



Monitoring U.S. E-Cigarette Sales: *National Trends*

This brief report highlights trends in national e-cigarette sales from January 2018 through March 2023.

Notice of Revision to Previous Data Estimates

- The data in this brief have been updated to capture new e-cigarette products coded by IRI. Historical sales estimates may differ from previous briefs.

Federal Regulatory Actions

- The U.S. Food and Drug Administration (FDA) issued an enforcement policy, effective February 2020, prohibiting the sale of flavored prefilled e-cigarette cartridges, which does not apply to tobacco-and menthol-flavored prefilled cartridges, e-liquids, or single use disposable e-cigarettes.
- FDA began issuing marketing denial orders for flavored e-cigarette products as of September 9, 2021.
- On April 15, 2022, FDA was granted authority to regulate products containing nicotine from any source, including synthetic nicotine.
- In April 2022, FDA issued a proposal to eliminate menthol cigarettes and flavored cigars.

Key Findings

Total e-cigarettes:

- From February 2, 2020, to March 26, 2023, total e-cigarette unit sales increased by 42.9% (15.6 million units to 22.4 million units). During this period, sales of non-tobacco flavored e-cigarettes (mint, menthol and other flavors) increased by 57.8% (11.2 million units to 17.6 million units).
- The 2022 National Youth Tobacco Survey (NYTS) found that 14.1% (2.14 million) of high school and 3.3% (380,000) of middle school students currently used e-cigarettes. Among current e-cigarette users, 84.9% used flavored e-cigarettes.¹

Flavored disposable e-cigarettes:

- From February 2, 2020, to March 26, 2023, disposable e-cigarette sales increased by 196.2% (4.0 million units to 11.9 million units); their unit share increased from 25.8% to 53.4% of total e-cigarette sales. As of March 26, 2023, 80.0% of disposable sales were of flavors other than tobacco, mint and menthol.
- Among youth who used e-cigarettes in 2022, 55.3% used disposable e-cigarettes. The most commonly used flavors of disposable e-cigarettes were fruit (69.1%) and candy/desserts/other sweets (38.3%) (NYTS).

Menthol flavored e-cigarettes:

- From February 2, 2020, to March 26, 2023, overall menthol-flavored e-cigarette sales increased by 31.7% (5.2 million units to 6.8 million units), including a 32.4% increase in menthol-flavored cartridge sales (4.8 million units to 6.4 million units). As of March 26, 2023, menthol-flavored e-cigarette sales accounted for 30.4% of the overall e-cigarette market and 61.1% of the prefilled cartridge market.
- Among youth who used flavored e-cigarettes in 2022, 26.6% used menthol flavor; 53.9% of students using prefilled cartridges used menthol (NYTS).

Relevant Issues

- The e-cigarette or vaping product use-associated lung injury (EVALI) outbreak in late 2019 and COVID-19 pandemic may have affected e-cigarette sales.
- During 2020-2022, additional flavored tobacco products continued to be marketed, such as flavored cigars; or entered the market, such as nicotine pouches.
- Units of e-cigarettes are not adjusted to account for variations in unit size. Large-format disposable e-cigarettes that allow for thousands of “puffs” are now available. Declines in unit sales may not signify declines in prevalence of use or consumption.

