

# E-cigarette advertising expenditures in the United States, 2014–2018

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## ABSTRACT

**Background** Tobacco product advertising has been shown to reach youth and promote initiation. This study assessed trends in e-cigarette advertising expenditures in the USA during 2014–2018, overall and by manufacturer and media type.

**Methods** Data came from Kantar Media, which provides information on US advertising expenditures, including for e-cigarettes. Advertising expenditures were estimated as the dollar amount spent by e-cigarette companies to purchase advertising space in print, television, Internet, radio and outdoors. Dollar amounts were adjusted to 2017 dollars. Trends in e-cigarette advertising expenditures during 2014–2018 were analysed using Joinpoint regression overall, by media type, and by manufacturers based on 2017–2018 national sales.

**Results** Total e-cigarette advertising expenditures in print, radio, television, Internet and outdoors decreased substantially from US\$133 million in 2014 to US\$48 million in 2017, followed by an increase to US\$110 million in 2018. By media type, expenditures were highest for print advertising, irrespective of year. By manufacturer, Altria had the highest e-cigarette advertising expenditures, totalling over US\$134 million during 2014–2018. Imperial Tobacco had the second highest, totalling over US\$85 million during 2014–2018, while JUUL Labs had the highest single-year expenditures, spending over US\$73 million in 2018 alone.

**Conclusions** E-cigarette advertising expenditures have been volatile in the USA, with declines in traditional advertising venues during 2014–2017 that may reflect a shift towards social media. However, an increase occurred in 2018 that is likely reflective of advertising by newer manufacturers. Continued monitoring of e-cigarette advertising is important to inform tobacco control strategies.

## INTRODUCTION

E-cigarettes are growing in popularity in the USA, with sales projected to reach US\$9.0 billion in 2019—up from US\$2.5 billion in 2014.<sup>1,2</sup> Concurrently, youth e-cigarette use has markedly increased in recent years. During 2011–2018, e-cigarette use increased from 1.5% to 20.8% among high school students and from 0.6% to 4.9% among middle school students.<sup>3</sup> This increase is influenced, in part, by e-cigarette advertising,<sup>4</sup> which employs diverse approaches that have been used in the past for advertising conventional tobacco products to youth and young adults.<sup>5,6</sup> Approximately 4 in 5 US middle and high school students were exposed to

e-cigarette advertisements in 2016,<sup>7</sup> and e-cigarette advertising is associated with e-cigarette use among youth.<sup>8–10</sup>

Although advertising expenditures are currently reported to the US Federal Trade Commission for cigarettes and smokeless tobacco,<sup>11</sup> no comparable reporting is required for e-cigarettes. However, media companies, such as Kantar Media, have tracked advertising expenditures for e-cigarettes since 2008. Previous analyses of these data show that advertising expenditures increased from US\$3.5 million in 2010 to US\$125 million in 2014.<sup>5,12</sup> Print media accounted for the greatest expenditures of any channel in 2014 (84%), followed by television. By brand, more than 60% of expenditures were for blu, which also led US e-cigarette sales during that period.<sup>5,12</sup>

The e-cigarette landscape has changed dramatically since 2014, particularly following the introduction of ‘podmod’ products such as JUUL, a rechargeable e-cigarette resembling a USB flash drive that emerged in 2015.<sup>13</sup> During 2016–2017, the annual market share of total e-cigarette sales increased 515% for JUUL Labs, the maker of JUUL.<sup>13</sup> By December 2017, JUUL became the top selling e-cigarette brand in the USA, occupying 29% of total sales.<sup>13</sup> Sales of JUUL have continued to increase since that time and, as of June 2019, accounted for nearly 75% of total sales.<sup>2</sup> A recent study of Kantar data showed that JUUL spent US\$1.6 million on advertising in 2015; however, spending was substantially reduced to US\$0.5 million in 2016.<sup>14</sup>

Analysis of e-cigarette advertising expenditures in the USA, overall and by manufacturer and media type, has not been updated since 2014. Furthermore, more recent changes the US e-cigarette market, including the surge in JUUL sales during 2016–2018, has not been assessed. To address this gap, this study assessed e-cigarette advertising expenditures during 2014–2018 overall, and by media type and manufacturer.

## METHODS

### Data

Data came from the Kantar Media database (<https://www.kantarmedia.com/us>), which provides information on e-cigarette advertising expenditures in print, television, Internet, radio and outdoor media. The Kantar database was searched using e-cigarette terms (eg, e-cigarette, e-juice and vapour); e-cigarette brand names; and related product subcategories to capture any entity that was promoted in an advertisement, including e-cigarette/vape shops,



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businesses, conferences, events and e-cigarette device names. Advertising expenditures associated with media of the same type were aggregated by media type: television (local and national), print (local and national magazines and newspapers, in English and Spanish), radio (local and national), Internet (standard web and mobile device types) and outdoor (eg, billboard, poster).

