NEJM Evidence

Published August 11, 2026

DOI: 10.1056/EVIDpha2600137

PUBLIC HEALTH ALERTS | IN PARTNERSHIP WITH CIDRAP

Sales of Unauthorized E-Cigarettes in the United States, December 2025

Varvara Schoute,[1] Alannah Kittle, M.P.H.,[1] Elisha Crane, M.P.H.,[1] Fatma Romeh M. Ali, Ph.D.,[1] Margaret Mahoney, J.D.,[1] and Kristy Marynak, Ph.D., M.P.P.[1]

Abstract

The rapidly changing U.S. e-cigarette marketplace is dominated by unauthorized products. We used retail scanner data from Circana, a market research company that collects point-of-sale scanner data from a large retail sample, to estimate the proportion of unauthorized e-cigarette product sales in U.S. brick-and-mortar stores. As of December 2025, 69.4% of e-cigarette product sales in convenience and grocery channels were estimated to be unauthorized. Most unauthorized products were disposable devices in flavors that may appeal to young people. More complete data on products and sales in untracked channels such as vape shops could better inform monitoring and enforcement efforts.

The Public Health Alerts section in *NEJM Evidence* is in partnership with the Center for Infectious Disease Research and Policy (CIDRAP) at the University of Minnesota.

Introduction

The Family Smoking Prevention and Tobacco Control Act of 2009 requires a manufacturer to receive a marketing granted order (MGO) from the U.S. Food and Drug Administration (FDA) to legally market a new tobacco product in the United States.[1] An MGO requires a determination that the product is "appropriate for the protection of public health" when considering the population-level risks and benefits of the product, including the likelihood of initiation by young people.[1] As of December 2025, there were 39 e-cigarette products with MGOs, referred to hereafter as authorized, exclusively in tobacco and menthol flavors.[2] However, thousands of unauthorized e-cigarette products continue to be sold in the United States.[3]

In the United States in 2024, current use of e-cigarettes was reported by 7.0% of adults (18+ years),[4] 14.8% of young adults ages 18–24,[4] 7.8% of high-school students, and 3.5% of middle-school students.[5] Youth and young adults are at disproportionate risk for e-cigarette use, particularly disposable devices in non-tobacco flavors, such as fruit.[5,6]

Investigation and Findings

Total U.S. e-cigarette sales data, excluding Alaska and Hawaii, were licensed from Circana, a market research company that collects point-of-sale scanner data from a large retail sample and projects to national estimates, and customized by the CDC Foundation for analysis. The data included Universal Product Code (UPC) sales from various retail

The author affiliation is listed at the end of the article.

Varvara Schoute can be contacted at vschoute@cdcfoundation.org.

Table 1. Share of Dollar Sales and Number of E-Cigarette Products Sold, by Authorization Status, Flavor, and Product Type, December 2025.*

Characteristic and Sales Type	Dollar Sales, %	Product (UPC) Count
Match type		
MGO authorized	30.6%	146
Exact	22.5%	116
Probable	8.1%	30
Unauthorized flavor		
Menthol	69.4%	4421
Total sales	38.6%	136
MGO authorized	26.1%	28
Unauthorized	73.9%	108
Tobacco		
Total sales	20.8%	234
MGO authorized	93.1%	88
Unauthorized	6.9%	146
All other flavors		
Total sales	38.8%	4059
MGO authorized	0.0%	0
Unauthorized	100.0%	4059
N/A or unknown		
Total sales	1.9%	138
MGO authorized	61.5%	30
Unauthorized	38.5%	108
Product type		
Closed refills		
Total sales	56.8%	226
MGO authorized	50.0%	109
Unauthorized	50.0%	117
Disposable system		
Total sales	41.7%	4194
MGO authorized	2.4%	8
Unauthorized	97.6%	4186
Hardware and accessories		
Total sales	1.3%	75
MGO authorized	87.4%	29
Unauthorized	12.6%	46
Other or unknown		
Total sales	0.1%	72
MGO authorized	0.0%	0
Unauthorized	100.0%	72

*E-cigarette sales data were obtained from Circana, LLC, point-of-sale (POS) retail scanner data (multi-outlet and convenience), which includes convenience, grocery, drug, retail chain, club, and dollar stores; gas stations; mass merchandiser outlets; and military bases. Data do not include vape shops, tobacco specialty stores, or online retail sales. Product count is defined as number of Universal Product Codes (UPCs). The 39 Food and Drug Administration–authorized products were exactly matched to a larger set of 116 products in the Circana retail scanner data; scanner data contain multiple UPCs with different pack sizes for the same underlying product. As a result, a single FDA-listed product corresponded to multiple UPCs in the retail scanner data. The unknown or not applicable (N/A) flavor category includes hardware and accessories, as well as products with missing flavor information. Products classified as other or unknown product type include e-liquid bottles and products with missing product type information. MGO denotes marketing granted order.

outlets (e.g., convenience, grocery, drug, retail chain, club, and dollar stores; gas stations; mass merchandiser outlets; and military bases); data from online and vape shop sales were not available. This work was deemed exempt from Institutional Review Board (IRB) oversight by the Advarra IRB.

