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ORIGINAL ARTICLE

Electronic cigarette use in France in 2014

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Abstract
Objectives The aim of this study was to investigate electronic cigarette use in France with a special focus on its relationship with tobacco smoking.
Methods The 2014 Health Barometer is a telephone survey of 15,635 individuals which provides a status update regarding electronic cigarettes use in France.
Results In 2014, 25.7 % of 15–75-year-olds had tried e-cigarettes. Among these, 23.4 % were current vapers (6.0 % of 15–75-year-olds). Among vapers, about half were daily vapers (2.9 % of 15-75-year-olds). Smoking prevalence was high among those who vape: 83.1 % were smokers (74.7 % were daily smokers) and 15.0 % were former smokers. Four out of five vapers considered that they had reduced their cigarette consumption through e-cigarette use. Vaping ex-smokers represented 0.9 % of 15–75-year-olds, which are approximately 400,000 people. This figure represents an initial estimate of the number of smokers who have successfully stopped smoking, at least temporarily, thanks to e-cigarettes.
Conclusions E-cigarettes in France were on the whole used by smokers. The e-cigarette could have helped several hundreds of thousands of individuals to quit smoking, at least temporarily.

Keywords Electronic cigarette · e-cigarette · Dual use · Smoking · Cessation

Introduction

Since their introduction to the French market in 2010, electronic cigarettes (i.e., e-cigarettes) have rapidly become popular across France. According to the European Tobacco Barometer (European Union 2012), 66 % of people in France had heard of e-cigarettes in 2012. Results from the ETINCEL (*Enquête téléphonique pour l'information sur la cigarette électronique*) survey by the French Monitoring Centre for Drugs and Drug Addiction (Lermenier and Palle 2014) showed that by the end of 2013, 18 % of French people age 15–75 years had tried e-cigarettes, and 6 % had used an e-cigarette in the last 30 days.

Understanding of the patterns and determinants of e-cigarette use currently remains incomplete. Further, a recent systematic Cochrane review (McRobbie et al. 2014) concluded that there is limited evidence to support the efficacy of e-cigarettes in quitting or reducing smoking, although there are still too few studies to draw solid evidence-based conclusions. In addition, the safety of e-cigarettes is not currently known (Callahan-Lyon 2014). Some researchers (Grana et al. 2014) call for strict control of e-cigarettes due to the lack of evidence on toxicity,

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although others (Hajek et al. 2014) consider that strict regulation is not warranted. Lack of evidence on safety has led to caution among health authorities. The World Health Organisation, via the Framework Convention on Tobacco Control, has invited Member States to regulate the e-cigarette market (World Health Organization 2014). In France, the French National Authority for Health does not recommend use of e-cigarettes, but proposes not to discourage its use by smokers who will not use recommended cessation interventions (Haute Autorité de Santé 2014). The French High Council for Public Health issued an Opinion in 2014, that highlighted the risk of introducing young people to smoking via e-cigarette use (i.e., the "gateway" scenario), as well as the risk of a re-normalizing smoking (Haut Conseil de la santé publique 2014).

The e-cigarette is often presented as a "healthier" alternative to conventional cigarettes and its use tends to be closely linked with that of conventional cigarettes (McNeill et al. 2015). In fact, dual use of both products concurrently is common. It is important to monitor e-cigarette use to improve understanding of consumer behavior and to investigate the link between conventional and e-cigarettes.

The objectives of the present study were:

1. To describe the prevalence of e-cigarette use and dual use (i.e., concurrent use of e-cigarettes and conventional cigarettes) in France.
2. To identify independent sociodemographic correlates of dual use.

Method

Health Barometers are repeated cross-sectional surveys of random representative samples of the French population age 15–75 years, which are conducted using computer-assisted telephone interviews (CATI). The 2014 Health Barometer survey was conducted between December 2013 and May 2014. Telephone numbers of households were randomly generated, and individuals within households were randomly selected among eligible household members to participate in the interview. When the individual selected was unavailable, an appointment was made. Households were not replaced if the individual selected refused to participate. Forty telephone calls were made before the household or individual selected was considered unreachable.

In 2014, due to preferential use of mobile telephones by an increasing segment of the population including people with landlines, an overlapping dual-frame sample was used, including a landline sample ($n = 7577$) and a mobile phone sample ($n = 8058$). The response proportion was 61 % in the landline sample and 52 % among those in the mobile phone sample. The final sample therefore included 15,635 individuals. A detailed description of the survey methodology is available (Beck et al. 2013; Richard et al. 2015).

