

Vaporized

Youth and young adult exposure to e-cigarette marketing.

Truth Initiative is a non-profit public health organization dedicated to making today's youth the generation that ends tobacco use in the U.S.

In 2014, against a backdrop of rising youth and young adult vaping — or use of Electronic Nicotine Delivery Systems (ENDS) — we assessed the unrestricted marketing environment for electronic cigarettes (e-cigarettes), the most common type of ENDS,¹ and its reach among 13–21 year olds.

We took a fresh look at that marketing environment in 2015. Consistent with our research from 2014, we find the vast majority of youth and young adults are aware of the marketing of e-cigarettes – more than eight of ten. The following are key takeaways from surveys of youth and young adults, as well as analysis of e-cigarette media expenditure data, that together highlight youth and young adult awareness and exposure to e-cigarette advertising and promotions over the past two years.

“ Five brands (blu, MarkTen, NJOY, Vuse and Fin) account for 95% of total category spend. The three brands with highest advertising expenditure in 2014 — MarkTen, blu and Vuse — are all owned by Big Tobacco companies. ”

KEY TAKEAWAYS

E-CIGARETTE ADVERTISING AWARENESS

- E-cigarette advertising awareness across channels remains high from February 2014 to August 2015, with 82% of 13–17 year olds and 88% of 18–21 year olds reporting having seen an ad in at least one channel in 2015.
- These high levels of e-cigarette advertising awareness are concurrent with rising youth e-cigarette use.
- Awareness of e-cigarette advertisements remains highest in retail establishments (convenience stores, supermarkets or gas stations), followed by on television and online.
- Awareness of e-cigarette advertising was second highest on television. That is particularly notable because cigarette advertising has not been permitted on television since 1971.
- The high level of awareness young people have with regard to television advertising of e-cigarettes suggests e-cigarette advertisers may be purposefully reaching this audience.

INDUSTRY ADVERTISING

- The top 10 e-cigarette brands with the highest advertising expenditure in 2013 and 2014 account for 98% of total category spend.
- Five brands (blu, MarkTen, NJOY, Vuse and Fin) account for 95% of total category spend. The three brands with highest advertising expenditure in 2014 — MarkTen, blu and Vuse — are all owned by Big Tobacco companies.

- Spending across the top 10 brands rose 52%. Those brands spent \$75.7 million in 2013 and \$115.3 million in 2014. Magazines and cable television accounted for the vast majority of dollars spent in both years.
- The brand with the highest 2014 spending — MarkTen — increased its spending from only \$431,000 in 2013 to \$54 million in 2014. MarkTen far outspent any other brand in 2014. The remaining top spending brands were blu, which spent \$39 million, and Vuse, which spent \$9.6 million. With the exception of MarkTen, Vuse and Tryst, all brands decreased spending from 2013 to 2014.
- In 2014, MarkTen and blu accounted for nearly all of the \$83 million in magazine expenditures. blu, Vuse and NJOY accounted for nearly all of the \$22 million in cable television expenditures.
- In 2014, e-cigarette advertising across TV and print reached approximately 80% of 13–17 year olds (20 million) and 94% of 18–24 year olds (29 million). Among the top spending brands, blu and MarkTen reached the greatest proportion of youth and young adults.
- Notably, this analysis does not capture expenditures or reach of social media promotion, brand websites and other such avenues of promotion online that are often difficult to monitor in terms of both expenditures and audience delivery by age. Thus, it is possible and perhaps even likely that e-cigarette advertising expenditures and delivery against youth are underreported.

BACKGROUND

Q: What are ENDS?

Electronic Nicotine Delivery Systems (ENDS) are a product category that includes disposable cigarette-like e-cigarettes, e-hookah, vape pens, and refillable tank-like or personal vaporizers that do not look like cigarettes. These devices heat a solution (usually propylene glycol or glycerin, with or without nicotine, often combined with additives and flavors) producing an aerosol mist that is inhaled without combustion. This inhalation is widely referred to as vaping.

Q: What do we know about the health effects of ENDS?

Since ENDS are relatively new products, the health risks of ENDS are not fully known, particularly the long-term effects of inhaling nicotine, propylene glycol, flavors or other ingredients in e-cigarette liquid. While the FDA appears to be close to asserting jurisdiction over ENDS through what is known as the deeming rule, these products have not been subject to any federal standards for quality or safety. As a result, the constituent profile can — and does — vary from product to product, and new product designs may present different individual health risks.

ENDS that contain nicotine may be harmful to certain populations (children, youth, pregnant women, those with heart disease and some other conditions).¹⁶ Nicotine is an addictive stimulant.¹⁶

Q: Are ENDS less harmful than smoking cigarettes?

The 2014 U.S. Surgeon General's report states that the overwhelming majority of the preventable deaths and disease burdens from tobacco use come from smoking combustible tobacco products, primarily cigarettes.¹⁶ Current evidence supports the conclusion that vaping, while not harmless, poses significantly less harm to an individual than smoking cigarettes.¹⁷

The best way for smokers to protect their health is to quit use of any and all nicotine or tobacco products. Smokers who completely switch to ENDS as soon as possible are likely to significantly reduce their harmful exposures versus continued use of combustible tobacco products such as smoking cigarettes, cigars, pipes, hookah and roll-your-own tobacco. ENDS can help some smokers to quit smoking.

Q: Are youth and young adults using ENDS, and is there a relationship to youth cigarette use?

Youth (aged 12–17) and young adults (aged 18–21) are experimenting with or trying e-cigarettes. Recent national studies raise concern about e-cigarette use among youth and young adults.⁸ The National Youth Tobacco Survey found large increases in e-cigarette use among youth from 2011 to 2014.² Monitoring the Future found that past 30-day e-cigarette use was higher for 8th, 10th and 12th graders than past 30-day cigarette use.³

⁸ National surveys that assess use of ENDS among youth ask specifically about e-cigarette use.

There is no evidence to date of ENDS increasing the likelihood of other tobacco use (i.e., combustible tobacco forms). Cigarette use has fallen to record lows for both youth and adults in the last few years although overall use of non-cigarette, combustible tobacco products, such as large cigars, has increased.¹⁸ We do not know whether ENDS are associated with further tobacco use. It is possible ENDS use will have little influence on other tobacco use if these behaviors travel together in risk-taking youth. More research is required to answer this question.

Regardless of whether ENDS impact cigarette smoking or not, young people should not use ENDS.

Q: Does advertising of ENDS promote youth and young adult vaping?

Research provides conclusive evidence that tobacco industry advertising causes youth and young adults to start smoking.⁴ It is currently unknown whether advertising has the same effect on susceptibility to and initiation of ENDS use. The lack of data on the relationship between ENDS advertising and use among young people is troubling because recent studies document rapid increases in promotional expenditures for e-cigarettes over the past three years.^{5,6} While they have indicated they will start to monitor such spending in future years, the Federal Trade Commission, which tracks advertising and promotional expenditures for cigarettes and smokeless tobacco products, does not yet measure such expenditures for e-cigarettes and other ENDS.