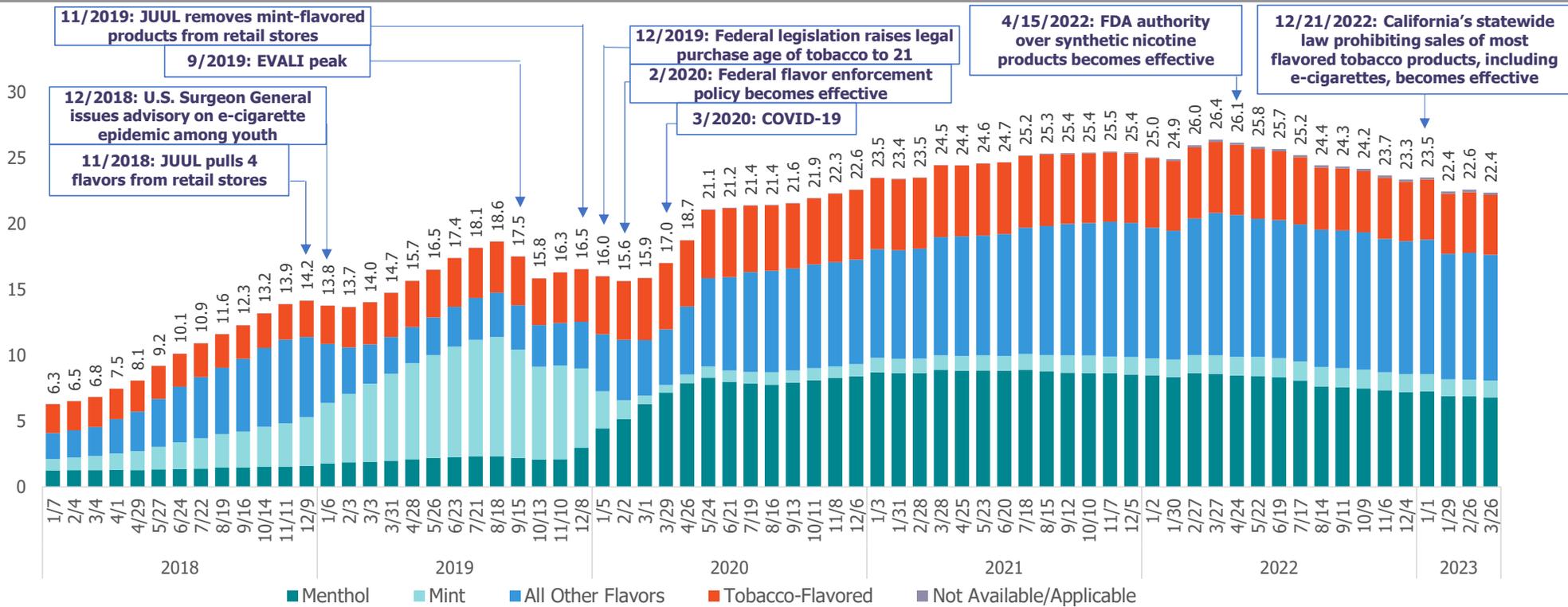
Conclusion

Restrictions that exempt certain flavors and product types likely shift sales to the products and flavors that remain on the market. Policies that prohibit all non-tobacco flavored e-cigarettes, including flavored disposable e-cigarettes and menthol-flavored prefilled cartridges, may reduce e-cigarette sales, reduce youth access to flavored e-cigarettes, and ultimately reduce youth e-cigarette use.

1. Cooper M, Park-Lee E, Ren C, Cornelius M, Jamal A, Cullen KA. Notes from the Field: E-cigarette Use Among Middle and High School Students — United States, 2022. *MMWR Morb Mortal Wkly Rep* 2022;71:1283–1285.

Figure 1. National E-Cigarette Unit Sales by Flavor, 4 Week Estimates 1/7/2018 – 3/26/2023*

Total Unit Sales, in Millions

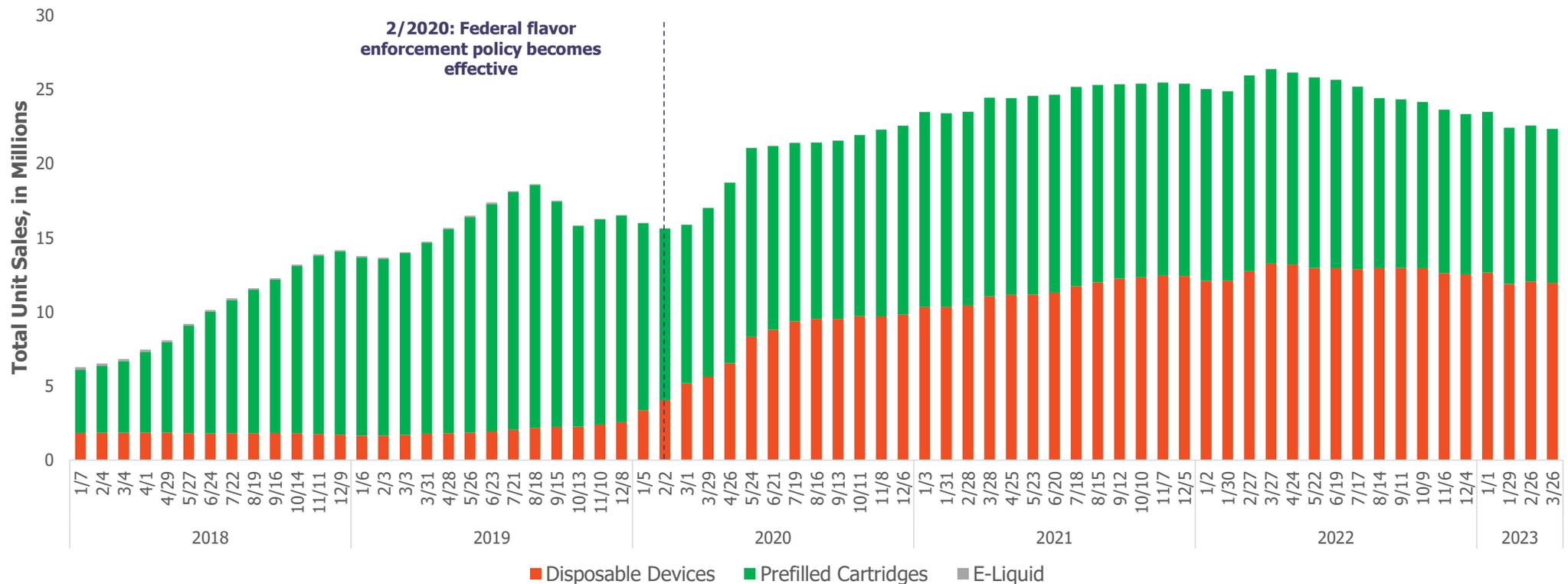


*Sales data do not reflect sales from vape shops or online retailers; dates represent end of 4-week periods; All Other Flavors category includes fruit, clove/spice, chocolate, alcoholic drink (such as wine, cognac, or other cocktails), candy/desserts/other sweets, some other flavor; e-cigarette accessories and devices sold without e-liquids were excluded (2.6% of total dollar sales in October 2022). Unit sales were standardized to reflect the most common package size for each product type. A standardized unit was equal to five prefilled cartridges, one disposable device, or one e-liquid bottle.

