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A CASE STUDY OF BARRIERS TO IMPLEMENTING A SMOKE-FREE POLICY IN COMMUNITY HEATH SERVICE CENTERS IN WUXI, CHINA

By

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A CASE STUDY OF BARRIERS TO IMPLEMENTING A SMOKE-FREE POLICY IN COMMUNITY HEATH SERVICE CENTERS IN WUXI, CHINA

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Peking University Health Science Center

2007

Thesis Committee Chair: Cheng Huang, PhD

An abstract of
A thesis submitted to the Faculty of the
Rollins School of Public Health of Emory University
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Abstract

A Case Study of Barriers to Implementing a Smoke-Free Policy in Community Heath Service Centers in Wuxi, China

By Changwei Li

Background: As the world's largest tobacco producer and consumer, China faces the most serious and urgent public health problem in the world—tobacco use. Health workers are believed to play an exemplary role in tobacco control, but a sampling survey in 2009 in Wuxi showed that 38.7% of the male physicians smoked, and some even smoke in the clinics. Thus, from May 2010, Wuxi developed and implemented a smoke-free policy in 47 pilot healthcare institutions through its Tobacco Free Cities–Starting with the Health Care System (TFC–SFHCS) project.

Objective: This research examines the objective barriers existing in community health service centers (CHSC) and subjective barriers perceived by staff members, patients, and visitors.

Methods: Data from a baseline survey and intercept survey collected by Wuxi's TFC-SFHCS project were analyzed using SAS and Excel.

Results: High prevalence of smoking among male staff members and second-hand smoke were found in CHSCs. Inpatient clinic physicians and security staff had the highest smoking prevalence. Smoking prevalence declined as education level increased. Staff members usually smoked in rest rooms, toilets, outside the building, in their offices, and in hallways. Physicians and nurses received very little training on cessation and were unprepared to provide cessation service to patients. The will of high-level leaders in the CHSCs and binding force were important factors to implement smoke-free policy successfully. Patients and visitors preferred vivid tobacco control publicity, such as cartoons, and eschewed text format publicity.

Discussion: The tepid willingness of political leaders, especially high-level leaders, with regard to tobacco control, health professionals' poor knowledge of the harms of smoking and second-hand smoke, health professionals' lack of cessation training, the weakness of the current policy and tobacco control publicity constitute the barriers to controlling tobacco use in CHSCs. The findings from this research can be used to improve the quality of the new smoke-free policy and its implementation in Wuxi's CHSCs, and will result in the reduction of smoking and exposure to second-hand smoke.

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The author also wishes to express his deepest appreciation to his mother, Catherine Xueke Zhou! Without her love, understanding and greatest supports in the world, the author cannot finish his study in US.

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List of Tables and Figures

Introduction

As the world's largest tobacco producer and consumer, China is facing a most serious and urgent public health problem, tobacco use, in the world [1]. Currently, 52.9% of Chinese men smoke [2]. Although China has ratified WHO Framework Convention on Tobacco Control, and commits to accomplish 100% smoke free in all the indoor workplaces, indoor public places and public transportations, etc. by the year 2011 [3], there is no national law or policy on tobacco control, and it needs tremendous endeavor to accomplish the commitment. Health workers play an exemplary role in tobacco control [4, 5, 6, 7], but the Global Adults Tobacco Survey (GATS) in 2010 shows that 40.0% of the male medical/health personals smoke in China [2]. Wuxi in Jiangsu Province, a rich city located in the southeast China, is also suffering from increased tobacco use as a consequence of economic development [8]. And the control of physicians smoking is big issue of tobacco control works in Wuxi. A sampling survey in 2009 in Wuxi shows that 38.7% of the male-doctors smoke and some even smoke in the clinics [9]. In addition, there is no tobacco control policy in all the healthy administrative departments in Wuxi. So starting from May 2010, Wuxi Centers for Disease Control and Prevention (CDC) developed and implemented a smoke free policy in 47 pilot healthcare institutes through its Tobacco Free Cities – Starting From Health Care System (TFC-SFHCS) project under the fund and helps from Gates China Tobacco Control Program, and planned to refine and spread the smoke-free policy to the whole health care system [8]. The pilot healthcare institutes include 24 health administration departments and 23 community health service centers (CHSC). Further studies are needed to access the implementation of the current smoke-free policy. I was an intern of the TFC-SFHCS project in Wuxi

Centers for Disease Control and Prevention under the director of Dr. Zaifang Chen (program director).

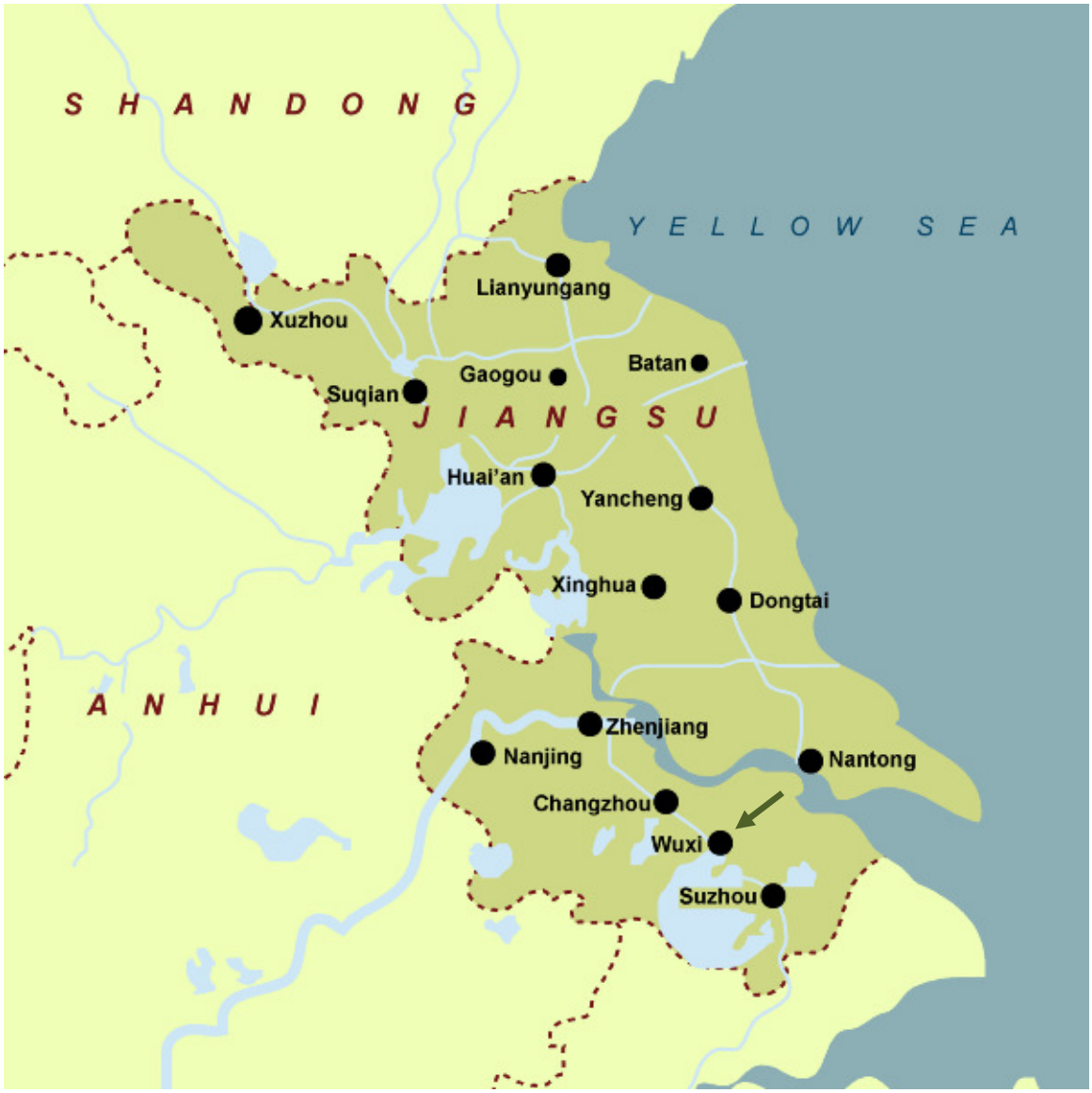
Problem

Wuxi is a city in Jiangsu province which locates in south China (see figure 1, figure 2). Previously, there is no policy intervention to control tobacco use in this city.

