

SELECT COMMITTEE ON TOBACCO HARM REDUCTION

Professor Emily Banks
Responses to Questions on Notice from
Hearing on Friday, 13 November 2020

QoN 016-01, Senator Hughes. Your study relies on a statistic in 'key fact seven' from the AIHW report, that you were questioned on during the public hearing on 13 November 2020. The statistic in 'key fact seven' has two asterisks next to it; under those two asterisks it says: *'The estimate has a high level of sampling error, meaning it's unsuitable for most uses'*. Why did you use this evidence? Do you place a high level of importance and confidence in this statistic?

Response

Our review of the patterns of e-cigarette using in Australia was of published data. Since ascertaining the proportion of current e-cigarette users who were never smokers requires analysis of National Drug Strategy Household Survey reported data,¹ at the time of our review those reported were the best available published evidence.²

The proportion of e-cigarette users who have never smoked is an important statistic, as it gives an indicator of non-therapeutic use, as well as those who may be at risk of adverse outcomes. Our review of current evidence regarding e-cigarette use and smoking uptake showed that non-smokers using e-cigarettes are more likely than non-users to transition to smoking tobacco.²

While the figures quoted were the best available from the published evidence, they were from 2016 and e-cigarette use is changing rapidly. We consider that obtaining more robust and contemporary evidence on this measure is important and have conducted our own calculations on this, as part of responding to a previous Question on Notice from Senator Canavan. We reproduce our response to this Question on Notice below, for the information of Senator Hughes and the Committee:

To respond to this question on notice, Dr Grace Joshy (Senior Biostatistician at the National Centre for Epidemiology and Population Health, Australian National University) and I have conducted analyses using data from the 2019 National Drug Strategy Household Survey² (NDSHS), concentrating on reported statistics that are likely to be most robust.

According to ABS estimates the prevalence \pm margin of error (MOE) of at least monthly e-cigarette use in 2019 was $2\% \pm 0.24\%$ (see Appendix, NDSHS Table 2.22). Applying these to population estimates according to smoking status (total = 20.9M, see Appendix, NDSHS Table 2.3), we estimated the number of current daily, weekly or at least monthly e-cigarette users aged 14 and over to be $418,000 \pm 50,671$ overall. From NDSHS data on estimated numbers of smokers (see Appendix NDSHS Table 2.3) and data on e-cigarette use according to smoking status (see Appendix NDSHS Table 2.22), we estimate that among people aged 14 and over reporting current use of e-cigarettes (classified as those using e-cigarettes, daily, weekly or at least monthly):

- $54.1\% \pm 95\%$ MOE 5.6% report being current smokers (daily, weekly or less than weekly)
- $32.2\% \pm 5.5\%$ report being ex-smokers
- **$15.8\% \pm 4.4\%$ report being never smokers**

The number of current e-cigarette users who report being never smokers would be **$66,000 \pm 20,228$** noting the following assumptions/limitations:

1. The MOEs for smoking prevalence estimates have been incorporated into the MOE for proportions of e-cigarette use.
2. Rounding of numbers in ABS estimates
3. Approximations used in the equations

Among those who reported ever having used e-cigarettes:

- 42.7% ± 2.8% reported that they were a regular smoker;
- 15.4% ± 2.3% reported that they were a social smoker;
- 10.8% ± 1.7% reported that they were an occasional smoker;
- 7.9% ± 1.4% reported that they were an ex-smoker;
- **23.2% ± 2.3% reported that they had never smoked;**

at the time they started using them (see Appendix NDSHS Table 2.26).

The proportion of never-smokers at initiation of e-cigarette use varied with age; among those aged 14-17 who had used e-cigarettes, **64.5% ± 12.9% were never smokers, as were 39.0% ± 6.0% of those aged 18-24** (see Appendix, NDSHS Table 2.27).

APPENDIX: DATA USED IN THESE CALCULATIONS

NATIONAL DRUG STRATEGY HOUSEHOLD SURVEY 2019, DATA TABLES¹

Extract from Table 2.3: Tobacco smoking status, people aged 14 and over, by sex, 2019 (persons)			
Smoking status	n	RSE	MOE
Daily smoker	2,300,000	2.7	100,000
Current occasional - weekly	300,000	7.6	40,000
Current occasional - less than weekly	300,000	6.9	50,000
<i>Current smokers^(a)</i>	<i>2,900,000</i>	<i>2.3</i>	<i>100,000</i>
Ex-smoker ^(b)	4,800,000	1.6	100,000
<i>Smoker in their lifetime^(c)</i>	<i>7,700,000</i>	<i>1.3</i>	<i>200,000</i>
Never smoked ^(d)	13,200,000	0.7	200,000

(a) Includes people who reported smoking daily, weekly or less than weekly.

