A.カバーページ

WHO簡易タバコ介入法の日本の歯科医療への統合
Integrating the WHO brief tobacco intervention into dental care program in Japan

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C. Main Section of the Proposal

1. The overall objective, and the goals of this project is to introduce and sustain effective tobacco dependence treatment as appropriate in daily dental clinical practice to guide smokers encountered at the dentist office toward cessation and support non-smokers in preventing exposure to secondhand smoke. Hereby, the dental clinic can also be a place that over time contributes to reducing the health risks to citizens due to exposure to tobacco smoke, and further provide a platform for sharing and expanding this practice throughout the world. This project has four objectives: three primary objectives and one secondary objective.

Objective 1: To provide dental clinic treatment staff with the opportunity for training in an effective dental tobacco intervention program that is based on the WHO-recommended program for dentistry.

Specialists in dentistry in the countries with leading tobacco control efforts such as Canada, the United States of America, and the United Kingdom have put great effort into treatment for tobacco dependence. Research up to this point reports various roadblocks to introducing intervention, and that there are other factors that lead to slow adoption. The most reported cause was a lack of training among dental treatment staff. Accordingly, the first objective of this project is to provide opportunities for effective training. The Applicant has been working since 2015 to integrate the WHO Recommended Tobacco Intervention in Dental Care Program which targets primary care physicians (referred to as the WHO Program below) into an oral health program. Because the WHO Program aims to be a global standard, this project will partially modify the program so that it is compatible with the needs in Japan. The modifications to the WHO Program will be based on the results of prior research conducted in Japan. Training will be conducted in the form of meeting-type workshops which were implemented when the WHO program was piloted in Japan, as well as through e-learning and a mixture of both modes. The meeting workshops will be hosted as satellite events to academic conferences, as well as incorporated in community-based lifelong learning courses. The e-learning program will be offered based on the prior developed J-STOP platform. Some trainers at the meeting style workshops will be teaching staff from dental colleges and dental health schools throughout Japan; and thus, these workshops will promote integrating the training into pre-graduate associate professor education as a part of faculty development (faculty development lecturers).

Objective 2: For trainees to intervene for their patients and achieve behavioral change whereby the patient quits smoking or avoids passive smoking.

The goal is not only for dental specialists to improve their skills and knowledge through training; it is also important that the method of intervention is applicable to the patient, and that the intervention leads to a behavioral change where the patient quits smoking or avoids passive smoking. Other important barriers besides insufficient training include ("no time available", "no compensation", "doubts regarding the effectiveness", and "patient resistance". A standard intervention program applicable to dental care is needed to help surmount these barriers. However, the WHO recommended international standard for brief dental intervention program incorporates three to five minutes of intervention in daily practice (i.e. intervention takes place during clinical practice). The brief dental intervention program also requires support for preventing non-smoker's exposure to secondhand smoke and promotes rapid adoption of regulations for preventing exposure to secondhand smoke throughout the country. Only the smokers that are prepared to quit are given cessation support. The cooperation between dentists and physicians is particularly effective in cessation support, and especially between the dentist and the physicians covered under national health insurance who offer cessation treatment. This cooperation can more reliably establish cessation practices, for instance, by encouraging patients that have trouble quitting to try again. The [provider's] theories and skills in brief motivational interviewing is often the source of some resistance in patients not prepared to quit. The intervention algorithm within the WHO program is quite clear; thus once the overall picture is understood the program can be designed to be easy to use even for the busiest clinical practice. This project will introduce visual communication of information as a foundation of the program in Japan as well as the standard of WHO program. This visual communication will involve an image color panel that illustrates the various effects on oral health. As such, this will also create a new style of motivational interviewing [TN: Author switches to using simply "motivation (動機づけ)" in Japanese. Context suggests this is just a shorthand for "motivational interviewing (動機付け面接)" and so all instances of the shorthand were rendered in full].

Objective 3: To include brief tobacco intervention within lifestyle intervention under pre-graduate clinical education at dental colleges and dental health schools

The primary targets of the proposed project are dentists and dental hygienists. However, it is also necessary to ensure that lifestyle intervention takes place continuously in dentistry. For this to happen, dentistry and dental hygiene students just entering school must be given clinical training and other preparatory training at the dental college and dental health school which encourages awareness and confidence in brief tobacco intervention as well as basic clinical skills before they graduate. The various steps in cessation intervention does appear in the model core curriculum (education guideline) and provides a basis for a system of intervention. However, it is quite difficult

to add any new information to an already full curriculum and thus it would be necessary to change the currently existing training. One solution may be to invite dental college and dental health school teaching staff to the workshop style training of trainers. This will be instrumental in developing lecturers who can provide faculty and staff development at the dental college or dental health school and who go back to implement student training at their and other institutions.

Objective 4: To have cessation intervention in dental care added as an independent item in the health insurance in health insurance regulations, and to have this kind of system expanded globally

Japan is known throughout the world to have an excellent national healthcare insurance system. While it has been 10 years since cessation treatment by physician is covered under the health insurance system, dental care insurance differs from medical care insurance. Cessation treatment in dental care does not independently qualify for coverage under the health insurance system. Therefore, this project is expected to play a part in having intervention covered under dental care insurance. The aim is that the experiences gained in introducing brief tobacco intervention in dental care will be the base for spreading the program to various countries in Asia, Europe, and around the world through the information exchange resulting from doctors and dentists cooperating together to expand coverage for cessation treatment. Furthermore, that these experiences will provide a base the expansion of interventional clinical practice and a change in the clinical practice system in a dental care setting when it comes to the need for a lifestyle behavioral change for other risk factors such as diet, exercise, and alcohol intake that are common to cancer, diabetes, cardiovascular disease, pulmonary disease and the like.

