



**Indian Health Service**  
**National Pharmacy and Therapeutics Committee**  
**Formulary Brief: Nicotine Dependence**  
-August 2015-



**Background:**

Last year the U.S. Surgeon General released the report, *The Health Consequences of Smoking-50 years of Progress*, which detailed the impact of the epidemic of smoking in the last five decades, both in terms of lives lost and economic burden. Smoking continues to be the most preventable cause of disease, disability and death in the United States. American Indians and Alaska Natives, as a group, have the highest prevalence of smoking of any ethnic minority in the United States.

**Discussion:**

In the 50 years since the publication of the U.S. Surgeon General's Report, *Smoking and Health*, prevalence rates for smoking have decreased substantially. Yet roughly one in four U.S. adults still use tobacco products. While prevalence rates for combustible tobacco products have declined, the use of emerging products such as electronic cigarettes is on the rise, particularly among youth. These products may pose similar health risks as traditional tobacco products and have not been proven effective in the management of tobacco use disorders. They pose the additional risk of nicotine overdose among young children.

At its August 2015 meeting in Denver, the IHS National Pharmacy and Therapeutics Committee (NPTC) reviewed the pharmacologic management of tobacco use disorders. Available agents are primarily indicated for smoking cessation. An effective strategy for smoking cessation involves routine assessment of tobacco use, counseling, and behavioral support, as well as medication therapy.

Three first-line medication therapies for smoking cessation include nicotine replacement therapy (NRT), bupropion, and varenicline. Each of these agents has proven effective and safe in promoting significant long-term tobacco cessation, roughly doubling quit rates compared to placebo.

NRT products approved for use include the long-acting nicotine patch as well as nicotine gum, lozenge, inhaler and nasal spray - the first three of which are available without a prescription. All are equally effective in promoting smoking cessation, but combination NRT with the long-acting nicotine patch and a short-acting agent (for as-needed use to treat nicotine cravings) has been found superior to any other single agent with the exception of varenicline.

Bupropion is an anti-depressant which is also FDA-approved for smoking cessation. A recent Cochrane review of 44 trials and over 13,000 participants found high-quality evidence for its efficacy in promoting tobacco cessation. While neuropsychiatric side effects, including suicidality, have been reported with bupropion use, causality has not been established and the agent is generally considered safe.

Varenicline is a partial agonist of the nicotinic acetylcholine receptor which both reduces symptoms of nicotine withdrawal and blunts the rewarding aspects of tobacco use. A recent Cochrane review of 15 randomized control trials comparing varenicline to placebo found the agent to be highly effective in producing sustained tobacco cessation. Efficacy was superior to each of the other first line agents with the exception of combination NRT, which has similar efficacy. While post-marketing reports of adverse neuropsychiatric symptoms and cardiovascular events raised concern, published meta-analyses including large numbers of treated patients have been reassuring regarding the safety of varenicline.

Nortriptyline has been found effective for off-label use for tobacco cessation. However, there is somewhat less data supporting its use compared to other agents and it carries the adverse side effect profile of a tricyclic antidepressant, including sedation and potential adverse anti-cholinergic effects.

Regardless of the agent selected, a 12 week treatment course is generally recommended. Bupropion and varenicline are most effective when started at least 1 week in advance of the tobacco quit date. NRT should not generally be used in combination with tobacco products.

### Findings:

To enhance access to the most effective therapies for tobacco cessation, the NPTC added varenicline and combination NRT (nicotine patch and any short-acting NRT product) to the IHS National Core Formulary (NCF). Bupropion remains on the NCF.

It is well recognized that tobacco cessation is substantially aided by behavioral support including cessation counseling. The NPTC advocates universal access to culturally appropriate tobacco cessation counseling resources for the IHS service population. Resources for such training are available through the University of Arizona's HealthCare Partnership (<http://www.healthcarepartnership.org/>).

The NPTC endorses further research into the health effects of electronic cigarettes and advocates for additional regulation of these products, particularly regarding marketing to youths. IHS clinicians are encouraged to educate patients about the potential harms of these products and discourage their use.

*If you have any questions regarding this document, please contact the NPTC at [IHSNPTC1@ihs.gov](mailto:IHSNPTC1@ihs.gov). For more information about the NPTC, please visit the [NPTC website](#).*

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