

Implementation of Smoking Cessation Programs

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MILLER: Implementation of Smoking Cessation Programs. *The growing economic and chronic health burden of smoking calls for aggressive intervention to help smokers give up the habit. Smoking remains a significant risk factor for cardiovascular disease and is associated with detrimental effects on the vascular system. Interventions within the United States and China suggest that smokers may be helped by both in-patient and outpatient clinical programs. The U.S. Tobacco Treatment and Dependence Clinical Practice Guideline offers assistance to health care professionals providing smoking cessation counseling and intervention within clinical settings and cardiac rehabilitation programs. Strategies to help patients willing to quit tobacco use (The 5 A's) and messages to move them to think about change (The 5 R's) represent tools to assist health care professionals. Additional behavioral techniques such as relapse prevention training may improve counseling techniques for patients ready to quit smoking. Pharmacological therapies such as nicotine replacement may further increase success with quitting. (J HK Coll Cardiol 2006;14(Suppl 2):B97-B104)*

Smoking advice, smoking cessation, smoking cessation counseling, tobacco cessation

摘要

吸煙帶來的不斷經濟增長和慢性健康的負擔，要求強而有力的措施幫助這些人戒掉這個習慣。吸煙仍然是心血管疾病發生的一個重要危險因素，它對血管系統有著有害的作用。在美國和中國的干預措施，提示需要同時對住院病人和門診病人的治療計劃中進行幫助。美國煙草治療和依賴臨床實踐指導，針對醫療專業人士，在臨床診治和心臟病康復中為戒煙的諮詢和干預提供幫助。為醫療專業人士提供的方案在於幫助病人戒除對煙草的慾望和分散他們的注意力。其他的行為治療如復發的預防訓練，可以通過提高勸告的技巧使病人有準備地戒除吸煙。藥物治療如尼古丁替代療法可以進一步提高戒煙的成功率。

關鍵詞：吸煙忠告 戒煙 戒煙諮詢 戒除煙草

Introduction

Smoking is the leading preventable cause of death and disability worldwide. Among the 1.3 billion smokers worldwide, China accounts for approximately one-quarter of the total tobacco market.^{1,2} Currently, approximately 300 million males and 20 million females in China smoke tobacco products.³ An additional 460 million Chinese are exposed to passive smoking.⁴

The epidemic of smoking in China appears to have leveled off, but there is no significant indication that it has diminished. Thus numerous opportunities exist to implement smoking cessation interventions and public policies that support reducing the harmful effects of smoking. In China, cardiovascular disease and cancers, are the leading causes of death among adults.² Approximately 100 million people died worldwide during the 20th Century from smoking-related disease, – a number expected to reach 1 billion during the 21st century.¹ Furthermore, at least 50% of these deaths occur in those aged 35–69 years. This decreases the average lifespan of these individuals by at least 22 years.⁵ The current economic burden of smoking in 2000 in China is approximately US \$5.0 billion up from US \$3.3 billion in 1989. These costs include the direct medical costs of treating smoking-related diseases, indirect morbidity

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costs of smoking and the indirect mortality costs of premature deaths caused by smoking-related diseases.²

Smoking and Cardiovascular Disease

Smoking is a major risk factor for coronary heart disease, peripheral vascular disease, aortic aneurysm, and stroke. In a recent study of 169,871 Chinese men and women, aged 40 years and older, followed for an average of 8.3 years, the leading causes of death were diseases of the heart, malignant neoplasm, and cerebrovascular diseases which accounted for 66.0% of deaths for all causes.⁶ Death rates were highest for cerebrovascular disease (mortality, 277 per 100,000 person years) chronic pulmonary heart disease (138), coronary heart disease (86), heart failure (15) and rheumatic heart disease (10). The ranking of these deaths were similar for both men and women, but was significantly higher in northern China than in southern China. This study highlighted the significant contribution of smoking to risk and the preventable risk factors of hypertension and physical inactivity, which offer unique opportunities for reducing the burden of premature deaths among adults in China.