The researchers involved in this application belong to Fukuoka Dental College. Fukuoka Dental College puts forth as its brand "From Dentistry to Oral Health Sciences", and the college was one of the earliest to set up an academic system and conduct education research into the relationship between oral health and systemic risk factors. Smoking is conducted orally. Considering the common risks between noncommunicable diseases (NCD) and oral diseases which plays a huge health burden on citizens, have dental treatment staff involved in oral health science through tobacco intervention is incredibly significant. The Japanese Society for Dental Health, was a joint applicant on this project, is responsible for health promotion and the prevention of oral diseases. This organization is unique in that separately it has worked towards both preventative dental care for the individual and policy recommendations and requests for the public welfare. In addition to popularizing counseling, the organization has been involved in promoting policy for preventing exposure to secondhand smoke, which is an incredibly important policy issue in Japan. The Japanese Society for Dental health will be deeply involved in this project. Fukuoka Dental College has experience in implementing a pilot program for the WHO Brief Tobacco Intervention in Dental Care project, which took, place at the attached Medical and Dental Hospital. The head of the WHO Collaborating Center for Translation of Oral Health Science (at Niigata University) was formerly the Executive Director of the Japanese Society for

Dental Health, and so the organization will be closely involved in the WHO Program, which is the basis for this project and in training.

The applicant researcher has been involved in the Japan Medical-Dental Association for Tobacco Control since the beginning, and currently serves as a short video series lecturer in the J-STOP e-learning program (the program that will be used as stated in Objective 1). The applicant researcher was also the deputy chairman of the Smoke Free Policy Promotion Committee within the Japan Dental Association and participated in the Tobacco Control Medical-Dental Research Network, and the Oral Health Societies Joint Committee on Realizing a Smoke-free Society. The relationship between these institutions will serve as a platform for implementing Objective 1 and Objective 3. Objective 1 and Objective 2 will be set for completion within the grant period of two years. Objective 3 and Objective 4 are two-stage medium and long-term objectives; therefore the aim will be to establish a foundation for these objectives within the grant period.

2. Assessment of Current Rationale for this Target Area

(1) Rationale for introducing tobacco intervention in dental care

[1] The effects of tobacco use on health in the context of dental care are quite clear. Halting tobacco use prevents onset or increased severity of dental diseases or symptoms.

The organ first exposed to tobacco smoke is the mouth, and various effects have been reported. The effects of tobacco use are often accompanied by pain and are visibly perceptible; and thus rather than the effects on another's health it is often quite easy to recognize the effects on one's own health. In contrast, it has taken some time for the effects of tobacco use on oral health to be made clear compared to the effect on other internal organs. The effects on oral micro flora, the effectiveness of dental treatment and the effects of secondhand smoke have only recently been made clear. The most important scientific basis was the epidemiological findings of the effects of smoking on health. This scientific basis has supported intervention training in dental care in developed countries and increased popularity of lifelong education.

The fourth edition of smoking and health published in 2016 focused on the Japanese and summarized the evidence level of the effects on health. In the dental care domain, active smoking resulting in oral cancer or periodontitis is categorized as level 1 since the evidence is certain. Active smoking resulting in the loss of teeth, tooth decay, or implant treatment is categorized as level 2 since evidence is implied. Periodontitis will be added to the health warning displayed on tobacco packaging. Tooth decay in children resulting from passive smoking is categorized as level 2. Moreover, the relationship between passive smoking and periodontitis, and early-stage loss of teeth was only been recently systematically reviewed and reported. Given this scientific background, in 2016, the Japanese Society for Dental Health made a policy statement declaring the need for a reformed health system where dental care staff would

participate cessation support for passive and active smoking.

This project will be instrumental in reducing dental illness and alleviating oral frailty by preventing increases in the severity of symptoms. The project will also be instrumental in minimizing the burden of sickness and the medical costs due to noncommunicable diseases (NCD). One characteristic of tobacco use in the dental care domain is that tobacco use reduces the effectiveness of dental treatment, and thus it is possible to improve the effects of treatment by stopping tobacco use.

[2] Tobacco use is a common risk factor for diseases that impose a serious national health burden such as dental and noncommunicable diseases. A dental exam is an important opportunity for reducing this serious health burden before it happens.

The effect of tobacco use can be understood from the point of view of the effect on the health of the entire body. Worldwide, the health burden of tobacco use is extremely enormous. Article 19 in the governmental declaration on the prevention and control of noncommunicable diseases from the government officials in the United Nations in 2011 states "Renal, oral and eye diseases pose a major health burden for many countries and that these diseases hare common risk factors and can benefit from common responses to non-communicable diseases." A dental exam is also an important opportunity for tobacco intervention for a smoker. Thus it is necessary to capitalize on this important opportunity for tobacco intervention.

Tobacco use in Japan poses an extremely major health burden on the entire body; accordingly, using the dental exam is an opportunity for tobacco intervention would also contribute to large cuts to medical costs. In 2016 the government sought to revise the national health insurance system. The Japanese Society for Dental Health provided certain projections along with a proposal for tobacco intervention techniques in dental care. According to the calculations, given 36,000 dental care patients, all smokers, who required significant periodontitis treatment, convincing these smokers to quit smoking would have reduced dental care costs by ¥9.8 million over 10 years. In terms of medical fees, this would be roughly ¥22.53 billion in lifelong medical costs. It is important for dental care staff to be involved in improving their skills in tobacco control. However, according to an analysis of medical examinations in various countries, the dental exam setting was not being properly utilized even in countries with more developed tobacco control policies like the United States of America. Only about half the smokers reported receiving any advice about cessation in a dental care setting, and reports about receiving advice in a medical setting were even less significant. In the United States observing the cessation treatment guideline would require a system-level change of the regulations in dental specialist organizations or the education and training curriculum, i.e. the medical insurance system. In the United Kingdom, it is acknowledged the need to change the system to allow more time for dental care in lifestyle support examinations. It was determined that when oral health related symptoms appear in a smoker, compared to the non-smoker the smokers subjected to more frequent examinations and it was pointed out that this

opportunity where the smoker gets a dental exam should not be wasted.