While we have observed that some e-cigarette advertising is appropriately targeted to adult smokers as an alternative to smoking more harmful combustibles, other forms of advertising of e-cigarettes occur predominantly through youth-oriented channels where marketing of other tobacco products is banned (e.g., television, sponsorships).^{7,8} On television alone, youth exposure to e-cigarette advertisements (ads) increased an estimated 256% from 2011 to 2013 and was primarily for blu e-cigarettes.⁹ Specifically, blu was shown to be responsible for 81.7% of e-cigarette ads airing to youth aged 12-17 and 80.4% of those airing to young adults aged 18-24.⁹ Some televised e-cigarette ads include celebrities and imagery of e-cigarette vapor that is indistinguishable from cigarette smoke.⁹

Q: What did you measure to determine youth and young adult exposure to e-cigarettes?

To further characterize the reach of ENDS youth marketing efforts, Truth Initiative has administered surveys to youth and young adults to document awareness of e-cigarette advertising and promotions, as e-cigarettes are the most common type of ENDS.¹ Truth Initiative has also used e-cigarette media expenditure data to document how and to what extent e-cigarette advertising is reaching young people. In addition to presenting the most recent data available, this report also highlights changes in awareness and reach of advertising and promotions over the last two years. The report also provides prevalence estimates of e-cigarette use from national data sets.

USE AND AWARENESS AMONG YOUTH AND YOUNG ADULTS

Using national data and results from our study using Research Now, we answer the following questions:

1. What were the rates of ever and past 30-day use of e-cigarettes among middle and high school students, as well as young adults, in 2014?
2. What are the levels of e-cigarette advertising awareness across various channels among 13–21 year olds in 2014 and 2015?

METHODOLOGY

Prevalence of ever and past 30-day use of electronic cigarettes was obtained from two national datasets; data on youth e-cigarette use (middle and high school students)^b was obtained from the National Youth Tobacco Survey (NYTS)² and data on young adult e-cigarette use (ages 18–21) was obtained from the National Health Interview Survey (NHIS).¹⁰ The NYTS and NHIS data include prevalence estimates from 2014.^c

Data collection on awareness of e-cigarette advertising was conducted using Research Now, a research firm with expertise in developing robust online opt-in panels. For this study, respondents were surveyed from February 13 through February 16, 2014, and then again from August 12 through August 27, 2015. The 2014 sample was composed of 1,002 13–17 year olds and 1,000 18–21 year olds, and the 2015 sample was composed of 970 13–17 year olds and 1,022

^b NYTS reports tobacco use by grade, rather than age group.

^c While the rest of this study examines data from 2014 and 2015, only data from 2014 were reported from the national data sets (NYTS and NHIS) because data from 2015 haven't been released yet.



This ad for blu e-cigarettes features well-dressed young adults at a party, smiling and gazing at the young man in the center holding a blu e-cigarette. The ad appeared in Esquire in January 2012 and Men's Journal in March and May 2012. Source: Trinkets and Trash.

18–21 year olds. In both years, the samples contained a greater percentage of females than males. The racial composition of each year’s sample was over 50% white, approximately 15% black and about 10% Hispanic. Data were weighted to produce nationally-representative estimates.

RESULTS

1. What are the rates of past 30-day use of e-cigarettes among 13–21 year olds?

Data from NYTS demonstrate that ever use of e-cigarettes for middle and high school students in 2014 was 10.1% and 27.3%, respectively. In the same year, past 30-day use of e-cigarettes was 3.9% for middle school students and 13.4% for high school students.² According to data from NHIS, ever use of e-cigarettes among 18–21 year olds was 18.2% and past 30-day use of e-cigarettes among this group was 5.5% in 2014.¹⁰

Use of traditional, combustible cigarettes was also measured in both the NYTS and NHIS surveys. In 2014, ever use of cigarettes was 11.4% and 30.8% among middle and high school

students, respectively. Past 30-day use of cigarettes was 2.5% and 9.2% among middle and high school students, respectively.² Among 18–21 year olds, NHIS data indicate that ever use of cigarettes was 17.8% and past 30-day cigarette use among this age group was 14.6% in 2014 (see Table 1).¹¹

2. What are the levels of e-cigarette advertising awareness across various channels among 13–21 year olds?

We also examined awareness of e-cigarette advertising across most major channels — TV, radio, print, online and retail — by asking respondents how often they see e-cigarette ads through these different channels. Results show that, among the major advertising channels, youth awareness of e-cigarette advertisements is highest at retail sites, and that awareness of retail e-cigarette advertisements has increased since February 2014 (see Figures A and B). In the August 2015 survey, 69% of teens aged 13–17 (vs. 60% in February 2014)^d and 75% of young adults aged 18–21 (vs. 69% in February 2014)^e said they always, most of the time, or some of the time see

Table 1: Rates of Ever and Past 30-day Use of E-cigarettes and Cigarettes, Ages 13–21, 2014

	E-cigarettes		Cigarettes	
	Ever Use	Past 30-Day Use	Ever Use	Past 30-Day Use
Middle School Students	10.1%	3.9%	11.4%	2.5%
High School Students	27.3%	13.4%	30.8%	9.2%
18-21 Year Olds	18.2%	5.5%	17.8%	14.6%

^d The differences between these percentages were significant ($z = 4.61, p < .001$)

^e The differences between these percentages were significant ($z = 3.88, p < .001$)

e-cigarette advertising at convenience stores, supermarkets or gas stations. Young people also had high awareness of television and online e-cigarette advertising, and these rates were similar to those seen in February 2014. In August 2015, 44% of 13–17 year olds and 57% of 18–21 year olds said they saw e-cigarette advertising on TV always, most or some of the time, similar to the 45% of 13–17 year olds and 56% of 18–21 years olds who reported the same in February 2014.^f Similarly, 40% of 13–17 year olds and 57% of 18–21 year olds said they saw e-cigarette advertising online always, most or some of the time in August 2015 (vs. 43% and 58% respectively in February 2014)^g. Overall, in 2015, 82% of 13–17 year olds and 88% of 18–21 year olds have seen an ad across at least one of these channels. As seen in the February 2014 data,

data from August 2015 also indicated e-cigarette advertisement awareness via each channel was even higher among ever or past 30-day cigarette smokers. Across all channels and for both age groups, awareness of e-cigarette advertising was lowest among never cigarette smokers (see Figures A and B). Among racial/ethnic groups, Hispanics and African Americans had the highest e-cigarette advertising awareness across channels in both February 2014 and August 2015, except for retail advertising awareness, which was equally high across racial/ethnic groups. Our most recent data demonstrates that e-cigarette advertising awareness is higher among ever users of e-cigarettes compared to never users regardless of media channel or age category (see Table 2).