Smoking has adverse effects on the vascular system including lipoprotein metabolism, blood coagulation, platelets, and the oxygen-supply demand relationship.⁷ The adverse effects of smoking reflect the 4,000 toxic compounds in cigarettes. As noted in the INTERHEART study,¹ there is a clear dose-response relationship that exists for the number of cigarettes smoked per day and the risk of myocardial infarction. This risk begins with even low levels of smoking five cigarettes per day. Most encouraging is the fact that a large part of the excess risk of acute myocardial infarction dissipates within five years and no excess in risk is found in light smokers (those smoking <10 cigarettes per day) after 3-5 years of quitting.¹

Implementing Smoking Cessation in Clinical Practice Settings

Few intervention models have been evaluated in China to date. However, there are hopeful signs that

Chinese men and women may benefit from interventions that include group support, pharmacotherapies such as nicotine replacement, and telephone quit lines, which have been successfully undertaken in the United States and other countries.^{8,9} In addition, programs utilizing nurses and social workers to deliver educational interventions at the bedside have gained success in Hong Kong.¹⁰ The first randomized controlled study in a Chinese cardiac population also indicates that nurse-mediated counseling improves patients' motivation to quit, and reduces cigarette consumption.¹¹

Attitudes of Chinese regarding smoking cessation are similar to those found elsewhere. In a recent study of 201 male smokers in Hangzhou City, Zhejiang province, the most significant reasons for quitting smoking included personal healing (77.1%), the cost of cigarettes (53.7%), and family pressures to quit (29.9%). The most common situations triggering relapse included social situations (34.3%), feeling negative or down (13.4%), and in times of being alone (8.4%). These relapse situations are similar to those reported in studies conducted in the United States.¹²

How to Intervene in Clinical Practice Settings

Health care professionals including physicians, nurses, social workers, pharmacists, and those working in cardiac rehabilitation settings have a unique opportunity to deliver smoking cessation interventions at the bedside and within clinic settings. The U.S. Treating Tobacco Use and Dependence Clinical Practice Guideline expert panel reviewed more than 6,000 smoking related studies conducted from 1975-1999.¹³ Evidence from randomized controlled studies published in the guideline show that smoking cessation is fostered by: 1) a three-minute message about the importance of cessation provided by multiple health care providers; 2) high intensity counseling (greater than ten minutes per session with a total of thirty minutes or more); 3) four or more follow-up sessions; and 4) provision of multi-component interventions such as self-help materials, telephone follow-up, pharmacotherapies, and behavioral counseling. Treatments that last eight or more weeks more than double the quit rate.¹³

Studies suggest that at least 40-50% of smokers choose to make an attempt to quit smoking during hospitalization.¹⁴ Close to 70% of patients in the United States want to quit, and 40% attempt to quit annually providing an opportunity for motivational messages.¹⁵ A survey of 4,441 households in Hong Kong also indicated that 52% of daily smokers stated they had an intention to quit smoking.¹⁶ An overview of the suggested brief strategies to help a patient who is willing to quit smoking (The 5 A's) is shown in Table 1.¹³ In-depth information on the implementation of such strategies based on the evaluation of randomized controlled trials and dissemination trials by the investigator,^{14,17-19} is provided below.

Step 1: Ask About Tobacco Use at Every Visit

A systematic approach to identifying all smokers is needed in clinical practice settings. Using smoking as a vital sign or placing bright stickers on charts are two ways to identify smokers. Multiple methods such as vital signs, electronic identification, and nursing/MD histories are needed to assure that smokers have been identified. Smoking bans in clinical practice settings provide a window of opportunity for patients to become abstinent.

Step 2: Advise All Smokers to Quit

Smokers require clear, strong, personalized messages about the hazards of smoking. Delivering the message in a clear, concise, empathetic way supports a patients' attempt to quit. Personalizing this message is important so that it has clear relevance to the patient. For example, if the patient has just experienced a myocardial infarction, discussing the hazardous effects of continuing to smoke due to the deprivation of oxygen, effects on platelet aggregation and injury to the endothelium can help patients understand the urgent need for quitting. This must be undertaken in simple plain language and can be followed up by asking patients about the benefits they see to quitting such as personal, health, or family issues.

Studies in the United States suggest that strong physician messages to quit smoking enhance a patient's capability to quit.²⁰ Further work is needed to understand factors that limit the efficacy of Chinese physicians in influencing their patients' willingness to quit.²¹ One

factor responsible for this is the significant number of Chinese physicians who continue to smoke. In a recent survey analysis of 3,533 hospital-based physicians in six Chinese cities, smoking prevalence was 45% for surgeons, 40% for other specialties, and 33% for internists.²² Although physicians agreed that they should serve as role models, 9-19% of physicians from all three groups stated they had smoked in front of their patients. Moreover, fewer than 34% of physicians felt that smokers would heed their advice. Because it is often difficult for physicians and other health care professionals to intervene effectively with patients if they themselves smoke, smoking cessation interventions should be provided to health care providers prior to initiating smoking programs in clinical practice settings.