(2) Framework that Strengthens Rationale for Need

[1] Numerous advantages have been identified for providing tobacco intervention in dental care from experiences in Japan and in developed countries:
(1) the diverse age group of smokers who receive a dental exam are repeatedly given reasons to quit smoking; (2) the entire family can be provided cessation support by providing passive smoking prevention support to younger patients, e.g., small children; (3) cessation support and follow up can be conducted during the dental exam which is thus more efficient; (4) the dentist and the dental hygienist can team up to increase the amount of time for cessation intervention and thus increasing the effectiveness of the intervention [TN: was lit. "the effect of cessation"]; (5) a patient can recognize the effects of smoking on the mouth, and this improves the recognition of the importance of quitting smoking; (6) a patient's awareness will also increase given that day-to-day topics such as sense of taste and bad breath can be linked with smoking; (7) routine preventive clinical practice at the dentist's office will increase patients' receptiveness to cessation support. The publication "beyond smoking skills" offered by one of the UK's smoke free advocacy groups stated that smokers who contracted a severe disease would visit the dentist before visiting the doctor. The publication also noted that there are opportunities to make inquiries to the cessation serves offered by the NHS.

(2) Tobacco intervention in dental care satisfies the reach requirement as soon as smokers (target audiences) enters a dental practice setting (REACH).
In 2014 there were 68,592 dental clinics. Of the comparison in 2016 there were 54,451 convenience stores. Similar to other countries, in Japan the dental clinic is the one type of medical facility that takes root in the community and then grows. In Japan, 1,363,400 people receive dental examinations in one day. This figure is equivalent to roughly 18.8% of the total number of outpatients. It has been proven that smoker and non-smoker dental care patients receive an identical dental exam in Japan. The need for conducting cessation intervention during the dental exam is clear, however many smokers have doubts about the dental exam. In 2007, 1,022 members in the Japan Dental Association were invited to participate in a survey; 753 members (74%) participated and as a result 14,383 patient responses were collected. Consequently, it was estimated that 32% of male smokers and 48% of female smokers received a dental exam at least once a year. Examining the results based on age revealed that the proportion of male smokers in their 50s who received the dental exam was greater than the national prevalence of tobacco use. Furthermore, the proportion of men in their 40s, and women in their 20s and 30s was also greater than the national prevalence of tobacco use. A larger number of smokers examined had periodontitis and thereafter also suffered from early-stage dental loss. Younger women highly conscious of their health did not believe that smoking was the cause of the problem and among women overall the proportion of smokers receiving dental exams was greater than the national prevalence of tobacco use. Seven percent (7%) of men and ten percent (10%) of women who were preparing to quit had the opportunity to advance to

receiving medical cessation treatment, and the larger number of smokers, i.e., 64% of men and 71% of women were considering cessation. The cessation intervention approach used in dental care for Japanese smokers mainly involved motivational interviewing, and this was identified as an opportunity for cooperating with the cessation treatment provided in medical care.

(3) Tobacco intervention in dental care satisfies either requirement of efficiency or effectiveness (EFFICIENCY and EFFECTIVENESS).
There are doubts on whether intervention through motivational interviewing related to tobacco use and tobacco dependence therapy in dental care would be effective. The effectiveness of intervention in dental care appeared in the Cochrane review. In the revised version, the odds ratio for cessation between smokeless tobacco intervention and smoking cessation intervention were 1.70 and 1.74 respectively. The combined odds ratio was 1.71, all showing significant results. Therefore, intervention in dental care on a global scale would effectively increase the number of people who continue cessation. The main methods of intervention in dental care were dental inspections [TN: author changes terminology here] and counseling. A smoker can directly observe the effects of smoking on the mouth; the applicants used this to assess the effectiveness of two intervention approaches, i.e., using minimum verbal explanation along with images showing the basic effects of smoking on the mouth; and adding a technical explanation to a very brief intervention where the patient conducts a self-evaluation. The approaches were assessed based on whether the subject increased smoking activity, reduced smoking activity, or made a plan to quit. There were two groups: an intervention group of 248 people and a non-intervention group of 249 people. The intervention group viewed a 24-topic color chart and the non-intervention group who received simple advice. The differences were significant: 9.1% and 3.3% (odds ratio 3.1) made a plan to quit; 22.6% and 17.7% (odds ratio 2.1) increased smoking activity; and 7.7% and 15.8% (odds ratio 0.2) reduced smoking activity. Moreover, experiments were also conducted to determine the possibility of using medical care grade drugs in focused intervention. The cessation rate determined from the amount of nicotine in sputum at three months was 51.5%, at six months was 39.4% and one year was 36.4%. These results were identical to the cessation rates achieved through cessation treatment by a physician according to the intervention study accompanying the introduction of insurance coverage for cessation treatment. However, Japan does not recognize dentists conducting treatment for nicotine dependence using medical grade drugs, and thus effective cessation treatment will require cooperation between medical and dental care. The introduction of public tobacco dependence treatment in dental care by the NHS in the United Kingdom has been proven effective. In this setting, the short intervention takes place within 30 seconds. These results have indicated the need for tobacco intervention in Japan that combines motivational interviewing and cooperation with the medical community to intervene in dental care regarding tobacco use.

