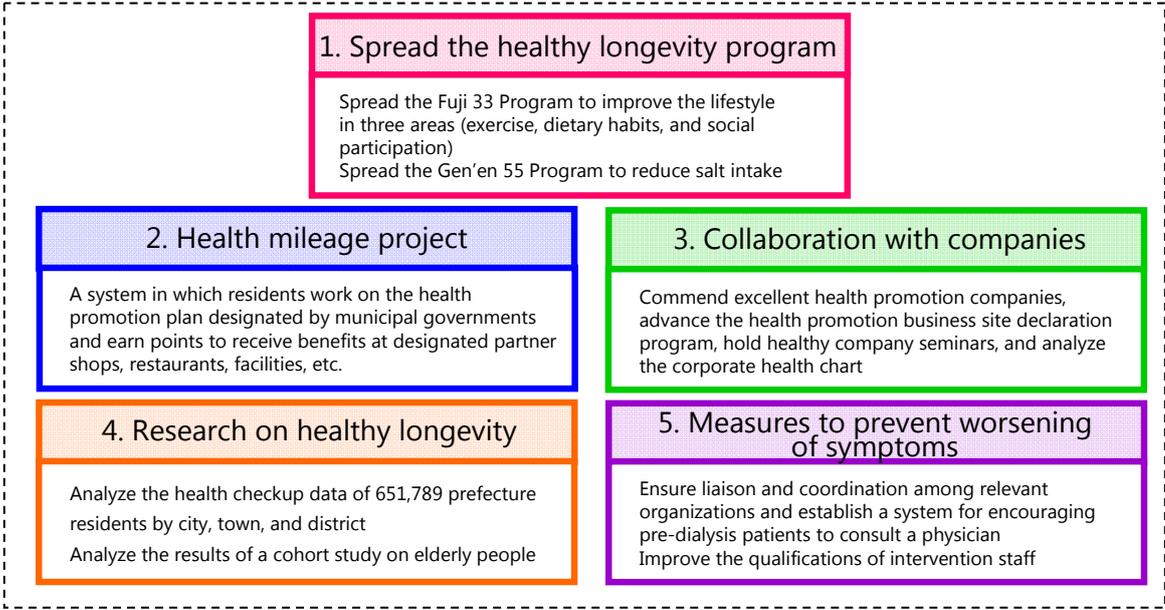


(3) Measures implemented by the Shizuoka Prefectural Government to extend healthy life expectancy

I. Fujinokuni Healthy Longevity Project

To achieve further healthy longevity, various initiatives have been promoted under the *Fujinokuni* Healthy Longevity Project based on five priorities: 1) Spread the healthy longevity program, 2) Health mileage project, 3) Collaboration with companies, 4) Research on healthy longevity, and 5) Measures to prevent worsening of symptoms. Notably, the Shizuoka Prefectural Government has been working to visualize the analysis results of health checkup data and promote the health mileage project, in order to encourage residents who are indifferent to health promotion (who account for the majority) to understand the situation and take action, thereby extending the healthy life expectancy.

[*Fujinokuni* Healthy Longevity Project]



II. Shizuoka age model

The Shizuoka Prefectural Government has advocated its unique *Shizuoka* age model. The age classification up to 76, which is equivalent to the current healthy life expectancy for females, is named “Prime.” People in this age bracket are expected to be active in society. Notably, the prefectural government has been sending messages to prefecture residents in the “Prime (ripening stage)” group (aged 66–76), who are included in “elderly people” in the conventional classification, to remain active in the workforce at various opportunities and in various fields. The prefectural government has been making efforts to build

momentum to change the awareness of residents in this age bracket in the prefecture from “those who need support” to “those who can give support.”