Trends of Unit Sales by Flavor Following FDA’s Flavor Enforcement Policy

- From February 2, 2020, to March 26, 2023:
 - Total monthly e-cigarette unit sales increased by 42.9% from 15.6 to 22.4 million units.
 - Tobacco-flavored e-cigarette sales increased by 1.9% (from 4.45 million units to 4.53 million units); unit share decreased from 28.4% to 20.3%.
 - Non-tobacco flavored e-cigarette sales (mint, menthol and other flavors) increased by 57.8% (11.2 million units to 17.6 million units).
 - Mint-flavored e-cigarette sales decreased by 10.6% (from 1.4 million units to 1.3 million units); unit share decreased from 9.1% to 5.7%.
 - Menthol-flavored e-cigarette sales increased by 31.7% (from 5.2 million units to 6.8 million units); unit share decreased from 33.0% to 30.4%.
 - All other-flavored e-cigarette sales increased by 108.1% (from 4.6 million units to 9.6 million units); unit share increased from 29.4% to 42.8%.
- California’s e-cigarette unit sales represented 3.4% of national e-cigarette unit sales on December 4, 2022 (i.e., 0.8 million units out of 23.3 million units). Following California’s restriction on flavored e-cigarette sales (effective 12/21/2022), unit sales in California decreased by 35.2% during December 4, 2022 and March 26, 2023. This decline represents 27.8% (i.e., 276.1 thousand units out of 992.5 thousand units) of the decline in national e-cigarette sales that occurred during this period.

Figure 2. National E-Cigarette Unit Sales by Product Type, 4 Week Estimates 1/7/2018 – 3/26/2023*

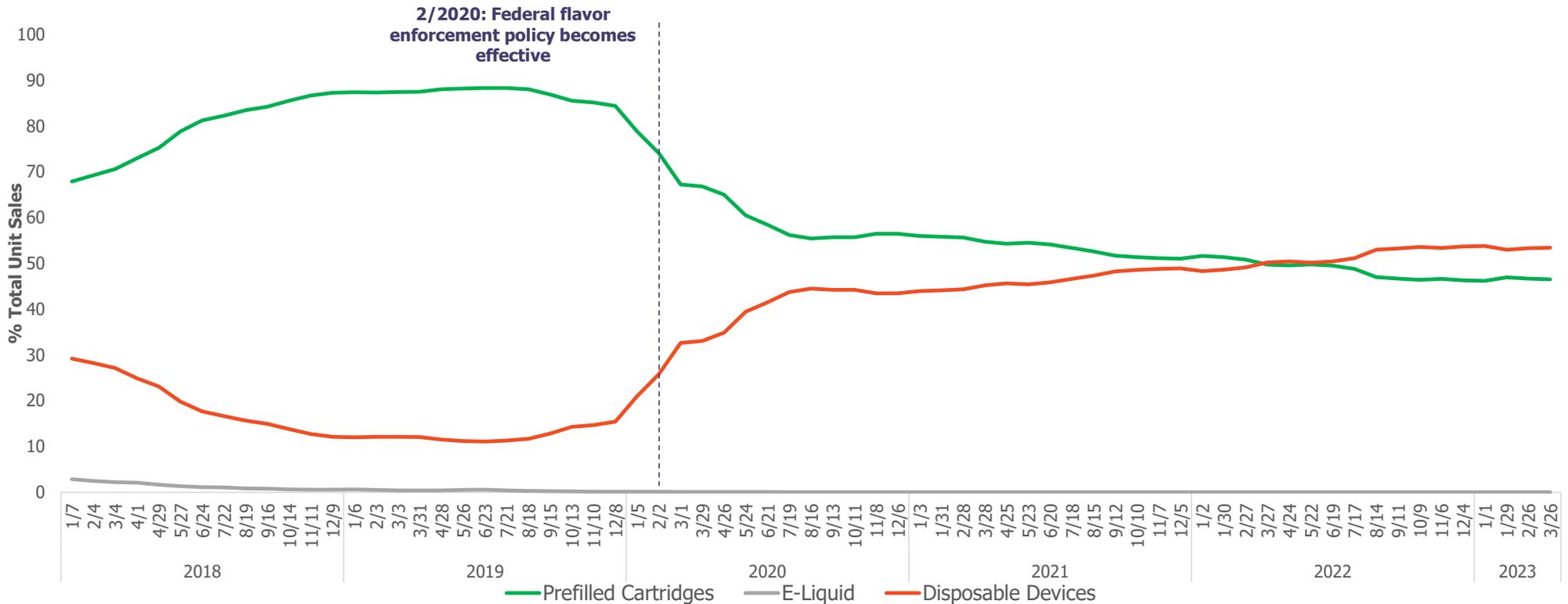


*Sales data do not reflect sales from vape shops or online retailers; dates represent end of 4-week periods; prefilled cartridges include tanks, cartridges, and pods used in rechargeable and reusable e-cigarette device; disposable devices include nonrechargeable and nonreusable e-cigarette devices that are not intended to be refilled with e-liquid after being depleted; e-liquids are containers of the liquid used in e-cigarette devices, which typically contain a humectant (e.g., propylene glycol), nicotine, and flavoring. Unit sales were standardized to reflect the most common package size for each product type. A standardized unit was equal to five prefilled cartridges, one disposable device, or one e-liquid bottle.

Trends of Unit Sales by Product Following FDA’s Flavor Enforcement Policy

- Following FDA’s flavor enforcement policy, which prohibited the sale of flavored prefilled cartridges but exempted disposable devices and menthol and tobacco prefilled cartridges, between February 2, 2020, and March 26, 2023:
 - Sales of disposable devices increased by 196.2% (from 4.0 million units to 11.9 million units).
 - Sales of prefilled cartridges decreased by 10.3% (from 11.6 million units to 10.4 million units).