(4) Dental treatment staff and dental patients are receptive to tobacco intervention in dental care (ACCEPTANCE). Although tobacco use intervention in dental care is effective, there are questions on whether dental treatment staff would be receptive to tobacco use intervention, and whether

patients would be receptive to the dental treatment staff providing tobacco intervention. In 2011, 2,356 dentists were invited to participate in a study; 150 professionals were selected from the 198 professionals who applied to ensure regional diversity. The purpose was to study the receptiveness of dentists and the patients who smoke to cessation intervention. A survey was also conducted to investigate the changes in perception before and after reading the research briefing, and 75% of the dentists responded. Over 80% of patients were receptive to a smoking related examination as well as evaluation of their awareness regarding cessation. Over 70% of the dental patients responded the desire to hear methods on how to quit, and within these results a majority of 35% were interested in a medical recommendation, 30% in cessation drugs, and 25% in behavioral therapy. While the need for cessation support was quite high at 60% there was remarkable variation regarding the method. Over half of the smokers responded that the description of the risks to the mouth lead to the desire to quit, while about 30% were influenced by the effectiveness of dental treatment.

Dentists were more concerned of the influence on the effectiveness of treatment than on health risks by about 10 percentage points. While limited to the results of participants in the study, a high proportion (70%) of the dentists reported being aware of the smoking status of their patients; at the same time a lower proportion of dentists (20%) were aware of whether patients had a desire to quit smoking. On the one hand, patients were very receptive to questions about smoking; however only about half responded that it is natural for the dentist to be inquiring about the desire to quit smoking. Patients were given a patient education panel that served to increase awareness that smoking influences the effectiveness of treatment and vastly improved information [available] on methods of cessation support and introduced medical cessation treatment. Viewing patient education materials also strengthen the recognition on how to improve the effectiveness of treatment. Only a few of the dentists that began to implement cessation intervention assess that receptivity was high among patients. First, the above suggests that one particular scenario for increasing the popularity of tobacco intervention may be to introduce cessation intervention mainly in reference to treatment effectiveness and expanding the discussion into the risks to health. This would be effective for training in Japan. The above results also prove that dentists and dental patients are highly receptive to tobacco intervention in dental care. [Source:] Cancer Research Development Costs (2010) which studied the building of a strategic framework for tobacco control policy and a mechanism for policy recommendations, implementation and assessments.

(3) A fact-finding study is currently underway to investigate the level of practice of tobacco intervention and dental care, the level of implementation of tobacco intervention in gap dental care [TN: Not sure if this pertains to oral surgery or skill gap can find no relevant hint], and training of students just entering dental college and dental health school who will be the future of dental care.

[1] The School of Public Health conducted a questionnaire survey on cessation intervention among 10,000 members of Dental Associations in 47 prefectures

in 2008 to 2009; 5879 professionals responded. A little over twenty-eight percent (28.7%) of respondents asked patients about smoking status. The level of cessation intervention was insufficient; only 21% of these respondents followed up with intervention. The intervention was merely a description of instructions; only in a few cases did respondents use drug therapy or intervention that encouraged patient self-evaluation. Some barriers mentioned were the lack of time and manpower, the lack of return, and the lack of opportunity for education and practical training. This report [TN: project] will (1) establish a practical training and education system; (2) introduce cessation intervention for dental hygienists; (3) seek to develop the awareness of dentists; and (4) create a systematic route for the patient from the dentist to the physician. [2] The Japanese Society for Dental Health will conduct opinion polls and fact-finding surveys on tobacco intervention education in dental colleges and dental health schools on two separate occasions. A survey of dental colleges in 2005 revealed that only 14% of dental colleges provided cessation intervention training. A 2014 survey established that a majority of educational institutions provided courses that allowed students to acquire information regarding tobacco intervention; however, only 20% of dental colleges and 30% of dental health schools provided clinical training. Despite that, the majority of educational institutions recognize the need for clinical training itself and the preparatory training and faculty development required to implement clinical training.
Consequently, given the necessity of tobacco intervention in dental care in Japan, there is a very urgent need to move from mere dental examinations and corresponding pre-graduate training to the integration of standardized and effective dental care tobacco intervention in dental examination and the establishment of pre-graduate training towards that end.

3. Target Audience

(1) Dental treatment staff

(Objective 1) On receiving training in the WHO Brief Tobacco Intervention Program, the dental treatment staff will begin to routinely practice tobacco intervention for patients receiving dental care exams. Therefore, it will be necessary for training to be accessible. The training can be made accessible through offering workshops, using an e-learning platform, and a mixture of both modes. Trainees will be recruited by two routes. First, by progressively posting invitations to participate in the academic journals or member mailing lists of the 10 academic organizations connected to dental colleges that actively pursued tobacco control policy. When possible, a short training session or the opportunity to use the e-learning platform may be offered together alongside the general meetings of these academic organizations as a means of skills development. Second, by posting invitations to participate in workshop style training sessions offered in various regions in the academic journals of the Japan Dental Association and the Japan Dental Hygienists' Association. The workshop style training sessions may also be an opportunity to increase awareness of lifestyle diseases or provide a seminar on new techniques in preventative oral care. Participants may also publish comments on their experiences at the workshop. This will encourage other dental treatment staff

who initially had no interest into active participation. Trainees will be able to learn techniques for counseling patients having difficulty quitting, and will be regarded as professionals who are highly conscious of preventative care, and will thus improve the rate of acceptance among patients. It has been suggested that smokers often seek examination with the appearance of acute symptoms. It is important to ensure that patients do not avoid dental examinations due to interventions. Helping patients quit will likely improve the acceptance of intervention. Therefore, the dental treatment staff who are trained and practice brief tobacco intervention at the dental clinic will reap the benefits of the program.

