

## Internet promotes and undermines smoking cessation

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(PhysOrg.com) -- Analysis of internet search data shows, federal cigarette excise tax hike drove smokers to find ways to quit smoking, but more often shop online for tax-free or cheap cigarettes.

A new study led by researchers at the Johns Hopkins Bloomberg School of Public Health shows both the intended and unintended consequences of cigarette taxes. According to an analysis of <u>internet search</u> data, the 2009 U.S. federal cigarette excise tax increase successfully drove many smokers online to find ways to quit smoking, but more often smokers responded by shopping online for tax-free or cheap <u>cigarettes</u> in an apparent effort to evade the tax hike. The study is the first evaluation of smokers' responses to the federal cigarette excise tax, which increased from \$0.39 to \$1.01 per pack under the State Children's Health Insurance Program (SCHIP) reforms. The findings are published in the March 16 edition of PLoS One.

"Smokers can use the web to continue or kick their habit but, until now, we haven't been able to observe these behaviors in real-time," said John Ayers, lead author of the study and doctoral candidate at the Johns Hopkins Bloomberg School of Public Health. "This study shows how the internet is a double-edged sword both promoting and undermining smoking, which remains the leading cause of premature death in the U.S. Online vendors sell reduced or tax-free cigarettes using policy loopholes or by illegally evading the taxes all together, while health advocates use the web to promote cessation."



For the study, Ayers and a team of scientists from University of North Carolina's Gillings School of Global Public Health and the Informatics Program at Children's Hospital Boston (CHIP) studied the impacts of the SCHIP tax increase by monitoring search queries to Google-powered search engines a year before and after the SCHIP tax increase. The researchers found that, around the time the SCHIP tax increase took effect, smoking cessation and tax avoidance search queries reached new highs, increasing about 50 percent and 300 percent over baseline, respectively. However, cessation searches approximated pre-tax levels within two weeks of the tax, while searches for tax-free and cheap cigarettes remained about 60 percent higher a year after the tax. Analyses of search trends for two recent state-specific cigarette excise tax increases in Florida and New York corroborated these trends.

Study coauthor Kurt Ribisl, PhD, whose research focuses on policy issues related to internet tobacco sales, noted, "I am troubled to see the spike in people searching for cheap cigarettes around the time of tax increases. These tax increases are the leading way to reduce smoking while generating substantial revenue. This is a wake-up call for states and the federal government to crack down on tax evasion from internet tobacco sales."

"This was the first study to use real-time search query surveillance for a health policy evaluation," said coauthor John Brownstein, PhD, director of the Computational Epidemiology Group within CHIP and co-founder of Health Map (healthmap.org). "Search query surveillance is a promising approach for low cost, public and real-time insight into population health," he said.

"Health professionals need to anticipate how the public may respond to changes in health policies or new health information. We can create new approaches for utilizing internet searches to help the public make the best decisions to improve their health," said Daniel Ford, MD, Vice



Dean of Clinical Investigation for Johns Hopkins Medicine, who was not affiliated with the study. "It has been a challenge to find ways to engage smokers who are not actively considering quitting. When policies lead to increased internet searches for cheap cigarettes, this might provide an important opportunity for reaching these smokers," Ford added.

"Still, most smokers want to quit smoking and it is paramount that governments implement evidence-based policies to help people quit, including raising tobacco taxes. The good news here is that in absolute terms more people searched for smoking cessation rather than illicit cigarettes, even after the taxes promoted tax evasion," said Joanna Cohen, director of the Bloomberg School's Institute for Global Tobacco Control.

Health advocates have options to influence online behaviors. "In the future, we can target smokers with advertisements tailored to individual search queries that discourage tax evasion and promote cessation. Had such systems already been in place to take advantage of the increases in cessation and tax evasion searches around the SCHIP tax there would likely be fewer smokers today," said Ayers.

**More information:** www.plosone.org/article/info %3Adoi%2F10.1371%2Fjournal.pone.0016777

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