Products were identified by matching attributes in the FDA's MGO database[2] for brand, device model, flavor, nicotine strength, and e-liquid volume with the corresponding information in the scanner data. A single FDA-listed product may correspond to multiple UPCs in the scanner data because of varying package sizes. Products, which we defined as distinct UPCs, were assigned into two categories: exact and probable matches. Exact matches aligned all MGO database attributes with corresponding scanner data attributes. Probable matches aligned brand, nicotine strength, and e-liquid volume attributes to scanner data but only closely aligned flavor or device model (e.g., the Vuse Alto Prismatic Golden Spark Tobacco Pod product in scanner data was a probable match to the Vuse Alto Golden Tobacco Pod in the FDA database). This approach was intended to account for potential labeling changes to authorized products.[7] Products were coded for product type (closed refill, disposable) and flavor (tobacco, menthol, all other flavors).

Dollar share, defined as the percentage of total e-cigarette dollar sales, of FDA-authorized products was estimated overall and stratified by matching category, product type, and flavor during the 4-week period ending December 28, 2025. We measured total dollar sales rather than units sold owing to the wide variability of e-cigarette types and sizes. We also reported the count of distinct products in each category.

A total of 146 products, accounting for 30.6% of e-cigarette dollar sales in tracked channels, were matched to authorized products in December 2025; 22.5% were for 116 products with exact matches and 8.1% were for 30 products with a probable match to an authorized product. The remaining 69.4% of dollar sales for 4421 products were classified as unauthorized.

Among all tobacco-flavored e-cigarette sales in December 2025, 93.1% (88 products) were FDA-authorized, compared with 26.1% (28 products) of menthol-flavored sales. None of the other flavored product sales (e.g., fruit, sweet, candy, mint) were authorized. By product type, 50.0% (117 products) of closed refill sales and 97.6% (4186 products) of disposable e-cigarette sales were classified as unauthorized in December 2025 (Table 1).

Conclusions

We estimate that nearly 70% of e-cigarette sales in U.S. convenience and grocery retailers were not authorized by the FDA as of December 2025. Disposable e-cigarettes in flavors that may appeal to young people[6] comprised the majority of unauthorized sales.

This report updates previous estimates of unauthorized sales and accounts for potentially relabeled products by including a probable match category.[8] Matching publicly available data to retail scanner data presents challenges because manufacturers are not prohibited from selling products with substantially altered product labels after MGO authorization, as long as other product attributes (e.g., ingredients, nicotine concentration, volume) are unaltered; they are also not required to notify the public of these changes.[7] For these reasons, we may have underestimated authorized product sales. Conversely, we may have overestimated the proportion of legally marketed sales, because scanner data exclude vape shops and online retailers, channels that have been found to sell unauthorized products[9] and violate marketing restrictions.[10]

Insufficient public data regarding which tobacco products are legally marketed presents compliance challenges for retailers and complicates research. More robust reporting requirements would aid enforcement and transparent monitoring of legal sales, support monitoring the public health impacts of specific products, and help inform potential enforcement by the FDA and state governments.

Disclosures

Author disclosures are available at evidence.nejm.org.

Funding provided by the Bloomberg Initiative to Reduce Tobacco Use through the CDC Foundation with a grant from Bloomberg Philanthropies.

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the CDC Foundation.

Author Affiliation

[1]CDC Foundation, Atlanta, GA, USA

References

1. U.S. Food and Drug Administration. Perspective: FDA's progress on tobacco product application review and related enforcement. September 9, 2021 (https://www.fda.gov/tobacco-products/ctp-newsroom/perspective-fdas-progress-tobacco-product-application-review-and-related-enforcement).

2. U.S. Food and Drug Administration. Searchable tobacco products database. March 13, 2026 (https://www.accessdata.fda.gov/scripts/searchtobacco/).

3. CDC Foundation. Monitoring e-cigarette sales: national trends. January 2026 (https://tobaccomonitoring.org/wp-content/uploads/2026/01/National-E-Cigarette-Sales-Brief-09.07.25.pdf).

4. Agaku I. Tobacco product use among U.S. adults, 2023–2024. NEJM Evid 2026;5(4). DOI: 10.1056/EVIDpha2500339.

5. Park-Lee E, Jamal A, Cowan H, et al. Notes from the field: e-cigarette and nicotine pouch use among middle and high school students — United States, 2024. MMWR Morb Mortal Wkly Rep 2024;73:774-778. DOI: 10.15585/mmwr.mm7335a3.

6. CDC Foundation. Monitoring tobacco product use among youth and young adults in the United States: TEEN+ data brief, issue 3. May 11, 2026 (https://tobaccomonitoring.org/wp-content/uploads/2026/05/TEENDataBriefIssue3_051126.pdf).

7. Philip Morris USA Inc. v. U.S. Food & Drug Administration, 202 F. Supp. 3d 31 (D.D.C. 2016).

8. Ganz O, LaVake M, Barnwell PV, Foulds J, Delnevo CD. Regional variations and market share of FDA-authorised products for top-selling electronic cigarette brands in the USA: 2022–2024. Tob Control 2025 May 30 (Epub ahead of print). DOI: 10.1136/tc-2024-058965.

9. U.S. Food and Drug Administration. Tobacco compliance check outcomes. Updated March 31, 2026 (https://timp-ccid.fda.gov/).

10. Roeseler A, Vuong TD, Henriksen L, Zhang X. Assessment of underage sales violations in tobacco stores and vape shops. JAMA Pediatr 2019;173:795-797. DOI: 10.1001/jamapediatrics.2019.1571.