Figure 3. National E-Cigarette Unit Share by Product Type, 4 Week Estimates 1/7/2018 – 3/26/2023*

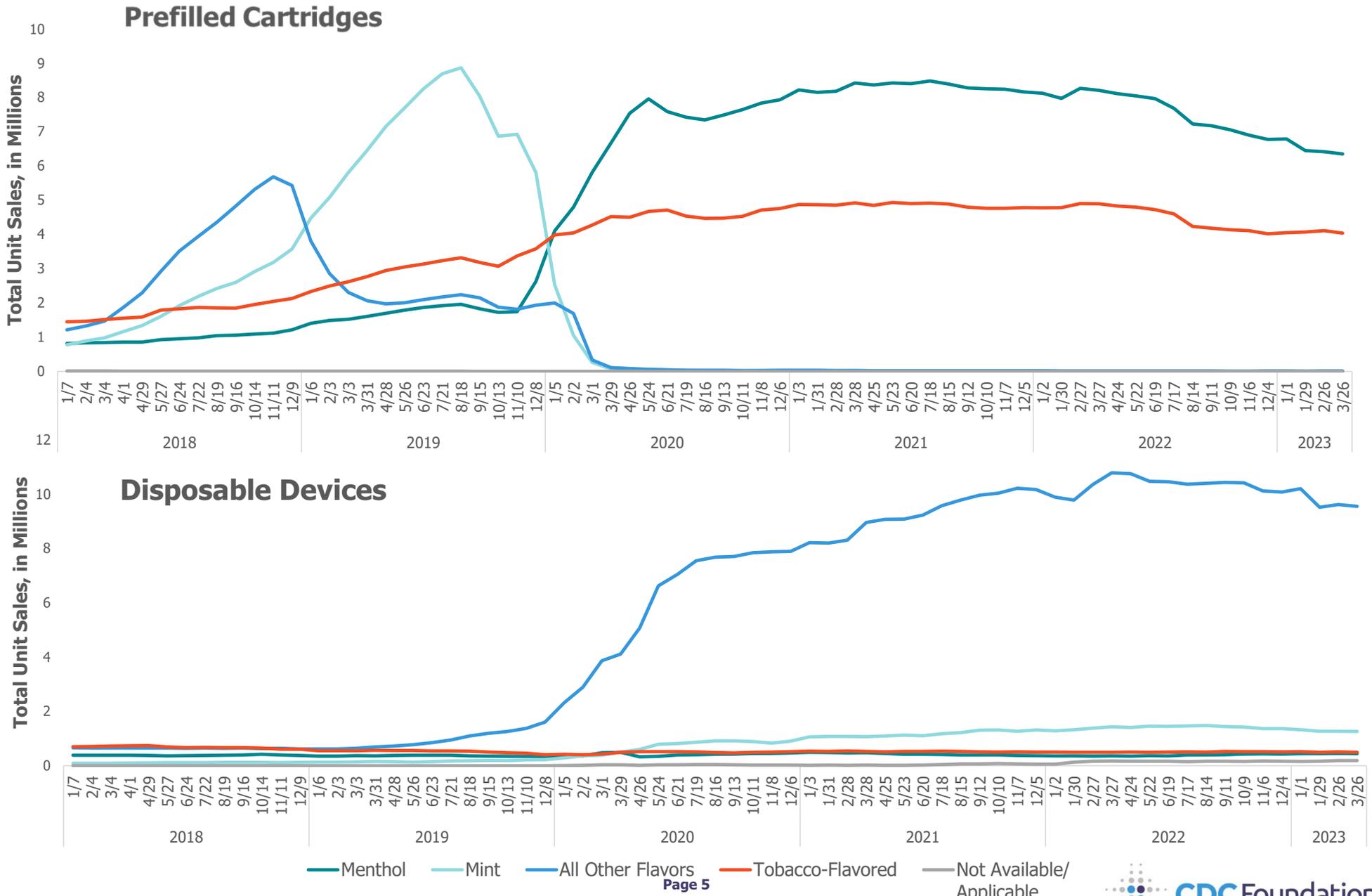


*Sales data do not reflect sales from vape shops or online retailers; dates represent end of 4-week periods; prefilled cartridges include tanks, cartridges, and pods used in rechargeable and reusable e-cigarette device; disposable devices include nonrechargeable and nonreusable e-cigarette devices that are not intended to be refilled with e-liquid after being depleted; e-liquids are containers of the liquid used in e-cigarette devices, which typically contain a humectant (e.g., propylene glycol), nicotine, and flavoring. Unit sales were standardized to reflect the most common package size for each product type. A standardized unit was equal to five prefilled cartridges, one disposable device, or one e-liquid bottle.

Trends of Unit Share by Product Following FDA’s Flavor Enforcement Policy

- Following FDA’s flavor enforcement policy, which prohibited the sale of flavored prefilled cartridges but exempted disposable devices and menthol and tobacco prefilled cartridges, between February 2, 2020, and March 26, 2023:
 - Unit share of disposable devices increased from 25.8% to 53.4%.
 - Unit share of prefilled cartridges decreased from 74.1% to 46.5%.

