

## 2 Entire society in 2040 and the future of dental care in data

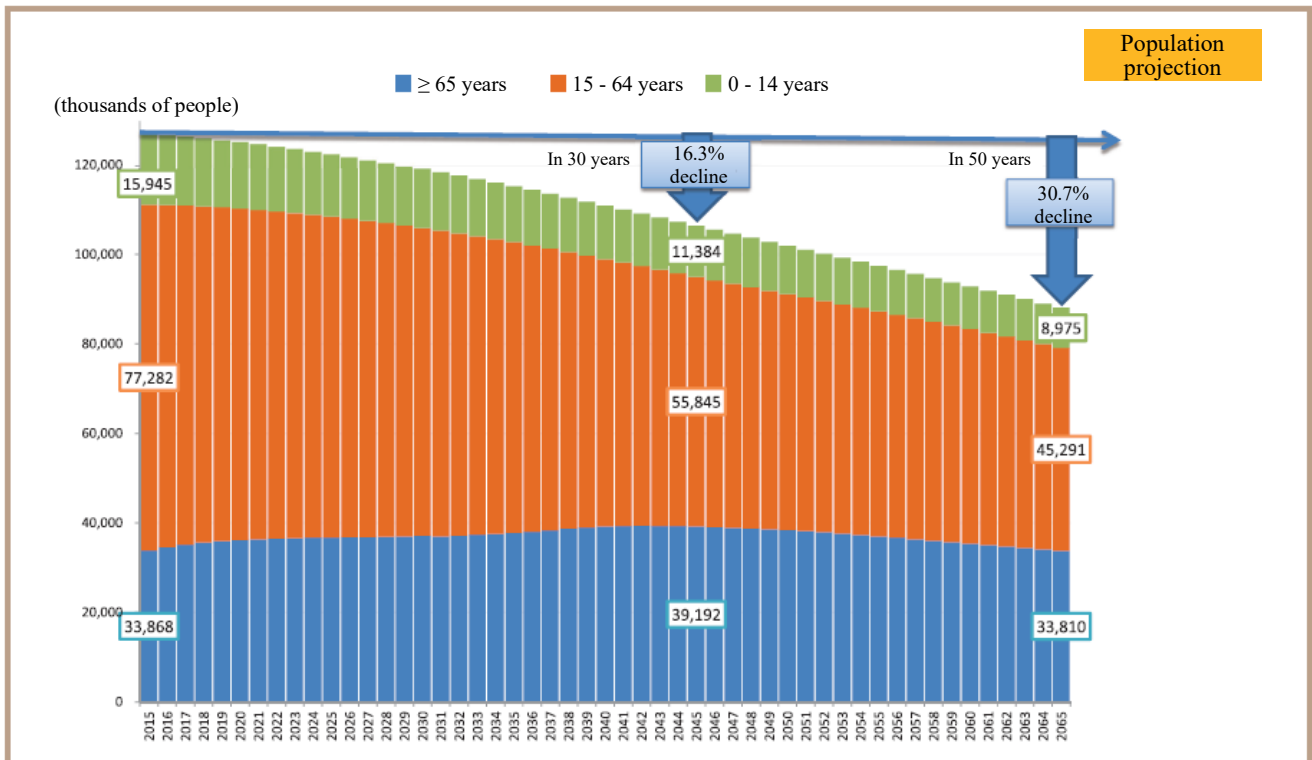
By 2025, the last of Japan's baby boomer generation will be older than 75, and the country is forecast to transition from rapid growth of the elderly population to a steep decline in the working-age population over the period through 2040. By 2040, the population will have only 1.5 young people to support each elderly person.

Discussion of dental care in 2040 must factor in the per-capita number of dental clinics, number of dental service at home, and functionality of hospitals with a department of dentistry in individual secondary medical areas as well as municipalities. Obviously, there are both regions with an already substantial elderly population and regions whose elderly population will grow rapidly by 2040; therefore, many factors including the systems for providing dental care in such regions must be considered.

Ageing of the population not only impacts regional demographics. It is also deeply intertwined with efforts to maintain access to dental care in different regions. This chapter presents projections and models for dental care at this time.

### 1 Projection of numbers of patients visiting dental clinics

According to the 2017 projection in Population Projections for Japan by the National Institute of Population and Social Security Research, Japan's population will have declined by 16.3% in 2045 and 30.7% in 2065 (Chart 8).

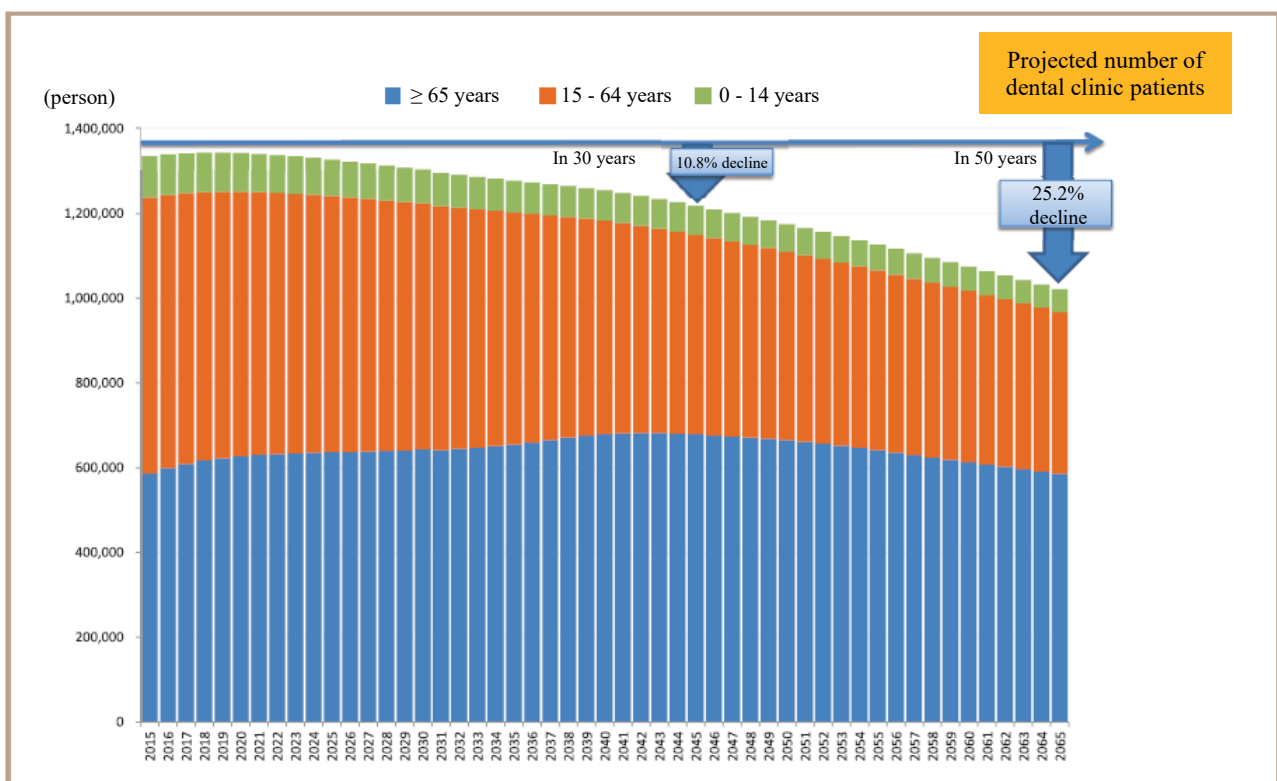


**Chart 8 Population projection for the next 50 years**

Created by Japan Dental Association Research Institute with data from the 2017 edition of Population Projections for Japan by National Institute of Population and Social Security Research