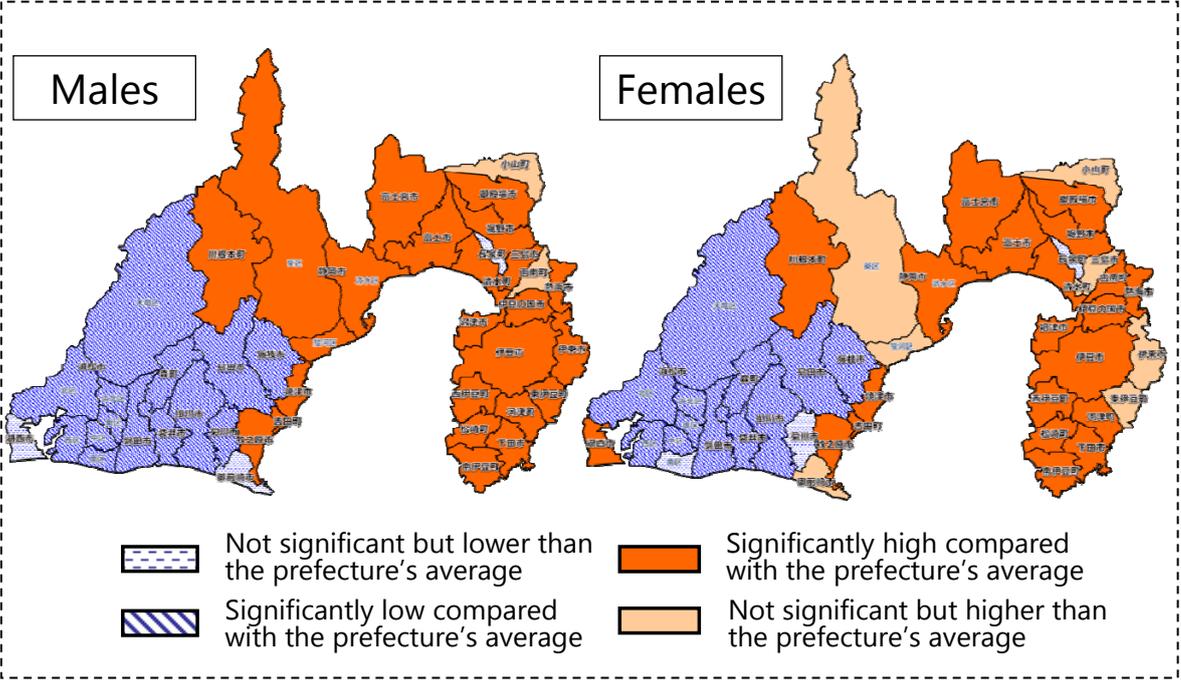
[Shizuoka age model]

Name		Age Classification	Explanation
Senior	Centenarian	100 or above	100 or above (after hakuju)
	Advanced	88 - 99	From 88 (beiju), 90 (sotsuju) to 99 (hakuju)
	Senior	81 - 87	After sanju, before beiju
	Early	77 - 80	From 77 (kiju) to 80 (sanju)
Prime	Ripening	66 - 76	Those who have gained experience and skills in various aspects and play active roles in society (workers in the most productive years) (healthy life expectancy: 71.68 years for males, 75.32 years for females)
	Medium	56 - 65	
	Early	46 - 55	
Adulthood		18 - 45	Those who are in the process of growing or developing in terms of social and personal aspects and full of vitality (“Adolescence” applies to those up to the age of 45 in projects under the auspices of the Japanese Ministry of Agriculture, Forestry and Fisheries and district chambers of commerce.)
Youth		6 - 17	Those who are aged from entering elementary school to gaining the right to vote
Early childhood		0 - 5	Those who are born and develop and grow as individuals

III. Analysis of the health checkup data

Currently, the Shizuoka Prefectural Government collects the data of 651,789 people from medical insurers in the prefecture, and processes and provides the data so that they can be used by municipal governments and medical insurers. The data are visualized in the form of city and town maps and other graphical tools to clarify the characteristics and trends of health indices and health issues such as diseases by city and town or by area (Izu, eastern area, central area, and western area). By making the data available, the prefectural government hopes to arouse the interest of municipal governments or prefecture residents, help improve the lifestyle in communities, and extend the healthy life expectancy of prefecture residents.

[Example of health checkup data analysis (hypertension patients, by city and town in 2014)]



(4) Factors that contribute to healthy longevity in Shizuoka Prefecture

I. Factors that contribute to healthy longevity

The main factors that underpin healthy longevity in Shizuoka Prefecture are described below.