Figure 1: Map of China with Jiangsu province highlighted

(http://www.paulnoll.com/China/Provinces/)

Figure 2: Map of Jiangsu province with Wuxi highlighted



(http://www.chinatourusa.com/china-map/maps/jiangsu-s-ow-600x600.gif)

Studies in developed countries show that there are barriers and challenges to control tobacco use in smoke-free hospitals [10]. However, there is no policy intervention case in health care institutes under Chinese social and cultural environment for Wuxi's

TFC-SFHCS project to follow. The project needs to find out the potential objective and subjective barriers and challenges of implementing current smoke-free policy, in an effort to refine and promote the project through addressing these barriers and challenges.

Purpose

The study is to identify the barriers that impede the implementation of smoke-free policy in the pilot Community Health Service Centers in Wuxi, with a hypothesis that there are both objective and subjective barriers of implementing smoke-free policy in these Centers from both health care providers' and patient-and-visitors sides. The study will provide scientific support for Wuxi's current TFC-SFHCS project, and benefit Wuxi's future tobacco control work in providing evidence and valuable experience.

Research Questions

1. What is the smoking prevalence among community health service center staffs? How is their knowledge on smoking and second hand smoking harms? How are physicians' training on cessation and their preparation to provide patients with cessation services? How is staffs' attitude to smoking and smoke-free policy? What do they believe impedes the implementation of smoke-free policy?
2. What is the patients' and visitors' attitude to the smoke-free policy? What do they believe impedes the implementation of smoke-free policy?

Significance

Hospitals and health professionals play an important role to control tobacco use. Barriers of implementing a smoke-free policy in health care institutes are important for

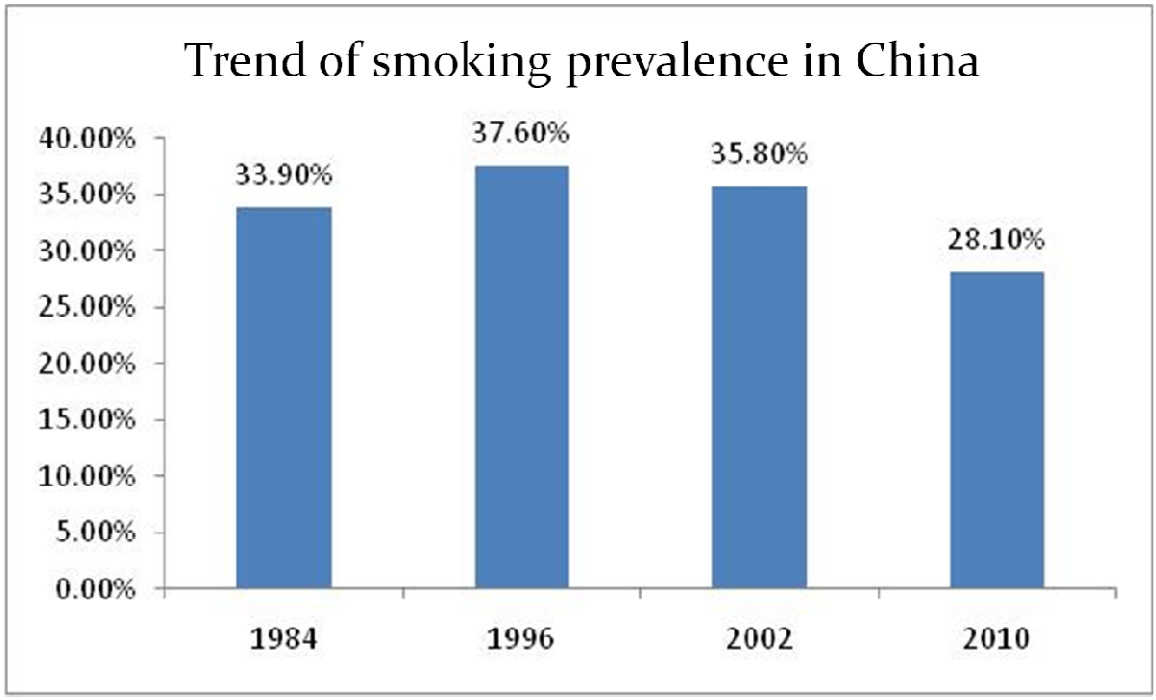
both policy makers and health care institute leaders when initiating and carrying out smoking interventions in China. This case study will identify potential barriers of implementing smoke-free policy in Wuxi's community health service centers under Chinese social and cultural environment. And this study will provide new information that will be relevant to China's future tobacco control effort in the health care system.

Literature Review

General prevalence of smoking and second hand smoking in China

China is currently the biggest tobacco consumer and producer in the world. It produces a third of the world's cigarettes [1]. Although the smoking prevalence has slightly declined in the past 20 years, the smoking prevalence is still very high (See Figure 2) [11].

Figure 3: Trend of smoking prevalence in China from 1984 to 2010.



Overall, 28.1% of the population currently smokes tobacco. The smoking population in China is as large as the entire US population. Most of the smokers are male. Global Adults Tobacco Survey (GATS) indicate that 52.9% of men in China currently smoke, and only 2.4% of women smoke [2]. On the other side, smokers' access to cessation service limit. In the GATS China fact sheet, 91.8% of the ever smokers who

tried to quit in the past 12 months did not use any quitting assistance, and as a result, 33.1% of them are still smoking [7].

Second hand smoke exposure is also very serious in China. According to GATS, 7 in 10 non-smoking adults are exposed to second hand smoke in a typical week, and 6 in 10 adults once notice smoking at the workplaces [2]. In addition, 180 million children below the age of 15 are exposed to second hand smoking [12].

Smoking prevalence among physicians and physicians' preparation to provide cessation service

Health care providers can play a key role in smoking cessation, and should act as models in controlling tobacco use [4, 5, 6, 7]. However, the smoking prevalence among health care providers, especially male providers, is very high in China. According to GATS survey in 2010, about 40.0% of the male medical/health personals are current smokers [2]. Historically, the smoking rates among male physicians rose to a peak around 1996 when about 61.3% of the male physicians smoked, and declined slowly to 58.0% in 2005, and 40.0% in 2010 [13]. Even in China's capital Beijing, the most developed place where medical personals are well trained, male physician smoking in hospitals is very common. A survey in Beijing in 2007 indicated that some 52.05% of the male doctors smoked. The same survey also showed that about a half of the smoking physicians once smoked in front of their patients, a quarter of them smoked in front of their patients very frequently, and about two thirds of them once smoked in hospital uniforms [14]. Besides the high smoking prevalence among male physicians in hospitals, the smoking prevalence among male health providers in community health service centers is also very high. A

survey in Beijing in 2009 showed that 35% of the male providers in community health service centers smoked [15]. In the mean time, health care providers were lack of tobacco control knowledge. The 2007 survey in Beijing showed that most of the physicians never heard about FCTC; and they only knew that smoking can cause lung cancer; and for other smoking caused diseases, for example, coronary heart disease, hypertension, diabetes, and cerebrovascular disease, very few knew [14]. Another clustered randomized survey of 3552 hospital-based physicians from six Chinese cities also suggested that physicians' knowledge on smoking and second hand smoking limited [16]. These three studies also suggested that physicians were lack of training and education on smoking-cessation techniques and counseling skills; physicians were less likely to inquire patients' smoking status; and even they advised patients to quit smoking, their expectation on the effectiveness of the counseling was low. In the 2007survey in Beijing's hospitals, results indicated that only 28.45% of the physicians would dissuade people from smoking inside hospitals, and less than 25% of the doctors could prescribe quitting recipes and quitting plans for smokers [14]. The physicians' gender and smoking status are important factors to physicians' likelihood of providing cessation services. A study in Guangzhou, China suggested that non-smoking female physicians were more active in advising patients on quitting, while male physicians, no matter their smoking status, were less likely to provide smoking cessation counseling [17].

