

Interrupting the disease of tobacco addiction

Charl Els, MBChB, FCPsych, MMedPsych, ABAM, MROCC

“The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being.”

—The Constitution of the World Health Organization

Tobacco is the only legal consumer product that kills at least 1 out of 2 of its regular users when used as intended by the manufacturer.¹ There are approximately 1.1 billion smokers worldwide, and it is predicted that the use of tobacco could kill 1 billion people during the 21st century. Cigarettes contain tobacco, and tobacco contains nicotine, delivered rapidly to the brain when smoking tobacco. Nicotine is a single psychoactive substance that affects the brain and the central nervous system, among others. The disease of tobacco addiction (nicotine dependence, tobacco use disorder) is recognized as a chronic disease by most authorities including the United States Department of Health and Human Services (USDHHS), Health Canada, many countries' medical associations, and the World Health Organization; it is identified as such in major disease classification systems.^{2,3} However, not every person who uses tobacco is addicted to nicotine.

Addiction is a pediatric disease

Tobacco addiction is a treatable disease and not simply a lifestyle choice. Addiction is a primary, chronic, neurobiological disease with genetic, psychosocial, and environmental factors influencing its development and manifestations. It is characterized by behaviours that include one or more of the following: impaired control over drug use, compulsive use, continued use despite harm, and craving.³ This condition is typically induced by repeated exposure to nicotine from tobacco, producing changes in the brain's motivational system as a consequence of which a reward-seeking behaviour has become out of control.^{4,5} Decision making and behaviour are subsequently influenced by the underlying pathophysiological changes in the brain. Ninety per cent of the population will try tobacco at least once in their lifetime, and about 90% of persons who become addicted will do so before the age of 18.

Global approaches to tobacco control

Although much progress has been made in many countries, our current country-specific prevalence rates cannot be seen as the endpoint for success. Increasing adult cessation is considered a major determinant for reducing smoking-related death and disease over the next few decades.⁶ The first international public health treaty—the Framework Convention on Tobacco Control (FCTC)⁷—

represents a milestone for public health. Article 14 of the FCTC addresses cessation. In its MPOWER initiative, the WHO describes the 6 key policy strategies that have been demonstrated to denormalize and reduce tobacco use¹:

M: Monitor tobacco use and prevention policies

P: Protect people from tobacco smoke

O: Offer help to quit tobacco use

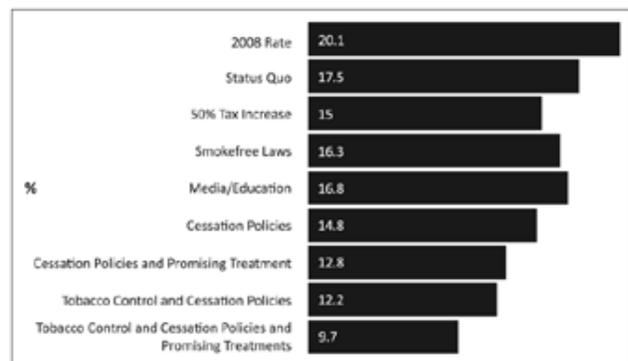
W: Warn about the dangers of tobacco

E: Enforce bans on tobacco advertising, promotion and sponsorship

R: Raise taxes on tobacco

Simulation models examine the overall effect of tobacco control policies and other interventions on estimated population quit rates (Figure 1).⁸ Figure 2 demonstrates some of the lost opportunities for cessation interventions on primary care for different disciplines.