Step 3: Assess: Determine Willingness to Make a Quit Attempt

Assessing patients' willingness to quit smoking can be easily assessed by a simple "yes/no" question such as, "Are you willing to make an attempt to quit smoking now?"¹⁷ Patients stating a willingness to quit can be offered assistance as noted in the next step of the quitting process. If patients are not willing to quit, it is important to determine why. Some individuals don't fully understand the risks associated with continuing to smoke, while others may feel they don't know how to deal with periods of depression or not smoking when they are alone. As shown in Table 2, the U.S. Treating Tobacco Use and Dependence Guideline¹³ recommends providing a motivational message to patients not willing to quit. This includes the "5 R's": 1) relevance; 2) risks; 3) rewards; 4) roadblocks; and 5) repetition. Suggested examples are provided to help the communication process and potentially move patients along a continuum of change. Techniques for motivational interviewing employed by health care professionals are useful to employ with patients unwilling to quit.²³

Step 4: Assist: Aid the Patient in Quitting

Part of this process includes helping the patient to set a quit date, usually within two weeks of an office visit or hospitalization. A behavioral contract between the nurse and the patient has been shown to be useful to those attempting to quit during hospitalization.²⁴ Telephone follow-up contacts have been shown to

increase cessation rates. Nurses and other health care professionals may help patients by offering standardized educational materials on the quitting process, offering telephone numbers for active quit lines, counseling patients about the appropriate use of pharmacotherapies, and providing lists of community resources such as the use of support groups.

Family members can be especially helpful during the quitting process. Because smoking in China and elsewhere is associated with social interactions it is especially important to ensure that patients interested in quitting are able to ask for the support of family and friends. Family members can support the patient who is willing to quit by: 1) not smoking in the patient's presence; 2) never offering cigarettes or other tobacco products to the patient; 3) making sure cigarettes are not lying around; and 4) looking for pleasurable ways to socialize together to replace the loss associated with giving up the habit.

Step 5: Arrange for Follow-up

Success with cessation is enhanced when at least two follow-up sessions are provided to patients.³ Thus, patients indicating a willingness to quit should be offered encouragement and support during the first two weeks after cessation when the relapse rate is highest. Follow-up provided by health care professionals within rehab

settings or by telephone contacts are useful in assessing patients' success in quitting. Telephone algorithms focused around relapse enables health care professionals to provide positive reinforcement to those who quit, and offer coping strategies for those who have not quit. Local and national quit lines provide another method of offering follow-up to individuals attempting to quit.

Relapse is common in the first two to three weeks after quitting. A behavioral skills approach helps individuals who have quit to identify high-risk situations and develop cognitive and behavioral strategies to cope with these situations. The cognitive-behavioral model of the relapse process developed by Marlatt²⁵ is based on the premise that individuals are in control until they encounter a high-risk situation. If they are better prepared to handle the high-risk situation, the likelihood decreases that they will lapse or totally relapse back into the old behavior. Steps in relapse prevention include: 1) helping individuals identify personal high-risk situations; 2) developing at least one cognitive and 1-2 behavioral strategies for dealing with high-risk situations; and 3) practicing coping strategies in the event of a high-risk situation.²⁵ Self-efficacy scales are useful to help individuals identify high-risk situations.²⁶ Finally, additional counseling may be required to help patients to overcome the frustration and guilt that comes with a lapse into the old behavior.

Table 1. Brief strategies to help the patient willing to quit tobacco use

Action	A1: Ask – systematically identify all tobacco users at every visit
Implement an office-wide system that ensures that tobacco use status is queried and documented, for every patient at every clinic visit.	Expand the vital signs to include tobacco use, or use an alternative universal identification system. <i>Vital signs</i> Blood pressure: _____ Pulse: _____ Wt: _____ Temperature: _____ Respiratory rate: _____ Tobacco use (circle one): Current Former Never Alternatives to expanding the vital signs are to place tobacco-use status stickers on all patients' charts or to indicate tobacco-use status using electronic medical records or computer reminder systems.
Action	A2: Advise – strongly urge all tobacco users to quit
In a clear, strong, and personalized manner, urge every tobacco user to quit.	Advice should be: <ul style="list-style-type: none"> • <i>Clear</i> – "I think it is important for you to quit smoking now, and I can help you. Cutting down is not enough." • <i>Strong</i> – "As your clinician, I need you to know that quitting smoking is the most important thing you can do to protect your health now and in the future. The clinic staff and I will help you." • <i>Personalized</i> – Tie tobacco use to current health/illness, its social and economic costs, motivation level/readiness to quit, and the impact of tobacco use on children and others in the household.