**Measures**

E-cigarette advertising expenditure was defined as the estimated dollar amount spent by e-cigarette companies to purchase advertising space on tracked media types.

**Statistical analyses**

E-cigarette advertising expenditures during 2014–2018 were aggregated by quarter, media types and by the five top-selling manufacturers based on 2017–2018 US sales: Altria (MarkTen, Green Smoke), Imperial Tobacco Group (blu), Japan Tobacco (Logic), British American Tobacco (Vuse) and JUUL Labs (JUUL). All other manufacturers were combined into a single category designated ‘other’.<sup>13</sup>

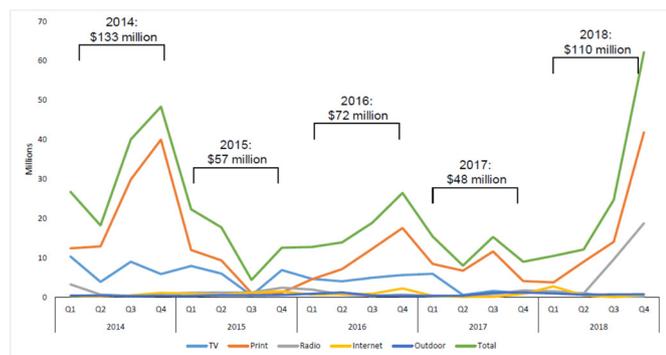
Dollar amounts were adjusted to 2017 dollars using the annual US Consumer Price Index.<sup>15</sup> Trends during 2014–2018 were examined using Joinpoint regression models, controlling for autocorrelated errors (V.4.6.0.0). Average quarterly percent change (AQPC) with corresponding 95% CIs were calculated. Data were de-identified, and thus, institutional review board approval was not sought. All analyses were conducted using R V.3.4.4 with p value <0.05 to determine statistical significance.

**RESULTS**

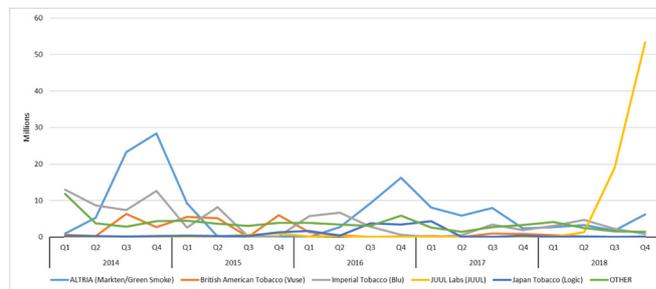
Overall, e-cigarette advertising expenditures in print, radio, television, Internet and outdoors decreased from US\$133 million in 2014 to US\$48 million in 2017, then rose to US\$110 million in 2018 (figure 1). Expenditures did not show a significant trend until the first quarter of 2018, then showed a significant upward trend by an average of 82.7% (CI 13.1 to 195.3) per quarter through the fourth quarter of 2018.

By media type, expenditures were highest for print and television. Television advertising declined during 2014–2018 (AQPC=−14.1%, CI −19.0 to −9.0). The rise in overall expenditures in 2018 was mostly attributable to print and radio media (91% of 2018 expenditures); in 2018, radio advertising increased by an average of 210.4% (CI 36.1 to 607.9) per quarter, and print advertising increased by an average of 106.2% (CI 78.7 to 137.9) per quarter.

By manufacturer, Altria was the leader in e-cigarette advertising expenditure during 2014–2018, with total expenditures



**Figure 1** E-cigarette advertising expenditures, by media type—USA 2014–2018.



**Figure 2** E-cigarette advertising expenditures, by major manufacturer—USA, 2014–2018.

exceeding US\$134 million (figure 2). Imperial Tobacco, which had the second highest expenditure, spent over US\$85 million. The third highest in spending was JUUL Labs, which spent US\$76 million overall and US\$73 million in 2018 alone, when their spending increased by an average of 1338.9% (CI 106.8 to 9909.5) per quarter. In 2018, JUUL Labs’ expenditures were less than 1% of total expenditures in quarter 1, 11.4% in quarter 2, 76.6% in quarter 3 and 85.8% in quarter 4. While 2015 was the only year with concentrated placement by JUUL in online advertisements (76% of total expenditures), the large increase in spending that occurred during 2018 was primarily driven by print media (61%). Japan Tobacco expenditures increased until the third quarter of 2016 (AQPC=28.1%; CI 5.4 to 55.7) and then decreased (AQPC=−32.8%; CI −46.6 to −15.3). British American Tobacco and other manufacturers showed decreasing trends; AQPCs were −17.1% (CI −25.5 to −7.7) for British American Tobacco and −5.2% (CI −8.2 to −2.1) for other manufacturers.