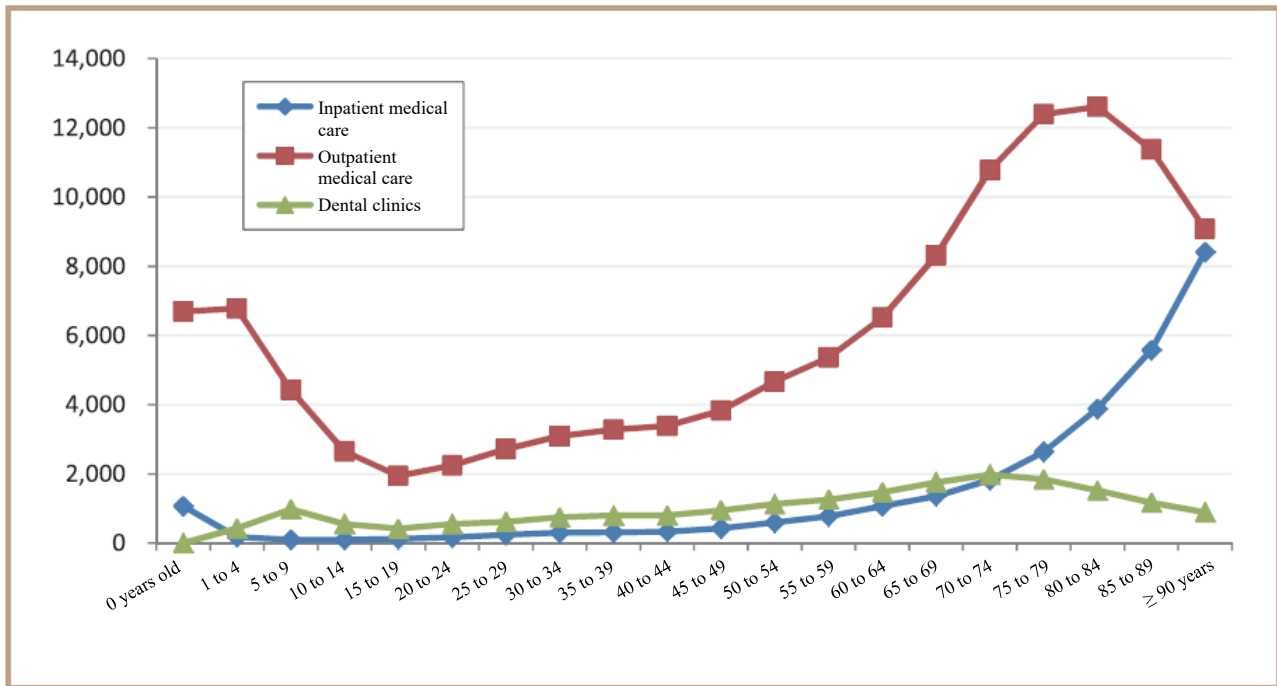
Assuming that dental clinic visit rate remains in the 2014 level, the projected number of patients visiting dental clinics will have declined by 10.8% in 2045 and 25.2% in 2065 (Chart 9). In other words, patients visiting dental clinics are, overall, expected to decrease substantially as the population drops. Even so, patients aged 65 years or older are predicted to increase through approximately 2045.

In terms of dental care expenditure, more than 95% of all dental care services are provided in dental clinics. The proportion of the population receiving dental care (Chart 10, based on 2011 data), which is provided primarily on an outpatient basis, peaks in the 70 - 74 year-old age group and decreases thereafter. The curve of the proportion of the population receiving outpatient medical care is shaped similarly but peaks at 80 - 84 years of age. This latter decline may be attributable to increasing levels of hospitalization and admissions to care facilities. With only about 20% of Japan's hospitals having a Department of Dentistry, elderly people are likely to lose the opportunity to receive dental care, once they are no longer able to visit dental clinics. When dental service at home is factored in, the proportion of the population visiting dental clinics (Chart 11), as verified with NDB data, shifts from the 2011 levels to the peak at 75 - 79 years of age, but still declines after 80 years of age.



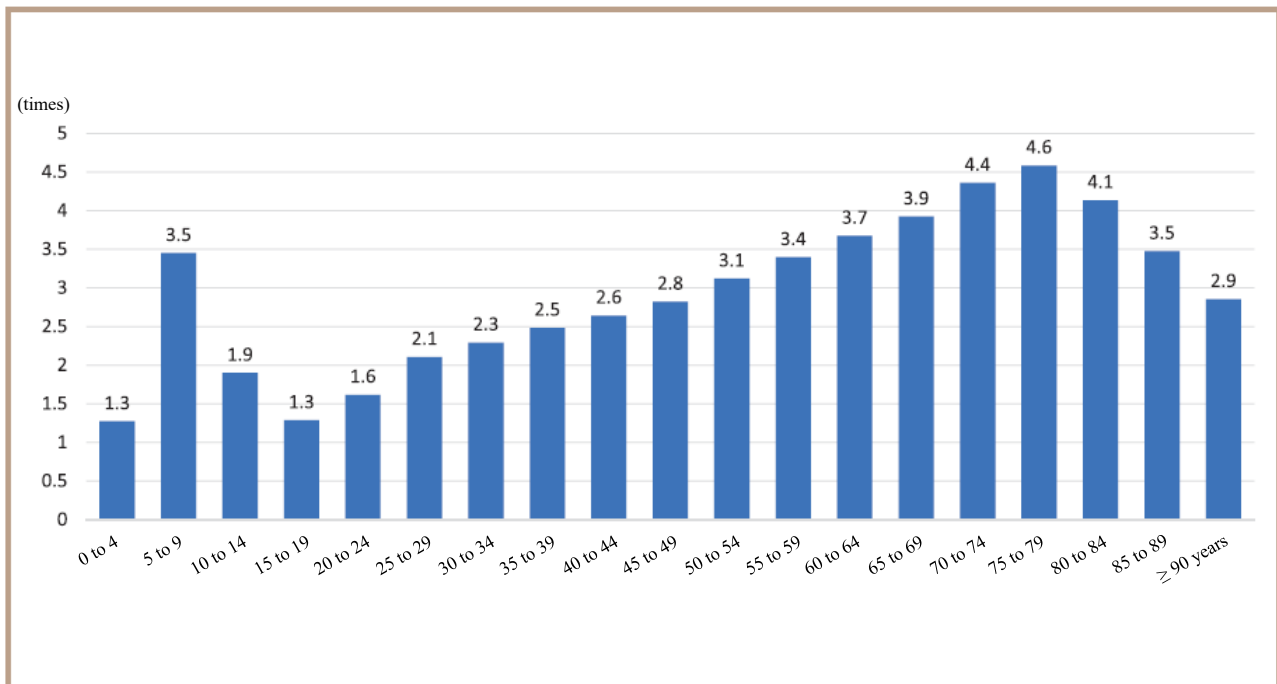
**Chart 9 Projection of patients visiting dental clinics over the next 50 Years**

Created by Japan Dental Association Research Institute with data from the 2017 edition of Population Projections for Japan by National Institute of Population and Social Security Research and *Patient Survey* (by Ministry of Health, Labour and Welfare)



**Chart 10 Proportion of population receiving care by age group (per 100,000 population)**

Created by Japan Dental Association Research Institute with data from *Patient Survey* (by Ministry of Health, Labour and Welfare)



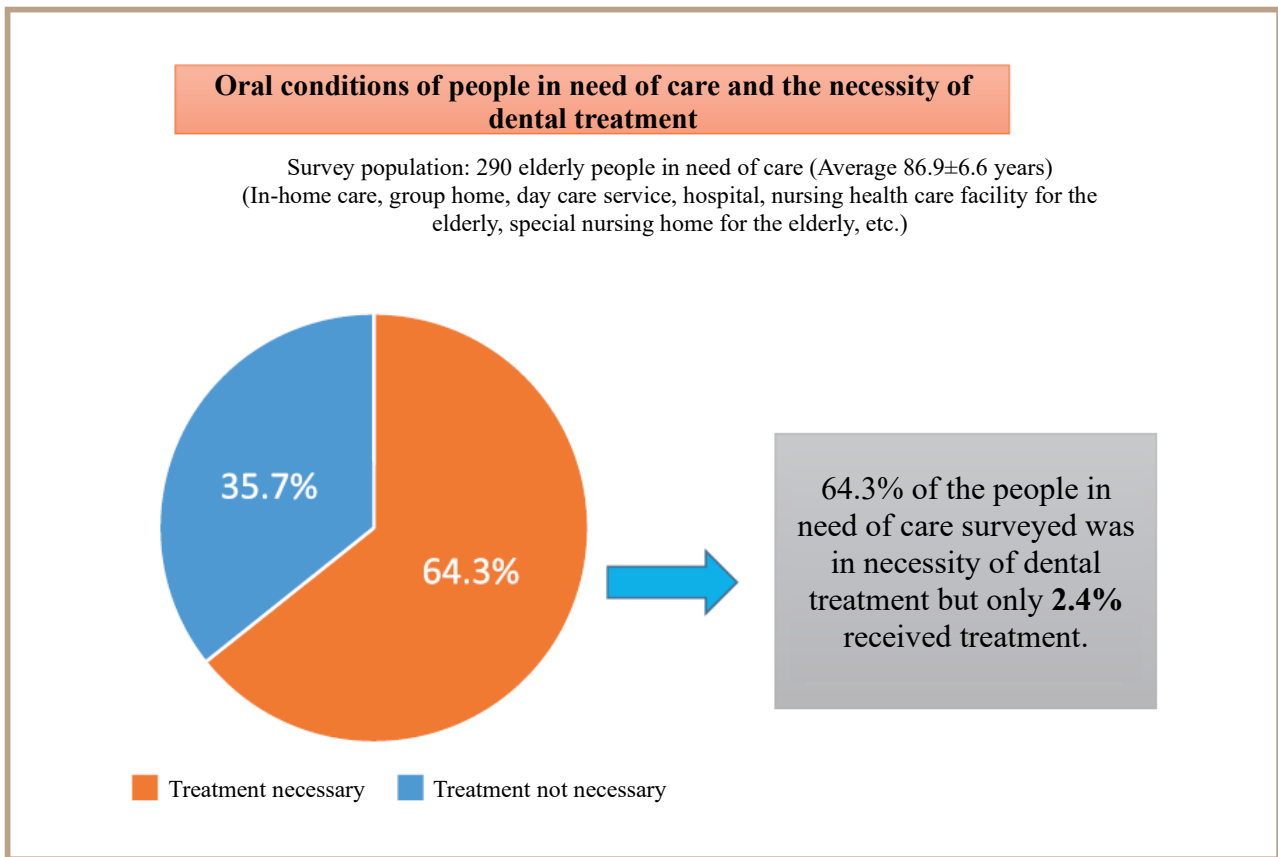
**Chart 11 Per-capita number of dental visits by age group**

