

Electronic nicotine delivery systems (ENDS): new evidence from the State and Community Tobacco Control Research Initiative

Todd Rogers

This supplement to *Tobacco Control* is the product of the State and Community Tobacco Control Research Initiative (SCTC), which consists of seven research projects and a coordinating centre funded through cooperative agreements with the National Institutes of Health, National Cancer Institute (NCI). Research conducted by Initiative members addresses important, understudied aspects of state and community tobacco control policy and media interventions in four areas: secondhand smoke policies; tobacco tax and pricing policies; community and individual behaviour related to tobacco advertising, and mass media actions to counter tobacco advertising; and tobacco industry practices. The Initiative has five interdependent components:

- ▶ Multiyear *Research Projects*, each with several specific aims centred on Initiative-relevant topics.
- ▶ Short-term *Collaborative Developmental Projects*, formed as collaborations among research projects and tobacco control partners to address emerging state and community research needs, and provide opportunities for novel pilot research.
- ▶ *Working Groups*, enabling collaboration among SCTC investigators and relevant partner individuals and organisations to address high-priority gaps in research and practice.
- ▶ The *NCI*, which, in addition to funding the Initiative, contributes to the scientific direction, and evaluates the Initiative process and short-term impact.
- ▶ A *Coordinating Centre*, which serves as an Initiative-wide resource to foster communication and collaboration among components and outside partners, participates in working groups and Initiative evaluation efforts, and facilitates the packaging and dissemination of Initiative research findings.

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A full description of the SCTC Initiative is available at (<http://sctcresearch.org/PublicHome>).

One common objective shared by Initiative components is to conduct research and disseminate findings on topics of high relevance for a wide array of audiences, including: tobacco control programmes; public health practitioners;

researchers; and federal, state, and local policy makers. Initiative members engage in strategic partnerships with state and local tobacco control programmes and other voluntary health, advocacy and public health organisations. These partnerships help to assure the relevance of Initiative research, and facilitate rapid adoption of research findings into tobacco control policies and practices.

In 2013, the SCTC steering committee determined that priority audiences share an urgent need for high-quality, relevant research to inform state and community policies and practices related to electronic cigarettes (e-cigarettes) and related electronic nicotine delivery systems (ENDS). Collective SCTC research and dissemination resources and capabilities, guided by close partnerships with the tobacco control community, uniquely positions the

Table 1 Relevance of SCTC ENDS research papers published in this supplement

Supplement paper	ENDS research priority area*	Findings with tobacco control relevance
Zhu <i>et al.</i> 460 brands of e-cigarettes and counting: implications for product regulation ²	Policy; messaging; marketing; normalisation	Changes in product designs and promotional messages included in online e-cigarette marketing have implications for policy development
Rose <i>et al.</i> The availability of electronic cigarettes in US retail outlets, 2012: results of two national studies ³	Marketing; policy	ENDS availability is associated with store and neighbourhood characteristics, with implications for retail sales and marketing policies that may also reduce tobacco-related health disparities
Emery <i>et al.</i> Wanna know about vaping? Patterns of message exposure, seeking and sharing information about e-cigarettes across media platforms ⁴	Policy; messaging; marketing; normalisation	Specific demographic groups vary in exposure to, searching for, and sharing of e-cigarette-related information across media platforms, which has relevance for policies and counter-marketing efforts
Huang <i>et al.</i> A cross-sectional examination of marketing of electronic cigarettes on Twitter ⁵	Policy; messaging; marketing; normalisation	Twitter is an important platform for commercial e-cigarette marketing, especially involving smoking cessation messages, with relevance for policies and counter-marketing efforts
Pepper <i>et al.</i> Effects of advertisements on smokers' interest in trying e-cigarettes: the roles of product comparison and visual cues ⁶	Marketing; messaging; policy	Certain message features of online e-cigarette ads stimulate smoker interest in trying e-cigarettes, with relevance for advertising restrictions
Gourdet <i>et al.</i> A baseline understanding of state laws governing e-cigarettes ⁷	Policy; product definitions	Provisions of existing state laws and other regulations that restrict and regulate e-cigarette-related products vary widely, which may impact policy enforcement and inform new policy development
Huang <i>et al.</i> The impact of price and tobacco control policies on the demand for electronic nicotine delivery systems ⁸	Marketing; industry action; policy	E-cigarette sales are sensitive to price changes, which may inform policies addressing ENDS marketing
Cummins <i>et al.</i> Use of e-cigarettes by individuals with mental health conditions ⁹	Uptake; marketing; harm reduction; policy	High rates of e-cigarette use by a vulnerable subgroup of smokers, with implications for policies, counter-marketing efforts, and cessation interventions
Schmitt <i>et al.</i> Research support for effective state and community tobacco control program response to electronic nicotine delivery systems ¹	All	State tobacco control leaders express the need for ENDS-related research on priority topics, some of which may be addressed by the SCTC Research Initiative

*Based on ENDS research priority areas catalogued by Schmitt *et al.*¹ ENDS, electronic nicotine delivery systems; SCTC, State and Community Tobacco Control Research Initiative.