Social environment of smoking and tobacco control

Smoking is widely accepted by the Chinese society and is widely used to net work in various situations. A market research in China discovered that the cigarettes, especially

prestigious ones, were gifted and smoked purposely for building relationships and social status in China [18]. Meanwhile, both smoking advertisement and anti-smoking publicity exist in China. The 2010 GATS China fact sheet shows that 7.4% of adults have noticed cigarette marketing on TV, 19.6% noticed any cigarette marking, and 46.4% noticed anti-cigarette smoking information on the television or radio [2]. Moreover, in popular films and TV plays that may encourage young people mimicking smoking, smoking scenes are very common. Among the 31 popular films and TV plays in 2008, there are 510 tobacco exposure scenes, totally 635.5 minutes [19].

Health and economic burdens resulting from smoking

Currently, about 1 million Chinese people died from smoking related diseases every year, which is the sum of deaths from HIV/AIDS, tuberculosis, suicide and traffic accidents. A retrospective research indicated that tobacco use caused 11.2% of total deaths in China in 1987, and more than two-thirds of these excess deaths occurred between the ages of 50 and 74 years. In addition, smokers at age 35 lost about 3 years of expectancy in comparison with never smokers [20]. Although the data this article used was collected in 1980s, but it can still reflect the health burdens attributed to smoking in China. Currently the leading causes of death among adults in China are vascular disease and cancers [21]. A review study suggested that one third of the total cancer deaths among Chinese men were related to smoking [22]. A national research in 2005 suggested that controlling tobacco use was one of the important strategies for reducing the burden of premature death among adults in China [21].

The economic burden of smoking is very heavy, too. And it kept increasing in China in the past decade and is expected to continue increasing as the national economy and healthcare prices grow. In 2008, the total economic cost of smoking in China amounted to $28.9 billion with a 69% increase comparing to the cost in 2003. Direct smoking-attributable healthcare costs were $6.2 billion in 2008 with a 48% increase comparing to that in 2003. Indirect economic costs in 2008 were $22.7 billion with an increment of 76% from 2003 [23].

Challenges of controlling tobacco use in China: policy and state tobacco monopoly

All the above descriptions imply that controlling tobacco use in China is in urgent need. Base on successful smoking prevention experience worldwide, tobacco control laws, policy, and increasing tobacco tax and price are powerful leverages to control tobacco use [24, 25, 26]. The more restrictive to implement smoking bans, the greater effects on smoking behavior change will happen at workplaces [27, 28]. However, there is no national level smoke-free policy or law in China. Even in city level, the tobacco control policy or regulation is not common. A research in 2007 showed that among all the cities above prefecture level (including), only 45.7% has tobacco control regulations [29]. Besides the lack of tobacco control policy, China's tobacco control work also faces many other challenges. The biggest challenge comes from China's State Tobacco Monopoly. State Tobacco Monopoly is the only legal tobacco company in China. It is owned by the state, and produces, distributes and sales tobacco products both domestically and abroad. State Tobacco Monopoly plays an important role in China's economy. In the first half of 2010, the total sales value of wholesale and retail tobacco trade amounted to $65.6 billion,

taking up 6.14% of the total retail sales of consumer goods, and it contributed $47.8 billion to taxes and profits with a 17.32% increase comparing to that of the same period in 2009 [30]. And the State Tobacco Monopoly is trying to intermingle themselves to China's tobacco control teams. Taking China' national tobacco control organization for example, the leader organization of China's tobacco control works is Ministry of Industry and Information, however, Ministry of Industry and Information is also leading State Tobacco Monopoly Bureau. So in China, tobacco producer is selected to control tobacco use. This situation has violated Article 5.3 of Framework Convention on Tobacco Control which China ratified in 2005. And this is also the reason why China was awarded "Dirty Ashtray Award" in the Fourth Contracting Parties Conference of WHO Framework Convention of Tobacco Control [31]. In addition, the Chinese Tobacco Industry has maintained very close ties with academic research institutions and universities to provide both research and training, which had affected tobacco control policy making [32].

Experiences and challenges of implementing Smoking-free policy in hospitals

International research can provide useful experiences for China's tobacco control works in hospitals and other health care institutes: Studies abroad suggested that physicians were more likely to ask about or advise against smoking if they believed that counseling about health harms helped smokers quit and that most smokers would follow smoking-cessation advice [33]; the creation of smoke-free workplaces was associated with reductions in smoking prevalence and cigarettes consumption [34]; and administrative support and inpatient smoking cessation services were independently and positively associated with the implementation of smoke-free policies in hospitals [35].

Although China's Ministry of Health has issued Ministerial Decision to make all medical and health institutions smoke free by the end of 2011, and in some big cities such as Beijing, Shanghai and Guangzhou, legislation requires hospital buildings to be smoke free since 2009, and a range of initiatives have been implemented to ensure the accomplishment of this goal by the end of 2011 [36], there are still challenges to achieve smoke free in hospitals and other health care institutes. One challenge is that physicians are lack of tobacco control training and knowledge as discussed above. Another challenge comes from the lack of smoke-free policy and its implementation. Challenge also arises from patients and health care institute visitors. Smokers with cigarette craving were more likely to smoke while hospitalized, and those with nicotine withdrawal symptoms were more likely to violate the hospital no-smoking policy [35].

Conclusion

Tobacco use is currently a big public health issue in China. Smoking and second hand smoking have brought heavy burdens to both Chinese health and China's economy. However, China's tobacco control works face challenges. Health care providers should act as models in controlling tobacco use in China, but health care professionals have high prevalence of tobacco use, and they are lack of knowledge on smoking and second hand smoking harms, and also they were lack of training on cessation services.

Methods

Wuxi's Tobacco Free City – Starting from Health Care System (TFC-SFHCS) is an intervention program between May, 2009 and May, 2010. In the program, a new smoke-free policy was developed and implemented in 47 pilot health care institutes in the urban area of Wuxi city. Among which, 24 were health administrative departments and the other 23 were community health care service centers. This study focuses on the community health service centers (CHSC). The 24 CHSCs were selected base on their sizes and locations. Specifically, the selection made sure that all the districts had CHSCs participate in the intervention, and the sizes of the CHSCs varied. TFC-SFHCS conducted a baseline survey at the beginning of the project, an intercept survey 3 months after the launch of the project, and will carry out a follow-up survey at the end of the project. The baseline survey and follow-up survey use questionnaires, and intercept survey use both questionnaires and in-depth interview. Baseline was conducted in all the target institutes, and intercept survey was carried out in part of the target institutes. The selection of institutes for the intercept survey also depended on the location and size of the target institutes. Basically the project chose at least one type of institute from each district.

Study design

Study population

This study use baseline survey and intercept survey data of community health service centers from Wuxi's TFC-SFHCS project. Participants of the baseline survey

were all the staffs in the 23 community health service centers. Participants of the intercept survey were staffs, patients and visitors from five CHSCs.

The eligibility criteria for participation in the baseline survey were:

1. Staffs in the target 23 community health service centers;
2. Voluntarily sign the consent forms of the survey;

The eligibility criteria for participation in the intercept survey were:

1. Participants must be staffs, patients or visitors in the 5 selected community health service centers;
2. No physical or medical conditions which could cause communication disabilities, such as critically ill, mental disorders;
3. Adults

Both baseline survey and intercept survey were conducted by Health Education Department, Wuxi CDC with the help of volunteers from Jiangnan University School of Nursing. Volunteers were trained on the survey process and questionnaire. In baseline survey, staffs were called on to gather in a large meeting room in each community health service center, and then a consent form and questionnaire were distributed to each staff. After staff read and signed the consent form, they would participate in the survey and answer questionnaires. Those who decided not to participate in the survey left the meeting room. During the survey, participants could raise their hands to indicate the survey organizer if they had question about the questionnaire, and the organizer or volunteers would come to the participant and answer the question separately without

disturbing the others. Participants could finish the questionnaire in 10 to 20 minutes, and dropped all the finished questionnaires into a box by themselves. After all the participants had finished the questionnaires, survey organizer collected the questionnaires from the box. For those staffs who could not leave their work sites, the survey organizer would send volunteers to the work sites to carry out the survey.