Table 2: Awareness of E-cigarette Advertising Among E-cigarette Ever and Never Users, Ages 13–21, in 2015

	Advertising Awareness		
	Overall	E-Cigarette Ever Users	E-Cigarette Never Users
TV	49%	64%	44%
Radio	31%	48%	25%
Print	38%	56%	32%
Online	48%	71%	39%
Retail	71%	86%	66%
Any Advertising	84%	95%	80%

^f The August 2014 and February 2015 percentages for TV ads were not significantly different from each other.

^g The August 2014 and February 2015 percentages for internet ads were not significantly different from each other.

Figure A: Awareness of E-cigarette Advertising, Ages 13–17

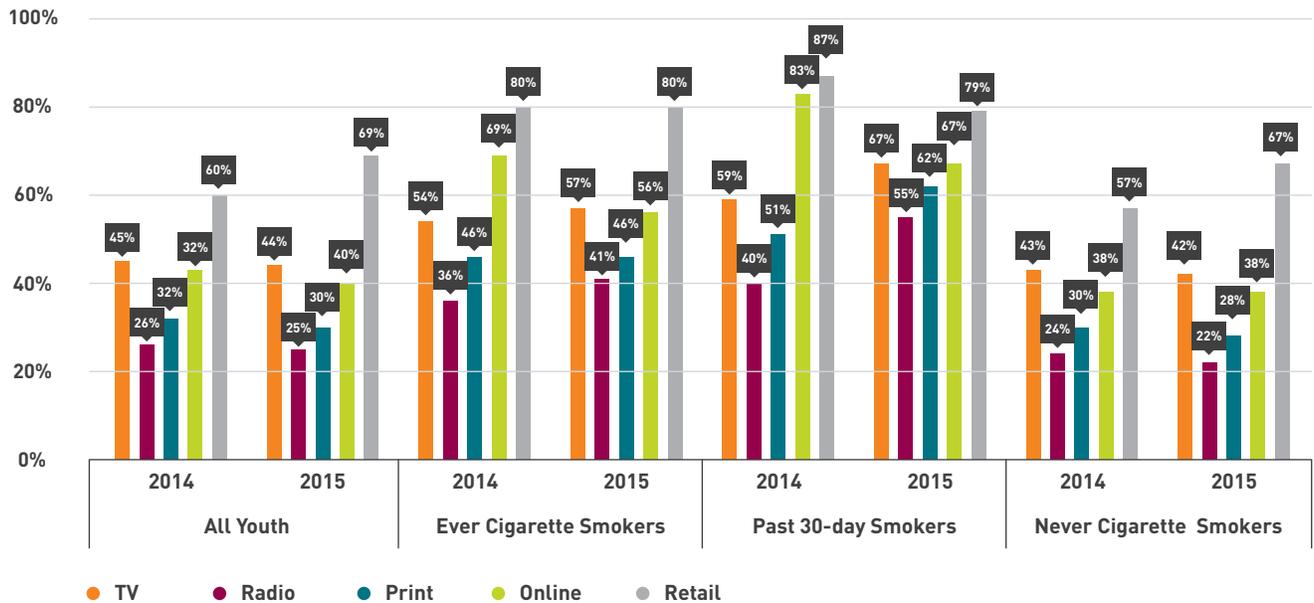
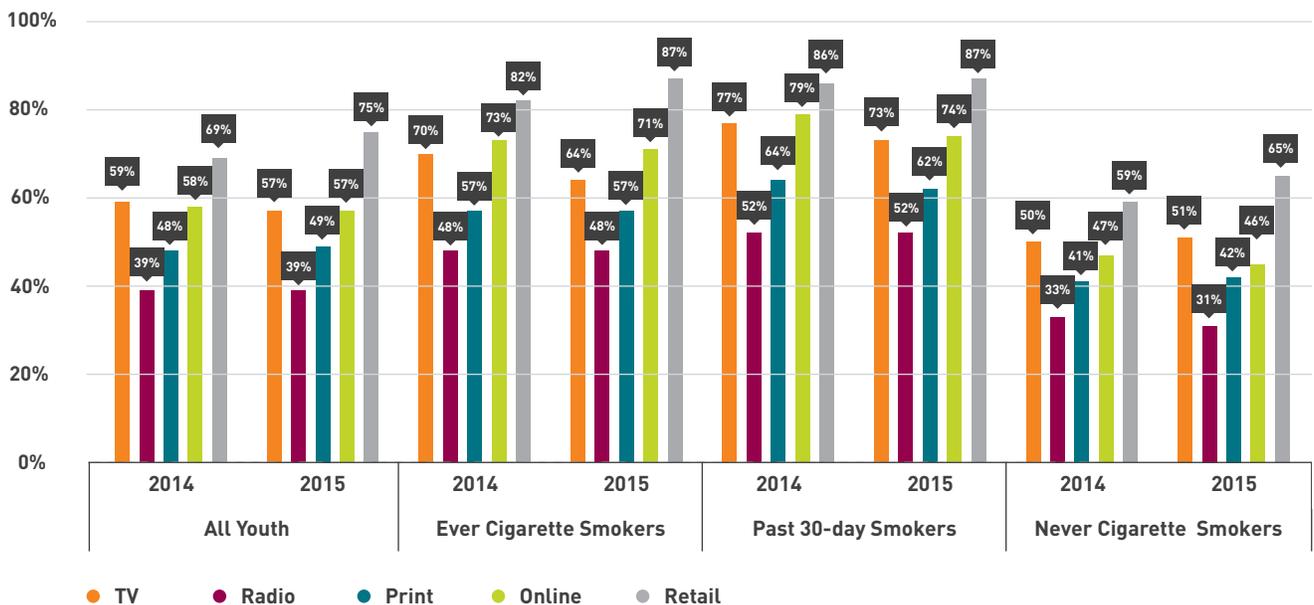


Figure B: Awareness of E-cigarette Advertising, Ages 18–21



TOBACCO INDUSTRY ADVERTISING EXPENDITURE ANALYSIS

We answer the following questions for both 2013 and 2014, examining changes over time:

1. In which channels did e-cigarette advertisers spend the most money?
2. Which brands spent the most money?
3. Were teens and young adults exposed to e-cigarette advertising during this timeframe?
4. If young people were exposed to e-cigarette ads, which brands did they see and in which channels?