(2) Dental care patients

(Objective 2) Smokers are the primary target audience among the patients examined at a dental clinic. The WHO Program increases the cessation success rate by ensuring that intervention to stop tobacco use takes place for all smokers and all smokers receive support when quitting.

Intervention increases motivation among smokers preparing to quit as well as smokers not ready to quit and increases awareness regarding cessation. Therefore, this can increase the overall cessation rates for the entire dental clinic. The WHO program also targets non-smokers and provides brief intervention on avoiding secondhand smoke. This addresses another potential target audience: children in families with smokers and non-smokers living with smokers. This audience may encourage the person they live with to quit. Therefore, the health effects of passive smoking can be minimized not only for the smokers receiving the dental exam but also for non-smokers. Consequently, many of the patients will benefit from the project by being examined at the dental clinics that employ the dental treatment staff that will receive training.

(3) Dental colleges and dental health schools

(Objective 3) Reports on the challenges of tobacco intervention in dental care in developed countries always suggests that the lack of training becomes roadblock to cessation intervention in dental care. Dental diseases are a common risk factor (alcohol intake, diet, and exercise) for lifestyle and noncommunicable diseases. And while lifestyle intervention training can be expected in dental care, it is also expected that this will include tobacco intervention. Dental college and dental hygienist training already involve a full curriculum. While it would be difficult to add to this curriculum, on every important first step would be to have the faculty (particularly the clinical training faculty) at these institutions learn brief tobacco intervention programs as a part of lifestyle intervention. A review of tobacco intervention training will include reports on positive results of training at the educational institutions involved; this will also include opportunities faculty development staff to meet and work together to resolve issues that arise in the training. The faculty given the role of trainers will develop into lecturers responsible for faculty development of the respective institutions, and these lectures have the potential to enrich and disseminate clinical training in brief tobacco intervention in the pre-graduate curriculum. Accordingly, the dental colleges and dental health schools in Japan will gain faculty with pioneering training skills in behavioral change intervention methods and will thus benefit from this project.

4. Project Plan and Methods

[See separate file for translation of graphic]

(1) Devise an intervention program based on the WHO Brief Tobacco Intervention Program

[1] The applicant was involved in the creation of a simple three step brief tobacco intervention in dental care protocol recommended by the WHO, and in July 2017 the recommended program was published on the WHO website for dental care professionals. The program recommended by the WHO has two intervention systems 5A-I for smokers and 5A-II for non-smokers. The smoker intervention system (5A-I) also includes using the 5R's of intervention to interact with smokers who were not prepared to quit. It is therefore possible to understand which intervention system to use with the patient during a routine examination, and use the medical interview time to conduct the appropriate intervention in a short time. The protocol adopted allows the intervener to use theories and skills of brief motivational interviewing to respond to the patient's resistance on the basis of a two-dimensional assessment of the stage of change (i.e., readiness to quit).

[2] The applicants have led the smooth adoption of this program that shifts focus from prevention to the effect on treatment. Applicants will now revise newly presented in WHO program to be compatible with Japan's national health insurance system, without changing the basic structure of the program. First, Japan's health insurance system of regulations for ensuring against illnesses, where claims for treatment of dental in illnesses can be made. However, preventative measures are not covered. Therefore, considering the 5R's and in particular the questions regarding the necessity and motivation for cessation i.e., relevance, risks, and rewards, the approach will be to first demonstrate the effect on dental treatment and then ask about the effect on health during intervention. The intervention then proceeds to step (2) Ask in A-I [sic, 5A-I]. The dentists and dental hygienist's familiar with intervention will eventually practice the WHO program without being limited to whether it is therapeutic or preventative.

[3] The United Kingdom, which has reduced intervention time and improved recognition for intervention, introduced a brief tobacco intervention system that takes no more than 30 seconds. This system supposes that after

30 seconds the patient will start to resist. The applicants will implement a method that additionally shows the patient oral images to visually communicate the effects of smoking on the mouth. The effects on the mouth will be presented using a color panel, and this image will also be provided online. The maxim of "show, don't tell(*)" holds true; therefore, it is likely that this approach will increase the patients recognition of the effects of smoking and reduce the explanation time. [TN: (*) Original maxim lit. "One can say more with a look than with ten thousand words."] In reality images of the oral cavity are often used where color images are provided in the warnings on tobacco packaging.

[4] Pilots of the WHO intervention program [TN: author changes term] for quickly understanding the smoking status of a patient were conducted at university hospitals in Japan and Thailand. The results were inadequate.
A system that clarifies whether a patient smokes is a necessary requirement for tobacco intervention. Private practice dentists use a paper-based clinical records system; therefore it is quite easy to introduce a process for clearly indicating smoking status by adding a sticker to the medical record, for instance. On the other hand, University hospitals use electronic records; and even in the trial in Japan the medical-dental hospital electronics records system had no built-in means for including the patient's smoking information. Therefore it was not possible to determine a patient's smoking status from the electronic record. Not being able to determine a patient's smoking status is definitely a problem when trying to provide brief intervention during a routine exam. This project will make revisions to current software, however introducing a system dedicated to cessation information is not likely to become popular. There are an increasing number of older dental patients, many of whom are taking a variety of drugs at different dosages. This information and information on whether the patient is receiving dental treatment is essential information in a routine dental exam. Therefore, this project will change the software so that the system presents dosage and smoking information at a glance. Such a system is more likely to be developed and spread to other dental colleges. The availability of smoking information will, in time, expand to include noncommunicable diseases and other common risk factors such as alcohol intake, diet, and exercise.