Intercept survey use mixed methods and had two parts. The first part was survey among patients and visitors. Volunteers went to the selected community health service center and randomly selected patients and visitors in the center to participate in the intercept survey. The selection took age, gender, smoking status into consideration to make sure that the participants had male and female, young and senior people, smokers and non-smokers. After patients or visitors consented to participate in the survey, they would answer a questionnaire first, and then answer open-ended questions asked by the volunteers. Volunteer took notes for the answers to the open-ended questions. The second part was survey among hospital staffs. The participant should at least include the leader responsible for tobacco control works in the community health service center, and physician and nurses from different departments. After staffs consented to the survey, they would answer a questionnaire first, and then answer open-ended questions asked by the volunteers. Volunteers took notes of the answers.

Data collection

All participants in the baseline survey provided information on demographic characteristics, smoking status, Knowledge, Attitude and Practice (KAP) on smoking and second hand smoking, and attitude to smoke-free policy. Physicians in the baseline

survey also provided information on their practice of providing cessation service to patients, and their perception on doctors' role in tobacco control works.

Both staffs and patients and visitors in the intercept survey provided information on demographic characteristics, smoking status, Knowledge, Attitude and Practice (KAP) of smoking and second hand smoking, attitude to smoke-free policy and cessation, and factor that they believed impede smoke-free policy implementation.

IRB

This study is secondary data analysis, and no human subject is involved, so I was not required to submit IRB.

Methods of analysis

Data was first transformed from EpiData format into SAS format. Data analysis was then performed using Statistical Analysis System version 9.2 (SAS Institute, Inc., Cary, North Carolina).

For baseline survey data

First, descriptive analysis was carried out for all the variables. Each variable was examined for extreme values, unusual values, and outliers. Normality was checked for continuous variables. Investigator also created a new variable, perception index. There were 7 questions in the survey about perception on physicians' role in tobacco control work. Each question has 5 choices with the extend increasing from "very much agree" to "very much disagree". Investigator assigned score to each choice, specifically, "very much agree"=5, "agree"=4, "Not sure"=3, "disagree"=2, "very much disagree"=1; then

calculated the sum scores of the 7 questions as the perception index on physicians' role in tobacco control work.

Chi-square tests were performed to compare the smoking prevalence, KAP on smoking and second hand smoking, and attitude to smoke-free policy between different age, gender, career and education groups. The 95% confidence intervals were calculated for all odds ratios. T-test and ANOVA tests were performed to evaluate the association between the perception index on physicians' role in tobacco control works and gender, smoking status, smoking behavior, staffs' KAP on tobacco use, physicians' cessation practice, and staffs' attitude to smoke-free policy. All tests of statistical significance were two-sided.

Odds ratio and 95% confidence intervals were calculated to measure the association between KAP on smoking and second smoking and education, gender and smoking status.

Odds ratios and 95% confidence intervals were calculated to measure the association between attitude to smoke-free policy and education, gender and smoking status.

Odds ratios and 95% confidence intervals were calculated to measure the association between cessation practice and physicians' education, gender and smoking status.

Perception index difference and 95% confidence intervals were calculated to measure the association between perception on physicians' role in tobacco control work and education, gender and smoking status.

For intercept survey qualitative data

Excel was used to summarize and count the answer keys.

Results

Population characteristics

Selected characteristics of participants are summarized in Table 1. Most of the participants in baseline survey were female (74.3%). The age of the participants ranges from 19 to 74, with a mean age of 39.2±12.1. The majority of the participants (80.8%) in the baseline survey were health professionals: physicians 28.8%, Nurses 26.4% and medical technicians 17.5%. The majority of the participants in the intercept survey were patients and visitors (63.8%).

Smoking prevalence and second hand smoking exposure

Selected results are summarized in Table 1. The smoking prevalence among staffs in community health service centers is 10.4%. The majority of the smokers are daily smokers (64.5%). Male staffs are more likely to smoke than female staffs (OR=657.1, 95% CI: 91.38, 4724). Among health professionals, inpatient clinic doctors have the highest smoking prevalence (22.5%). As education level increase, smoking prevalence decreases. The average cigarettes consumed by smokers are 11.1±8.4 per day. Among current smokers, 65.9% smoke inside the community service centers. The most popular places that smokers smoke are, order as ranking, resting room, toilet, outside the building, and office. In the other places, such as passage, stair cage, lobby, cafe, and public areas, there are also staffs smoking. Only less than half of the current smokers once tried to quit smoking. Only about 42% of the current smokers plan to quit in one month or 12 months. In addition, 42.3% of the staffs have noticed people smoking indoor in their workplaces.

Knowledge on smoking and second hand smoking

The information is summarized in Table 3. Most of the staffs (97.3% and 96.0% respectively) in community health service centers believe that smoking and second hand smoking can cause serious disease. When it comes to specific disease, most of the participants (92.8% and 96.1% respectively) know that smoking can cause children lung disease and adult lung cancer, but only 78.2% of the participants know that smoking can cause adult heart disease; most of the staffs know that second hand smoking can cause lung cancer, but only 78.7% and 80.9%, respectively know that second hand smoking can cause stroke and heart attack.

Attitude to smoking in the indoor workplaces

Most of the staffs (96.0%) believe that smoking should not be allowed in their community health service centers (table 1.). However, this attitude differs by smoking status. Smokers are more likely to believe that smoking should be allowed in their workplaces (OR=3.47, 95% CI: 1.70, 7.10). There is no gender difference on the attitude to smoking in the indoor workplaces (OR=1.73, 95% CI: 0.91, 3.32).

Attitude to smoke-free policy

Most of the staffs prefer stronger smoke-free policy in their centers, but there are still staffs preferring weaker policy or keep the current policy unchanged (table 1.). The preference to smoke-free policy differs by gender and smoking status (table 5.).

Perception of current smoke-free policy implementation

In the perception of all the staffs, current smoke-free policy is not well implemented in their community health service centers. Only 52.7% and 64.6% respectively believe that current policy is completely enforced among visitors and staffs (table 1.).

Physicians' preparation in providing cessation service

Most of the physicians in community health service centers have no training in cessation. As a result, only 40.6% of the physicians felt that they were well prepared in providing cessation services to their patients (table 1.). However, physicians who received training before felt more prepared to provide cessation service to their patients ($p<0.0001$) than those who received no training (table 6.). In the clinic practice, the most common methods available and physicians widely used are counseling and self-help materials (table 1.). Most of the physicians do not ask patients about their smoking status (table 1.).

Perception on health professionals' role in tobacco control

The results are summarized in Table 7. The range of perception index on health professionals' role in tobacco control is 7 to 35. The higher the index is, the more responsibility physicians believe. In the baseline survey, the physicians' mean index is very high (mean=31.0, std=3.49, median=32). However, smoking physicians' mean index is much lower than that of non-smoking physicians (difference=2.3, $p<0.0001$); male physicians' mean index is also much lower than female physicians' index score (difference=1.1, $p<0.0001$). There is no relationship between perception index and smoking behavior inside the community health service center. Physicians who believe that smoking can cause serious disease are more likely to take responsibility in tobacco

control than those who believe smoking cannot cause serious disease. Physicians who have received cessation training, formal or informal, will take more responsibility than those who have received no training. Physicians who believe that they have more responsibility in tobacco control works are more likely to dissuade their patients to quit smoking, more definite that smoking should not be allowed in the indoor workplaces and more likely to expect stronger smoke-free policy in their institute. But perception index has nothing to do with self quit plan among smoking physicians.