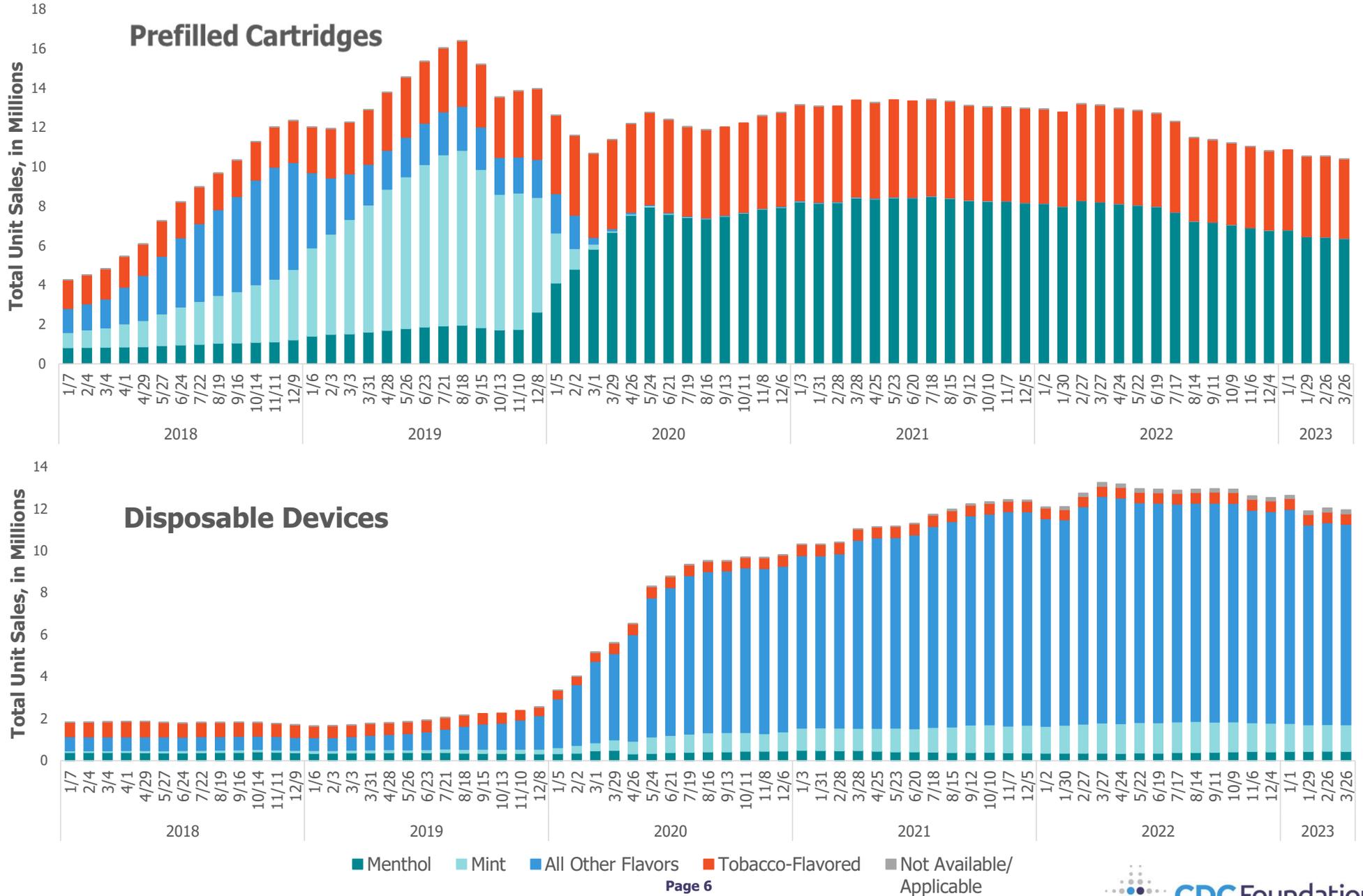
Figure 4. National E-Cigarette Unit Sales by Product Type and Flavor, 4 Week Estimates 1/7/2018 – 3/26/2023



All estimates and analyses in this data brief based on Information Resources, Inc., Multi-Outlet + Convenience data are by the author and not by Information Resources, Inc. Financial support was provided by Bloomberg Philanthropies through a grant to the CDC Foundation. According to IRI, new e-cigarette product coding is managed to consistently meet or exceed releasing products that cover a minimum of 95.5% of total e-cigarette dollar sales at any given time. Coding and releasing of new products are prioritized based on significance of dollar sales in order to continually comply with capturing at least 95.5% of total e-cigarette dollar sales in each period.