Created by Japan Dental Association Research Institute based on public NDB data (by Ministry of Health, Labour and Welfare)

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**Current status and challenges on providing dental care to patients having difficulties in visiting dental clinics**

A survey of elderly patients in need of care (Chart 12) revealed that 64.3% of this population needed dental care or oral health care but that only 2.4% actually received dental care. The discrepancy between demand and delivery systems is a challenge.

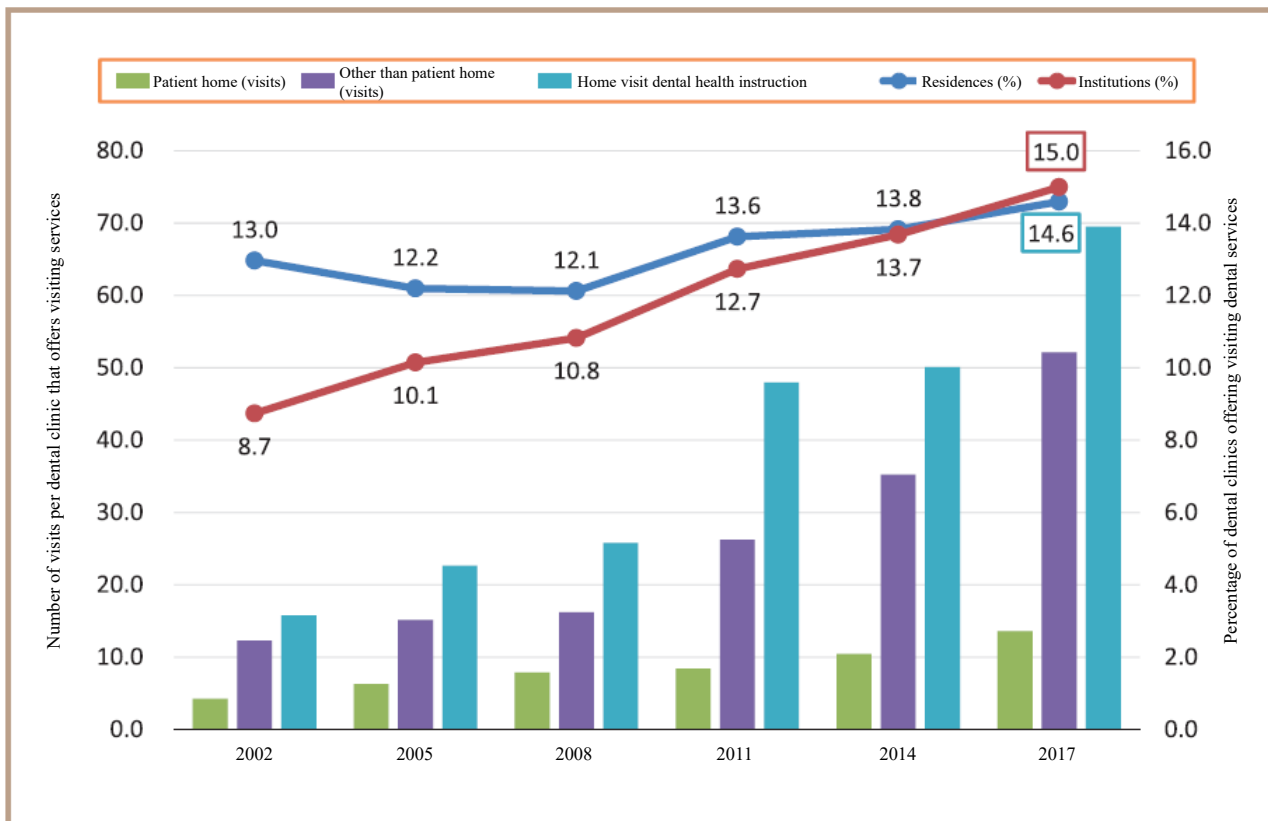


**Chart 12 Oral conditions of people in need of care and the necessity of dental treatment**

Data from interim report of “Study on Establishing Dental Treatment Guidelines in the Age of 100-year Olds with a Focus on the Relationship of Frailty and Dementia to Oral Health” in FY2019 Japanese Association for Dental Science Project Research

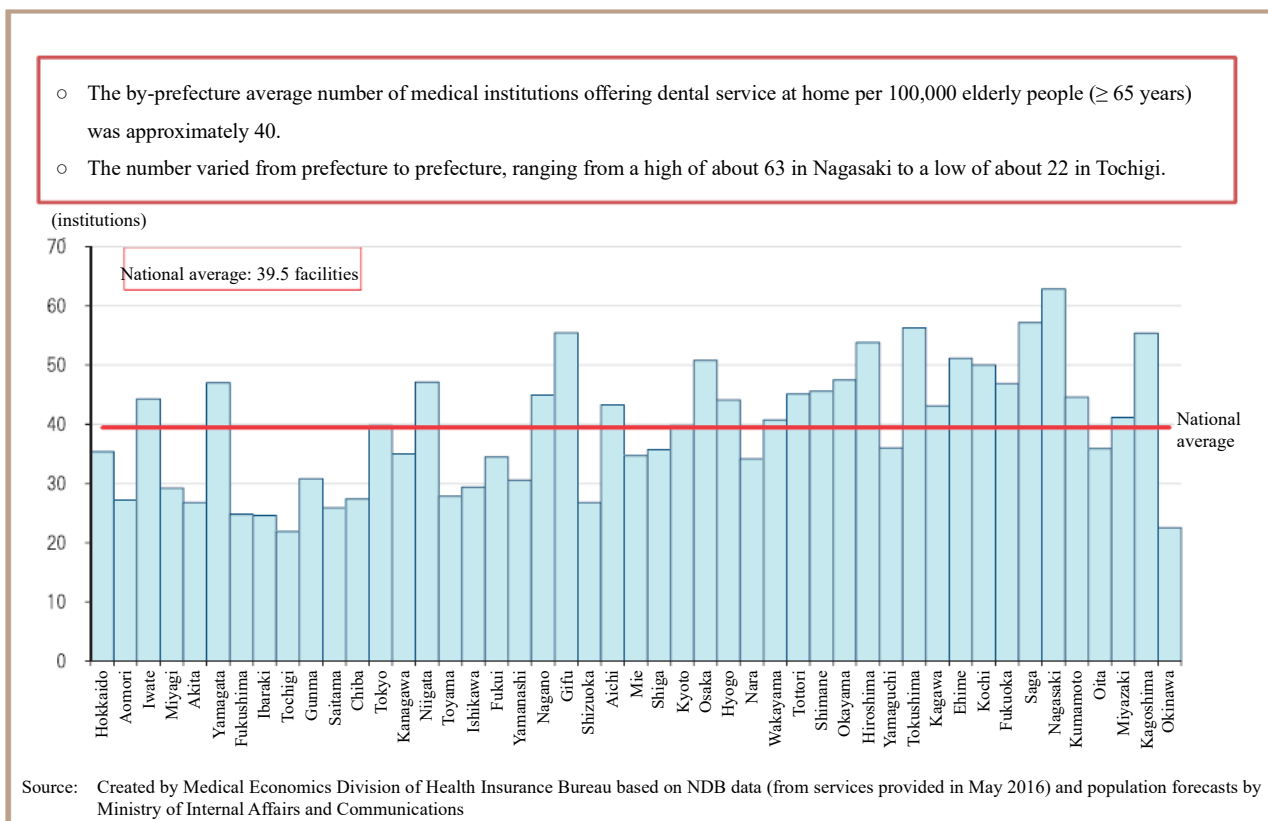
The projection of the number of patients visiting dental clinics shown in Chart 9 assumes that the gap between current demand and service provision remains unchanged. The dental society must promptly take action to meet the expectations of the public. One major challenge will be, reflecting the realities of the region in question, deciding how to establish a system for providing dental care services to patients having difficulties in visiting clinics. Although the percentage of dental service at home (by home and facility) and the number of dental visits conducted at the dental clinics that provide such services are increasing (Chart 13), only 20% of dental clinics currently offer the services. NDB data indicates disparities in dental service at home provision among Japan’s prefectures (Chart 14).