Intercept survey

The barriers listed by patients and visitor to smoke-free policy implementation are as follows:

- The policy is lack of binding effect, and there is almost no real punishment for smoking patients or visitors who violate the policy.

- Some smokers have low moral level. Although staffs try to dissuade people from smoking inside the community health service centers, some smoking patients and visitors are in low moral level, and keep smoking inside the centers without any shame feelings. The most frequent complaint from non-smoking patients and visitors and staffs are “Smokers are not in good morale. They always say smoking is their own business, and we should leave them alone.”

- The price of the cigarette is too low and there are so many cigarette venders around the community health service centers. It is very easy to buy a pack of cigarette. Some smokers, especially those who are additive to smoking just indulge themselves in smoking.

- Most of the current tobacco control publicity materials in the community health service centers are in text format, and not attractive at all. They wish the publicity is in more vivid format, such as cartoons, et al.

Barriers perceived by hospital staffs:

- Overall, the policy works well among hospital staffs because punishment will be carried out to staff violators. But the measures for patient and visitor violators limit. The only measure for smoking patients and visitors is persuading, however, some people with low moral level will not listen to them.

- Staffs feel embarrassed to ask the smoking patients and visitors to get out of the community health service centers.

- Their leaders are smokers, and sometimes they break the policy, and it is very embarrassing and unrealistic for supervisors to warn or punish the leaders.

  But staffs from three community health service centers mentioned that the smoke free policy and tobacco control works were well implemented in their centers because the top leader of their centers were female, and the leaders hated smoking.

Discussion

Smoke-free policy is one of the most powerful intervention strategies in controlling tobacco use. Wuxi's Smoke Free City – Starting from Health Care System project developed and implemented a new smoke free policy in the target 23 community health service centers, and carried out a series of behavioral interventions accompanying the policy intervention, such as training on tobacco use harms and cessation skills. Most of the participants in the baseline survey believe that the current smoke-free policy is not well enforced in their community health service centers. To study the baseline situation related to tobacco use and cessation among target population and identify possible barriers of smoke-free policy implementation will provide important information for the project.

Physicians' perception on their roles in tobacco control works is very important. This study indicates that physicians who perceive that they should take more responsibility in tobacco control work are more likely to dissuade their patients to quit smoking, more definite that smoking should be banned in the community health service centers, and more likely to expect a stronger smoke-free policy in their centers. However, this perception has little to do with self quit plan among smoking physicians.

Health professionals who smoke are a major barrier to cessation efforts [37]. Base on the descriptive analysis, the overall smoking prevalence is slightly lower than previous studies. But the smoking prevalence among male community health service center staffs is very high, and second hand smoking exposure among all staffs is very common, and this is accordant with previous researches. Binary analysis shows that smoking physicians

are more likely to believe that smoking should be allowed inside the community health service center. Since lack of physicians' support is believed to be one of the internal barriers to implementing smoke-free policies [38], high smoking prevalence potentially decline physicians' support to smoke-free policy. In addition, the study suggests that smoking physicians are less likely to take responsibility in controlling tobacco use. As a result, high smoking prevalence among male staffs acts as one barrier of smoke-free policy implementation.

Although most of the staffs know smoking and second hand smoking can cause serious disease, they only know that smoking and second hand smoking can cause lung cancer and lung disease, and not many staffs know that smoking can cause other diseases such as stroke and heart attack. This suggests staffs' limit of knowledge on smoking harms and second hand smoking harms. The study also shows that knowledge on smoking and second hand smoking is positively associated with physicians' perception on their roles in tobacco control works. So lack of knowledge on smoking and second hand smoking harms is another potential barrier of smoke-free policy implementation.

The study suggested that cessation training makes physicians feel more prepared to provide cessation service to their patients. However, physicians in the surveyed community health service centers are lack of cessation training, and they are not prepared to provide cessation service to their patients. In addition, physicians who have received cessation training are more likely to have the perception that they are more responsible for tobacco control works than those who have not received any training. These suggest another barrier of the smoke-free policy implementation: lack of cessation training.

Non-smoking patients and visitors and staffs believe that the binding force of the policy is very important to the successful implementation of current policy, especially to prevent smoking among some smokers with very low moral level. This finding suggests that the lack of binding force of smoke-free policy is also a barrier. Patients and visitors also suggested that the tobacco control publicity materials should be in more vivid format.

Physicians mentioned that if their leaders were non-smoking female, the policy was well implemented among staffs; and if their leaders were smokers, the policy implementation faced difficulty, especially when the smoking leaders violated the policy. So the leaders' smoking status is also a key issue in smoke-free policy implementation.

As a conclusion, high smoking prevalence, low KAP (knowledge, attitude and practice level), lack of cessation training of the staffs, lack of binding force and smoking leaders are potential barriers to the implementation of smoke-free policy in community health service centers. The investigator believes that smoking prevalence is hard to change, but the KAP and cessation training of physicians may be easier to be improved. So Wuxi's project should provide more training on smoking and second hand smoking harms to staffs and cessation skills to physicians in the future. The project should also take the institute leaders' smoking status, tobacco control publicity format and the smoke-free policy's binding force among patients and visitors into consideration.

Strengthens and limitations

This intervention project target at community health service centers, and these centers usually locate in communities, so smoke-free policy will not only control tobacco use in these centers, but also impact the smoking behaviors in their residing communities.

The size and functions of the community health service centers limit, so the research findings may not be applicable to larger health care institutes, such as district and municipal hospitals. The baseline survey only focus on staffs in community health service centers, and patients and visitors are not involved in. Patients and visitors are also important stakeholders and impact factors in smoke-free policy implementation, so the barriers identified in this research may not reveal all the possible barriers in the smoke-free policy implementation in community health service centers. In addition, though participants were informed that their answers to questionnaires were kept in high confidential, smoking staffs, especially smoking physicians and nurses may be reluctant to provide real smoking status information, so the smoking prevalence may be higher than revealed in this research. And also, physicians who believe that providing cessation service to patients is their responsibility might exaggerate the proportion of patients who received cessation services. So the proportion of patients that physicians have suggested to quit smoking may be lower than revealed in this research. The research does not take culture, economy and social norms that related to smoking into consideration, so the barriers revealed in this research may also limit.

Future direction

The effectiveness of training on tobacco use knowledge and cessation skills is a pivotal measure to make sure the smoke-free policy is well implemented. However, the project's training has not been proven on its effectiveness of improving staffs' KAP and cessation skills. Future studies need to focus on this. And also, future study can investigate to what extend will the improvement of tobacco use KAP and cessation skills decrease smoking prevalence. In the baseline survey, patients and visitors are not involved in. Patients' and visitors' impact to smoke-free policy is unknown, so future research can also focus on it.

The research does not take culture, economy and social norms that related to smoking into consideration, so the barriers revealed in this research may also limit. Future studies can focus on how smoke-free policy can adapt to local cultural and social norms, as well as the economic impact to smoke-free policy implementation.