Study variables

Sociodemographic data included sex, age, level of education, occupational status (working, unemployed, student or inactive), socio-professional category (SPC) (farm worker, craftsman, retailer, business owner, executive, senior-level professional occupation, intermediate occupations, manual worker or employee), and household income per consumption unit (CU). Consumption units are used to compare households of different sizes and compositions by assigning a coefficient to each member of the household. We used the OECD scale for calculating the consumption units in the household: one CU for the first adult in the household, 0.5 CU for the other persons aged 14 years or older and 0.3 CU for the children under 14 years (French National Institute for Statistics and Economic Studies).

Smoking status was ascertained by asking respondents if they currently smoked, even occasionally, if they smoked daily and how much they smoked. Smokers were classified as daily smokers if they reported a daily consumption. All other smokers were classified as occasional smokers. Non-smokers were asked if they had smoke in the past. Respondents who had never smoked or just once or twice to try it were classified as never smokers.

Use of e-cigarettes was measured in four items: (1) "Have you ever tried an e-cigarette?" (yes, no); (2) "Are you currently using an e-cigarette?"(yes, no); (3) "For how long have you been using an e-cigarette?" (response in days, weeks, months or years); and (4) "How often do you use your e-cigarette?" (response options were every day, not every day but at least once a week, less than once a week but at least once a month and less than once a month).

Dual use (yes, no) was defined as current use of both e-cigarettes and conventional cigarettes.

Vapers (i.e., users of e-cigarettes) were asked where they usually vaped. Several locations (at home, at work, at school, inside restaurants, bar or nightclubs and outside) were proposed for which response options were yes and no. Vapers were also asked to check if any of several reasons for using e-cigarettes applied to them (including "it could help you quit smoking" for smokers and "it helps you maintain cessation" for former smokers). Response options for each reason included yes and no.

Dual users were asked if vaping had enabled them to reduce their cigarette consumption and if so, by how many cigarettes per day. Finally, former smokers who vaped were asked if vaping had helped them quit.

Analyses

The data were weighted according to number of eligible individuals and number of telephone lines in the household, and adjusted for the current population structure in France (2012 Labour Force Survey, French National Institute for Statistics and Economic Studies) according to sex and age, region of residence, level of urbanization, level of education and whether or not participants lived alone. Prevalence of e-cigarette use and dual use were assessed using weighted data and presented by age and gender The sociodemographic correlates of dual use were identified in multivariate logistic regression modeling (adjusted odds-ratios and 95 % confidence intervals). All statistical analyses were conducted using Stata/SE (v.13.1).

Results

E-cigarette use

In 2014, 25.7 % of 15–75-year-olds in France had tried e-cigarettes. Among these, 23.4 % were current vapers, which represents 6.0 % of 15–75-year-olds. Among current vapers, approximately half were daily vapers (2.9 % of 15–75-year-olds).

Fewer females than males had tried e-cigarettes (i.e., 22.7 versus 28.7 % of men ($p < 0.01$)). Similarly, fewer females reported current e-cigarette use (5.2 versus 6.8 % of males ($p < 0.01$)). Finally, only 2.3 % of females vaped on a daily basis, compared to 3.5 % of males ($p < 0.01$).

Lifetime and current e-cigarette use as well as dual use declined with age, regardless of sex [Table 1]. The proportion of lifetime e-cigarette users was highest at age 15–24 years in both sexes, while the proportion of current e-cigarette users was highest at age 25–34 years, again in both sexes.

The average duration of e-cigarette use was 4 months; 47.2 % of vapers had been vaping for less than 3 months and 9.0 % for more than 1 year. Most vapers (84.1 %) reported vaping at home, 77.3 % vaped outside, 36.0 % vaped at their workplace, 27.1 % vaped in public places (i.e., restaurants, bars, cafes, and nightclubs), 4.8 % at school and 0.1 % in cars.

Electronic cigarettes and use of conventional cigarettes

More than 98 % of current vapers were or had been conventional cigarette smokers [Table 2]—83.1 % currently smoked conventional cigarettes (i.e., were dual users), and 15.0 % were former smokers. About three quarters of daily vapers were smokers (75.7 %, of whom 65.3 % were daily smokers), the rest of them were mostly former smokers (23.1 %).