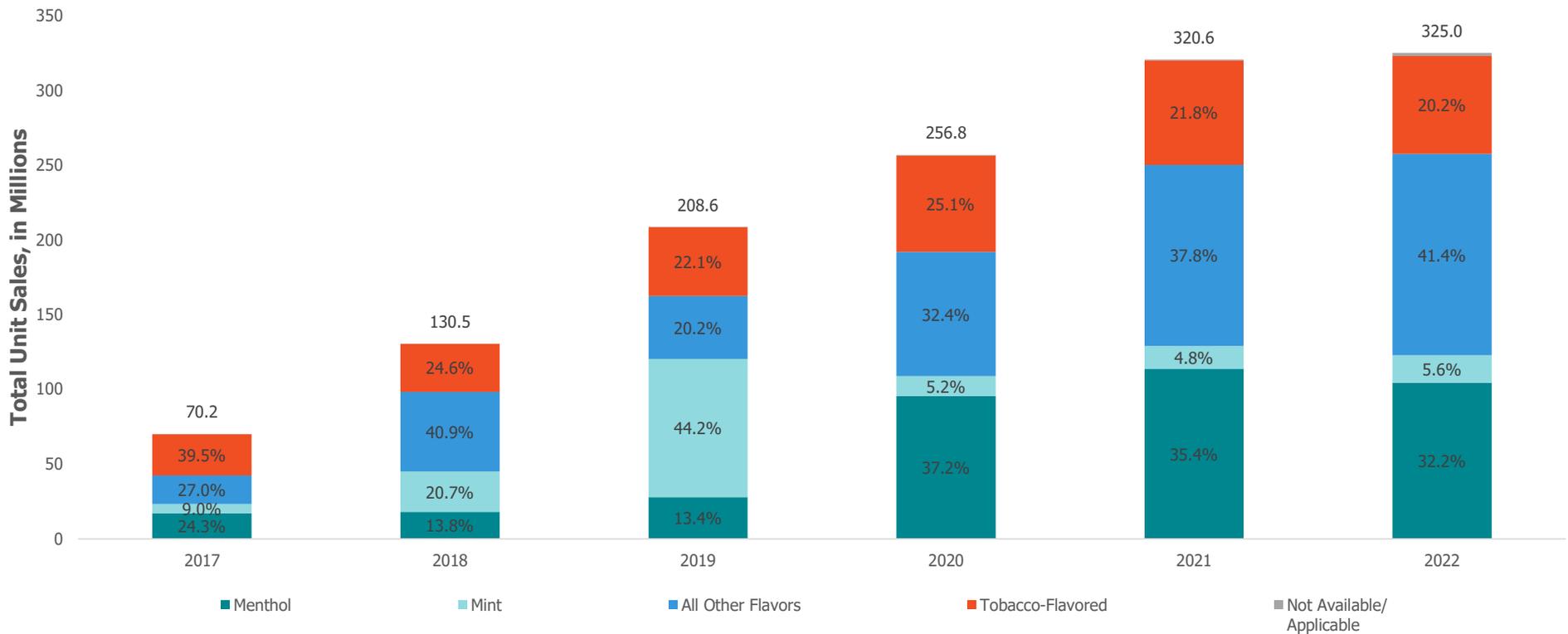


Figure 5. National E-Cigarette Unit Sales by Product Type and Flavor, 4 Week Estimates 1/7/2018 – 3/26/2023



All estimates and analyses in this data brief based on Information Resources, Inc., Multi-Outlet + Convenience data are by the author and not by Information Resources, Inc. Financial support was provided by Bloomberg Philanthropies through a grant to the CDC Foundation. According to IRI, new e-cigarette product coding is managed to consistently meet or exceed releasing products that cover a minimum of 95.5% of total e-cigarette dollar sales at any given time. Coding and releasing of new products are prioritized based on significance of dollar sales in order to continually comply with capturing at least 95.5% of total e-cigarette dollar sales in each period.

Figure 6. National E-Cigarette Unit Sales by Flavor, Annual Estimates 2017 – 2022*

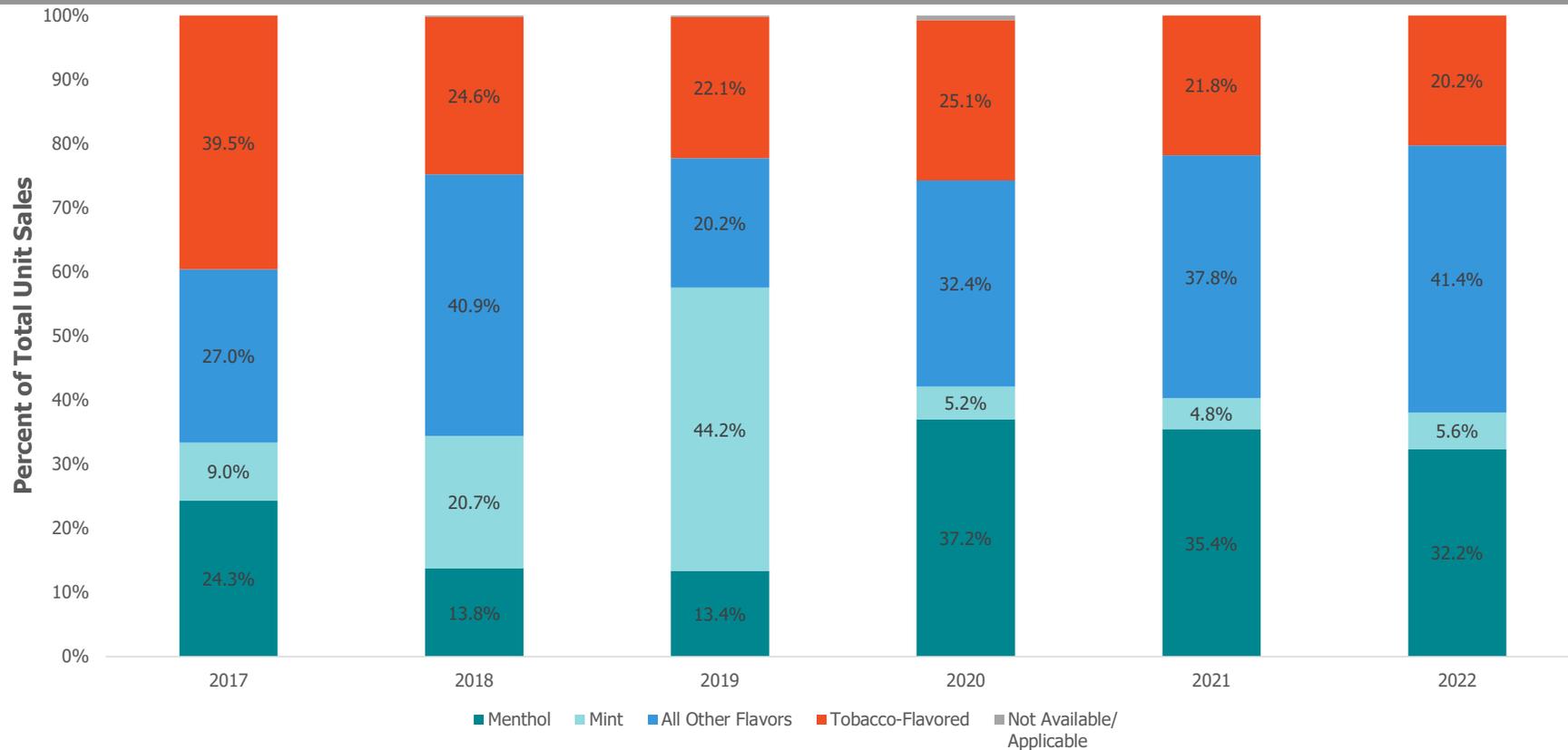


*Sales data do not reflect sales from vape shops or online retailers; All Other Flavors category includes fruit, clove/spice, chocolate, alcoholic drink (such as wine, cognac, or other cocktails), candy/desserts/other sweets, some other flavor; e-cigarette accessories and devices sold without e-liquids were excluded (9.5% of total dollar sales in 2022). Unit sales were standardized to reflect the most common package size for each product type. A standardized unit was equal to five prefilled cartridges, one disposable device, or one e-liquid bottle.