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Appendix

A: List of tables:

Table 1. Selected characteristics of participants in the baseline survey

Characteristics	N(percentage)
Gender (n=1332)	
Male	343(25.75%)
Female	989(74.25%)
Age (years)	39.2±12.1
Education (n=1332)	
Post graduate degree completed	6(0.45%)
College/university completed	833(62.54%)
High school completed	388(29.13%)
Secondary school completed	71(5.33%)
Less than secondary school completed	9(0.68%)
Primary school completed	4(0.30%)
Less than primary school completed	4(0.30%)
No formal schooling	5(0.38%)
Don't know	12(0.90%)
Occupation (n=1332)	
Out-patient doctor	273(20.50%)
In-patient doctor	111(8.33%)
Doctor in technical departments	233(17.49%)
Pharmacist	108(8.11%)
Out-patient nurse	189(14.19%)
In-patient nurse	158(11.86%)
Surgery nurse	4(0.3%)
Administration	152(11.41%)
Logistic staff	55(4.13%)
Security staff	9(0.68%)
Don't know	40(3.00%)
Smoking status (n=1332)	
Daily	89(6.68%)
Less than daily	49(3.68%)
Not at all	1193(89.56%)
Don't know	1(0.08%)
Smokers (n=138)	
Smoke daily at workplaces	46(33.33%)
Smoke less than daily at workplaces	45(32.61%)
Don't smoke at workplaces	47(34.06%)

Smoking sites at workplaces reported by smokers smoking at workplaces(n=91)	
Resting rooms	51(56.04%)
Bathroom	46(50.55%)
Outside the building	45(49.45%)
Office	35(38.46%)
Hallway	21(23.08%)
Cafeteria	14(15.38%)
Common areas	13(14.29%)
Lobby	12(13.19%)
Stairs	9(9.89%)
Meeting room	9(9.89%)
Elevator	2(2.20%)
Ever tried quitting smoking (n=138)	
Yes	61(44.20%)
No	77(55.80%)
Quit plan	
In one month	31(22.46%)
In next 12 months	28(20.29%)
Will quit, but not in next 12 months	29(21.01%)
Not interested in quitting	20(14.49%)
Don't know	30(21.74%)
Attitude to smoking in indoor worksites (n=1332)	
Should allow	41(3.08%)
Should not allow	1278(95.95%)
Don't know	13(0.98%)
Perception on current smoking policy (n=1332)	
Allowed everywhere	21(1.58%)
Allowed in part of the indoor areas	270(20.27%)
Not allowed in any indoor areas	928(69.67%)
No policy	78(5.86)
Don't know	35(2.63%)
Attitude to smoke-free policy (n=1332)	
Expect more strong policy	1218(91.45%)
Expect weaker policy	52(3.90%)
Keep current policy unchanged	35(2.63%)
Don't know	27(2.03%)

Second hand smoking (n=1332)	
Yes	564(42.34%)
No	698(52.40%)
Perception on current policy implementation among staffs (n=1332)	
Completely enforced	861 (64.64%)
Partially enforced	339(25.45%)
Not enforced at all	27(2.03%)
No policy	105(7.89%)
Perception on current policy implementation among visitors (n=1332)	
Completely enforced	702(52.74%)
Partially enforced	494(37.11%)
Not enforced at all	28(2.10%)
No policy	107(8.04%)
Physicians' preparation in providing cessation service to patients (n=944)	
Very well prepared	383(40.57%)
Somewhat prepared	486(51.48%)
Not at all prepared	51(5.40%)
Don't know	24(2.54%)
Physicians' training on cessation (n=942)	
Formal training during in medical or nursing school	108(11.46%)
Special conference, symposia or workshops	273(28.98%)
No training	561(59.55%)
Measures available in practice (n=944)	
Traditional Chinese medicine	0
Self-help materials	353(37.39%)
Counseling	660(69.92%)
Medication	0
Interventions used in practice (n=944)	
Traditional Chinese medicine	0
Self-help materials	351(37.18%)
Counseling	629(66.63%)
Medication	0

Cessation practice: proportion of smoking patients being suggested to quit smoking	
Few or none	302(31.99%)
Less than a half	271(28.71%)
About half	125(13.24%)
More than half	125(13.24%)
All/almost all	121(12.82%)

Table 2. The association between smoking status and gender, occupation and education

	Current smoker (Daily smoker: 89; Less than daily 49)	Non-smoker (n=1193)	Don't know (n=1)	P value
Gender				
Male	137 (39.94%)	206 (60.06%)	0	<0.0001*
Female	1 (0.10%)	988 (99.80%)	1 (0.10%)	
Occupation				
Out-patient doctor	38(13.92%)	235(86.08%)	0	0.0229**
In-patient doctor	25(22.52%)	86(77.48%)	0	
Doctor in technical departments	24(10.30%)	209(89.70%)	0	
Pharmacist	8(7.41%)	99(91.67%)	1(0.02%)	
Out-patient nurse	0	189(100.00%)	0	
In-patient nurse	0	158(100.00%)	0	
Surgery nurse	0	4(100.00%)	0	
Administration	20(13.16%)	132(86.64%)	0	
Logistic staff	9(16.36%)	46(83.64%)	0	
Security staff	6(66.67%)	3(33.33%)	0	
Don't know	8(20.00%)	32(80.00%)	0	
Education				
Post graduate degree completed	0	12(100.00%)	0	<0.0001**
College/university completed	77(9.24%)	755(90.64%)	1(0.12%)	
High school completed	34(8.76%)	354(91.24%)	0	
Secondary school completed	17(23.94%)	54(76.06%)	0	
Less than secondary school completed	0	9(100.00%)	0	
Primary school completed	2(50.00%)	2(50.00%)	0	
Less than primary school completed	2(50.00%)	2(50.00%)	0	
No formal schooling	4(80.00%)	1(20.00%)	0	
Don't know	2(33.33%)	4(66.67%)	0	

*: Chi-square test

**: M-H Chi-square test

Table 3. Knowledge on smoking and second hand smoking

	Yes	No	Don't know
Second hand smoking			
Cause serious disease	1278(95.95%)	25(1.88%)	29(2.18%)
Adult heart disease	1041(78.15%)	118(8.86%)	173(12.99%)
Children lung disease	1236(92.79%)	26(1.95%)	70(5.26%)
Adult lung cancer	1280(96.10%)	18(1.35%)	34(2.55%)
Smoking			
Cause serious disease	1295(97.30%)	17(1.28%)	19(1.43%)
Stoke	1048(78.68%)	115(8.63%)	169(12.69%)
Heart attack	1077(80.86%)	97(7.28%)	158(11.86%)
Lung cancer	1300(97.60%)	12(0.90%)	20(1.50%)

Table 4. The relationship between attitude to smoking and smoking status, and gender,

	Allow (41)	Not allow (1278)	Don't know (13)	P value
Smoking status				
Smokers	11(7.97%)	122(88.41%)	5(3.62%)	0.0014**
Non-smokers	30(2.51%)	1155(96.81%)	8(0.67%)	
Not known	0	1	0	
Gender				
Male	15(4.37%)	319(93.00%)	9(2.62%)	0.0004*
Female	26(2.63%)	959(96.97%)	4(0.40%)	

*: Chi-square test

**: M-H Chi-square test

Table 5. The relationship between attitude to smoke-free policy and smoking status, and gender

	Stronger policy	Weaker or not change	Don't know	P value
Smoking status				
Smokers	106(76.81%)	21(15.22%)	11(7.97%)	<0.0001**
Non-smokers	1111(93.13%)	66(5.53%)	16(1.34%)	
Not known	1(100.00%)	0	0	
Gender				
Male	290(84.55%)	38(11.08%)	15(4.37%)	<0.0001*
Female	928(93.83%)	49(4.95%)	12(1.21%)	

*: Chi-square test

**: M-H Chi-square test

Table 6. The association between physicians' preparation in providing cessation service to patients and cessation training

	Very well prepared	Somewhat prepared	No preparation	Don't know
Formal training during medical school or nursing school	76(70.37%)	31(28.70%)	1(0.93%)	0
Special conference, symposia or workshops	148(54.21%)	122(44.69%)	3(1.10%)	0
No training	157(27.99%)	333(59.36%)	47(8.38%)	24(4.28%)

Note: M-H Chi-square=103.8475, p<0.0001

Table 7. Difference of perception index on physicians' role in tobacco control works among groups with different gender, smoking status, quit behavior, and knowledge, attitude, practice of tobacco use