We modeled the increase in the age 75 & older population and number of in-home medical/dental care and long-term care service from 2010 to 2035 based on the data from a 2017 survey of medical institutions and the 2017 edition of Population Projections for Japan by the National Institute of Population and Social Security Research (Chart 15 and Chart 16). A total of 196 of Japan’s secondary medical areas will experience at least 30% growth in their age 75 & older population by 2035. Even data from 2017 show that 113 secondary medical areas have low levels of both dental and medical care for in-home and long-term care service settings, which suggests that various issues may be affecting these areas.



**Chart 13 Proportion transition of dental clinics that offer visiting dental services by home/facility and number of visits per offering dental care**

Created by Japan Dental Association Research Institute



- The by-prefecture average number of medical institutions offering dental service at home per 100,000 elderly people (≥ 65 years) was approximately 40.
- The number varied from prefecture to prefecture, ranging from a high of about 63 in Nagasaki to a low of about 22 in Tochigi.

Source: Created by Medical Economics Division of Health Insurance Bureau based on NDB data (from services provided in May 2016) and population forecasts by Ministry of Internal Affairs and Communications

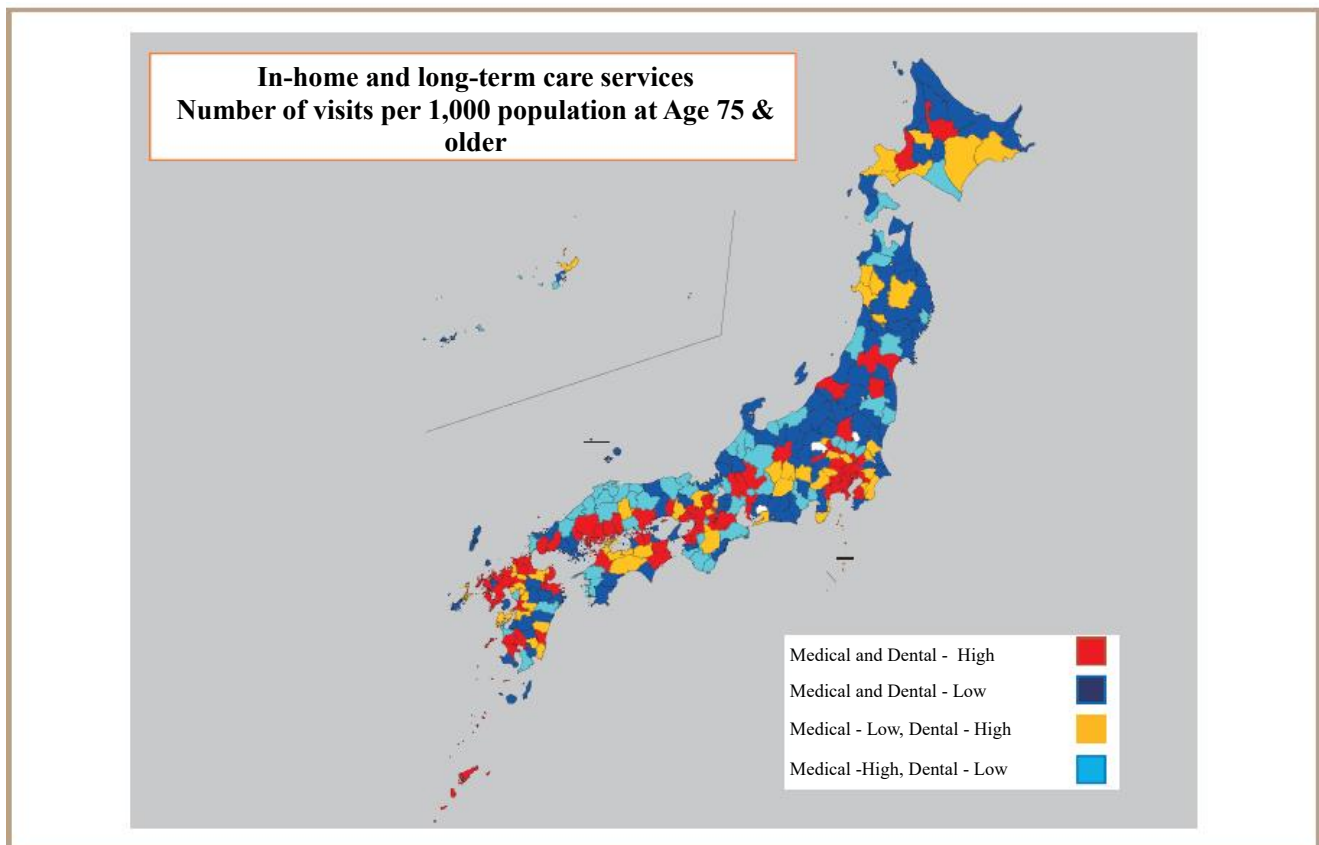
**Chart 14 Number of dental institutions offering visiting dental services by prefecture**  
Cited from data of Ministry of Health, Labour and Welfare's 369th Session of Central Social Insurance Medical Council

**Chart 15 Increase in age 75 & older population (2010 - 2035) and modeling of number of medical and dental in-home and long-term care services offered per 1,000 People over 75 years old**

Increase in age 75 & older population (2010 to 2035)		Medical service low*		Medical service high*		Total
		Dental service low*	Dental service high*	Dental service low*	Dental service high*	
< 30%	Number of secondary medical areas	75	24	34	13	146
30% to 60%	Number of secondary medical areas	26	15	16	38	95
≥ 60%	Number of secondary medical areas	12	19	8	62	101
Total		113	58	58	113	342

\* Medical/dental service high or low indicates that the number of in-home and long term care-service visits per 1,000 population over 75 years old

Source: Survey of Medical Institutions by Ministry of Health, Labour and Welfare) and 2017 edition of Population Projections for Japan (by National Institute of Population and Social Security Research)  
 Created by Japan Dental Association Research Institute



**Chart 16 Provision status of in-home medical care and domiciliary dental care**

Created by Japan Dental Association Research Institute based on Survey of Medical Institutions (by Ministry of Health, Labour and Welfare)