Unit Sales Annual Trends by Flavor (2021 - 2022)

- From 2021 to 2022:
 - Annual total e-cigarette unit sales increased by 1.4% (from 320.6 million units to 325.0 million units);
 - Unit sales of menthol-flavored e-cigarettes decreased by 8.0% (from 113.6 million units to 104.5 million units);
 - Unit sales of tobacco-flavored e-cigarettes decreased by 6.2% (from 69.9 million units to 65.6 million units);
 - Unit sales of mint-flavored e-cigarettes increased by 19.0% (from 15.4 million units to 18.4 million units); and
 - Unit sales of other-flavored e-cigarettes increased by 11.1% (from 121.2 million units to 134.6 million units).

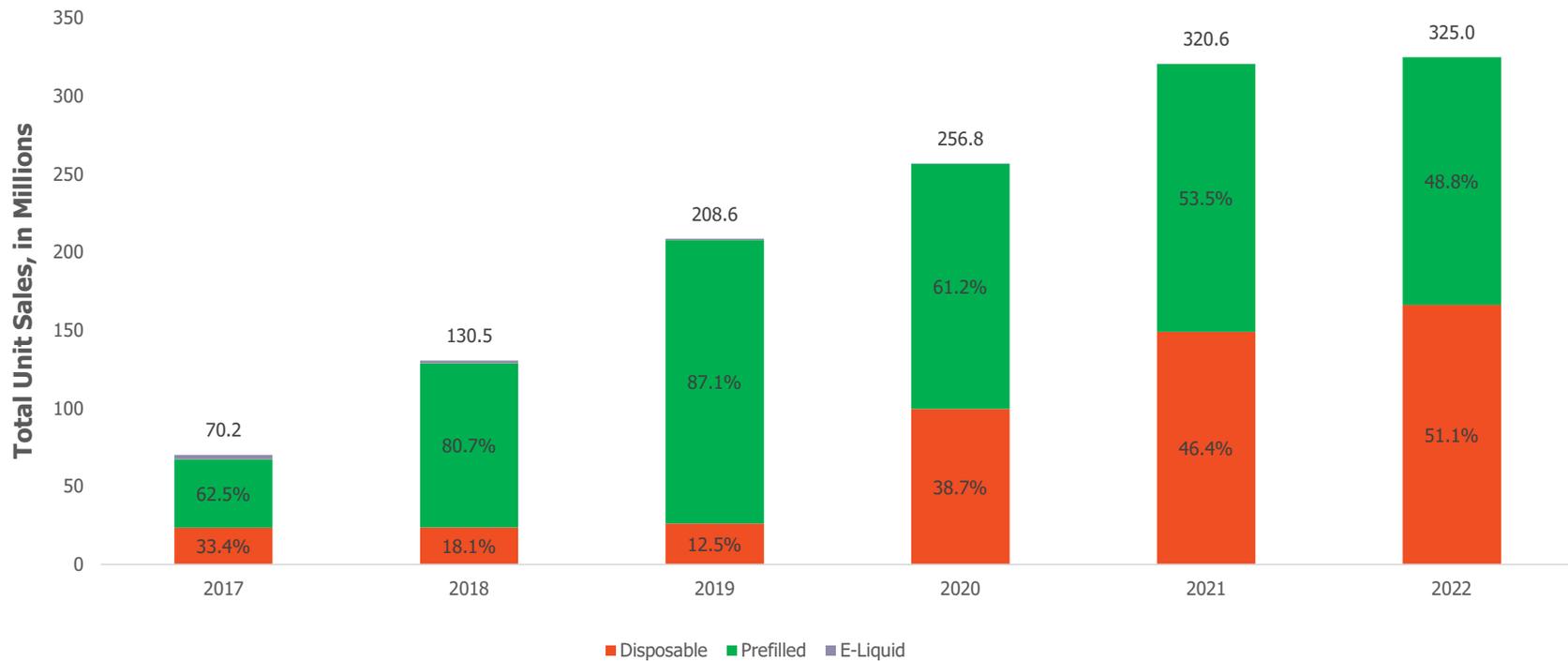
Figure 7. Unit Share of National E-Cigarette Unit Sales by Flavor, Annual Estimates 2017 – 2022*



*Sales data do not reflect sales from vape shops or online retailers; All Other Flavors category includes fruit, clove/spice, chocolate, alcoholic drink (such as wine, cognac, or other cocktails), candy/desserts/other sweets, some other flavor; e-cigarette accessories and devices sold without e-liquids were excluded (9.5% of total dollar sales in 2022). Unit sales were standardized to reflect the most common package size for each product type. A standardized unit was equal to five prefilled cartridges, one disposable device, or one e-liquid bottle.