The proportions of daily and occasional cigarette smokers who reported lifetime use of e-cigarettes were high (60.0 and 47.6 %, respectively). The proportion was substantially lower among ex-smokers (12.3 %) and among those who had never smoked conventional cigarettes (5.6 %). Twenty-four percent of conventional cigarette smokers who had never used an e-cigarette reported that they intended to try it in the future.

Factors associated with dual use

Dual users had a distinct socio-demographic profile compared to participants who smoked conventional cigarettes only (Table 3). Farm workers, craftsmen, retailers and business owners who smoked conventional cigarettes had a much lower probability of being vapers as did those with lower incomes and the unemployed.

Table 1 Prevalence of lifetime and current e-cigarette use as well as dual use by age group and sex

Age group (years)	Males				Females			
	n	Lifetime e-cigarette use (%)	Current e-cigarette use (%)	Dual use (%)	*n*	Lifetime e-cigarette use (%)	Current e-cigarette use (%)	Dual use (%)
Total	7191	28.7	6.8	5.5	8444	22.7	5.2	4.3
15–24	966	48.8	8.8	7.9	1040	40.7	5.4	4.5
25–34	1227	44.3	9.6	8.0	1296	30.3	6.6	5.1
35–44	1501	31.2	8.0	6.5	1520	26.0	6.3	5.3
45–54	1369	25.4	7.4	5.4	1679	20.8	6.2	4.9
55–64	1294	12.8	4.1	3.4	1596	12.3	4.3	3.6
65–75	834	5.4	1.5	0.9	1313	5.3	1.7	1.6

All percentages correspond to weighted data

Health Barometer, National Institute for Health Promotion and Health Education, France, 2014

Table 2 Smoking status according to current and daily vaping

Vaper status	*N*	Smoking status			
		Daily (%)	Occasional (%)	Former (%)	Never (%)
Current	891	74.7	8.4	15.0	1.9
Daily	424	65.3	10.3	23.1	1.2

All percentages correspond to weighted data

Health Barometer, National Institute for Health Promotion and Health Education, France, 2014

Table 3 Association between sociodemographic variables and vaping among French smokers aged 15–75

	Vaping among current smokers ($N = 4752$)	
	n	AOR (95 % CI)
Sex		
Males	2509	Ref
Females	2243	1.0 (0.9–1.2)
Age (years)		
15–24	781	Ref
25–34	1045	1.0 (0.7–1.4)
35–44	1103	1.0 (0.7–1.4)
45–54	979	1.1 (0.8–1.5)
55–64	619	1.0 (0.7–1.5)
65–75	225	0.7 (0.4–1.3)
Education		
Less than secondary	2129	Ref
Secondary	1065	1.1 (0.9–1.3)
Post-secondary	1558	0.9 (0.7–1.1)
Income/CU (tertile groupings)		
1st (low)	1389	Ref
2nd	1631	1.3* (1.1–1.6)
3rd (high)	1505	1.5*** (1.2–1.9)
Missing	227	0.7 (0.4–1.2)
Occupational status		
Working	3047	Ref
Unemployed	592	0.7* (0.5–1.0)
Student	424	0.8 (0.5–1.2)
Inactive	689	1.0 (0.7–1.3)
Socio-professional category		
Farm worker, craftsman, retailer, business owner	365	0.7* (0.5–1.0)
Executive, senior-level professional occupation	751	1.0 (0.7–1.3)
Intermediate occupations	1114	1.0 (0.8–1.2)
Manual worker	1184	0.9 (0.7–1.2)
Employee	1338	Ref

Health Barometer, National Institute for Health Promotion and Health Education, France, 2014

AOR adjusted odds ratios, *CI* confidence interval

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Reasons for use

Among vapers, three-quarters of conventional cigarette smokers and ex-smokers agreed that they vaped because of their addiction to nicotine. Sixty-six percent of dual users and 80 % of former smokers who vaped used e-cigarettes because they considered them to be less harmful than conventional cigarettes. Other reasons for e-cigarette use included: less expensive (66 % of dual users and 71 % of vaping ex-smokers), and e-cigarettes are permitted in places where conventional cigarettes are banned (28 % of dual users and 20 % of vaping ex-smokers).

E-cigarette and smoking reduction or cessation

Eighty-two percent of dual users agreed that e-cigarettes could help with smoking cessation.

Further, 82 % of dual users reported that vaping had enabled them to reduce their cigarette consumption, with a mean reduction of 8.9 cigarettes per day. These individuals were initially heavy smokers, smoking 21 cigarettes per day on average (the mean overall among smokers was 11.3 in 2014). The mean number of cigarettes smoked initially corresponds to the total number of cigarettes smoked currently plus the reported decrease in the number of cigarettes smoked as a result of vaping.