Figure 1. Projected effect of tobacco control policies and other interventions on smoking prevalence, 2008–2020

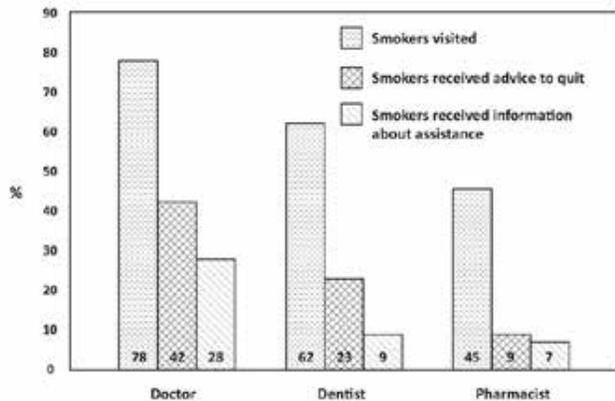


Despite the devastating health effects and the associated costs to society, and the availability of safe and effective measures to treat tobacco addiction, tobacco control's impact appears to have plateaued. There are numerous plausible explanations for this, including lost opportunities for safe and effective interventions by health professionals. The reality is that, despite the proven beneficial impact of remedying the tobacco epidemic, treatment of tobacco use and addiction continue to be vastly neglected.⁹

Associate Clinical Professor, Department of Psychiatry, University of Alberta, Edmonton, Alberta, Canada

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Figure 2. Lost opportunities for tobacco cessation interventions¹⁰



Treatment approaches

There is a robust body of evidence guiding effective tobacco cessation, and there exists a wide array of internationally recognized guidelines and opportunities for intervention with tobacco use and addiction. The US Public Health Service-sponsored Clinical Practice Guideline update identifies the “5-A” model for treating tobacco use and dependence.⁹ This model includes asking about tobacco use with every patient at every visit, advising tobacco users to quit, assessing willingness to make a quit attempt, assisting those willing to attempt quitting by offering counselling and medication, motivating future quit attempts in those unwilling, and arranging for follow-up contacts.

USDHHS guideline: Key recommendations for tobacco use and dependence⁹

The overarching goals of these recommendations are that clinicians strongly recommend the use of effective tobacco dependence counselling and medication treatments to their patients who use tobacco, and that health systems, insurers, and purchasers assist clinicians in making such effective treatments available.

1. Tobacco dependence is a chronic disease that often requires repeated intervention and multiple attempts to quit. Effective treatments exist, however, that can significantly increase rates of long-term abstinence.
2. It is essential that clinicians and health care delivery systems consistently identify and document tobacco use status and treat every tobacco user seen in a health care setting.
3. Tobacco dependence treatments are effective across a broad range of populations. Clinicians should encourage every patient willing to make a quit attempt to use the counselling treatments and medications recommended in the guideline.
4. Brief tobacco dependence treatment is effective. Clinicians should offer every patient who uses tobacco at least the brief treatments shown to be effective in the guideline.