METHODOLOGY

Truth Initiative's media partner, Assembly, analyzed e-cigarette industry spending and reach among the 10 brands with the top media spending numbers in 2013 and 2014, using data from Kantar Media. Kantar Media is the leading provider of strategic advertising intelligence to advertising agencies, advertisers and media properties. The company's tracking technologies collect advertising expenditure and occurrence data, as well as select creative executions, for more than 3 million brands across 20 media channels. Kantar utilizes machines and people to identify a TV commercial airing across most major broadcast and cable networks and time stamps it the second it airs. The spots level data is matched directly to Nielsen TV ratings based on the time the spot airs on each broadcast or cable network.

These top 10 e-cigarette brands with the highest advertising expenditure in 2013 and 2014 account for 98% of total category spend, with five brands (blu, MarkTen, NJOY, Vuse and Fin) accounting

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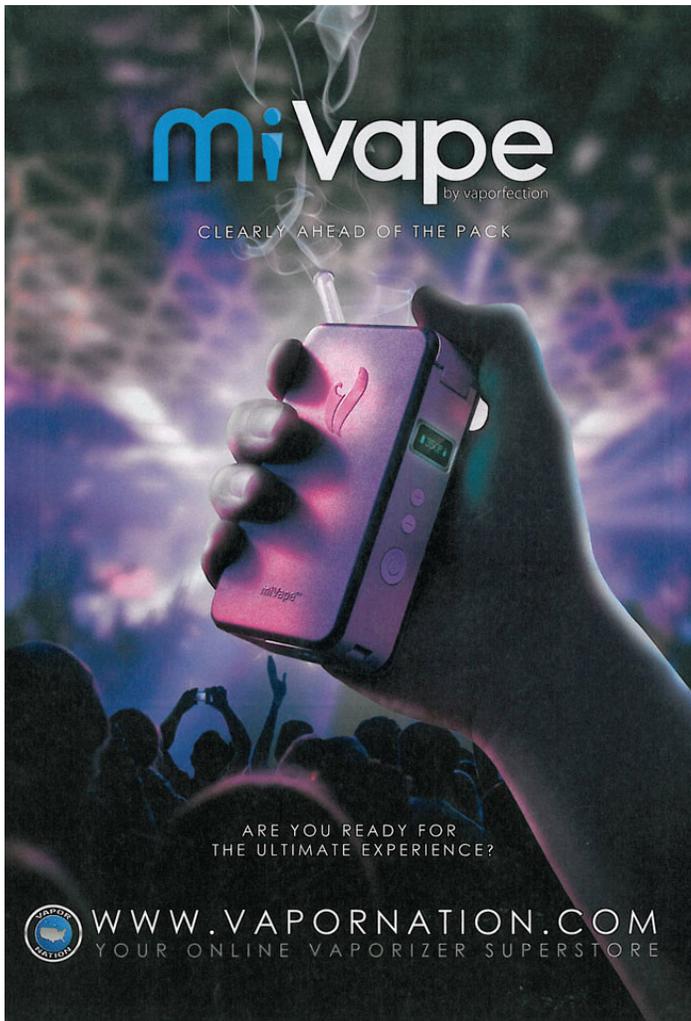
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This ad for NJOY e-cigarettes suggests that readers "Try something new in bed." The ad appeared in OUT in June 2013. Source: Trinkets and Trash.



This ad for MiVape vaporizer by vaporfection suggests the product is being used at a concert or music festival. The ad appeared in Rolling Stone in July 2015. Source: Trinkets and Trash.

for 95% of total category spend. The other five brands are 21st Century Smoke, Green Smoke, Logic, Mystic and Tryst.

Advertising expenditure categories are as follows:

- **Cable TV:** Any non-broadcast TV network, i.e., MTV, Vh1, ESPN, TBS, etc. (87 of these cable stations are measured by Kantar Media)
- **Syndication TV:** 200+ shows that are licensed by TV stations across the country so that they can air these shows without having to go directly through the broadcast network. Think of this as the *Friends* and *Seinfeld* reruns you see on TBS and other networks.
- **Spot TV:** Any local TV placements
- **Network Radio:** Any network radio placements
- **Spot Radio:** Any local radio placements
- **Print:** Print publication placements, further broken down into Newspapers (local newspapers that are specific to a certain city or state), National Newspapers, Magazines, and Sunday Magazines
- **Digital Display:** Any placements of display ads online (non-video digital ads on desktop and search ads)
- **OOH:** Out-of-home advertising, such as billboards
- **B2B:** Business-to-business magazine placements

RESULTS

1. In which channels did e-cigarette advertisers spend the most money?

Overall, e-cigarette advertisers across the top 10 brands spent \$75.7 million in 2013 and \$115.3 million in 2014, a 52% increase. Magazines and cable TV accounted for the vast majority

of dollars spent; magazines made up the majority of the ad dollars spent in both 2013 (\$43.6 million; 58%) and 2014 (\$83.4 million; 72%), followed by cable TV ads, which accounted for 20% of spending in 2013 (\$14.8 million) and 19% of spending in 2014 (\$22.3 million) (see Figures C and D; see Table 3).