[5] Although early adopters may be able to provide cessation intervention in clinical practice without issues questions may still arise during the initial introduction period. During the pilot of the WHO program, practitioners distributed free education materials for patients to take home, such as cessation self-help guides (Nakamura, M., et.al, Houken, Tokyo) and cessation pocket manuals (Murata, H., Houken, Tokyo). The distribution of these materials will aid in the smooth introduction of the program in the following two ways. First, the dentists and dental hygienists who describe the self-help guide to their patients will at the same time learn all the basics of cessation. The cessation pocket manual, which takes the form of a journal, also gives the dental care professionals a chronological record of when the patient decided to quit smoking, the patient's act of quitting smoking and any points that need attention. Second, these materials are distributed at no cost, and can therefore help to reduce stress of either the smoker receiving

intervention or the dental care professional who just started practicing intervention.

[6] Pilots of the WHO program have successfully standardized cessation intervention in dental care in the United States of America and the United Kingdom. The World Dental Federation (FDI) and WHO have created an advocacy guide on recommending cessation intervention in dental care. There is no national standard in Japan for providing intervention. In July 2017 the WHO Prevention of Noncommunicable Diseases Programme published a monograph on brief tobacco interventions in dental care(*), jointly created by the oral health programme officer and the tobacco free initiative programme officer; the same organization also published a patient and dental care professional guide. Consequently, this project will be utilized as the first worldwide full-fledged deployment of the program.[TN:(*)There is a monograph and a toolkit: WHO monograph on tobacco cessation and oral health integration; and Toolkit for oral health professionals to deliver brief tobacco interventions in primary care.] Nineteen private dental practices and four university departments participated in the training that was a part of the pilot program in Japan. Of these participants, 17 dental clinics (89%) and the Periodontitis Department of the university completed the program. There was marked improvement in the knowledge, consciousness, and confidence of the dentists and dental hygienist's participating in the training. Over a period of intervention of four months, a per clinic average of 9.4 patients received intervention 4.4 times at the dental clinics. Among these, 88% of 150 people received intervention multiple times and after three months, the one-week cessation continuation rate was 12.7%. This was an excellent result as the one-week cessation continuation rate was 3 to 4 times higher than the natural cessation rate.

(2) Broaden the foundation of the dental college

[1] Development of e-Learning (J-STOP) content Academic, dental, and dental hygienist associations with an interest in tobacco control policy, and clinics that participated in the WHO pilot program will be invited to help develop and launch the e-learning content (J-STOP). [TN: From this point subheadings and paragraph appear to run together in the Japanese; I have put them on separate lines for easier reading]. More specifically, a video of a model clinical case will be recorded for instant showing the dental chair and demonstrating in what treatment setting and in what manner and what timing the color panel may be shown or the conversation may be started. After the project has started, model cases (successes and failures) will be collected and the e-learning content will be expanded and updated with the model cases as well as the newest information regarding smokeless tobacco. Learner feedback will also be solicited. An e-learning and workshop promotion video will also be created to promote awareness of the project.

[2] From training at Fukuoka Dental College to dental colleges nationwide Dental colleges also serve a central role in community medicine; am therefore the establishment of the WHO program at a university attached hospital is essential to bring the program to colleges throughout the nation.

The Fukuoka Dental College Medical and Dental Hospital has a variety of clinics: internal medicine; surgery; psychosomatic; ear nose and throat; ophthalmology; dermatology, and pediatrics. Thus the hospital has the environment for building medical-dental cooperation in tobacco dependence treatment. Faculty development will focus on periodontics and oral surgery given the connection between the integrative care performed by private practices (the model case) and smoking. As previously mentioned, a part of this project will involve revising the software of the electronic records system to provide smoking status, which is a prerequisite for tobacco intervention; this will significantly improve the ability to understand smoking status. Subsequently, the project will seek to increase the scale together with establishing cooperation between medical and dental care. The college also occasionally offers lifelong learning courses in the inner city (near Hakata station). Thus in addition to a normal training course, an expanded course may be offered in intermediate level intervention counseling. This intermediate level course may be offered to dentists and dental hygienists who acquired tobacco intervention skills as well as skills for dealing with patients having difficulty quitting.

(3) Nationwide training project (Workshop training and e-Learning) There has been research in developed countries regarding the paths for disseminating a postgraduate training and lifelong learning program. This research often compares the efficiency of offering workshops and providing e-Learning for targets to obtain clinical skills; there has been no conclusions drawn as to which path is more useful. Therefore, this project will aim to spread the WHO Program through a combination of these two methods.

[1] Training of workshop trainers

The trainers and facilitators (collectively "trainers" below)for each of the different workshops will be trained during the preparatory stage at a workshop style meeting. Trainers will be, for example, dentists and dental hygienists who have taken the J-STOP cessation treatment course (Oral Health Societies Joint Committee on Realizing a Smoke-free Society), members of the Smoke Free Policy Promotion Committee in the Japanese Society for Dental Health, dentists and dental hygienist who participated in the WHO brief intervention brief tobacco intervention pilot program. In order to attain Objective 3, trainers will also be invited from among a wide variety of dental college and dental health school teaching staff. A specialist medical officer in cessation intervention will be hired from the WHO.

[2] Workshop style training and E-Learning training

The workshop style trainings will be offered in two forms: concurrently with academic conferences and as one day community workshops where attendees assemble at a particular location (for instance, the dental medical Association office) designated by the community expert.

A. The trainings (e-learning hybrid) offered concurrently at conferences will primarily be lectures, with the e-Learning portion offering a simulation experience to build participant's confidence. These kinds of trainings will basically be offered at the general meeting of the academic association.