### 3 Challenges and future projection for the succession of dental clinics

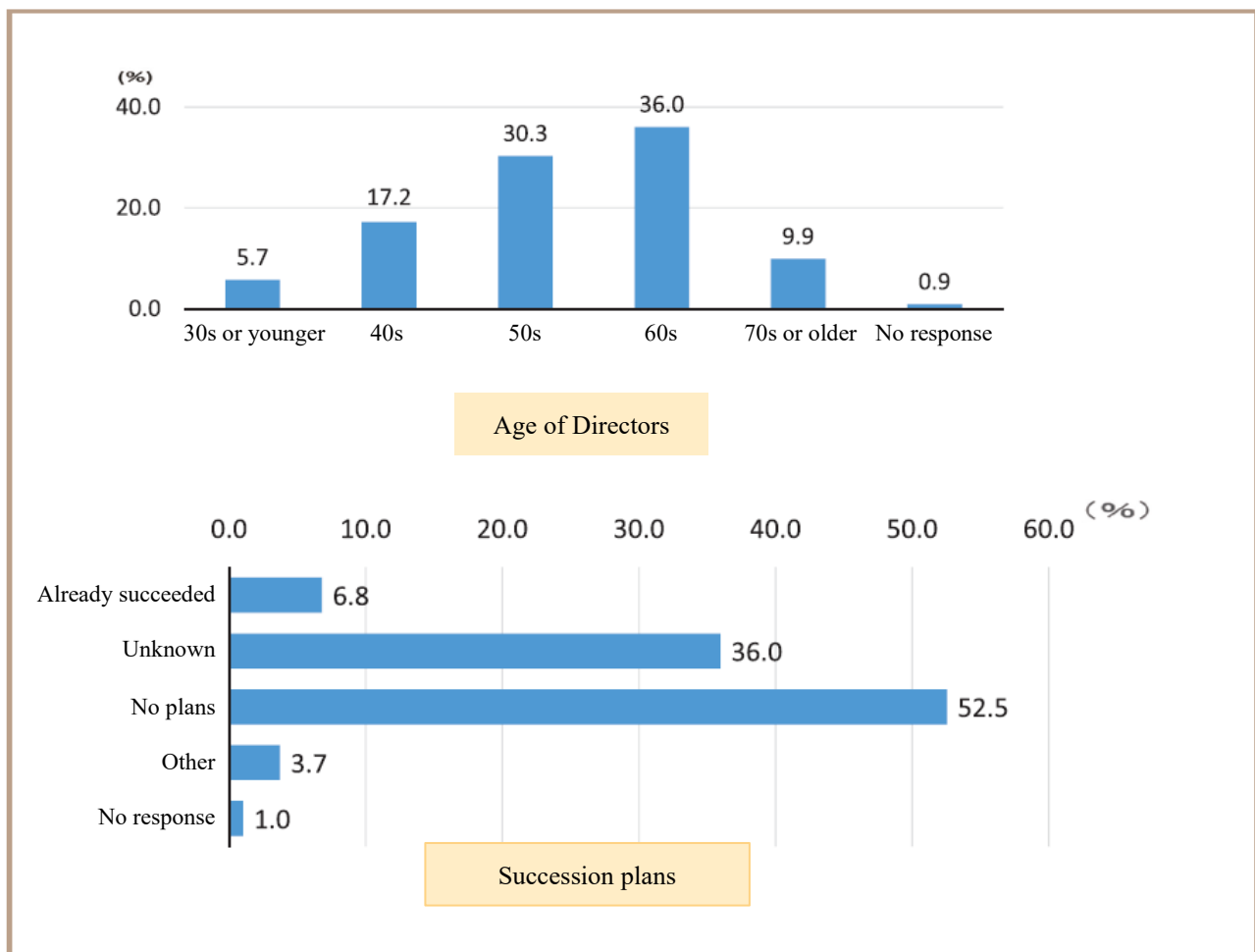
The Japan Dental Association Research Institute conducted a survey called “Roles and future working styles of family dentists in the integrated community care system” (published in March 2020). This postal mail-based survey of about 10,000 Directors of dental institutions who were members of the Japan Dental Association indicated that more of the Directors were in their 60s than any other age group, with 90% reporting having no

plan or unclear plans to pass along the clinic to a successor (Chart 17).

The survey also found that most respondents had 1 to 4 dental clinics within walking distance of their clinic (i.e., within a radius of about 800 m) (46.5%), and 18.3% had 10 or more clinics within walking distance. A total of 64.4% of respondents felt that there were currently many dental clinics nearby and 4.4% felt there were few clinics nearby. When asked about the number of nearby dental clinics in 2040, 43.7% of the respondents predicted that the number would be the same as it currently is and 30.8% predicted there would be fewer clinics. Compared to the percentage of respondents who answered that there are few nearby dental clinics, seven times more respondents answered that there would be fewer dental clinics in two decades. About 3% of the respondents predicted that there would be almost no nearby clinics (Chart 18).

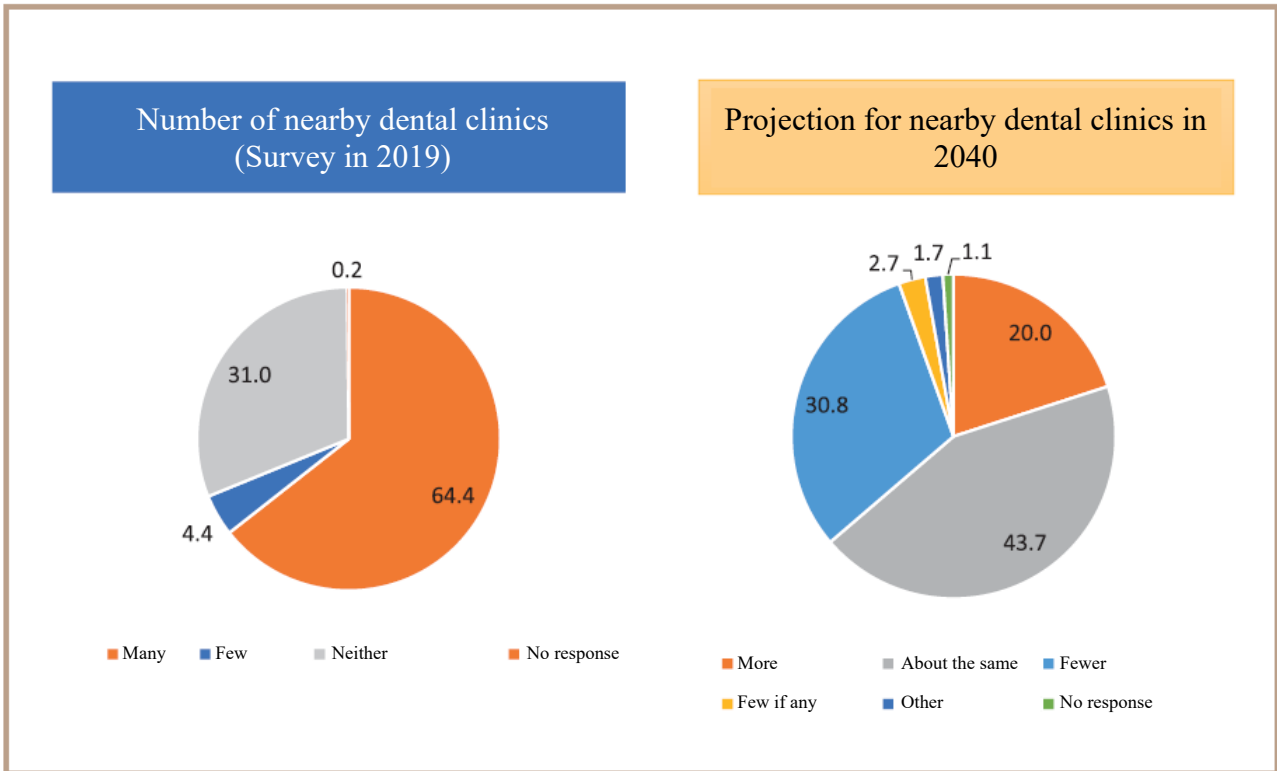
In any case, the reality is that the succession of dental clinics is not going smoothly, which may make it difficult to ensure sustainable provision of dental care, although there are regional differences.

The most common treatment that the association’s members responded that they would like to incorporate or expand in the future was addressing oral hypofunction, at 34.4% (Chart 19).



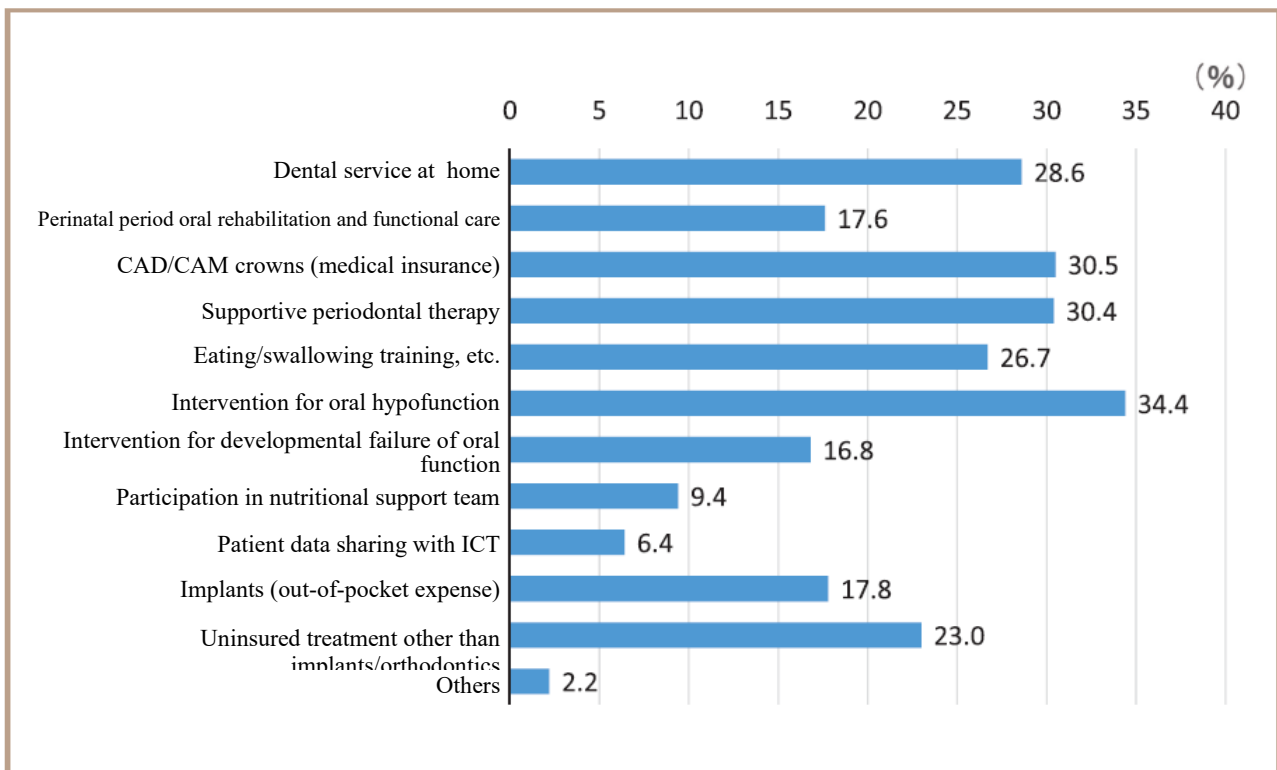
**Chart 17 Ages of Directors and succession plans**

