CLOSING THE REGULATORY GAP FOR SYNTHETIC NICOTINE PRODUCTS

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BACKGROUND:

In July 2017, the Food and Drug Administration (FDA) announced a broad plan to comprehensively and effectively regulate nicotine both under its tobacco and drug authority. This "nicotine-focused framework for public health" would seek to:

- Decrease nicotine to non-addictive levels for the most harmful and deadly products and
- Increase effectiveness and encourage innovation of less harmful ways to deliver nicotine to those already addicted.

However, there is a potentially critical gap left in this "comprehensive" plan: the emergence of affordable synthetic or non-tobacco derived nicotine products. Sellers of synthetic nicotine products recently celebrated as a "victory" the FDA's acknowledgement that its tobacco authority generally does not extend to products that do not contain tobacco-derived nicotine. However, the FDA has another option: regulating under its drug authority.

TABLE 1. HOW AFFORDABLE ARE SYNTHETIC NICOTINE PRODUCTS?

Brand	Nktr	Digable	Milkman	Mango-Lite	Enfuse	Creative E-Juices
Price ($)/ML	24.99 /60 = $0.42	19.99 /30 = $0.67	19.99 /60 = $0.33	27.99 /60 = $0.47	24.99 /60 = $0.42	14.99 /30 = $0.50
Nicotine Strength (mg)	0,3,6	0,3,6	0,3,6	0,3,6	0,3,6	0,3,6
Comparable Product Price ($)/ML	19.99 /60 = $0.33	15.99 /60 = $0.53	19.99 /60 = $0.33	24.99 /60 = $0.42	24.99 /60 = $0.42	15.99 /30 = $0.53
Difference Price ($)/ML	$0.09	$0.14	None	$0.05	None	$-0.03

TABLE 2. SPECIFIC EVIDENCE OF INTENDED USE IN SYNTHETIC NICOTINE PRODUCTS

	Evidence of Intended use	Rationale
Sellers' Representations	"This technology alliance will not only open the door for an entirely new, non-tobacco vape market, it aligns us closer to the pharmaceutical industry when combining the benefits from Vapeix Powered technologies with [synthetic nicotine], which can potentially result in future cessation tools for adult smokers." – *CEO of Vapeix*	Specifically references a cessation tool, which would align it with other nicotine replacement therapies (NRTs). A cessation claim is a claim to mitigate, treat or prevent disease.
	That its product could be used "in vapor for treatment of smoking cessation [sic]." – *Next Generation Labs*	Same as Above.
	"[n]o [c]arcinogenic or other tobacco combustion substances." – *Hiliq*	If this were a tobacco product, it would most likely be considered a "Modified Risk Claim" but outside the context of tobacco products, a Modified Risk Claim can be viewed as a claim to address disease.
	"since [its product] is completely synthetic, [it] does not contain any of some of the most harmful chemicals typically found as contaminants in tobacco-derived nicotine." - *Auster*	Same as above.
	About the product with "glacier, minty menthol" flavor as "definitely something you vape when you're like sick" with a cold because "it opens [you] up." – *SQN Vapor*	This is a claim about treating non-tobacco-related disease, here, the treatment of cold symptoms.
	"the same biological impact as tobacco derived nicotine." – *Next Generation Labs*	Comparing the synthetic nicotine to tobacco nicotine, which is well-known to be a stimulant and addictive, implies an effect on the body.
	Labeling products with different nicotine strengths flavor profile "allow[s] for the addition of a higher nicotine content," – *Next Generation Labs*	If products are offered at differing strengths of nicotine, the assumption can be made that different strengths have different effects on the body. Zero nicotine levels also make this same point; there is a difference between what the user experiences between a zero nicotine product and one with nicotine. Differing strengths may also imply that a user could step down their nicotine strength over time, similar to other cessation aids.
Product Design	Creating a product with nicotine content.	Nicotine has a well-known impact on the body and putting a drug-like ingredient in a product, knowing that the ingredient will affect the structure/ function of the body, suggests that sellers intend for that effect to take place.
Circumstances of Distribution	Consumer intent to use the product to mitigate the effects of nicotine withdrawal	Many studies show that among the most common reasons that e-cigarette users report using the products are to quit or reduce smoking and to reduce the health risks. In certain circumstances, the FDA has considered, in the absence of specific statements by the seller, the consumer's intent to be part of the relevant evidence. *See US v. Travia*, 1996 Jurisdictional Statement.[i]