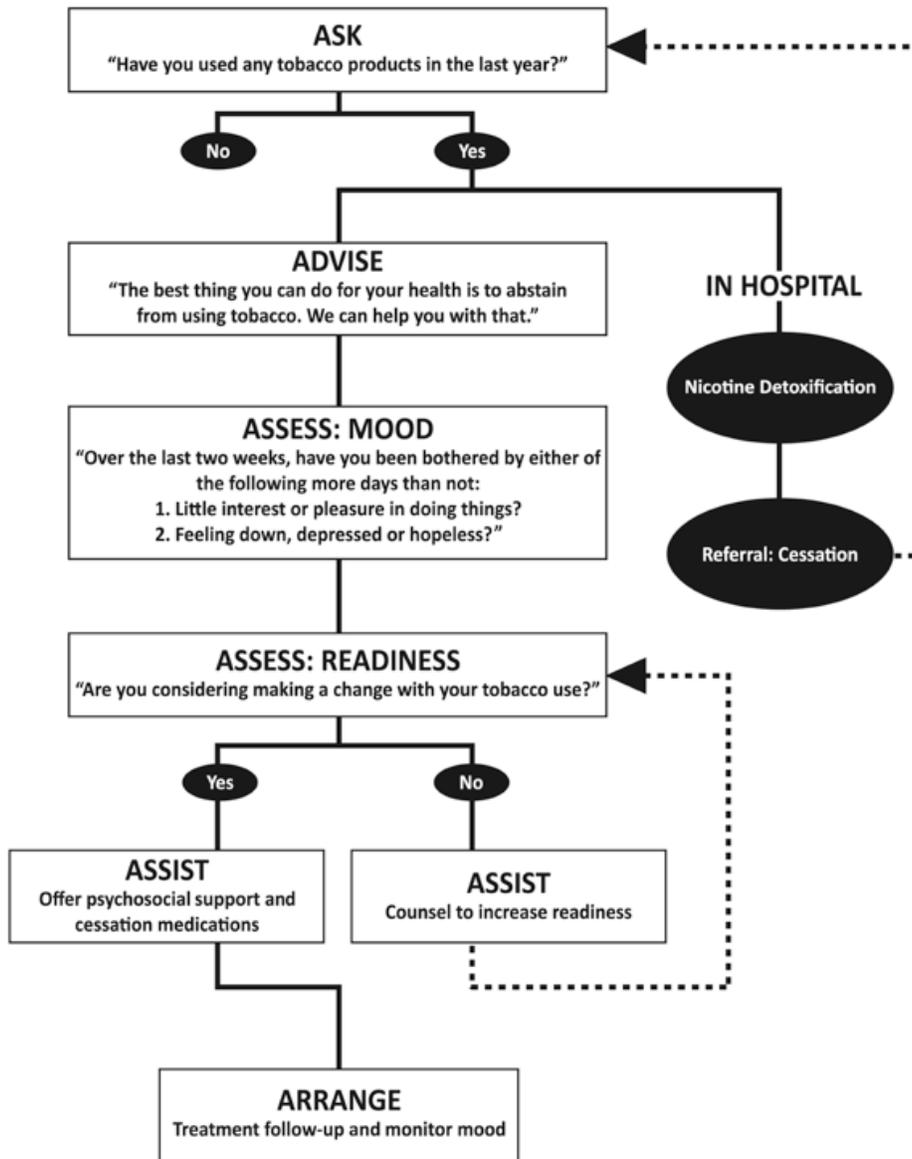
5. Individual, group, and telephone counselling are effective, and their effectiveness increases with treatment intensity. Two components of counselling are especially effective, and clinicians should use these when counselling patients making a quit attempt:
 - a. practical counselling (problem-solving/skills training)
 - b. social support delivered as a part of treatment

6. Numerous effective medications are available for tobacco dependence, and clinicians should encourage their use by all patients attempting to quit smoking—except when medically contraindicated or with specific populations for which there is insufficient evidence of effectiveness (i.e., pregnant women, smokeless tobacco users, light smokers, and adolescents). Seven first-line medications (5 nicotine and 2 non-nicotine) reliably increase long-term smoking abstinence rates:
 - a. bupropion (Sustained Release [SR])
 - b. nicotine gum
 - c. nicotine inhaler
 - d. nicotine lozenge
 - e. nicotine spray
 - f. nicotine patch
 - g. varenicline

Clinicians should consider the use of certain combinations of medications identified as effective in the guideline.

7. Counselling and medication are effective when used by themselves for treating tobacco dependence. The combination of counselling and medication, however, is more effective than either alone. Thus, clinicians should encourage all individuals making a quit attempt to use both counselling and medication.
8. Telephone quitline counselling is effective with diverse populations and has broad reach. Therefore, both clinicians and health care delivery systems should ensure patient access to quitlines and promote quitline use.
9. If a tobacco user currently is unwilling to make a quit attempt, clinicians should use the motivational treatments shown in the guideline to be effective in increasing future quit attempts.
10. Tobacco dependence treatments are both clinically effective and highly cost-effective relative to interventions for other clinical disorders. Providing coverage for these treatments increases quit rates. Insurers and purchasers should ensure that all insurance plans include the counselling and medication identified as effective in the guideline as covered benefits.