Survey of roles and future working styles of family dentists in the integrated community care system (March 2020)  
Japan Dental Association Research Institute



**Chart 18 Number of nearby dental clinics in 2019 and projection in 2040**

Survey of roles and future working styles of family dentists in the integrated community care system (March 2020)  
Japan Dental Association Research Institute



**Chart 19 Dental treatments that respondents prefer to introduce or expand**

Survey of roles and future working styles of family dentists in the integrated community care system (March 2020)  
Japan Dental Association Research Institute



## 4 Status of dental professions by secondary medical area

We modeled the increase in the age 75 & older population and numbers of dentists and dental hygienists working at dental clinics per 100,000 population from 2010 to 2035 on the basis of data from the 2017 Survey of Medical Institutions and the 2017 edition of Population Projections for Japan by the National Institute of Population and Social Security Research (Chart 20).

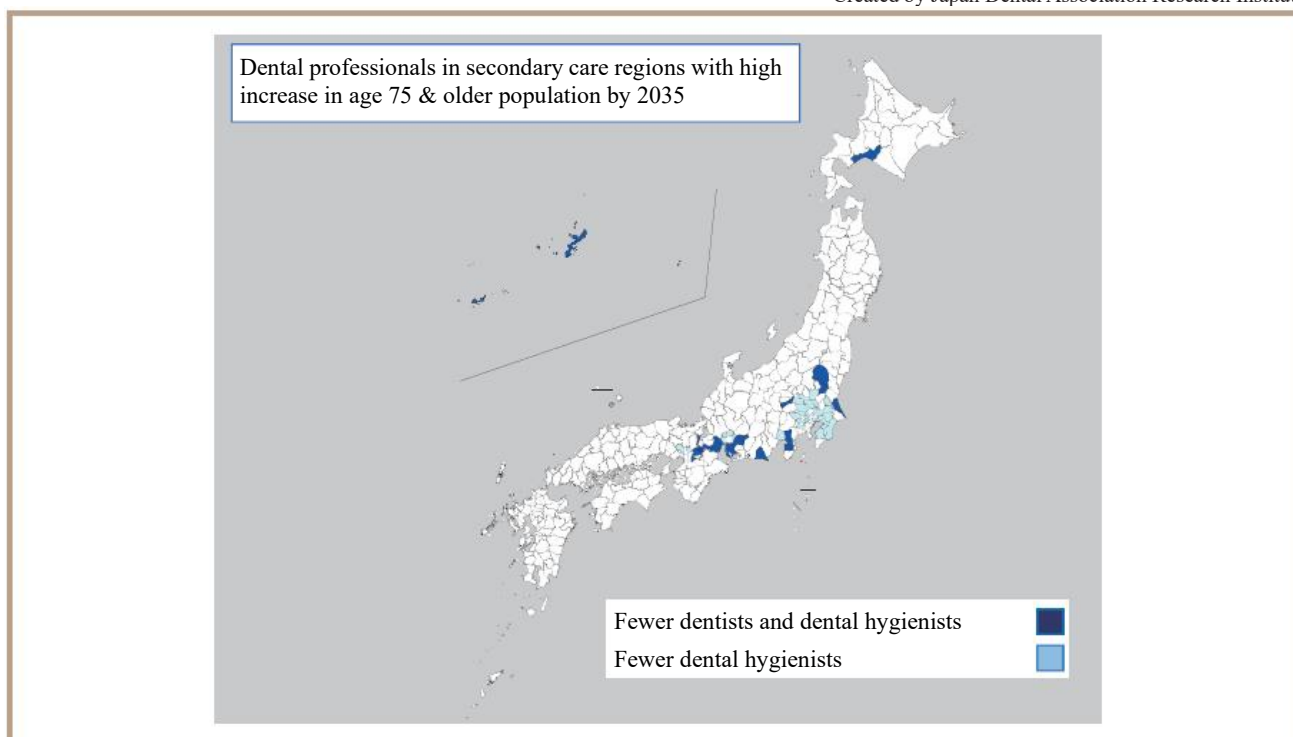
There are 101 secondary medical areas where the age 75 & older population will increase by more than 60% over the next 2035 years. Twenty of these areas already have few dentists and dental hygienists, and 35 have few dental hygienists (Chart 21). The shortage of dentists and dental hygienists will become a critical issue, even in urban areas where the age 75 & older population is expected to increase rapidly.

**Chart 20 Increase age 75 & older population (2010 - 2035) and modeling of numbers of dentists and dental hygienists per 100,000 population**

Increase of age 75 & older population (2010 to 2035)		Fewer dentists*		More dentists*		Total
		Fewer dental hygienists*	More dental hygienists*	Fewer dental hygienists*	More dental hygienists*	
< 30%	Number of secondary medical areas	69	31	13	33	146
30% to 60%	Number of secondary medical areas	22	21	12	40	95
≥ 60%	Number of secondary medical areas	20	8	35	38	101
Total		111	60	60	111	

\* Indicates whether the number of dentists/dental hygienists per 100,000 population is lower or higher than the median

Cited from Survey of Medical Institutions (by Ministry of Health, Labour and Welfare) and the 2017 edition of Population Projections for Japan (by National Institute of Population and Social Security Research)  
Created by Japan Dental Association Research Institute



**Chart 21 Regions with a forecast of high ≥60% increase in the age 75 & older population from 2010 to 2035 in which the number of dentists/dental hygienists working at dental clinics per 100,000 population is lower than the median**

Created by Japan Dental Association Research Institute based on Survey of Medical Institutions (by Ministry of Health, Labour and Welfare)

### 1) Projection of numbers of dentists .....

The demand for dental care is influenced by the structure of disease and demographics, but the challenges are to improve preventive management and support the development of oral functions for the younger population as minimizing dental diseases, and to provide smooth dental care for the elderly population, including those who have difficulties to visit clinics and those who receive in-home medical care. Increasingly diversifying demand for dental services is altered by supply-side dynamics. Demand for dental service at home, for example, is easier to accurately characterize in regions with robust systems for domiciliary dental health care. In addition, if there are more medical institutions which are able to provide highly specialized dental care, the demand for such services will become even more apparent.

From this perspective, when considering the supply and demand of dentists, the provision of details and quality of dental care should be emphasized, discussed, and addressed. Such discussion is already underway in the Review Committee on Improving Dentist Qualifications (formed in January 2015) of the Ministry of Health, Labour and Welfare and its subcommittee, the Working Group on Dentist Supply and Demand Issues (February 2015 - April 2016). The committee mainly examined responses based on the environment surrounding dental care and compiled a report.