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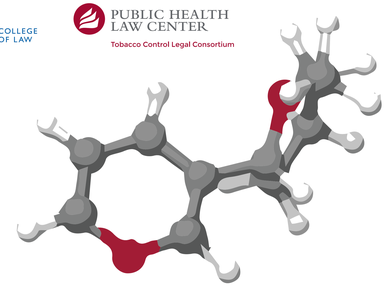
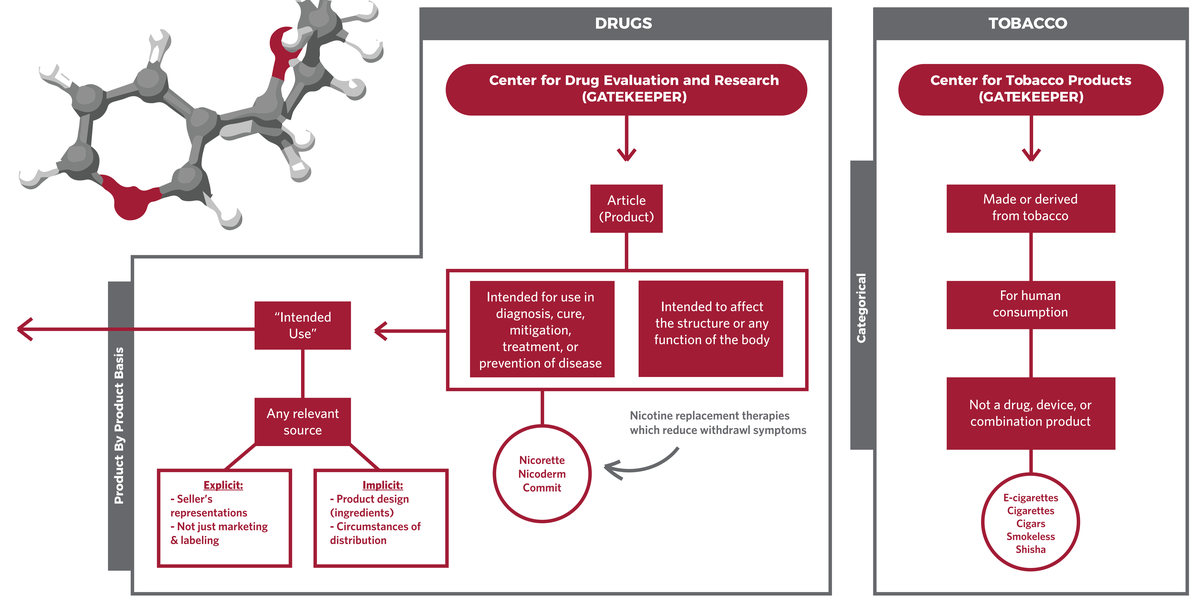


FIGURE 1. HOW IS NICOTINE REGULATED NOW?



INTENDED USE AND SYNTHETIC NICOTINE PRODUCTS:

Federal law authorizes the FDA to regulate as drugs those "articles" that are "*intended for use* in the diagnosis, cure, mitigation, treatment, or prevention of disease" or are "intended to affect the structure or function of the body." The FDA may consider a wide range of evidence in determining whether a product has such an "*intended use*." Table 2 provides examples of the evidence that the FDA could rely on to determine that synthetic nicotine products are intended to address disease or affect the structure or function of the body, making them drugs.

POLICY REASONS TO REGULATE AS A DRUG:

Based on sellers' representations, the product design, and the circumstances of distribution, there is a strong case that the FDA has the legal authority to regulate synthetic nicotine products as drugs. But the question remains if the FDA *should* do so. There are several policy reasons that support the FDA regulating synthetic nicotine products as drugs including:

TREATING LIKE PRODUCTS SIMILIARLY:

Because there is no evidence that the biological impact of the nicotine from synthetic sources differs meaningfully from tobacco-derived nicotine, there is no public health rationale for regulating one set of products but not the other. Regulating synthetic nicotine products as drugs would enable the FDA to treat them similarly to tobacco-derived nicotine products.

PROTECTING CONSUMERS:

The FDA acts as a gatekeeper for new drugs because there is asymmetry in the information available to consumers/prescribers and those who produce the drug. The safety, effectiveness, and quality of the product cannot be easily evaluated by the public. In the case of e-liquids, this is especially true for youth users who are particularly susceptible to the attraction of these products. By regulating synthetic nicotine products as drugs, the FDA would be able to ensure that these products are not more harmful than necessary and are less accessible to minors.

ENCOURAGING RESEARCH AND DEVELOPMENT:

The process for getting new drug approval is necessarily time-consuming and expensive. But the process also serves to incentivize high value innovation (in addition to protecting consumers). By regulating synthetic nicotine products as drugs, the FDA would be able to help ensure that claims about products are supported by rigorous scientific evidence and to encourage sellers to innovate products that would maximize health benefits and minimize health harms.

CONCLUSIONS:

There is strong evidence to support the FDA asserting jurisdiction over synthetic nicotine products as drugs. This action should be taken. The FDA can look to the sellers' representations, the product design, and the circumstances of distribution to support this action. In addition to having the legal authority to take this action, asserting jurisdiction over synthetic nicotine products would serve FDA's public health mission. It would close a loophole for nicotine products that, if left open, could undermine the goals of the agency's newly announced nicotine policy.

CITATIONS:

[i] United States v. Travia, 180 F. Supp. 2d 115, 119 (D.D.C. 2001), 1996 Jurisdictional Statement at 44630, https://www.gpo.gov/fdsys/pkg/FR-1996-08-28/pdf/X96-20828.pdf.