Unit Share Annual Trends by Flavor (2021 - 2022)

- From 2021 to 2022:
 - Unit share of menthol-flavored e-cigarette sales decreased from 35.4% to 32.2%;
 - Unit share of tobacco-flavored e-cigarette sales decreased from 21.8% to 20.2%;
 - Unit share of mint-flavored e-cigarette sales increased from 4.8% to 5.6%; and
 - Unit share of other-flavored e-cigarette sales increased from 37.8% to 41.4%.

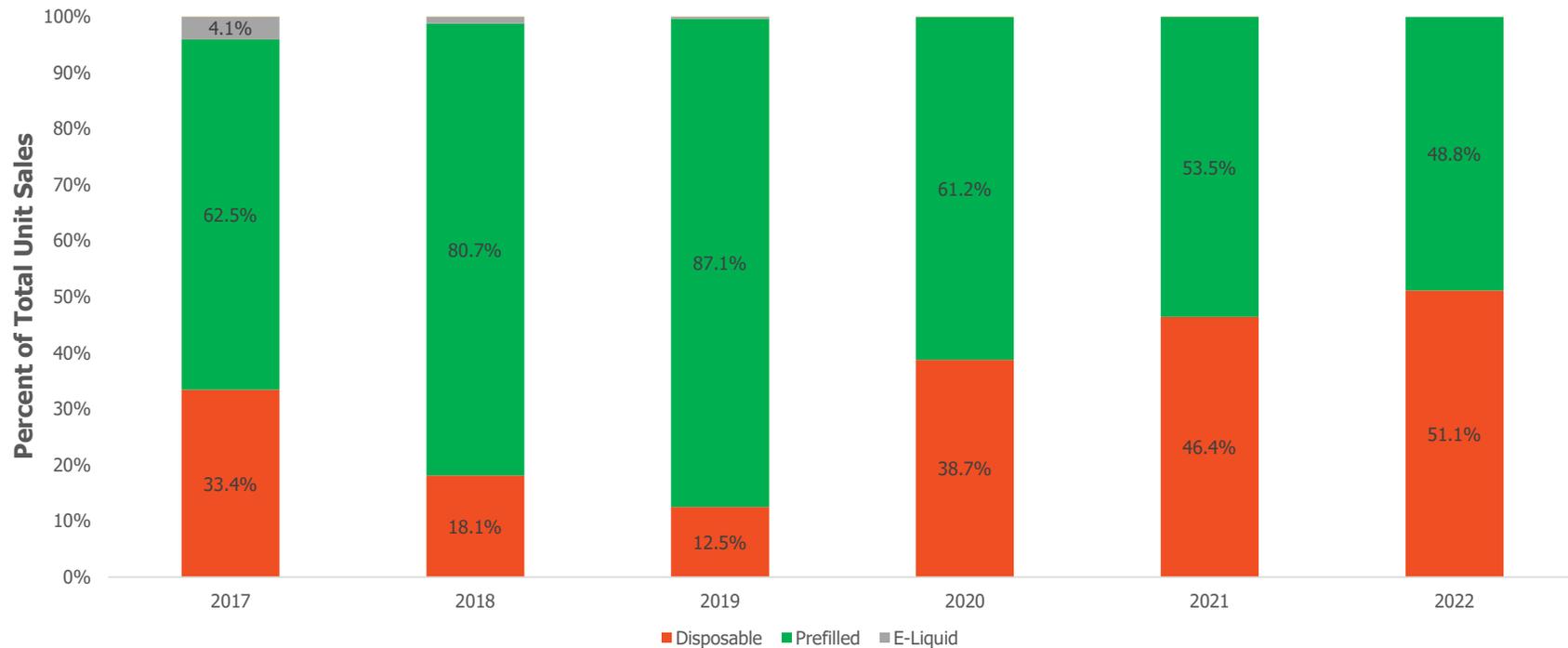
Figure 8. National E-Cigarette Unit Sales by Product Type, Annual Estimates 2017 – 2022*

*Sales data do not reflect sales from vape shops or online retailers; All Other Flavors category includes fruit, clove/spice, chocolate, alcoholic drink (such as wine, cognac, or other cocktails), candy/desserts/other sweets, some other flavor; e-cigarette accessories and devices sold without e-liquids were excluded (9.5% of total dollar sales in 2022). Unit sales were standardized to reflect the most common package size for each product type. A standardized unit was equal to five prefilled cartridges, one disposable device, or one e-liquid bottle.

Unit Sales Annual Trends by Product (2021 - 2022)

- From 2021 to 2022:
 - Annual total e-cigarette unit sales increased by 1.4% (from 320.6 million units to 325.0 million units);
 - Unit sales of prefilled cartridge e-cigarettes decreased by 7.5% (from 171.6 million units to 158.7 million units); and
 - Unit sales of disposable e-cigarettes increased by 11.6% (from 148.9 million units to 166.1 million units).

Figure 9. Unit Share of National E-Cigarette Unit Sales by Product Type, Annual Estimates 2017 – 2022*



*Sales data do not reflect sales from vape shops or online retailers; All Other Flavors category includes fruit, clove/spice, chocolate, alcoholic drink (such as wine, cognac, or other cocktails), candy/desserts/other sweets, some other flavor; e-cigarette accessories and devices sold without e-liquids were excluded (9.5% of total dollar sales in 2022). Unit sales were standardized to reflect the most common package size for each product type. A standardized unit was equal to five prefilled cartridges, one disposable device, or one e-liquid bottle.

Unit Share Annual Trends by Product (2021 - 2022)

- From 2021 to 2022:
 - Unit share of disposable e-cigarette sales increased from 46.4% to 51.1%; and
 - Unit share of prefilled cartridge e-cigarette sales decreased from 53.5% to 48.8%.