Figure C: 2013 Expenditures by Channel

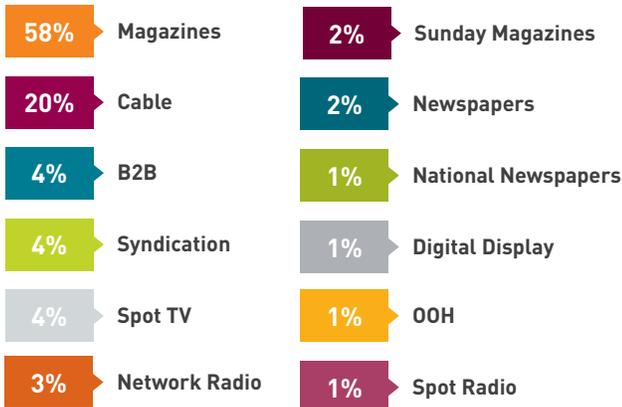


Figure D: 2014 Expenditures by Channel

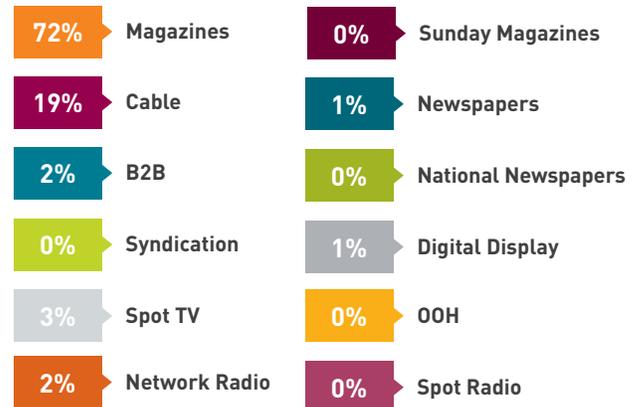


Table 3: E-cigarette Category Expenditures by Channel

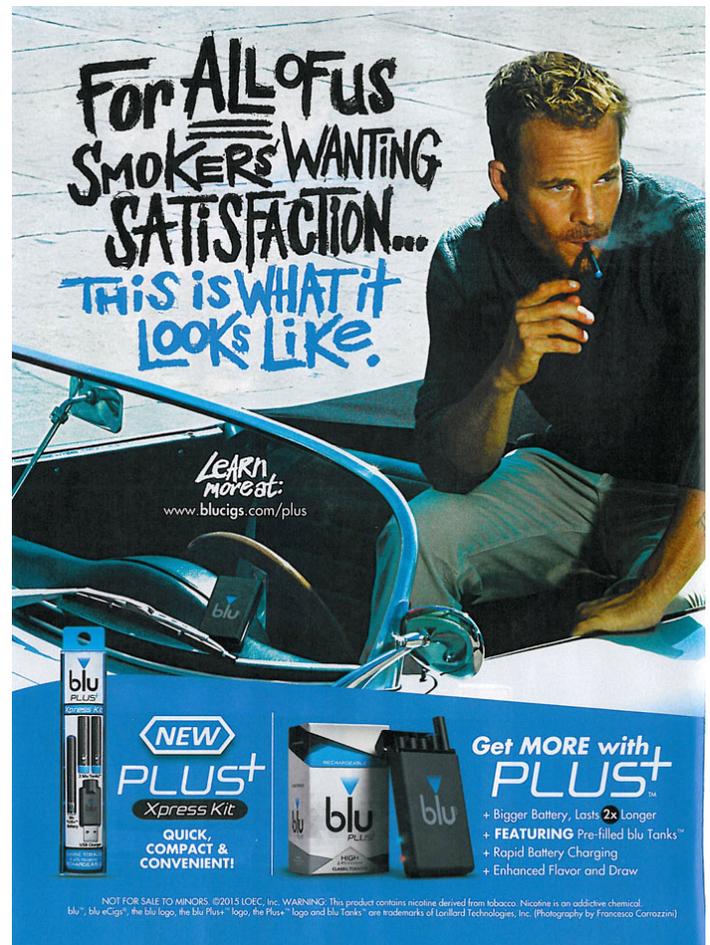
	2013		2014	
	\$ (millions)	%	\$ (millions)	%
Cable	\$14.78	20%	\$22.30	19%
Syndication	\$2.89	4%	\$0.11	0%
Spot TV	\$3.22	4%	\$3.12	3%
TV Total	\$20.89	28%	\$25.53	22%
Network Radio	\$2.34	3%	\$1.62	1%
Spot Radio	\$1.11	1%	\$0.14	0%
Radio Total	\$3.45	5%	\$1.76	2%
Magazines	\$43.63	58%	\$83.40	72%
Sunday Magazines	\$1.60	2%	\$0.0	0%
National Newspapers	\$0.94	1%	\$0.0	0%
Newspapers	\$1.16	2%	\$0.44	0%
Print Total	\$47.33	63%	\$83.84	73%
Digital Display	\$0.68	1%	\$1.23	1%
OOH	\$0.64	1%	\$0.30	0%
B2B	\$2.73	4%	\$2.63	2%
E-cigarette Category Grand Total	\$75.72	100%	\$115.29	100%

2. Which brands spent the most money?

The top spending brands in 2013 were blu, which spent approximately \$49 million on advertising, followed by NJOY (\$11 million), Green Smoke (\$7.5 million) and FIN (\$7.5 billion) (see Figure E). In 2014, MarkTen, which had spent only \$431,000 in the prior year, spent \$54 million on advertising, far outspending any other brand. The remaining top spending brands were blu, which spent \$39 million, a decrease from 2013, and Vuse, which increased their spend significantly in 2014 to \$9.6 million. With the exception of MarkTen, Vuse and Tryst, all brands decreased spending from 2013 to 2014 (see Figure E).

In 2013, the top spending brand in magazines was blu, accounting for approximately 78% of expenditures through this channel (\$34 million) (see Figure F). blu was also the biggest spender on syndicated television (\$2.7 million) and cable (\$11.7 million), accounting for 93% and 81% of the spend in those categories, respectively. That year, NJOY dominated spot TV (\$1.9 million), comprising 60% of the total spend in that category.

In 2014, MarkTen outspent blu in the magazine category, spending \$53.7 million, whereas blu spent slightly more than half of that (\$28.6 million). Combined, MarkTen and blu made up nearly all of the magazine expenditures. There were almost no expenditures in the syndicated television category in 2014, with the exceptions of blu and FIN, which spent \$32,400 and \$77,400, respectively.



This ad for blu e-cigarettes features celebrity Stephen Dorff with a blu e-cigarette inside a convertible car. The ad appeared in Maxim, Men's Journal and Playboy in Spring and Summer 2015. Source: Trinkets and Trash.

Comparing expenditures for 2013 and 2014, spot TV totals were similar, with NJOY (\$1.2 million) leading the category in expenditures. blu increased their spending on spot TV over the study period from \$384,700 in 2013 to \$1.1 million in 2014. Lastly, Vuse and NJOY greatly

increased their cable expenditures from 2013 to 2014, comprising 36% and 19% of expenditures, respectively. blu's cable expenditures were slightly lower for 2014, totaling \$9.7 million and making up 44% of the category (see Figure F).