Shizuoka Prefecture is ranked top in Japan in terms of agricultural and marine products produced (439 items according to a survey conducted by the Shizuoka Prefectural Government). An abundance of various local food in communities helps residents have nutritious meals.

Shizuoka is also the largest producer of green tea in Japan, and consumption is also high. In terms of the annual quantity bought and expenditure on green tea per household, Shizuoka and Hamamatsu Cities are ranked first and second, respectively, in Japan (mean value of the Household Economy Survey conducted by the Japanese Ministry of Internal Affairs and Communications from 2008 to 2010). Many prefecture residents of all ages drink a lot of green tea on a daily basis.

In terms of geographical characteristics, Shizuoka is known throughout Japan for its mild climate. The actual hours of sunshine in Shizuoka is one of the longest in

Japan (Omaezaki and Hamamatsu are ranked first and third, respectively, in terms of normal value at main observation points across Japan). The prefecture residents are considered to be mild-tempered due to the mild climate. The per capita prefectural income is also high (ranked third in Japan according to FY2010 Prefectural Accounts by the Japanese Cabinet Office). These advantages in the living and social environment are considered to contribute to healthy longevity.

The percentage of elderly people who are in the workforce is also high (ranked fourth in Japan according to the Employment Status Survey in 2012). Remaining active in society and in the workforce is considered to give elderly people a reason for living and vitality, thereby contributing to healthy longevity.

II. Analysis results based on the Elderly People Lifestyle Survey

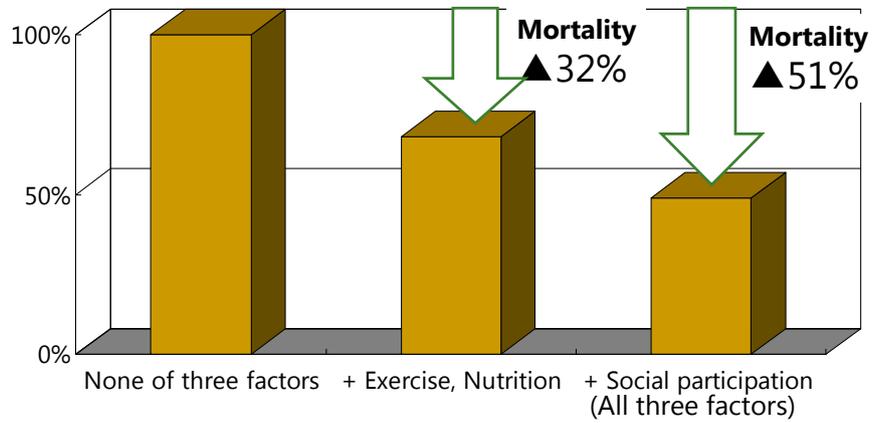
The Shizuoka Prefectural Government started to conduct the Elderly People Lifestyle Survey in FY1999 on about 22,000 elderly people in the prefecture (follow-up surveys were conducted in 2002, 2005, and 2008). The survey revealed the following results.

- 1) The mortality of those who drink seven cups or more of green tea a day is 58% less than that of those who drink less than one cup of green tea a day.
- 2) The mortality of people who walk 30 minutes or more a day (e.g. when going out) five days or more a week is about one third less than those who do not walk.
- 3) The mortality of elderly people with high social participation (i.e. those who answer yes to all four questions such as “Do you get along with people around you?”) is about 60% less than those with less social participation (i.e. those who answer no to all four questions).

The analysis results show that mortality is reduced by the habits of drinking green tea, doing exercise, and social participation. The survey concluded that exercise, dietary habits, and social participation are the three factors that underpin healthy longevity of prefecture residents.

[Main results of the Elderly People Lifestyle Survey]

- Elderly people who make a habit of exercise, nutrition, and social participation tend to live long.