Figure 3. Safety sensitive algorithm¹¹



Consistent with FCTC Article 14,⁷ Canada released its first federally funded set of clinical practice guidelines through the Canadian Action Network for the Advancement, Dissemination and Adoption of Practice-informed Tobacco Treatment (CAN-ADAPTT).¹¹ Given the high level of co-occurrence of mood symptoms in persons who use tobacco and/or stop its use, the basic algorithm included in CAN-ADAPTT allows integrated and brief screening of mood in the treatment of tobacco use and addiction (Figure 3).

Among those who currently smoke tobacco, approximately 70% would like to stop and about half of these will try to quit at least once this year.¹⁰ The use of short-term, acute care models to manage chronic, non-communicable diseases is theoretically inconsistent. Hypertension, hypercholesterolemia, obesity, diabetes,

depression, chronic obstructive lung diseases, and addiction are some diseases that often require repeated interventions. Following a short-term approach for tobacco-addicted individuals is equally illogical and compromises the chances of long-term cessation success. Evidence-based smoking cessation is both safe and effective and appears to be one of the most robust and clinically meaningful interventions that health care professionals could offer.

Conclusions

Tobacco use remains the leading preventable cause of death and disease worldwide and, having taken into consideration impressive progress over decades, existing smoking rates (as an endpoint) cannot be regarded as a success. Yet the problem of tobacco does not have to be

an intractable one. It has been estimated that some of the greatest declines in smoking-related death over the next few decades will come from increasing adult cessation. Tobacco (nicotine) addiction is a chronic disease amenable to treatment. Health professionals are ideally placed to make a substantial difference, utilizing clinical practice

guidelines.¹² Despite the highly significant health threat of tobacco, the existence of robust interventions, and the desire of most individuals to quit, opportunities continue to be neglected. Evidence tells a vivid and chilling story of the dire and urgent need to support cessation.¹²

References

1. World Health Organization. *WHO report on the global tobacco epidemic, 2008: The MPOWER package*. Geneva: Author; 2008.
2. American Psychiatric Association. *Diagnostic and statistical manual of mental disorders*, text revision. 4th ed. Washington DC: Author; 2000.
3. World Health Organization. *ICD-10: International statistical classification of diseases and related health problems*. 10th rev. Geneva: Author; 2007.
4. West R. Theory of addiction. *Alcohol Alcohol*. 2006;42(2):161-3.
5. Heather N. A conceptual framework for explaining drug addiction. *J Psychopharmacol*. 1998; 12:3-7.
6. McLellan A, Lewis D, O'Brien C, Kleber H. Drug dependence, a chronic medical illness: Implications for treatment, insurance, and outcomes evaluation. *JAMA*. 2007;284:1689-95.
7. World Health Organization. Framework Convention on Tobacco Control [website] [accessed 2014 Aug 21]. Available from: <http://www.who.int/fctc/en/>
8. Levy DT, Mabry PL, Graham AL, et al. Reaching healthy people 2010 by 2013—A SimSmoke simulation. *Am J Prev Med*. 2010;38:S373-81.
9. US Department of Health and Human Services. *The health consequences of smoking: A report of the surgeon general*. Atlanta: US Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health; 2004 [accessed 2014 Aug 21]. Available from: http://www.cdc.gov/tobacco/data_statistics/sgr/2004/complete_report/index.htm.
10. Leatherdale S, Shields M. *Smoking cessation: Intentions, attempts and techniques*. Statistics Canada: Health Reports. Catalogue no. 82-003-XPE. Ottawa: Statistics Canada; 2009.
11. CAN-ADAPTT. *Canadian smoking cessation clinical practice guideline*. Toronto: Canadian Action Network for the Advancement, Dissemination and Adoption of Practice-informed Tobacco Treatment, Centre for Addiction and Mental Health; 2011 [accessed 2014 Aug 21]. Available from: <https://www.nicotinedependenceclinic.com/English/CANADAPTT/Pages/Home.aspx>.
12. Els C, Kunyk D, Selby P. *Disease interrupted*. 2nd Print. Ste-Foy, QC: Laval University Press; 2014 [accessed 2014 Aug 21]. Available from: <http://www.pulaval.com/produit/disease-interrupted-tobacco-reduction-and-cessation>