Two-thirds (69.4 %) of dual users wanted to quit smoking conventional cigarettes (14.7 % intended to quit in the next month, and 20.3 % within the next 6 months) versus 54.2 % of non-vaping smokers (10.6 % intended to quit in the next month, and 14.5 % in the next 6 months) ($p < 0.01$).

We estimated the proportion of 15–75-year-olds who had quit smoking conventional cigarettes by vaping based on the proportion of vapers who were former smokers (15.0 % of current vapers). Among vaping ex-smokers, 89.0 % reported using e-cigarettes because it helped them remain abstinent, and 89.7 % because it helped them quit. Consequently, for the large majority, those vaping former smokers were rather individuals who would have stopped smoking while using e-cigarettes than former smokers who, after having successfully given up smoking, would have tried vaping independently from smoking cessation. We estimated that 0.9 % of 15–75-year-olds (approximately 400,000 French), believed that e-cigarettes helped them quit smoking or maintain cessation, at least temporarily.

Discussion

In 2012–2013, the lifetime prevalence of e-cigarette use in the United States was 13–15 % (McMillen et al. 2014; Agaku et al. 2014). It was 20 % in Australia in 2013 (Gravely et al. 2014), 25.7 % in France in 2014, and 40 % in the Netherlands in 2014 (Hummel et al. 2015).

The prevalence of current vaping was 3.5 % in Great Britain in 2014 (Office for National Statistics UK 2014), between 4 and 7 % in the United States in 2012–2013, 6.0 % in France in 2014, 7 % in Australia in 2013, and 16 % in the Netherlands in 2014 (Hummel et al. 2015).

These comparisons should be interpreted cautiously due to temporal and methodological differences across surveys.

E-cigarettes and cessation of cigarette smoking

As the reported reasons for vaping show, the e-cigarette was perceived as a substitute to conventional cigarettes due to health, economic and practical reasons. Moreover, four of five dual users reported that e-cigarettes helped them decrease their cigarette consumption. However, the impact of smoking on health, in particular lung cancer, is more related to duration of smoking than number of cigarettes smoked daily (Doll and Peto 1978; Flanders et al. 2003). Thus, reduction in the use of conventional cigarettes as a result of e-cigarette use would be more beneficial only if it was on the pathway to sustained cessation, which is yet to be investigated. The high level of intention to quit among dual users is promising. However, intensity of cigarette consumption also influences the risk of lung cancer, especially at lower consumption levels (Lubin and Caporaso 2006). While there may be minor benefit from each cigarette replaced by vaping, especially among smokers smoking 20 cigarettes or fewer daily, this must be balanced against the greater harm from each year that cessation is delayed by the false assumption that harm has been reduced. Nevertheless, a recent publication (McNeill et al. 2015) suggests that smokers unwilling to quit or unsuccessful in trying to quit could be encouraged to switch to vaping.

We estimated that 0.9 % of 15–75-year-olds believe that they quit smoking by vaping. This estimate excludes those who quit smoking using e-cigarette, and then also stopped vaping (which could not be accurately estimated in this study). However, an upper bound would include all former smokers who experienced e-cigarette—about 2.9 % of 15–75-year-olds. This is likely an overestimate since it includes former smokers who used e-cigarette at the time of cessation (whether vaping helped them quit cigarette smoking or not) as well as former smokers who only tried vaping. Moreover, it is not known if smokers who quit using e-cigarettes will sustain the quit.

A gateway to smoking conventional cigarettes?

Vapers who never smoked cigarettes (or tried cigarettes only once or twice) represent 1.9 % of all vapers (0.1 % of

15–75-year-olds). If most dual users began smoking cigarettes before using e-cigarettes (more than four of five viewed e-cigarettes as a cessation aid or a way of reducing cigarette consumption), then the hypothesized gateway-to-smoking effect of e-cigarettes would be, at this current time, relatively limited.

Young people are most at risk of initiating cigarette smoking after using e-cigarettes (Leventhal et al. 2015). Indeed, the proportion of participants that used e-cigarettes, but were never smokers was highest among 15–24-year-old. In this group, 7.5 % had never smoked, but had tried e-cigarettes compared to 2.5 % or lower in the other age groups ($p < 0.01$). While there are concerns that vaping could lead young people to cigarette smoking (Leventhal et al. 2015; Primack et al. 2015), more research is needed to investigate this hypothesis.