Table 1. Brief strategies to help the patient willing to quit tobacco use (cont)

Action	A3: Assess – determine willingness to make a quit attempt
Ask every tobacco user if he or she is willing to make a quit attempt at this time (e.g. within the next 30 days).	<p>Assess patient's willingness to quit:</p> <ul style="list-style-type: none"> • If the patient is willing to make a quit attempt at this time, provide assistance. • If the patient will participate in an intensive treatment, deliver such a treatment or refer to an intensive intervention. • If the patient clearly states he or she is unwilling to make a quit attempt at this time, provide a motivational intervention. • If the patient is a member of a special population (e.g. adolescent, pregnant smoker, racial/ethnic minority), consider providing additional information. • Remove tobacco products from your environment. Prior to quitting, avoid smoking in places where you spend a lot of time (e.g. work, home, car).
Action	A4: Assist – aid the patient in quitting
Help the patient with a quit plan.	<p>A patient's preparation for quitting:</p> <ul style="list-style-type: none"> • <i>Set a quit date</i> – ideally, the quit date should be within 2 weeks. • Tell family, friends, and coworkers about quitting and request understanding and support. • Anticipate challenges to planned quit attempt, particularly during the critical first few weeks. These include nicotine withdrawal symptoms. • Remove tobacco products from your environment. Prior to quitting, avoid smoking in places where you spend a lot of time (e.g. work, home, car).
Provide practical counseling (problem solving/training).	<ul style="list-style-type: none"> • <i>Abstinence</i> – Total abstinence is essential. "Not even a single puff after the quit date." • <i>Past quit experience</i> – Review past quit attempts including identification of what helped during the quit attempt and what factors contributed to relapse. • <i>Anticipate triggers or challenges in upcoming attempt.</i> Discuss challenges/triggers and how patient will successfully overcome them. • <i>Alcohol</i> – Since alcohol can cause relapse, the patient should consider limiting/abstaining from alcohol while quitting. • <i>Other smokers in the household</i> – Quitting is more difficult when there is another smoker in the household. Patients should encourage housemates to quit with them or not smoke in their presence.
Provide intra-treatment social support.	Provide a supportive clinical environment while encouraging the patient in his or her quit attempt. "My office staff and I are available to assist you."
Recommend the use of approved pharmacotherapy, except in special circumstances.	Recommend the use of pharmacotherapies proved to be effective. Explain how these medications increase smoking cessation success and reduce withdrawal symptoms. The first-line pharmacotherapy medications include: bupropion SR, nicotine gum, nicotine inhaler, nicotine nasal spray, nicotine patch, nicotine lozenge.
Help patient obtain extra-treatment social support.	Help patient develop social support for his or her quit attempt in environments outside of treatment. "Ask your spouse/partner, friends, and coworkers to support you in your quit attempt."
Provide supplementary materials.	<p><i>Sources</i> – Federal agencies, nonprofit agencies, or local/state health departments</p> <p><i>Type</i> – Culturally/racially/educationally/age appropriate for the patient</p> <p><i>Location</i> – Readily available at every clinician's workstation</p>
Action	A5: Arrange – schedule follow-up contact
Schedule follow-up contact, either in person or via telephone.	<p><i>Timing</i> – Follow-up contact should occur soon after the quit date, preferably during the first week. A second follow-up contact is recommended within the first month. Schedule further follow-up within the first month. Schedule further follow-up contacts as needed.</p> <p><i>Actions during follow-up contact</i> – Congratulate success. If tobacco use has occurred, review circumstances and elicit recommitment to total abstinence. Remind patient that a lapse can be used as a learning experience. Identify problems already encountered and anticipate challenges in the immediate future. Assess pharmacotherapy use and problems. Consider use or referral to more intensive treatment.</p>

Adapted from the US Dept of Health and Human Services Public Health Service. Tobacco Use and Dependence Guidelines. Clin Prac. June, 2000.

Table 2. Enhancing motivation to quit tobacco (The Five R's)**Relevance: *Personalize why quitting is relevant***

Ask the patient to indicate why they are interested in quitting, recognizing that motivational information is greatest if relevant to the disease or risk, family or social situation, health concerns, age, gender, and personal patient characteristics such as previous experiences or personal barriers.