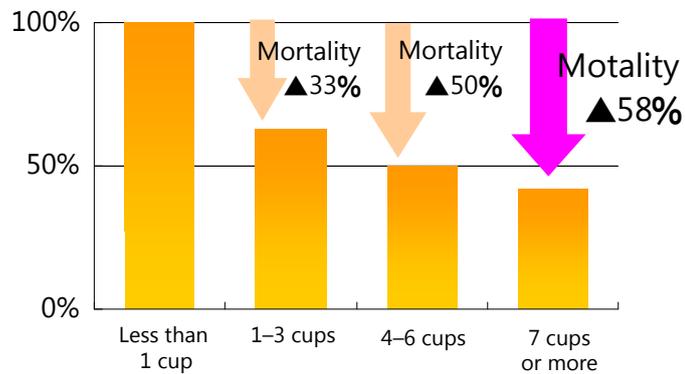


* Hazard ratio adjusted by sex, age, body mass index, and smoking

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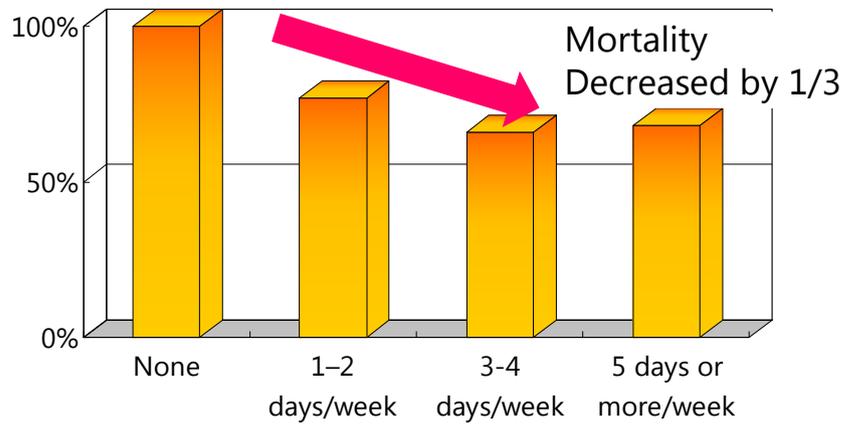
1) The more green tea elderly people drink, the longer they live.

(Q: How many cups of green tea did you drink a day during the past month?)



2) The more elderly people walk, the longer they live.

(Q: How often do you walk for 30 minutes or more per day, such as when going out?)

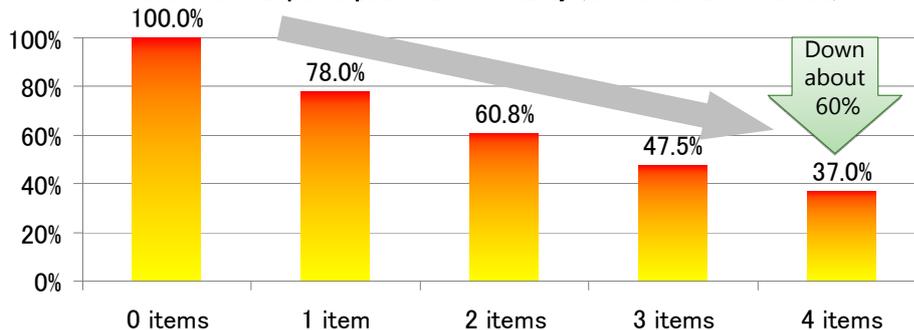


- Hazard ratio adjusted by sex, age, body mass index, smoking, drinking, past medical history, etc.

3) The more social participation, the longer elderly people live.

No	Question	Check	Concept
1	Do you get along with people around you?	<input type="checkbox"/>	Evaluate based on the number of checked items
2	Are you satisfied with your friendships?	<input type="checkbox"/>	
3	Do you have someone who you can ask for a favor?	<input type="checkbox"/>	
4	Are you satisfied with your relationships with the people around you?	<input type="checkbox"/>	

Score of social participation and mortality (trial calculation values)



(5) Outline to establish the “Public Health” Basic Plan Review Committee

Article 1 (Establishment)

The “Public Health” Basic Plan Review Committee (hereinafter referred to as “the committee”) shall be established to systematize the conventional healthy longevity initiatives from the viewpoint of public health, work on advanced measures and research that help extend healthy life expectancy, and reflect the results and findings in projects, in order to extend healthy life expectancy and achieve *Fujinokuni*, a world-leading area of healthy longevity.