Figure E: E-cigarette Advertising Expenditures by Brand

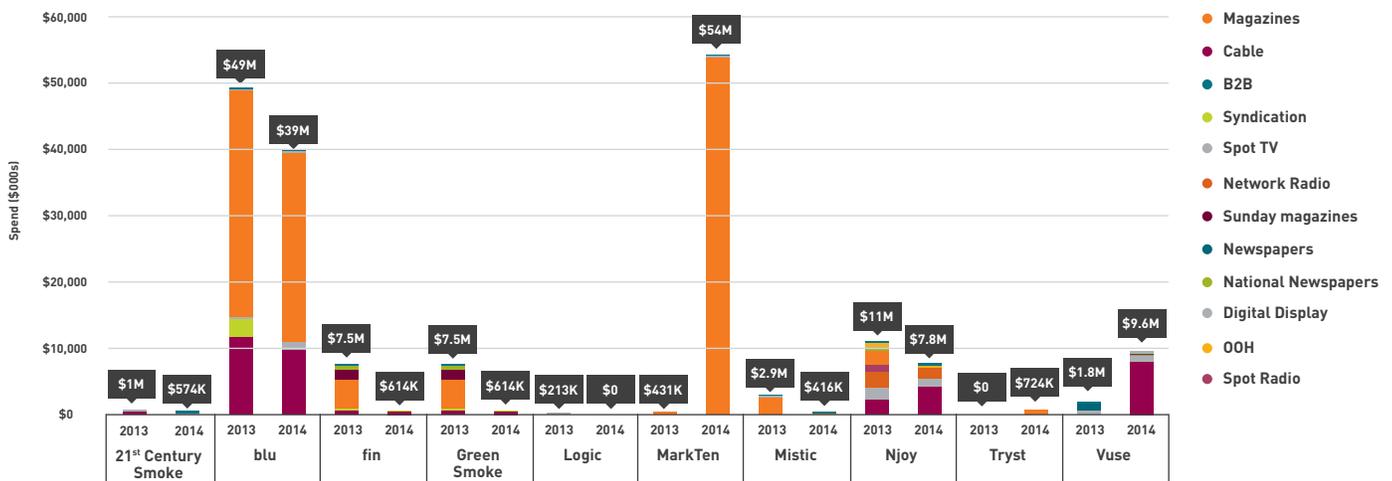
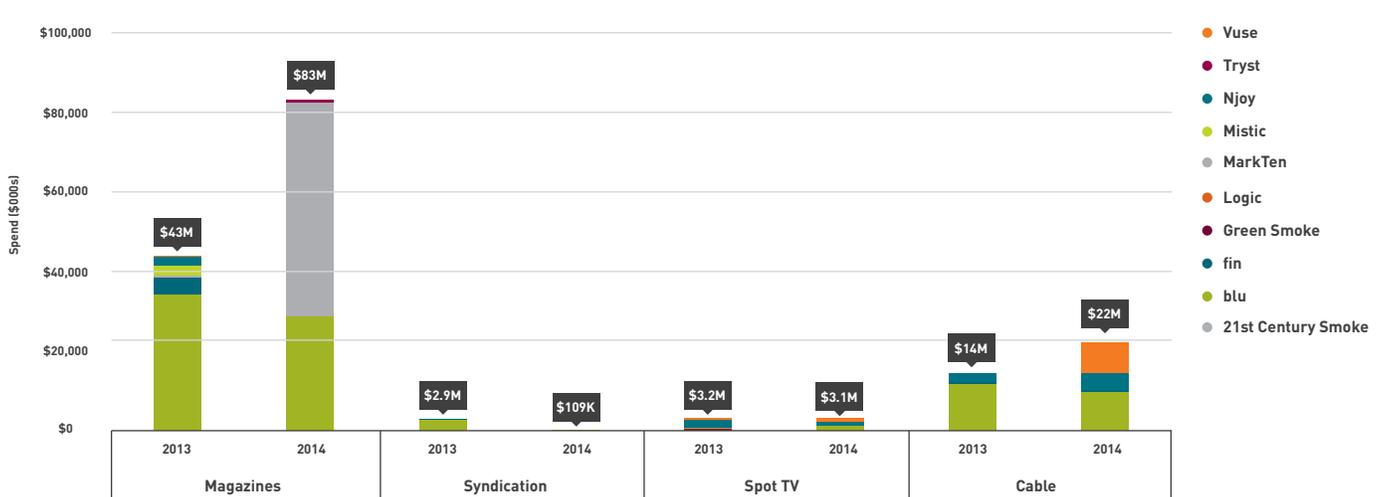


Figure F: E-cigarette Advertising Expenditures by Channel



3. Were teens (ages 12-17) and young adults (ages 18-24) exposed to e-cigarette advertising during this timeframe?

Assembly’s analysis found that a large proportion of teens and young adults were exposed to e-cigarette advertising, particularly television and print ads (see Tables 4 and 5).

TV: E-cigarette TV ads reached approximately 35 million teens and young adults in 2013 as well as 2014 (see Tables 4 and 5). Among teens ages 12-17, 63% or 15.8 million were exposed to e-cigarette ads on TV in 2013 while among young adults ages 18-24, 67% or 20.7 million were exposed in 2013. In 2014, 15.5 million or 62% of teens were exposed to e-cigarette ads on TV, as were 19.7 million or 64% of young adults.

Ads ran on a broad range of networks including Comedy Central, AMC, ESPN, VH1 and Spike.

Print: Print ads in magazines reached approximately 37 million teens and young adults in 2013 as well as 2014 (see Tables 4 and 5). In 2013, among teens ages 12-17, 45% or 11.3 million were reached through these ads while 83% or 25.6 million young adults ages 18-24 were exposed to e-cigarette print ads. In 2014, 47% or 11.8 million teens were exposed to print e-cigarette ads and 82% or 25.3 million young adults were exposed. Based on the magazines tracked by Kantar Media, a total of 302 print insertions ran during 2013 and a total of 416 print insertions ran during 2014; top magazines included tabloids like *Star*, weeklies like

Table 4: E-cigarette Advertising Reach across TV and Print, Ages 12-17

	Number of Individuals Reached		Percent of Population Reached	
	2013	2014	2013	2014
TV	15.8 million	15.5 million	63%	62%
Print	11.3 million	11.8 million	45%	47%

Table 5: E-cigarette Advertising Reach across TV and Print, Ages 18-24

	Number of Individuals Reached		Percent of Population Reached	
	2013	2014	2013	2014
TV	20.7 million	19.7 million	67%	64%
Print	25.6 million	25.3 million	83%	82%

Table 6: Percent of Readership Ages 12-24 among a Sample of Magazines with E-cigarette Advertising¹⁹

ESPN The Magazine	35%	GQ-Gentlemen's Qrtly	23%
Rolling Stone	31%	Men's Fitness	23%
Life & Style Weekly	30%	Marie Claire	23%
Cosmopolitan	29%	Popular Science	22%
In Touch	29%	Maxim	22%
Glamour	28%	Entertainment Weekly	20%
Elle	28%	People	20%
Us Weekly	27%	Car and Driver	19%
Allure	26%	Essence	19%
Sports Illustrated	26%	TV Guide	19%
Hot Rod	26%	Men's Health	17%
In Style	25%	Popular Mechanics	14%
Star	24%	Esquire	14%

Entertainment Weekly and *US Weekly* and lifestyle titles like *Rolling Stone*, *ESPN The Magazine* and *Sports Illustrated*. Many of these titles (see Table 6) have youth and young adult (ages 12-24) readership ranging from 14% to 35%, with *ESPN The Magazine* having the largest proportion of youth and young adult readers (35%).

4. If young people are exposed to e-cigarette ads, which brands did they see?

In 2013, teens and young adults were most likely to see ads from blu and FIN (see Table 7). Approximately 19.6 million or 78% of teens ages

12-17 were exposed to blu's print and TV ads while 33% or 8.3 million teens in this age range were exposed to FIN's print and TV ads. Among young adults ages 18-24, 28.5 million or 93% were exposed to blu while 19.3 million or 63% were exposed to FIN. MarkTen, Mystic and NJOY reached fewer young people in 2013; during this time period, 4.5 million teens (18%) saw MarkTen's print and TV ads, 6.0 million teens (24%) saw Mystic's print and TV ads, and 6.4 million teens (25%) saw NJOY's print and TV ads. This is in contrast to the 14.5 million young adults (47%) who saw MarkTen's print and TV ads, the



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15.7 million young adults (51%) who saw Mystic's print and TV ads, and the 13.3 million young adults (43%) who saw NJOY's print and TV ads.