Fewer than 1 % of 15–24-year-old vaped and had never smoked. Results from a recent survey support that exclusive use of e-cigarettes is rare among 17-year-olds in France (Spilka et al. 2015). Similarly, e-cigarette use among young people in Great Britain appears to be restricted to those who smoke (Eastwood et al. 2015).

Limitations

Analyses were based on a large sample representative of the French population. The methodology of the survey has been validated, and interviews were conducted by trained interviewers. Several limitations, however, deserve attention in the interpretation of the findings. First, the response rate obtained in the survey was 61 % in the landline sample and 52 % in the mobile phone one. Even if this rate is satisfactory for such health surveys in France, selection bias cannot be ruled out especially if non respondents have specific sociodemographic characteristics and health behaviors. Second, our analyses rely on declarative data for which it is impossible to control for all potential biases. In this study, it could be particularly inconvenient for the questions concerning the contribution of e-cigarette in smoking cessation. Indeed, it might be complicated for someone to clearly isolate the different factors that lead him/her to a successful smoking cessation. In understanding the relationship between vaping and smoking, the main limitation in our study—aside from using a cross sectional dataset—is that we cannot identify former vapers and also we do not know in which sequence individuals started or quit smoking and vaping. Not knowing when individuals quit also forbid us from estimating if their smoking cessation is successful on the long term. Thus, it is necessary that next surveys include questions regarding the sequence in which individuals started and stopped smoking and vaping.

Conclusion

Compared with other developed countries, the prevalence of cigarette smoking remains high in France (World Health Organization 2013). Data from the 2014 Health Barometer suggest that e-cigarettes are used primarily by cigarette smokers, and that eight of ten dual users substantially reduced the number of cigarettes they smoke. This may partially explain the reduction in the mean number of cigarettes smoked among smokers in France between 2010 and 2014 (Guignard et al. 2015). The link between e-cigarettes and smoking cessation remains under investigation, with at least nine trials in progress worldwide (McRobbie et al. 2014). However, if beliefs about the impact of e-cigarettes among smokers in this study are in fact borne out, e-cigarettes may have helped several hundreds of thousands of French smokers quit, at least temporarily. Regular national and international surveys such as the Health Barometer will provide data to assess the prevalence and determinants of the use of e-cigarettes into the future.

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References

Agaku IT, King BA, Husten CG et al (2014) Tobacco product use among adults–United States, 2012–2013 MMWR. Morb Mortal Wkly Rep 63:542–547

Beck F, Gautier A, Guignard R et al (2013) Health Barometer 2010 Methods. French Institute for Health Promotion and Health Education (INPES). http://www.inpes.sante.fr/Barometres/barometre-sante-2010/pdf/Health-Barometer-2010-methods.pdf Accessed 25 June 2015

Callahan-Lyon P (2014) Electronic cigarettes: human health effects. Tob Control 23(Suppl 2):ii36–ii40. doi:10.1136/tobaccocontrol-2013-051470

Doll R, Peto R (1978) Cigarette smoking and bronchial carcinoma: dose and time relationships among regular smokers and lifelong non-smokers. J Epidemiol Community Health 32:303–313

Eastwood B, Dockrell MJ, Arnott D et al (2015) Electronic cigarette use in young people in Great Britain 2013–2014. Public Health. doi:10.1016/j.puhe.2015.07.009

European Union (2012) Attitudes of Europeans towards tobacco, Special Eurobarometer 385. http://www.ec.europa.eu/health/tobacco/docs/eurobaro_attitudes_towards_tobacco_2012_en.pdf. Accessed 25 June 2015

Flanders WD, Lally CA, Zhu BP et al (2003) Lung cancer mortality in relation to age, duration of smoking, and daily cigarette consumption: results from Cancer Prevention Study II. Cancer Res 63(19):6556–6562

Grana R, Benowitz N, Glantz SA (2014) E-cigarettes: a scientific review. Circulation 129:1972–1986. doi:10.1161/CIRCULATIONAHA.114.007667

Gravely S, Fong GT, Cummings KM et al (2014) Awareness, trial, and current use of electronic cigarettes in 10 countries: findings from the ITC project. Int J Environ Res Public Health 11:11691–11704. doi:10.3390/ijerph111111691

Guignard R, Beck F, Richard J-B et al (2015) La consommation de tabac en France en 2014: caractéristiques et évolutions récentes—Évolutions n°31. http://www.inpes.sante.fr/CFESBases/catalogue/pdf/1611.pdf. Accessed 25 June 2015