**DISCUSSION**

Total e-cigarette advertising expenditures in print, radio, television, Internet and outdoor media in the USA decreased substantially from 2014 through the first quarter of 2018. This decline was likely due, in part, to shifts in advertising of e-cigarettes to social media, which were not fully captured by the Internet category in this analysis. The promotion of e-cigarettes via social media is relevant, particularly with the entrance of JUUL into the US marketplace in 2015.<sup>13 14</sup> Unlike the other leading e-cigarette brands, which relied on television and print advertising in their early stages, JUUL Labs used social media prominently to market and promote its products following JUUL’s debut.<sup>16</sup> The decline in traditional advertising venues could also reflect increases in e-cigarette promotional expenditures to retailers at the point-of-sale. JUUL Labs has increased its presence in retail settings, which might have shifted its advertising activities toward point-of-sale advertising.<sup>14</sup>

Although a decrease in total expenditures occurred through the first quarter of 2018, this trend appeared to reverse, and expenditures increased in 2018. This increase was driven by the increase in expenditures by JUUL, specifically related to print placements. JUUL’s expenditures considerably exceeded those of all other brands, increasing from less than 1% of total expenditures in quarter 1 of 2018 to 85.8% by quarter 4 of the same year. This is of public health concern, given that advertising spending is intended to increase demand, and tobacco product advertising has been shown to reach youth and influence initiation.<sup>5 17</sup> A recent study found that JUUL’s advertising imagery in its first 6 months was youth oriented, and that its advertising was widely distributed on social media channels frequented by youth, and amplified by hashtag and youth influencers, into 2018.<sup>18</sup>

However, in the late summer of 2018, JUUL began running full-page newspaper advertisements in prominent publications to frame its product as an alternative to conventional cigarette smoking.<sup>18</sup> These ads align with previous tobacco industry-sponsored initiatives designed to convey that the company is doing something substantial about preventing youth use of their products, despite its promotional activities that likely contributed to youth initiation.<sup>17 18</sup>

In 2009, the Food and Drug Administration gained authority to regulate the manufacture, marketing and distribution of tobacco products. The Act also does not pre-empt states, localities and tribes from imposing restrictions on the advertising and promotion of tobacco products. State and local strategies that could reduce youth advertising exposure include content-neutral restrictions on advertising, limits on Internet sales of tobacco products and tobacco retail outlet restrictions.<sup>5</sup> Continued monitoring of e-cigarette advertising and promotional strategies is important to guide e-cigarette regulation and policy at the national, state and local levels.

This study is subject to limitations. First, advertising expenditures may be underestimated because Kantar does not capture expenditures for retail advertising, social media, sponsored events and Internet promotions not paid for directly by the manufacturers. Second, the keywords used to retrieve advertising expenditures may not have captured all e-cigarette content. Third, Kantar estimates advertising expenditures using advertising rates, and these may differ from the actual dollars paid by manufacturers.

In conclusion, e-cigarette advertising expenditures in traditional advertising venues decreased during 2014–2017 that may reflect a shift towards social media. However, an increase occurred in 2018 that is likely attributable to JUUL's spending on full-page newspaper ads. These findings reinforce the importance of continued monitoring of e-cigarette advertising to guide e-cigarette regulation and policy as well as the exploration of novel strategies to monitor advertising in venues not presently captured by existing surveillance tools, including social media.

#### What this paper adds

- ▶ This study assessed trends in e-cigarette advertising expenditures in the USA during 2014–2018, overall and by manufacturer and media type.
- ▶ The findings suggest that total e-cigarette advertising expenditures in print, radio, television, Internet and outdoors decreased from US\$133 million in 2014 to US\$48 million in 2017, followed by an increase to US\$110 million in 2018.
- ▶ The decline likely reflects deviations from traditional advertising venues in favour of less expensive social media promotional strategies with broad reach to youth and young adults, while the reversal of this trend in 2018 was likely attributable to JUUL's spending on full-page newspaper to frame its product as an alternative to conventional cigarette smoking.
- ▶ Continued monitoring of e-cigarette advertising and promotional strategies is important to guide e-cigarette regulation and policy at the national, state and local levels.

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