Initiative to address questions raised by state and community tobacco control practitioners, advocates and policy makers about ENDS.¹ This supplement is a compilation of ENDS research studies conducted by transdisciplinary teams of SCTC investigators and collaborators that collectively address many high-priority research needs relevant to national, state and local tobacco control policies and practices (table 1).

The practice community's immediate need for high-quality scientific data to develop and implement effective policy and programmatic responses to a rapidly evolving ENDS environment was the primary stimulus for this supplement. The papers in this supplement.

- ▶ Provide detailed information on ENDS marketing through the internet and social media, and at the point of sale, as well as how tobacco users and non-tobacco users are exposed to, search for, and share ENDS-related information across media platforms,
- ▶ Examine the patterns and reasons for e-cigarette use, including information about the impact of electronic cigarette use on vulnerable populations, such as those with mental health conditions.
- ▶ Summarise the current state-level ENDS policies.
- ▶ Investigate the impact of price and other tobacco control policies on e-cigarette demand.

These papers also contribute to the growing evidence base regarding marketing, use, and impact of ENDS in the USA that supports regulatory actions proposed by the Food and Drug Administration.¹⁰

The range of ENDS research topics represented by the papers in this supplement is by no means exhaustive. The topics are necessarily biased towards the areas of focus for the SCTC Research Initiative; for example, high-priority

topics, such as issues of harm reduction, product characterisation, health effects and toxicity, are generally not studied within the Initiative despite the research gaps.^{11 12} Moreover, papers published here represent only a portion of the ENDS research being conducted by Initiative investigators, who will continue to publish findings from research on ENDS and other topics relevant to state and community tobacco control.

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TOBACCO CONTROL (SUPPLEMENT)

Ten new e-cigarette brands and over 240 new flavours appear monthly on web

Older brands more likely to push health and price; newer ones focus on consumer choice

Research [Four hundred and sixty brands of e-cigarettes and counting: implications for product regulation doi 10.1136/tobaccocontrol-2014-051670]

Linked editorial [Electronic nicotine delivery systems (ENDS): new evidence from the State and Community Tobacco Control Initiative doi 10.1136/tobaccocontrol-2014-051790]

The number and type of e-cigarettes available online has soared within the past couple of years, with around 10 new brands and more than 240 new flavours coming to market every month during this period, reveals a study published in a special supplement of Tobacco Control.

The study is one of nine pieces of research on e-cigarettes to come out of the State and Community Tobacco Control Research (SCTC) Initiative, funded by the US National Cancer Institute at the National Institutes of Health, and published in the supplement.

The researchers base their findings on a comprehensive trawl of online English language websites marketing e-cigarettes between two specific periods - May to August 2012 and December 2013 to January 2014.

They looked particularly at brands (older and newer); models ('cigalikes', which resemble conventional cigarettes); eGos, which are larger and usually have a removable tank containing liquid nicotine; and mods, which are larger still and endlessly customisable), flavours; nicotine strengths; ingredients; and product claims.

The first search identified 288 unique brands, 37 of which had disappeared by the time of the second search, which identified a further 215 new brands.

By January 2014, there were 466 different brands, each with its own website, and 7764 unique flavours. Nearly all brands offered tobacco and menthol flavours. The next most popular category of flavour was fruit, followed by dessert/candy, alcohol/drinks, snacks/meals.

In the 17 months between the two searches, there was a net increase of 10.5 brands and 242 new flavours each month.

A comparison of the older and newer brands showed that older brands were more likely to push their 'cigalike' qualities (just under 90% of older brands compared with just over half of newer ones).

Older brands were also significantly more likely to claim that they were healthier and cheaper than conventional cigarettes; that they offered a good substitute in areas where smoking is banned; and that they were effective smoking cessation aids.

Newer brands were more likely to focus on choice and versatility. They offered more flavours per brand than their older makes (49 compared with 32), and they were less likely to emphasise 'cigalike' qualities.

Around one in 10 older and newer brands made direct claims about the effectiveness of e-cigarettes in helping smokers quit.

The US regulator, the Food and Drug Administration, has recently categorised e-cigarettes as a tobacco product, so sales to minors will be banned. But this ban does not cover the internet, where up to half of the total quantity of e-cigarettes sold are purchased, the authors point out.

Since the arrival of the tobacco industry into the market, money has been ploughed into advertising, helping to spur growth, but no large advertising budget is required to achieve a web presence, they add. In the USA alone, the e-cigarette market is projected to reach US\$2 billion this year.

"The number of e-cigarette brands sold on the internet is large and the variety of flavours staggering," write the researchers.

They also note the shift in marketing tactics for these products, from conventional cigarette substitutes, only better, to styling themselves as new nicotine delivery systems, offering consumer choice in models and flavours.

As yet, it's unclear what impact this rapidly expanding market will have on smoking uptake and cessation, which poses "significant challenges to regulatory policy making," they conclude.