B. The one-day community workshops will be offered with a schedule and content similar to the workshops offered during the pilot WHO program. The WHO pilot program did not include a module on avoiding secondhand smoke since training was conducted with simultaneous interpretation. Now there is some flexibility to add this module. Note that cessation intervention does not incur examination fees; therefore, it is expected there will be fee participants willing to take on the expense for the one day of training offered by the one-day community workshop. Therefore, popular topics such as the latest in preventative care or managing the dental illnesses related to smoking of the common risk and the like may be selected to entice professionals to participate in the training. The conferences and regional dental medical associations willing to help offered training will be requested to show a short promotional video for the e-learning training to increase the number of professionals participating in the e-learning.

In preparing to hold the Olympics, the IOC and the WHO have made a pact for a tobacco free Olympics; the introduction of preventing exposure to secondhand smoke has increase awareness of smoke free policy. Consequently, there will be an increasing number smoking awareness events jointly held by professional organizations or municipalities, and smoking reform organizations. Therefore, the aim is to invite regional dental associations to cooperate, and thus conduct the workshops together with these events. The aim is to offer the training at conferences held in Tokyo, Hokkaido, Miyagi, Fukushima, Ibaraki, Saitama, Chiba, Kanagawa, and Shizuoka. Tokyo, and Hokkaido with its high prevalence of tobacco use will be the regions of focus.

E-learning will be conducted using the J-STOP platform (operated by the Japan Medical-Dental Association for Tobacco Control). J-STOP occasionally allows short lessons on oral health; however, the lessons are generic and based on a tobacco dependence guideline developed in the United States of America. The WHO program is a development of the US guideline.

(4) Project organization monitoring and proposals on expansion of upcoming medical technology To ensure the smooth running and expansion of the project, an ad hoc project organization committee will be set up within the Japanese Society for Dental Health to monitor scratch that to provide monitoring and feedback on the project and to investigate systematic implementation of tobacco intervention in dental care. Committee members will attend a regular committee meeting held twice a year with one of the meetings for discussion and the second provisional meeting held using the video conferencing system of the Japanese Society for Dental Health. While the e-learning training will use this J-STOP platform, the operation of the platform will be outsourced and thus requires participation in J-STOP operation meetings. Given that the results of this project will be those of the first nationwide implementation of the WHO program, it will be necessary to communicate these experiences internationally. The project will seek out assessment from global experts and attend global symposium to exchange ideas, create a global network, and thus contribute to spreading the program

globally. The applicants will attend an early adopter network training event to be held in 2018. A promotion and briefing video will be published and made freely accessible.

5. Evaluation Design

The research plan will be submitted to the research ethics committee of Fukuoka Dental College, Fukuoka College of Health Sciences, and Fukuoka Nursing College, so that the evaluation data may be used as research data. The research project will begin once the research plan is approved. The predicted variations in the project will be as follows. (1) Three types of training will be established; the cost versus the effect and increments will be measured. The target value is set to 80% of the planned participation capacity allocated in the budget. (2) In terms of behavioral change, the target is for a 70% implementation rate among dental clinics; in a particularly favorable environment, the target value for cessation achievement rate is set to 70% of the value set in the previous pilot of the WHO program. Given that there is no baseline value for previous research into intervention to assist in the avoidance of secondhand smoke, the target will be set at implementation. (3) In terms pre-graduate training, the target is set to an increase of 20% of the training status from the 2014 nationwide report. (4) Systematic and global implementation are medium and long-term goals, therefore in this project the goal will be to begin implementation. These evaluation results will be announced in conference presentations and the bulletins of participating support organizations. The results will also be disseminated and expanded through presentations at international conferences and in exchanges with experts.

(1) Training The changes in skill before and after training will be compared for the three different types of training and the data linked to whether or not the trainee began intervention, and the factors for starting intervention will be investigated. The basic attributes will also be examined during this investigation.

[1] Workshop-style Training (One day community workshops) Base value: number of offerings and number of participants, distribution of workshop locations, particularly locations where the Olympics will be held

aggregated each month and published online as a graphic; [use in] monitoring project progress and improving participants skill: evaluate before and after training.

Training targets (established by the WHO) 9 Questions (Knowledge, Awareness) measured on the Lincart Scale
1. Can you describe tobacco control from a dental care specialist point of view and the role of tobacco dependence treatment?
2. Do you understand the smoking status and concerns of your dental examination patients?
3. Can you describe the benefits of cessation on [a smoker's] health and its socioeconomic effects?

4. Can you describe tobacco dependence, psychology and behavior, and societal factors?
5. Can you provide examples of effective tobacco dependence treatment?
6. Do you understand and routinely practice brief intervention (5A's and 5R's)?
7. Do you have the means for assessing the nicotine dependence level?
8. Can you provide examples of effective cessation drug therapies?

A five-point visual analogue scale (VAS) established by the WHO will be used to survey perceptions on skills acquisition and effect of behavior.

