

The Nicotine Challenger

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A View From The Director *by Jonathan Foulds, PhD*

Importance of Adequately Funding Comprehensive Tobacco Control in New Jersey

Here in New Jersey, our Comprehensive Tobacco Control Program (CTCP) started in 2000 with funding of \$32.5 million via the Master Settlement Agreement (MSA). At that time the Centers for Disease Control and Prevention (CDC) recommended a \$45 million minimum annual expenditure on tobacco control. The program was set up to follow CDC guidelines with components for media, evaluation, community activities, youth prevention, and smoking cessation. Unfortunately, the post-9/11 recession caused severe budgetary problems for the state, and funding was drastically cut by 66% to \$11 million in 2004 and has remained at that level. The state brings in approximately \$1 billion per year from tobacco sources (MSA plus tobacco taxes), but only spends around 1% of those revenues on tobacco control. Even worse, New Jersey spends less on tobacco control than it receives in excise tax from illegal cigarette sales to children (\$11.5 million)! The CDC updated its funding recommendations for New Jersey to \$120 million (\$13.75 per person per year, and 12% of total tobacco-related revenue to the state) in 2007, but CTCP funding has not changed and is now less than 10% of the CDC recommendation.

Despite being considerably underfunded, the New Jersey CTCP has had many notable achievements:

- Over the years 2000 to 2007, cigarette taxes were increased from 80 cents per pack to \$2.575 per pack (highest state tax in the country).
- Legislation was passed to ban smoking in all workplaces and indoor public places (implemented in 2006, adding casinos in 2008).
- The number of cigarettes being smoked by New Jersey youth was cut by 50% from 1999 to 2006.
- Adults cigarette smoking fell from 21% during the mid 1990s to 17.1% in 2007, the lowest level recorded

Some may ask for early signs of a health impact. One early response to reduced smoking is a reduced rate of heart attacks. The number of reported inpatient hospitalizations caused by acute myocardial infarctions in New Jersey was above 22,000 every year from 1995 to 2003 (24,278 in 2000), but dipped below 22,000 in 2004 and continued to fall to under 20,000 in 2006. This reduction from the year 2000 to 2006 was evident for every age group over age 15. Although this reduction cannot be solely attributed to the accomplishments of New Jersey's CTCP, it is quite likely that many heart attacks were prevented by the state's overall reduction in smoking prevalence. In tough financial times, one must not overlook the cost savings to the healthcare system from reduced hospital admissions

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Tobacco Dependence Should Get its Due as a Chronic Condition *by Michael B. Steinberg, MD MPH*

Most smokers are aware of the numerous health risks associated with smoking, and the majority report wanting to quit ⁽¹⁾. Seven first



line medications have been approved by the Food and Drug Administration for cessation including: NRT (patch, gum, lozenge, inhaler, nasal spray); bupropion; and varenicline ⁽²⁾. Despite the proven benefits of these medications, a mere 17% of all smokers utilize pharmacotherapy for tobacco dependence each year ⁽³⁾.

Many smokers are misinformed about the safety of nicotine medications and other available cessation pharmacotherapies. The majority of smokers incorrectly reported that nicotine was the primary cause of cancer and only one-third correctly stated that the nicotine patch was less likely to cause a heart attack than cigarette smoking ⁽³⁾. In actual fact, NRT is safe even in high doses ⁽⁴⁾ and in high-risk populations such as those with existing cardiovascular disease ⁽⁵⁾. While dependence on NRT is possible, the overall chance of addiction as reported in the literature is very low, generally under 10% ⁽⁶⁾. Although the optimal duration of treatment remains unclear ⁽⁷⁾, a single, brief treatment with NRT will result in long-term abstinence in only a minority of smokers as relapse is a hallmark of this chronic condition. An estimated 30% of those who quit smoking by using NRT and achieve abstinence at 12 months subsequently relapse ⁽⁸⁾.