Article 2 (Affairs under the jurisdiction)

The committee shall review the basic plan to promote public health research.

Article 3 (Organization)

1. The committee shall consist of members who are commissioned by the prefectural governor.
2. The term of office of members shall be from the date of commissioning to March 31, 2017. The term of office of substitute members in the event of a vacancy shall be the remaining term of office of the predecessor.
3. The chairperson shall be designated by the prefectural governor.
4. The chairperson shall preside over the affairs of the committee and shall represent it.

Article 4 (Meetings)

1. The committee meetings shall be convened by the chairperson.
2. The meetings shall be open to the public. If an open meeting is likely to be advantageous or disadvantageous to specific persons or to considerably hinder the smooth or fair administration of the meeting, the meeting may be closed based on the chairperson’s consent.
3. Any other matters necessary in relation to the observation of meetings shall be provided for separately.
4. The chairperson shall be able to request the attendance of non-members.

Article 5 (General affairs)

The general affairs of the committee shall be handled by the staff of the Health and Welfare Strategic Division, Administrative Bureau, Health and Welfare Department, Shizuoka Prefectural Government.

Article 6 (Miscellaneous provisions)

In addition to the matters provided for in this outline, matters necessary for the administration of the committee shall be provided for separately by the chairperson.

Supplementary provisions

This outline shall come into force on April 28, 2016.

(6) List of members of “Public Health” Basic Plan Review Committee

(honorifics omitted, in Japanese syllabary order)

Name	Affiliation, title, etc.	Remarks
Tasuku Honjo	Chairman of the Board of Directors, Shizuoka Prefecture University Corporation	Chairperson
Yoshiyasu Sako	Director General, Shizuoka Foundation for Health and Longevity	
Issei Tanaka	Director General, Shizuoka Prefectural Hospital Organization	
Kenichi Tsuruta	President of National Association of Health Directors Prefectural Government / Director of the Shizuoka Prefectural Government (in charge of medical care and health)	
Koji Tokunaga	Vice President, Shizuoka Medical Association	
Takeo Nakayama	Professor, Health Informatics, Kyoto University School of Public Health	
Hiroaki Miyata	Professor, Department of Health Policy and Management, School of Medicine, Keio University Professor, Graduate School of Medicine (Healthcare Quality Assessment), The University of Tokyo	
Yoshiki Miyachi	Hospital Director of Shiga Medical Center for Adults (Professor Emeritus, Kyoto University)	
Ritsuko Mochizuki	President, Shizuoka Prefecture Council of Home Nursing Offices	
Seiji Yamamoto	Director and Vice President, Hamamatsu University School of Medicine (in charge of education and industry-academia collaboration)	
Toshihiro Yamamoto	President, Shizuoka Prefecture Social Welfare Corporations Operators Conference	

(7) History of meetings of the “Public Health” Basic Plan Review Committee

Meeting	Date and time	Agenda
1st	Wednesday, May 25, 2016 10:00–11:45 am	<ul style="list-style-type: none"> • Overview of the “Public Health” Basic Plan Review Committee • Status of healthy life expectancy in Shizuoka Prefecture and initiatives by the prefectural government, etc. • Promotion of public health research
2nd	Wednesday, July 27, 2016 10:15–11:45 am	<ul style="list-style-type: none"> • Goals of healthy longevity set by the Shizuoka Prefectural Government • Initiatives based on scientific evidence
3rd	Monday, October 24, 2016 2:00–3:30 pm	<ul style="list-style-type: none"> • Detailed items of initiatives by the Shizuoka Prefectural Government to extend healthy life expectancy • Ideal model of the base to promote public health initiatives
4th	Thursday, November 24, 2016 3:00–4:30 pm	<ul style="list-style-type: none"> • Basic plan (proposals) (draft) to promote public health research
5th	Wednesday, January 25, 2017 10:00–11:30 am	<ul style="list-style-type: none"> • Proposals to Extend Healthy Life Expectancy in Shizuoka Prefecture (draft)

* All the meetings were held at Hotel Associa Shizuoka (Bella Vista on 15F).