Hajek P, Etter JF, Benowitz N et al (2014) Electronic cigarettes: review of use, content, safety, effects on smokers and potential for harm and benefit. Addiction 109:1801–1810. doi:10.1111/add.12659

Haut Conseil de la santé publique (2014) Avis relatif aux bénéfices-risques de la cigarette électronique ou e-cigarette étendus en population générale. http://www.hcsp.fr/explore.cgi/avisrapportsdomaine?clefr=431. Accessed 25 June 2015

Haute Autorité de Santé (2014) Arrêt de la consommation de tabac: du dépistage individuel au maintien de l'abstinence en premier recours. http://www.has-sante.fr/portail/upload/docs/application/pdf/2014-11/recommandations_-_arret_de_la_consommation_de_tabac_octobre_2014_2014-11-17_14-13-23_985.pdf. Accessed 25 June 2015

Hummel K, Hoving C, Nagelhout GE et al (2015) Prevalence and reasons for use of electronic cigarettes among smokers: findings from the International Tobacco Control (ITC) Netherlands Survey. Int J Drug Policy 26(6):601–608. doi:10.1016/j.drugpo.2014.12.009

Lermenier A, Palle C (2014) Résultats de l'enquête ETINCEL-OFDT sur la cigarette électronique. Prévalence, comportements d'achat et d'usage, motivations des utilisateurs de la cigarette électronique. http://www.ofdt.fr/BDD/publications/docs/eisxalu2.pdf. Accessed 25 June 2015

Leventhal AM, Strong DR, Kirkpatrick MG et al (2015) Association of electronic cigarette use with initiation of combustible tobacco product smoking in early adolescence. JAMA 314(7):700–707. doi:10.1001/jama.2015.8950

Lubin JH, Caporaso NE (2006) Cigarette smoking and lung cancer: modeling total exposure and intensity. Cancer Epidemiol Biomark Prev Pub Am Assoc Cancer Res Cosponsored Am Soc Prev Oncol 15(3):517–523. doi:10.1158/1055-9965.epi-05-0863

McMillen RC, Gottlieb MA, Shaefer RM et al (2014) Trends in electronic cigarette use among U.S. adults: use is increasing in both smokers and nonsmokers nicotine & tobacco research. Off J Soc Res Nicot Tob. doi:10.1093/ntr/ntu213

McNeill A, Brose LS, Calder R et al. (2015). E-cigarettes: an evidence update. A report commissioned by Public Health England. https://www.gov.uk/government/publications/e-cigarettes-an-evidence-update. Accessed 28 Aug 2015

McRobbie H, Bullen C, Hartmann-Boyce J et al (2014) Electronic cigarettes for smoking cessation and reduction. Cochrane Database Syst Rev 12:CD010216. doi:10.1002/14651858.CD010216.pub2

Office for National Statistics UK (2014) Adult smoking habits in Great Britain. Opinions and Lifestyle Survey. http://www.ons.gov.uk/ons/dcp171778_386291.pdf. Accessed 25 June 2015

Primack BA, Soneji S, Stoolmiller M et al (2015) Progression to Traditional Cigarette Smoking After Electronic Cigarette Use Among US Adolescents and Young Adults. JAMA Pediatr. Published online September 08, 2015. doi:10.1001/jamapediatrics.2015.1742

Richard J-B, Beck F, Gautier A et al (2015) Méthodologie du Baromètre santé 2014. French Institute for Health Promotion and Health Education (INPES). http://www.inpes.sante.fr/CFESBases/catalogue/pdf/1613.pdf. Accessed 25 June 2015

Spilka S, Le Nézet O, Ngantcha M et al (2015) Consommation de tabac et usage de cigarette électronique à 17 ans. Bulletin épidémiologique hebdomadaire n°17–18. http://www.invs.sante.fr/beh/2015/17-18/pdf/2015_17-18_2.pdf. Accessed 25 June 2015

World Health Organization (2013) WHO Report on the global tobacco epidemic, 2013. Enforcing bans on tobacco advertising, promotion and sponsorship. http://www.apps.who.int/iris/bitstream/10665/85380/1/9789241505871_eng.pdf. Accessed 25 June 2015

World Health Organization (2014) Electronic nicotine delivery systems. Conference of the Parties to the WHO Framework Convention on Tobacco Control. http://www.apps.who.int/gb/fctc/PDF/cop6/FCTC_COP6_10-en.pdf. Accessed 25 June 2015