		Mean index difference (95% CI)	P value
Smoking status	Non-smokers vs. Current smokers	2.3 (1.6, 3.1)*	<0.0001[a]
Gender	Female vs. Male	1.1(0.6, 1.7) *	<0.0001[a]
Smoke inside the center	Daily vs. Less than daily	-0.6(-3.0, 1.8)	0.8128[b]
	Daily vs. No	-0.3(-2.7, 2.1)	
	Less than daily vs. No	0.4(-2.0, 2.7)	
Ever tried quit smoking	Yes vs. No	0.9(-0.8, 2.5)	0.2976[a]
Can second hand smoking cause serious disease	Yes vs. No	2.0(-0.2, 4.1)	0.0284[b]
	Yes vs. Don't know	1.5(-0.7, 3.7)	
	No vs. Don't know	-0.4(-3.5, 2.6)	
Can smoking cause serious disease	Yes vs. No	3.5(1.1, 5.9) *	0.0016[b]
	Yes vs. Don't know	1.2(-1.9, 4.3)	
	No vs. Don't know	-2.3(-6.1, 1.6)	
Have you ever received cessation training	Formal training in medical school or nursing school vs. conference training	-0.1(-1.0, 0.8)	0.0002[b]
	Formal training in medical school or nursing school vs. No training	0.9(0.02, 1.7) *	
	Conference training vs. no training	1.0(0.4, 1.6) *	
What proportion of patients do you suggest quit smoking	Almost all or all vs. more than a half	-0.2(-1.4, 1.0)	0.0002[b]
	Almost all or all vs. about a half	0.2(-1.0, 1.4)	
	Almost all or all vs. less than a half	0.8(-0.3, 1.8)	
	Almost all or all vs. few or none	1.2(0.2, 2.2) *	
	More than a half vs. about a half	0.4(-0.8, 1.6)	
	More than a half vs. less than a	1.0(-0.04, 2.0)	

	half		
	More than a half vs. few or none	1.4(0.4, 2.4) *	
	About a half vs. less than a half	0.6(-0.5, 1.6)	
	About a half vs. few or none	1.0(0.02, 2.0) *	
	Less than a half vs. few or none	0.5(-0.3, 1.3)	
Attitude to smoke-free policy	More strong policy vs. weaker policy or no change	0.9(-0.1, 2.0)	0.0081[b]
	More strong policy vs. Not sure	2.2(0.0, 4.4) *	
	weaker policy or no change vs. Not sure	1.3(-1.1, 3.7)	
Attitude to smoking in the indoor worksites	Should allow vs. not allow	-1.6(-3.3, 0.1)	0.0066[b]
	Should allow vs. Don't know	1.2(-2.0, 4.4)	
	Not allow vs. Don't know	2.8(0.03, 5.5) *	
Quit plan	Quit in one month vs. quit in 12 months	0.8(-0.6, 2.3)	0.0214[b]
	Quit in one month vs. quit, but not in 12 months	1.1(-0.7, 2.8)	
	Quit in one month vs. Don't know	2.2(-0.2, 4.6)	
	Quit in 12 months vs. quit, but not in 12 months	0.2(-2.0, 2.4)	
	Quit in 12 months vs. Don't know	1.4(-1.4, 4.1)	
	quit, but not in 12 months vs. Don't know	1.1(-1.8, 4.1)	

* Difference is significant.

[a] t-test

[b] Anova test and tukey test

B: Questionnaire:

SMOKE-FREE HOSPITAL BASELINE SURVEY

Institute ID: __ __ **Date:** Day__ __ Month__ __ Year __ _____ **Participant ID:** _____
Investigator ID: __ __

SECTION A. BACKGROUND CHARACTERISTICS

A1. Gender:

MALE.....1

FEMALE.....2

A2. How old are you?

		YEARS OLD

A3. What is the month and year of your date of birth?

Day:		IF DON'T KNOW, ENTER "77"
MONTH:		IF DON'T KNOW, ENTER "77"
YEAR:		IF DON'T KNOW, ENTER "7777"

A4. What is the highest level of education you have completed? *SELECT ONLY ONE CATEGORY*

NO FORMAL SCHOOLING…… ☐1
LESS THAN PRIMARY SCHOOL COMPLETED…….. ☐2
PRIMARY SCHOOL COMPLETED…….. ☐3
LESS THAN SECONDARY SCHOOL COMPLETED…… ☐4
SECONDARY SCHOOL COMPLETED…….. ☐5
HIGH SCHOOL COMPLETED…….. ☐6
COLLEGE/UNIVERSITY COMPLETED…….. ☐7
POST GRADUATE DEGREE COMPLETED…….. ☐8
DON'T KNOW…….. ☐77

A5. What is your occupation? *SELECT ONLY ONE CATEGORY THAT MOST FITS YOU*

OUT-PATIENT DOCTOR…… ☐1
IN-PATIENT DOCTOR……..... ☐2
DOCTOR IN TECHNICAL DEPARTMENTS…….…… ☐3
PHARMACIST…….…… ☐4
OUT-PATIENT NURSE…….. ☐5
IN-PATIENT NURSE…….. ☐6
SURGERY NURSE…….. ☐7
ADMINISTRATION…….. ☐8
LOGISTICS STAFF…….. ☐9

SECURITY…….. ☐10
DON'T KNOW…….. ☐77

Section B. Tobacco Smoking and Cessation

B1. Do you <u>currently</u> smoke tobacco on a daily basis, less than daily, or not at all?

DAILY. [Skip to B5.]……... ☐1
LESS THAN DAILY ..... ☐2
NOT AT ALL [***skip to B3***.]……...☐3
DON'T KNOW… [Skip to C1.]….. ☐77

B2. [IF LESS THAN DAILY] Have you smoked tobacco daily in the past?

YES [***skip to B5***.]…… ☐1
NO [***skip to B5***]…… ☐2
DON'T KNOW [***skip to B5***]… ☐77

B3. In the <u>past</u>, have you smoked tobacco on a daily basis, less than daily, or not at all?

NOTE: IF YOU THINK YOU SMOKED 'DAILY' OR 'LESS THAN DAILY' IN THE PAST, CHECK 'DAILY'

DAILY ……..…… ☐1
LESS THAN DAILY (Skip to C1.)……. ☐2
NOT AT ALL (Skip to C1.)……. ☐3
DON'T KNOW (Skip to C1.)…… ☐77

B4. If you have smoked tobacco daily in the past, how long has it been since you stopped smoking? ***[Skip to C1.]***

YEARS_____
MONTHS_____
WEEKIS_____
DAYS_____

IF YOU ARE CURRENTLY 'DAILY' OR 'LESS TAN DAILY' SMOKER, PLEASE ANSWER THE FOLLOWING QUESTIONS:

B5. During the past 30 days (one month), on the days you smoked, how many cigarettes did you usually smoke?

_____# of cigarettes

B6. Do you smoke at your workplace?

DAILY ……... ☐1
LESS THAN DAILY …… ☐2
NOT AT ALL [Skip to B8.]…….. ☐3
DON'T KNOW [Skip to B8.]…… ☐77

B7. IF 'DAILY' OR 'LESS THAN DAILY,' WHERE DO YOU SMOKE? Check all that apply.

	Yes	No
IN MY OFFICE…….....	☐1	☐2
IN PATIENT ROOMS……	☐1	☐2
IN MEETING ROOMS……..	☐1	☐2
IN THE BATHROOM…….	☐1	☐2
IN THE WAITING ROOM…….	☐1	☐2
IN THE HALLWAY…….	☐1	☐2
IN THE STAIRS…….	☐1	☐2
IN ELEVATORS…….	☐1	☐2
IN THE LOBBY……..	☐1	☐2
IN THE CAFETERIA…….	☐1	☐2
IN THE RESTING ROOMS……..	☐1	☐2
IN COMMON AREAS……	☐1	☐2
OUTSIDE THE BUILDINGS…….	☐1	☐2
OTHER (Please specify)_____		

B8. Have you ever tried to stop smoking?

YES…….☐1
NO [Skip to B10.]…….☐2

B9. During the past 12 months, have you tried to stop smoking?

YES…….☐1
NO……. ☐2

B10. Which of the following best describes your thinking about quitting smoking

QUIT WITHIN THE NEXT ONTH…….	☐1
THINKING WITHIN THE NEXT 12 MONTHS……	☐2
QUIT SOMEDAY, BUT NOT NEXT 12 MONTHS…….	☐3
NOT INTERESTED IN QUITTING……	☐4
DON'T KNOW…….....	☐77

SECTION C. Beliefs, Attitudes, and Exposure to SECONDHAND SMOKE

Beliefs/Support for Public Policies to Restrict Smoking

C1. Based on what you know or belief, does breathing other people's smoke cause serious illness in non-smokers?