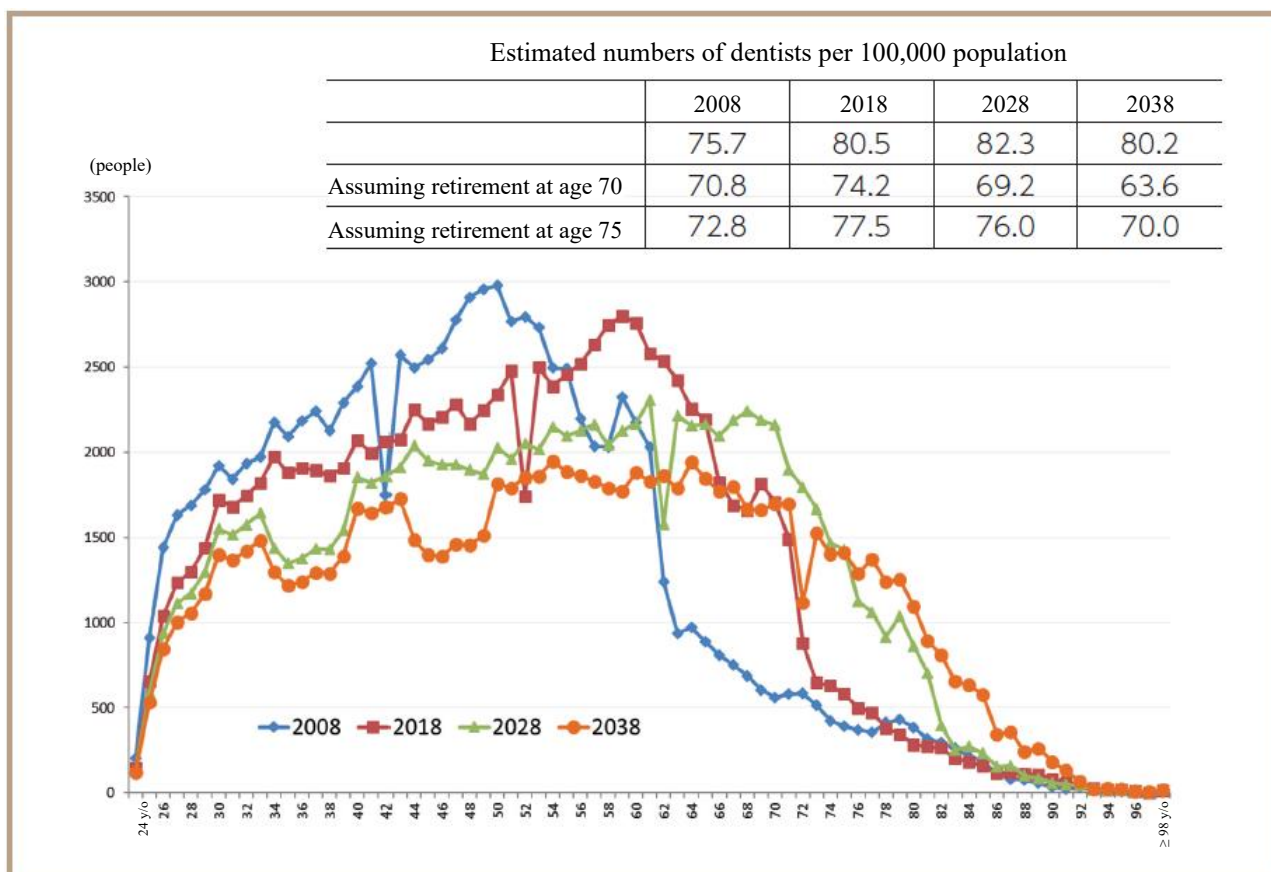
Given the large disparities in the number of dentists in different regions, national totals are unsuitable for discussions and quantitative analysis of dentist supply and demand. The websites of each of Japan's prefectures now list the number of dentists per 100,000 population in each of their secondary medical areas and these figures clarify which areas have more, or fewer, dentists.

While more than 3,000 dentists were once born each year, the number is currently only about 2,000 due to the stagnant pass rate of the national dental practitioner examination. Not to mention the large number of nurse trainees, 8,000 to 9,000 new physicians and 9,000 to 10,000 new pharmacists are qualified annually.

If the demand for accessible dental care for elderly people who have difficulties in visiting clinics and those recuperating at home continues to increase, will the dental society be able to provide an adequate service without over- or under-responding? Although the quality of dental care must be given highest priority, a certain number of professionals is required. Urban areas are likely unaffected, but dentists are unlikely to open a practice in depopulated areas with few residents. The challenge of ensuring a sufficient number of dentists will be unavoidable in regions that already have few dental care institutions.

With a view to 2040, it is considered essential to simultaneously discuss the future vision of dental care, the expected changes in dental needs resulting from this vision, and the appropriate number of dentists to meet these needs.

It is essential to discuss the issue of supply and demand of dentists from the present stage, because it takes a long time to educate and train dentists. As the projection of number of dentists in Chart 22 shows, the number of dentists per 100,000 population nationwide will remain level for more than a decade (top of Chart 22). As practicing dentists age during this time (bottom of Chart 22) and retire at age 70 or 75, the number of practicing dentists could start declining around 2025. As shown in Chart 23, the proportion of dentists working in dental clinics has more than doubled over the past five decades, and this trend is likely to continue. Most dental clinics, however, are small operations with only one to two dentists. If it is difficult to respond to the diversification of dental need and so-called multi-functionalization, new measures should be promoted, such as cooperation among dental clinics based on service enhancement and differentiation, forming a group of dental clinics under a regional dental association, considering diversifying functionality in the entire region, enhancing Hospital Dentistry services, or developing hospital-clinic cooperation.



**Chart 22 Estimated number of dentists per 100,000 population and future projections to 2038**

Top: Created based on numbers of dentists of different age groups in 2008 and 2018

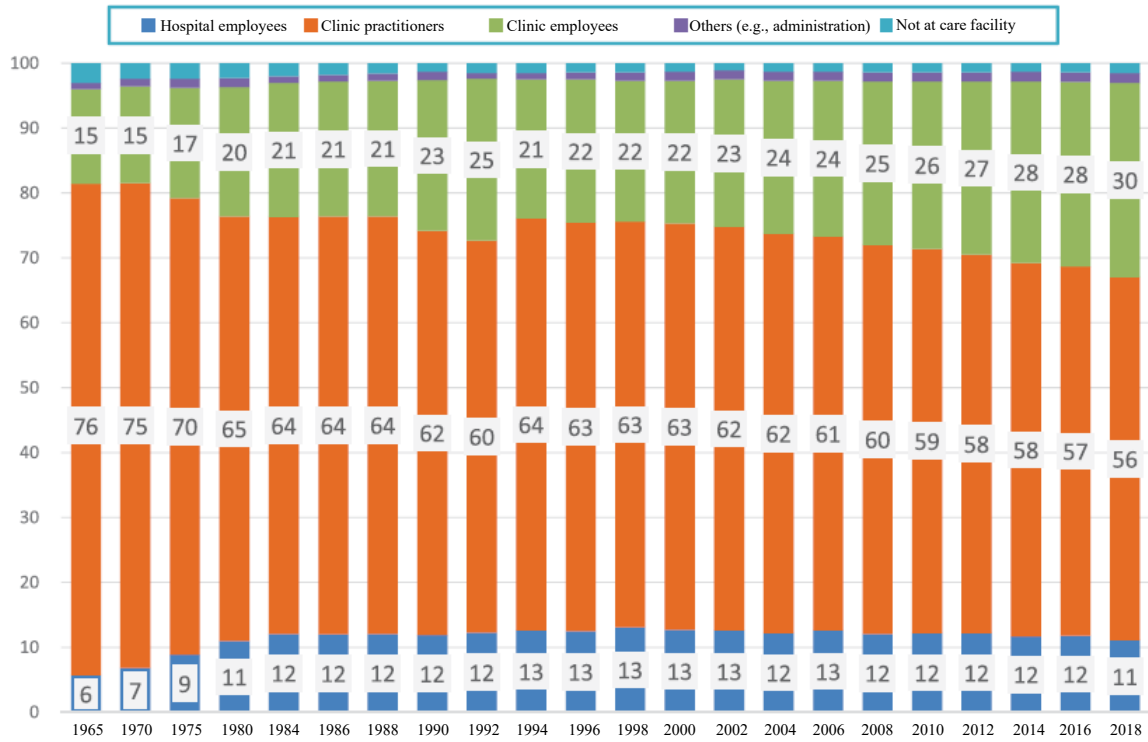
Bottom: Projecting method: Numbers of dentists in 2028 and 2038 were based on data on numbers of dentists of different age groups in 2008 and 2018 and also factored in the past pass rates of the national dental practitioner examinations.

Created by Japan Dental Association Research Institute based on Survey of Medical Doctors, Dentists, and Pharmacists (by Ministry of Health, Labour and Welfare)

## 2) Challenges to supply-demand balance.....

Hospital dentists play a key role in medical-dental coordination, and also provide logistical support for domiciliary dental health care and receive patients who have difficulties in receiving care, while only about 20% of all hospitals have a dental specialty, and 40% of these hospitals have only one full-time dentist. Moreover, approximately 70 of the nation's 344 medical areas have no hospital dentistry. This problem is compounded by a shortage of administrative dentists to run the dental health administration of prefectures and municipalities. The insufficient supply-demand balance in these two domains warrants measures such as establishing criteria for assigning dentists to hospitals, institutions, public health offices, and local government centers.