Extending the duration of NRT treatment for longer periods may be beneficial ⁽²⁾ and could actually prevent relapse ⁽⁹⁾. In clinical trials, nicotine inhaler use extended for up to 1 year increased abstinence rates at 12 months compared to placebo ⁽¹⁰⁾, and in the Lung Health Study, 31% of subjects continued using nicotine gum safely and effectively for over 1 year. Some participants continued gum use for up to 5 years without any serious side effects ⁽¹¹⁾. Additionally, data indicate that use of bupropion and varenicline for up to 1 year are effective and safe ^(12,13). Long-term medication use in patients requiring extended courses of treatment is also supported by the updated Public Health Service (PHS) Guidelines ⁽²⁾. Since quitters using long-term pharmacotherapy are exposed to lower levels of nicotine with an elimination of the 4,000 toxins found in cigarette smoke, there is a clear overall health benefit if the individual is no longer smoking cigarettes ⁽⁹⁾.

For some smokers, long-term pharmacotherapy is the difference between tobacco abstinence and life-long smoking. Long-term use of nicotine replacement therapy is much safer than continuing to smoke cigarettes. Healthcare providers should remain open-minded to patients who may require a unique course of treatment. Although

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long-term use is considered "off-label", patients should be encouraged to remain smoke-free, and if extended courses of pharmacotherapy will assist them, treatment should be continued, encouraged, and reimbursed.

Given the chronic, relapsing nature of tobacco dependence, rather than considering cessation medications as a short-term aid in smoking cessation, treatment and its coverage should be in line with other long-term illnesses and conditions, such as asthma, depression, and diabetes. The neurobiochemical effects of tobacco use are well documented and result in measurable and lasting changes in brain structure (e.g. upregulation of nicotinic receptors) and function (e.g. changes in the electroencephalograph), some of which can be objectively measured by imaging techniques, especially in the mesolimbic "reward" center⁽¹⁴⁾. These biological changes are a hallmark of a chronic medical condition, and discontinuation of tobacco use results in physiological changes within the brain and a subsequent withdrawal syndrome⁽²⁾.

Pharmacotherapies have been proven effective in treating these withdrawal symptoms, but a major barrier to obtaining treatment is insurance coverage. Despite the cost-effectiveness of tobacco treatment medications in comparison to other commonly prescribed medical interventions, a number of insurance carriers often do not cover proven cessation therapies and/or their duration is severely curtailed⁽²⁾. With other serious addictions, such as heroin, the long-term use of proven medications (methadone) to prevent relapse is commonly provided, whereas this is not the case with tobacco treatment medications, despite the fact that tobacco kills far more of its users than any other addiction. Tobacco dependence is viewed by physicians and insurers like other addictions that do not garner the same respect as "medical" diagnoses, and in fact bring with them a certain

stigma. The reality is that tobacco use kills more people than many classic medical diseases. It should not matter whether the site of disease is in the lung with airway hyper-reactivity (asthma), the adipose tissue with insulin resistance (diabetes), or in the nucleus accumbens (tobacco dependence). The outcomes of morbidity and mortality are what should be concerning patients, healthcare providers, and payers. It is time to move beyond the antiquated categorization of tobacco use as just a bad habit, and deal with providing effective treatment. Thus, tobacco dependence should be regarded by these stakeholders as the chronic medical condition that it represents. The long-term use of medications for the treatment of tobacco dependence can result in continued abstinence and the associated reduction in health consequences.

In summary, the prevalence of tobacco use and death rates caused from smoking are higher than those of other chronic conditions, such as diabetes. Both conditions are improved with comprehensive, cost-effective treatments including combined pharmacotherapy and behavioral components. However, while long term treatments for diabetes are commonly reimbursed by health insurance, those for tobacco dependence are often not. Covering both behavioral and pharmacological measures to assist in smoking cessation will increase the demand for and accessibility to effective treatment options, and has been called for by the National Institutes of Health in their "State of the Science Conference Statement"⁽¹⁵⁾. Improving the availability of these benefits will expand the number of smokers utilizing treatment and will increase smoking abstinence rates⁽²⁾. Tobacco dependence should be recognized as a chronic illness requiring effective treatments for as long as the condition exists.

Excerpt from a recently published article (Steinberg MB, Schmelzer AC, Richardson DL, Foulds J; The case for treating tobacco dependence as a chronic disease; *Annals of Internal Medicine*; 148(7):554-7; 2008)

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