YES……. ☐1
NO……... ☐2
DON'T KNOW…… ☐77

C2. Based on what you know or believe, does breathing smoke from other people's cigarettes cause any of the following?

	Yes	No	Don't Know
a. HEART DISEASE IN ADULTS…….	☐1	☐2	☐77
b. LUNG ILLNESSES IN CHILDREN…..	☐1	☐2	☐77
c. LUNG CANCER IN ADULTS…….	☐1	☐2	☐77

C3. For each of the following public places, do you think smoking should or should not be allowed in indoor areas? Check all that apply.

READ EACH ITEM:	SHOULD BE ALLOWED ⮟	SHOULD NOT BE ALLOWED ⮟	DON'T KNOW ⮟
a. HOSPITALS?	☐1	☐2	☐77
b. WORKPLACES?	☐1	☐2	☐77
c. RESTAURANTS…….....	☐1	☐2	☐77
d. BARS? ……	☐1	☐2	☐77
e. PUBLIC TRANSPORTATION VEHICLES? ….	☐1	☐2	☐77
f. SCHOOLS? ……..	☐1	☐2	☐77
g. UNIVERSITIES? ……..	☐1	☐2	☐77
h. PLACES OF WORSHIP …….	☐1	☐2	☐77

C4. Do you think smoking should or should not be allowed in indoor areas at your institution?

SHOULD BE ALLOWED……. ☐1
SHOULD NOT BE ALLOWED….. ☐2
DON'T KNOW…….. ☐77

C5. Which of the following best describes the indoor smoking policy where you work?

ALLOWED ANYWHERE……..... ☐1
ALLOWED ONLY IN SOME INDOOR AREAS……. ☐2
NOT ALLOWED IN ANY INDOOR AREAS…… ☐3
THERE IS NO POLICY…….. ☐4
DON'T KNOW……. ☐77

C6. Would you prefer a stronger hospital/clinic smoking policy, a weaker hospital/clinic smoking policy, or no change?

PREFER STRONGER POLICY…….. ☐1
PREFER A WEAKER POLICY……. ☐2
PREFER NO CHANGE…… ☐3
DON'T KNOW/AREN'T SURE…… ☐77

Enforcement/Compliance with Policies to Restrict Smoking in the Institution Where You Work

C7. During the past 30 days, did anyone smoke in indoor areas where you work?

YES ..... ☐ 1

NO ..... ☐ 2

DON'T KNOW ..... ☐ 77

C8. How well does your hospital/clinic enforce any of its policy (or rule) on tobacco use among visitors?

THERE IS NO POLICY OR RULE ON TOBACCO USE AMONG VISITORS……. ☐1
COMPLETELY…….. ☐2
PARTIALLY…….. ☐3
NOT AT ALL…… ☐4

C9. How well does your hospital/clinic enforce any of its policy (or rule) on tobacco use among employees?

THERE IS NO POLICY OR RULE ON TOBACCO USE AMONG EMPLOYEES ☐1
COMPLETELY…….. ☐2
PARTIALLY…….. ☐3
NOT AT ALL…… ☐4

For Nonsmokers only: The next questions are about your exposure to secondhand smoke.

C10. During the past 7 days, when you were at work, how many days were you exposed to other people's tobacco smoke? _____# days

C11. On these days, about how many hours per day were you exposed to other people's smoke while at work: ____number of hours per day

SECTION D. KNOWLEDGE, ATTITUDES & PERCEPTIONS

D1. Based on what you know or believe, does smoking tobacco cause serious illness?

YES…… ☐1
NO…… ☐2
DON'T KNOW……. ☐77

D2. Based on what you know or believe, does smoking tobacco cause the following?

	Yes	No	Don't Know
a. STROKE (BLOOD CLOTS IN THE BRAIN THAT MAY CAUSE PARALYSIS)	☐1	☐2	☐77
b. HEART ATTACK? ……	☐1	☐2	☐77
c. LUNG CANCER?	☐1	☐2	☐77

SECTION E. MEDICAL PROFESSIONAL'S PRACTICE ON TOBACCO CONTROL

The following questions are ONLY for medical professionals (doctor/nurse) who see patients during their visit.

D3. How well prepared do you feel you are when counseling patients on how to stop cigarette smoking?

VERY WELL PREPARED…….. ☐1
SOMEWHAT PREPARED…….. ☐2
NOT AT ALL PREPARED…… ☐3

D4. Have you ever received any training in smoking cessation approaches to use with your patients?

FORMAL TRAINING DURING MEDICAL OR NURSING SCHOOL….. ☐1
SPECIAL CONFERENCES, SYMPOSIA OR WORKSHOPS……. ☐2
Other_(Please specify) _____

D5. Are the following interventions AVAILABLE to YOU to help your patients stop smoking?

	Yes	No
a. TRADITIONAL REMEDIES……..	☐1	☐2
b. SELF-HELP MATERIALS……..	☐1	☐2
c. COUNSELING……..	☐1	☐2
d. MEDICATION (NICOTINE GUM, PATCH, BUPROPRION)……..	☐1	☐2
e. Other (specify)_____		

D6. Which of the following interventions do you USE to help your patients stop smoking?

	Yes	No
a. TRADITIONAL REMEDIES……..	☐1	☐2
b. SELF-HELP MATERIALS……..	☐1	☐2
c. COUNSELING……..	☐1	☐2
d. MEDICATION (NICOTINE GUM, PATCH, BUPROPRION)……..	☐1	☐2
e. Other (specify)_____		

D7. Please Check Appropriate Box

	Strongly Agree	Agree	Unsure	Disagree	Strongly Disagree
a. Health professionals serve as role models for their patients and the public	☐1	☐2	☐3	☐4	☐5
b. Health professionals should set a good example by not smoking	☐1	☐2	☐3	☐4	☐5
c. Patient's chances of quitting smoking are increased if a health professional advises him or her to quit	☐1	☐2	☐3	☐4	☐5
d. Health professionals should routinely ask about their patients smoking habits	☐1	☐2	☐3	☐4	☐5
e. Health professionals should routinely advise their smoking patients to quit smoking	☐1	☐2	☐3	☐4	☐5
f. Health professionals who smoke are less likely to advise people to stop smoking	☐1	☐2	☐3	☐4	☐5
g. Health professionals should get specific training on cessation techniques.	☐1	☐2	☐3	☐4	☐5

D8. During the past 3 months, for what proportion of your patients did you ascertain smoking status in each of the following patient groups?

Please Check Appropriate Box

Patient groups:	few/none	less than half	about half	more than half	all/almost all
a. Patients on a first visit	☐1	☐2	☐3	☐4	☐5
b. Patients with smoking-related symptoms or diseases	☐1	☐2	☐3	☐4	☐5
c. Patients who were smokers at their last visit	☐1	☐2	☐3	☐4	☐5
d. Patients without smoking-related symptoms or diseases	☐1	☐2	☐3	☐4	☐5
e. Adolescents (age 13-19 years)	☐1	☐2	☐3	☐4	☐5
f. Patients in general	☐1	☐2	☐3	☐4	☐5
g. During the past 3 months, for what proportion of your patients who smoke did you indicate their smoking status in the patient's file?	☐1	☐2	☐3	☐4	☐5

D9. During the past 3 months, for what proportion of your patients who smoke did you advise the patient to stop smoking?

Few/none ……..... ☐1
Less than half …….. ☐2
About half ……. ☐3
More than half …….. ☐4
All/almost all ……. ☐5

D10. During the past 3 months, for what proportion of your patients who smoke did you assess readiness to quit smoking? _____

Few/none ……..... ☐1
Less than half …….. ☐2
About half ……. ☐3
More than half …….. ☐4
All/almost all ……. ☐5

Thanks for your participation!