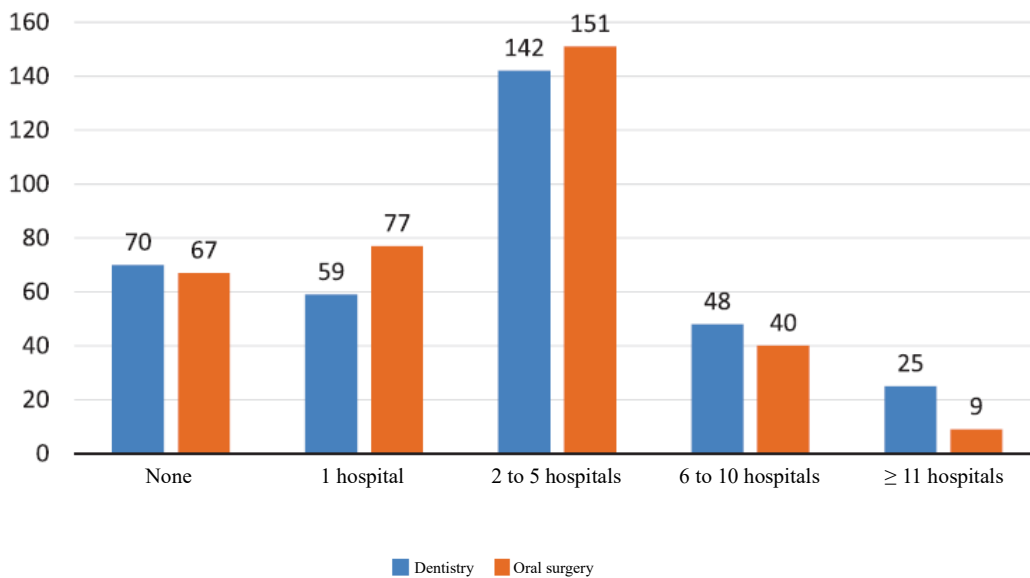
In domiciliary dental health care represents a domain that presumably has inadequate infrastructures for providing services, an analysis by the Japan Dental Association Research Institute revealed the proportion of dental institutions that offer dental service at home has increased only slightly over the past few years (although there are regional differences). The sufficiency rate for monthly care visits for all people in need of care, for example, stands at 10.6% (Chart 37).



**Chart 23 Yearly changes in the percentage of dentists by the main practice**

Created by Japan Dental Association Research Institute based on Survey of Medical Doctors, Dentists, and Pharmacists (by Ministry Health, Labour and Welfare)

(Number of secondary medical areas)



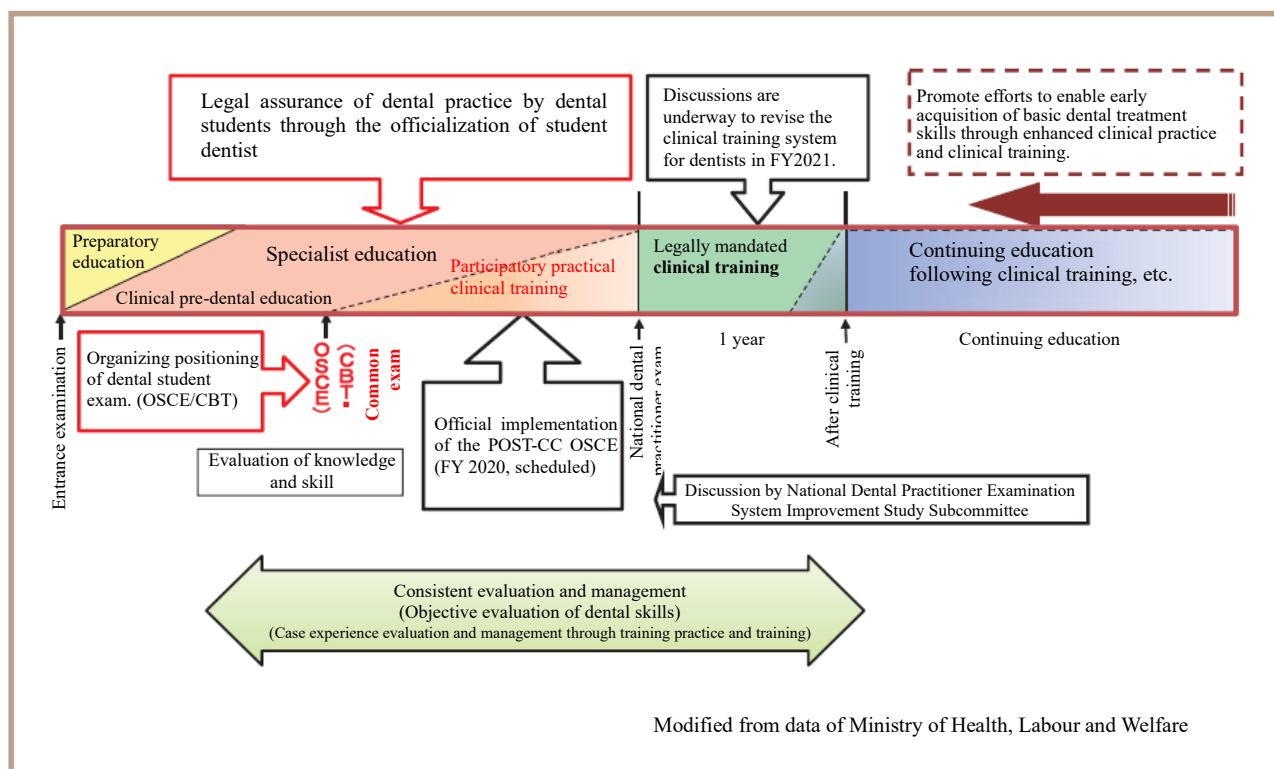
Among the secondary medical areas,  
 No hospital with department of dentistry: 70 areas  
 No hospital with department of oral surgery: 67 areas

**Chart 24 Number of hospitals with department of dentistry or oral surgery in secondary medical areas**

Created by Japan Dental Association Research Institute based on Survey of Medical Institutions (by Ministry of Health, Labour and Welfare)

With the decline in population and the advent of a super-ageing society, not only the concentration of population in Tokyo, but also the concentration of population in urban areas and depopulation in rural areas are becoming more and more pronounced. Even when a depopulated area has a well-developed network of roads, more and more elderly people there are unable to access healthcare facilities on their own. In depopulated areas, the ageing of dentists and the lack of successors, make the provision of dental care increasingly difficult. Therefore, along with operational support for dental institutions, it is necessary to strengthen the system of outpatient care and dental service at home in cooperation with the long-term care sector, hospital dentistry should be enhanced to provide logistical support, and a scheme should be created so that a hub dental institution with sufficient staff can provide support in depopulated areas.

To begin with considering the supply-demand balance of dentistry, it is necessary to examine the situation from the perspective of dental demand such as changed in the disease structure where the prevalence of periodontal disease is increasing while the prevalence of dental caries is decreasing in each generation of the population, or domiciliary dental health care and oral rehabilitation and functional care of hospitalized patients against the background of the super-ageing population. Although accurate projection of future numbers of patients is difficult, the number and quality assessment of dentists, which forms the basis of the supply system, must be influenced by social institutions and systems. So while we must seek to build systems for periodically evaluating the supply-demand balance for dentists, cooperation with the Ministry of Health, Labour and Welfare, Ministry of Education, Culture, Sports, Science and Technology, universities, and other organizations must also be strengthened in order to establish a system for seamlessly nurturing dentist training systems in line with changing entire social needs. In this sense, the Japan Dental Association and its continuing education system have an important role to play.



**Chart 25 Image of reforms for dentist training**

We also annotate the National Dental Practitioner Examination, which also correlates with the number of future dentists. While there are differences among universities/dental colleges, the decline in the rate of students graduating in six years and the large discrepancy between the number of applicants and the number of students taking the national dental practitioner examination are in serious situation, and the pass rate, once over 70%, has declined to 63-66% since the 107th National Dental Practitioner Examination (2014). While the premise is to maintain a reasonable scope and appropriate level as a national examination for dentists and to improve the quality of dentists, there are scattered suggestions that dental education is biased toward classroom lectures and preparation for the national examination. In order to correct this situation and to enhance the clinical training with practice participation, which is extremely important for students who aims to become dentists, the current OSCE/CBT should be placed as the official, and the dental practices performed by students should be given the legal protection as Student Dentist (see page 68) (Chart 25).