In 2014, teens and young adults were most likely to see ads from blu and MarkTen, followed by Vuse. Approximately 18.1 million 12-17 year olds or 72% were exposed to blu's print and TV ads, while 10.8 million or 43% were exposed to MarkTen's print and TV ads and 9.3 million or 37% were exposed to Vuse's print and TV ads. Trends were similar among young adults 18-24 years old, with 27.6 million or 90% exposed to blu's print and TV ads, 24.1 million or 78% exposed to MarkTen's print and TV ads, and 12.3 million or 40% exposed to Vuse's print and TV ads. All other brands had minimal reach (less than 10%) compared to blu, MarkTen and Vuse.

This ad for blu e-cigarettes features the mid-section of a thin woman with a bikini bottom with blu's logo. The ad appeared in the March 2014 Sport's Illustrated Swimsuit Issue. Source: Trinkets and Trash.

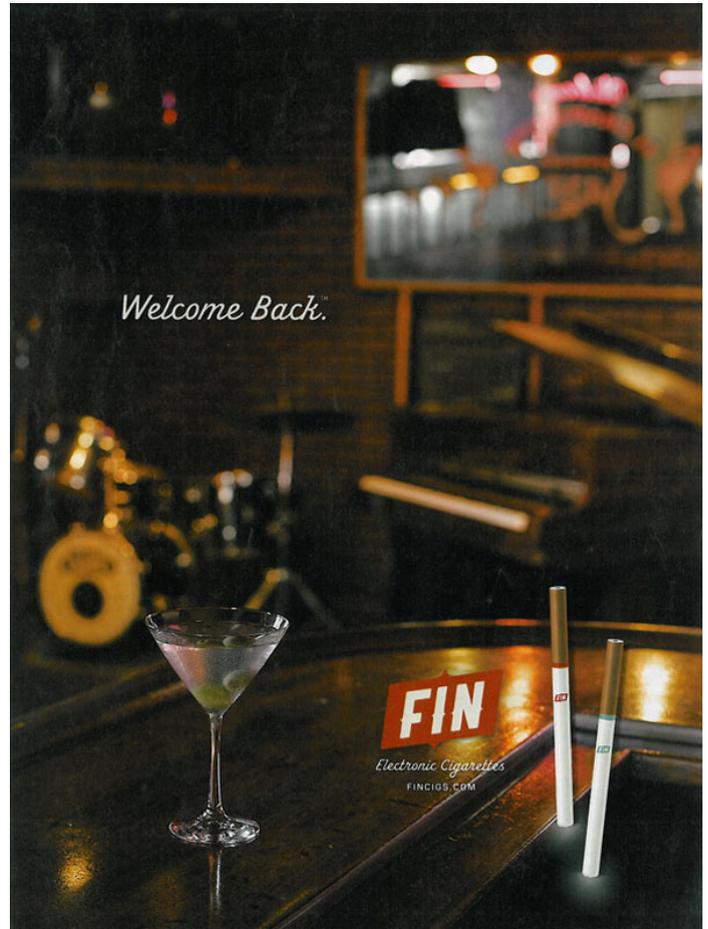
Table 7: E-cigarette Advertising Reach across TV and Print by Brand

	Total % Reached 2013		Total % Reached 2014	
	P12-17	P18-24	P12-17	P18-24
21st Century Smoke	6%	7%	0%	0%
	1,503,600	2,158,800	0	0
blu	78%	93%	72%	90%
	19,632,004	28,533,168	18,110,862	27,601,800
Fin	33%	63%	2%	3%
	8,299,872	19,305,840	501,200	925,200
Green Smoke	0%	0%	0%	0%
	0	0	0	0
Logic	0%	0%	0%	0%
	0	0	0	0
MarkTen	18%	47%	43%	78%
	4,510,800	14,494,800	10,775,800	24,055,200
Mistic	24%	51%	0%	3%
	6,014,400	15,728,400	0	925,200
Njoy	25%	43%	23%	32%
	6,360,228	13,273,536	5,763,800	9,868,800
Tryst	0%	0%	8%	8%
	0	0	2,004,800	2,467,200
Vuse	0%	0%	37%	40%
	0	0	9,272,200	12,292,824
TOTAL	80%	94%	80%	94%
	19,960,290	29,109,876	20,012,916	28,841,568

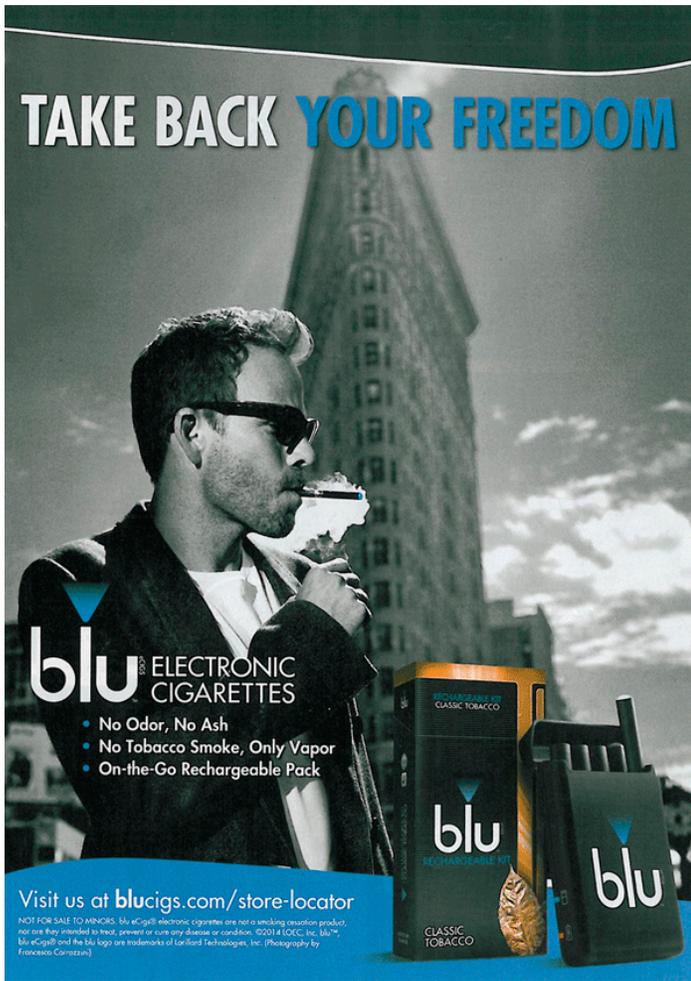
LIMITATIONS

There are several limitations to consider with regard to the analyses in this report. Findings about the awareness of e-cigarette advertising may not be generalizable to the general population given the use of opt-in online panels. Based on past experience, panelists tend to come from households with higher education and are more likely than others to be early adopters of new technologies. Data are cross-sectional, so observed differences from February 2014 to August 2015 may be partially due to differences between the two study populations rather than trends in awareness or behavior. Furthermore, the study used self-reported measures of exposure to pro-tobacco industry advertising, which may be subject to recall bias.