What level of clinical skill do you have in cessation intervention? Place a mark at the position along the line that best describes your level.
1. Ability to use information on the effect of smoking on health in clinical pathology
2. Ability to easily assist in attempts to quit (using 5A/R)
3. Ability to easily assist with quitting using motivational interviewing (using 5A/R)
4. Ability to easily assist with advice on avoiding secondhand smoke (using 5A/R)
5. Assessment of process for giving advice on cessation drug therapies and reference information on external [medical] facilities : survey via questionnaire to trainees

aggregate trainee skill and process evaluation at each workshop, and use in improving workshops

[2] e-learning Base value: number of participants, number of graduates, distribution of participant location, particularly locations where the Olympics will be held

aggregated each month and published online of the graphic; [use in] monitoring project progress and improving
participants skill: workshop style training (one day training) evaluation by participants and the same kind of process evaluation: via online survey of trainees

aggregate trainee skill and process evaluation every six months, and use in improving operations

[1] Workshop-style Training (Conference and e-learning hybrid) Base value: number of offerings and number of participants, distribution of workshop locations, particularly locations where the Olympics will be held

aggregated each month and published online as a graphic; [use in]monitoring project progress and improving participants skill: similar to participant workshop style training (one day training), however assess before training and after e-learning process evaluation: via online survey of trainees

aggregate trainee skill and process evaluation every six months, and

use in improving operations

(2) Behavioral change

[1] The dentists and dental hygienists who have participated in training will be mailed a survey to investigate the intervention implementation status, workload, and level of satisfaction. Facilities that have not yet introduced intervention will be asked about causes for the barriers to introduction. Professionals will have a paper questionnaire to survey the various factors that may arise when introducing a new type of work and thus will be asked about workload on the level of satisfaction. Questions will be classified in three categories: workload (mental, physical, time demands, overall effort, individual action, level of dissatisfaction); experiences at work (it confidence in individual compatibility, confidence in team compatibility, level of influence to work, comprehensive level of satisfaction in work); and consciousness toward work (anxiety toward emotional work, burden of becoming emotional through the work day, burnout at work).

[2] Cessation: similarly to the WHO pilot program participants will be asked to record the interventions for two months after interventions start. The participants will be mailed a survey to investigate the one-week continuous cessation state of a patient three months after the patient's intervention. The target is to have five persons per facility.

[3] A paper survey will be mailed three months after intervention starting intervention to investigate awareness and actions regarding avoiding secondhand smoke and whether the family is smoke free. The target is to have five persons per facility.

(3) Pre-graduate training will be compared with the same metrics used in the 2014 Japanese Society for Dental Health Survey. The survey was concerned with cessation intervention:

Lectures (12 questions); training that simulates providing personal services (11 questions); and technical practice preparatory education, descriptions of smoking and health surveys, participatory clinical training, awareness of cessation intervention clinical training (12 questions). The 2014 report revealed that there was a little clinical training; the changes between 2014 and status immediately after implementation of the project will be measured.

(4) In order to measure of the systematic and global implementation, and globalization, experienced trainers will be provided a paper survey requesting an assessment of current needs and status. Experts abroad will be asked their opinion: in Japan on the adoption into the healthcare system, and abroad, an assessment of intervention by dental treatment staff in dental care in countries in Southeast Asia and Eastern Europe currently implementing the process and on the global process. [TN: The original reads as something is missing; I can find no hints in surrounding text].

Detailed Work Plan and Schedule of Deliverables (could not be included in the 10 pages)

(1) The project term will change from the period listed in the LOI to a two year term: January 1, 2018 to December 31, 2019.

<January through 2018>

(1) Prepare foundation for Corporation between dental care and medical care in Fukuoka Dental College Medical and Dental Hospital (electronic records, renovation to incorporate an interactive dental chair system, three months). Begin training in the improved clinical practice environment, and gradually expand throughout the hospital (Applicant dental hospital -> Peridontics -> Oral Surgery).

(2) Develop dental care intervention content for workshop training and e-learning (i.e., in what situation, at what timing to start brief intervention); begin offering e-learning development workshop, transition to J-STOP platform.

(3) Submit application to engage WHO cessation treatment medical officer, and prepare training of trainers program.

<April through June 2018>

(1) Hire a WHO cessation treatment medical officer to educate dentists, dental hygienists, and other members of associations promoting smoke free policy with prior experience in smoking cessation intervention as trainers; build capacity for future trainers of the program.

(2) Recruit training participants through dental and dental hygienist association bulletins.

(3) Investigate a standard critical path for four dental clinics to cooperate within the hospital and outside the hospital, and establish a dentist's referral and introduction protocol.

<July 2018 through September 2019>

(1) Plan trainings to occur concurrently with scientific meetings of participating academic organizations and with community smoking awareness events and dental association events.

(2) Advertise e-learning training among members of participating academic organizations, and members of dental associations and dental hygienist associations; offer e-learning training.

(3) Coordinate smoking cessation intervention in dental departments throughout the [Fukuoka Dental College] Dental and Medical Hospital, and

train students (i.e., future intervention specialists) in smoking cessation intervention and continually offer training throughout the region. Continue the project as a webinar after the project period.

(4) Collect and record information on trainings occurring during this period.

<October 2019 through December 2019>

(1) Collect success and failed model cases for feedback to relevant project members.

(2) Evaluate specifics of successful and failed model cases, and revise e-learning training (organize e-learning revision workshop). Also provide this information for the pre-graduate education model curriculum.

(3) Share information on use cases in Japan with smoke free promotion organizations in abroad to facilitate expansion of the program worldwide.

(2) List of Deliverables and Schedule of Complete

Deliverable	Schedule of Completion
1. Training of Trainers Program	The Training of Trainers program will be based on the WHO Basic Program and will be completed three (3) months after project start.
2. WHO Recommended Brief Intervention in Dental Care Program (including patient education materials)	Initial deliverable will be ready within six (6) months of starting the project; the deliverable will be finalized in an e-learning revision workshop held in conjunction with the end of the training phase
2. The above training program and [TN: no additional text in this block in the original Japanese]	
3. e-Learning Program	The initial deliverable will be completed at an e-learning development workshop; after running the program, the final deliverable put at a revision workshop.
4. Model training curriculum for dental college and dental health school pre-graduates	The curriculum will be completed at the e-learning revision workshop (or so-called debriefing).
5. Project Results Report (International version)	This report will be created in anticipation of speaking engagements overseas, or exchange with international researchers