Example: "I understand you are not interested in quitting smoking now but I simply wondered if there are reasons why quitting might be important to you in the future?"

Example: "Many people have difficulty quitting smoking because of family or social situations or they've had problems quitting in the past. This is not uncommon. However are there important things you've considered about why you might want to quit smoking in the future?"

Risks: *Ask the patient to identify the negative consequences of tobacco use*

You can suggest the acute risks relative to their disease or risk such as shortness of breath, harm to pregnancy, exacerbation of asthma, etc.; the long-term risks such as heart attack, lung cancer, stroke, and long-term disability; and the environmental risks such as higher rates of smoking in children of tobacco users, middle ear disease, increased risk of low-birth weight and sudden infant death syndrome in those exposed to smoke.

Example: "Can you identify any of the risks associated with your continuing to smoke on a regular basis?"

Example: "Do you feel that there are any short-term or long-term risks associated with your continued smoking?" "Any risk to your family or friends?"

Rewards: *Ask the patient to identify the benefits of stopping smoking*

You can help the patient by suggesting or highlighting those things that seem most relevant to them.

Examples of rewards include: improved health, food will taste better, improved sense of smell, save money, feel better about yourself, reduced wrinkling, aging of the skin etc.

Example: "It sounds like you have some concerns about the problems you might encounter in the future if you continue to smoke. Have you thought about the real benefits of quitting smoking?"

Example: "You told me earlier that you might feel better physically if you quit smoking. Do you see any other benefits to quitting?"

Roadblocks: *Ask the patient to identify the barriers to quitting*

Typical barriers include: withdrawal symptoms, fear of failure, weight gain, lack of support, depression and enjoyment of tobacco.

Attempt to note any elements of treatment such as problem-solving, pharmacotherapy, that could address the barriers.

Example: "You know, Mr. Jones, it sound like you recognize how smoking is impacting your health, but you're not ready to quit again yet because you had some real problems gaining weight the last time you quit. Is there anything that I could do to provide you with additional resources about how to avoid gaining weight when you quit smoking?"

Example: "It sounds like there are several things standing in your way of quitting. Can you tell me the real important barriers for you?"

Repetition: *Repeat this intervention at every visit*

Always repeat your message at every encounter with a patient. In addition, let smokers know that most people make 3-4 quit attempts before they are successful.

Adapted from the US Dept of Health and Human Services Public Health Service Tobacco Use and Dependence Guidelines, June 2000.

The Need for Pharmacological Therapies

The US Department of Health and Human Services Treating Tobacco Use and Dependence guidelines recommend that all individuals expressing an interest in quitting smoking be offered not only behavioral counseling but also pharmacotherapy.¹³ Nicotine replacement therapy (NRT) not only helps individuals through the worst of nicotine withdrawal, but when combined with behavioral methods, it may enhance success with quitting. Nicotine replacement is not considered an independent risk factor for acute myocardial events and can be used safely in patients following an acute myocardial infarction and in those with arrhythmias or angina pectoris.²⁷

Four nicotine replacement products are currently available in China (patch, gum, lozenge, and inhaler) but the use of these over-the-counter agents has been somewhat limited. However, a 12-month study of 1,186 smokers receiving nicotine replacement therapy who were followed in the Smoking Cessation Center in Hong Kong showed an increase in the point-prevalence cessation rate at 12 months from 25% to 40% among those who were adherent (self-reported use for at least 4 weeks) compared to those non-adherent subjects.⁸ Patients' acceptance of free NRT was high (87%), but adherence to the recommended course of treatment for at least 4 weeks was low (16%).⁸ These results are similar to those obtained in other countries. A wide variation in the prevalence of adherence (5-96%) to NRT products has been noted in other studies.²⁸

The lack of adherence to NRT therapies and wide variation in their use calls for health care professionals to become engaged in educating patients about the appropriate administration of these products including side effects, length of use, cost, and perceived barriers to administration. Active inquiry about adherence to NRT and assistance in overcoming barriers to continuing the use of these products can be conducted by telephone follow-up or visits within rehabilitation programs.

Conclusion

The large burden of chronic disease caused by smoking requires a concerted approach by health care

professionals to help individuals quit. Numerous behavioral and pharmacological therapies are available to support patients in the quitting process. All health care professionals engaged in both inpatient and outpatient health care settings must take the opportunity to perfect their skills in offering strong messages to smokers, and in educating and counseling them to succeed with quitting.

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