Data from national surveys on prevalence also have limitations. These data are limited to self-reported measures of e-cigarette and cigarette use, which may be subject to recall bias. Additionally, for the younger age groups, data used from NYTS do not exactly match the age group of the Research Now study; the Research Now study included 13–17 year olds for the younger age group, while NYTS categorizes youth by grade, rather than age (middle and high school aged youth). Additionally, data for the younger age groups from NYTS and data for the older age groups from NHIS are not directly comparable given different sampling and survey methodologies. Furthermore, prevalence data from 2015 have not yet been released for NYTS or NHIS, so we are not able to present prevalence for both data points examined in the advertising portion of this study (2014 and 2015).



This ad for Fin e-cigarettes features an image of a martini in a bar setting. The ad appeared in Rolling Stone in June 2012. Source: Trinkets and Trash.



This ad for blu e-cigarettes features celebrity Stephen Dorff with a blu e-cigarette outside a building in New York City. The ad appeared in Car & Driver, Men's Journal, and Playboy in Summer and Fall 2014. Source: Trinkets and Trash.

Limitations for the industry advertising analysis include that reported spend can vary from actual spend by as much as 35% to 70%. Since the data in this analysis were based on flat rates for impressions purchased, the data cannot account for negotiated costs beyond the vendor's rate. Data on spend for digital displays are especially difficult to estimate; spend data for this category is better for showing directionality of spend over time rather than exact expenditures. However, this study's reported gross rating points (GRPs), the measure used to estimate the number of individuals reached, was consistent with overall trends. Moreover, certain categories of media spending — such as point-of-sale and certain types of digital advertising — were not captured by this study.

Indeed, many forms of digital and social media advertising and promotion are difficult to monitor in terms of both expenditures and audience delivery by age. While paid digital display advertising is included in this analysis, that does not capture social media promotion, brand websites or other such avenues of promotion online. Given the absence of this information, it is possible and perhaps even likely that e-cigarette advertising expenditures and delivery against youth are underreported.

CONCLUSIONS

This study confirms that exposure to and awareness of e-cigarette advertising among youth and young adults in the U.S. remains high, which is particularly concerning given the nature of e-cigarette ads, which often seem to appeal to this young population.

Data from national surveys demonstrate that ever use of e-cigarettes among middle school students was 10.1% and 27.3% for high school students in 2014. For these groups, past 30-day use of e-cigarettes was 3.9% for middle school students and 13.4% for high school students in 2014. For 18–21 year olds, ever use of e-cigarettes was 18.2% and past 30-day use was 5.5% in 2014. In comparison, ever use of cigarettes in 2014 was 11.4% among middle school students, 30.8% among high school students, and 17.8% among 18–21 year olds. Rates of past 30-day cigarette use in 2014 were 2.5% among middle school students, 9.2% among high school students, and 14.6% among 18–21 year olds.

Similar to 2014, the retail environment was where respondents reported seeing e-cigarette advertising most often, followed by TV and online advertising. Given that television is a channel from which other tobacco industry advertising has long been absent, the fact that awareness of e-cigarette advertising was second highest on television is especially notable. With approximately 50% of youth reporting seeing e-cigarette TV advertising, it is unreasonable to conclude this is simply spillover from e-cigarette advertising targeting older individuals. Paid media advertising on television is extremely expensive, and no advertiser would reasonably waste as much as 50% against a target that is outside their intended audience. This suggests

that certain e-cigarette advertisers may be purposefully reaching youth. Data also show that in 2015, a greater portion of e-cigarette ever users were aware of e-cigarette advertising compared to e-cigarette never users. However, it is not clear from the data whether exposure to e-cigarette advertising leads to e-cigarette use or e-cigarette users are more aware of e-cigarette advertising.

E-cigarette advertising expenditures increased significantly by 52% from 2013 to 2014, reaching \$115.3 million in 2014. The majority of this increase reflects advertising expenditures in magazines, which increased from \$43.6 million in 2013 to \$83.4 million in 2014. The vast majority of this increase reflects expenditures by the MarkTen brand.

MarkTen advertising significantly increased in 2014 (from \$431,000 in the prior year to \$54 million), far surpassing all other brands; this increase was due mostly to the increase in magazine spend. Vuse elected to focus their expenditures on cable advertising while blu spent most of their advertising budget on magazines and cable. The decrease in spending for blu observed from 2013 to 2014 may be due to R.J. Reynolds' acquisition of Lorillard,¹² which led to the sale of blu to Imperial Tobacco (the sale of blu was announced in mid-2014¹¹ and made official in mid-2015).¹³ It is possible that Lorillard decreased advertising expenditures for blu once they knew that they would soon no longer

own the brand. Overall, the three Big Tobacco e-cigarette brands, MarkTen (owned by Altria), Vuse (owned by R.J. Reynolds Tobacco Company) and blu (owned by Imperial Tobacco), in addition to NJOY (an independent company that sells and markets e-cigarettes but does not sell any other tobacco product), dominated e-cigarette advertising in 2014.

The data demonstrate that e-cigarette advertising is effectively reaching youth and young adults, and recent studies note potential impacts of e-cigarette advertising on e-cigarette intentions and use in youth and young adults. One randomized controlled trial found that among adolescents who had never used e-cigarettes, those who were exposed to four e-cigarette TV ads reported a greater intention to use e-cigarettes in the future compared to those who did not view the e-cigarette ads and current cigarette smoking was highly associated with likelihood of future e-cigarette use.¹⁴ Our own randomized controlled trial in young adults showed that brief exposure to four print e-cigarette ads increased curiosity about e-cigarettes in the young adults exposed to the ads and ad exposure was also associated with subsequent trial of e-cigarettes in a small proportion of young adults who had never used an e-cigarette or cigarette at the start of the study.¹⁵

There is general agreement in the tobacco control field that any and all nicotine delivery systems or tobacco products, including e-cigarettes, should not be sold or marketed to appeal to youth. Federal, state and local action is needed to protect young people from the promotion and marketing of all nicotine delivery systems or tobacco products.

“ One randomized controlled trial found that among adolescents who had never used e-cigarettes, those who were exposed to four e-cigarette TV ads reported a greater intention to use e-cigarettes in the future compared to those who did not view the e-cigarette ads... ”

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