(b) Smoked at least 100 cigarettes (manufactured and/or roll-your-own) or the equivalent amount of tobacco in their life, and reported no longer smoking.

(c) Includes people who reported smoking daily, weekly or less than weekly and ex-smokers.

(d) Never smoked 100 cigarettes (manufactured and/or roll-your-own) or the equivalent amount of tobacco.

Extract from Table 2.22: Frequency of electronic cigarette use by smoking status, people aged 14 and over, 2019 (col per cent)				
	Smokers ^(a)	Ex-smokers ^(b)	Never smoked ^(c)	Total
Frequency of e-cigarette use				
Daily	3.2	2.2	*0.2	1.1
At least weekly (but not daily)	3.0	*0.5	*<0.1	0.6
At least monthly (but not weekly)	1.6	**<0.1	*0.2	0.4
<i>At least monthly</i>	<i>7.8</i>	<i>2.8</i>	<i>0.5</i>	<i>2.0</i>
Less than monthly	1.9	*0.4	0.2	0.5
I used to use them, but no longer use	10.2	1.9	0.3	2.0
I only tried them once or twice	18.8	6.4	4.2	6.7
Never used	61.3	88.6	94.8	88.7

Extract from Table 2.22: Margins of error for frequency of electronic cigarette use by smoking status, people aged 14 and over, 2019 (col per cent)				
	Smokers ^(a)	Ex-smokers ^(b)	Never smoked ^(c)	Total
Frequency of e-cigarette use				
Daily	0.8	0.5	0.1	0.2
At least weekly (but not daily)	0.8	0.3	0.0	0.1
At least monthly (but not weekly)	0.5	0.1	0.1	0.1
<i>At least monthly</i>	<i>1.2</i>	<i>0.6</i>	<i>0.2</i>	<i>0.2</i>
Less than monthly	0.7	0.3	0.1	0.1
I used to use them, but no longer use	1.4	0.5	0.1	0.2
I only tried them once or twice	1.9	0.9	0.5	0.5
Never used	2.3	1.1	0.5	0.6

* Estimate has a relative standard error of 25% to 50% and should be used with caution.

** Estimate has a high level of sampling error (relative standard error of 51% to 90%), meaning that it is unsuitable for most uses.

Statistically significant change between 2016 and 2019.

(a) Includes people who reported smoking combustible cigarettes (manufactured and/or roll-your-own) daily, weekly or less than weekly.

(b) Smoked at least 100 combustible cigarettes (manufactured and/or roll-your-own) or the equivalent amount of tobacco in their life, and reported no longer smoking.

(c) Never smoked 100 combustible cigarettes (manufactured and/or roll-your-own) or the equivalent amount of combustible tobacco products.

Extract from Table 2.26: Smoking status at initiation^(a) of e-cigarette use, by sex, people aged 14 and over, 2019 (col per cent)

Smoking status	Males	Females	Persons
A never smoker	23.5	23.0	23.2
An ex-smoker	7.7	8.1	7.9
A social smoker	16.9	12.6	15.4
An occasional smoker	11.8	9.4	10.8
A regular smoker	40.0	47.0	42.7

Extract from Table 2.26: Margin of error for smoking status at initiation^(a) of e-cigarette use, by sex, people aged 14 and over, 2019 (col per cent)

Smoking status	Males	Females	Persons
A never smoker	3.3	3.4	2.3
An ex-smoker	1.8	2.2	1.4
A social smoker	3.3	2.7	2.3
An occasional smoker	2.6	2.1	1.7
A regular smoker	3.7	3.9	2.8

(a) Response to the question 'At the time you first used an electronic cigarette, would you say that you were...'

Extract from Table 2.27: Smoking status at initiation^(a) of e-cigarette use, by age, 2019 (row per cent)

Age groups	A never smoker	An ex-smoker	Current smoker ^(b)
14–17	64.5	**1.7	33.8
18–24	39.0	*3.1	57.8
25–29	27.4	9.2	63.4
30–39	17.3	10.7	71.9
40–49	7.2	12.5	80.3
50–59	*3.4	*8.7	87.9
60–69	**3.1	*5.3	91.6
70+	n.p.	*16.2	82.9

Extract from Table 2.27: Margin of error for smoking status at initiation^(a) of e-cigarette use, by age, 2019 (row per cent)

Age groups	A never smoker	An ex-smoker	Current smoker
14–17	12.9	2.4	12.8
18–24	6.0	2.0	6.0
25–29	5.6	4.1	6.6
30–39	4.0	3.1	4.6
40–49	3.1	4.2	4.9
50–59	3.1	4.6	5.3
60–69	3.6	3.6	4.9
70+	1.7	10.9	11.0

* Estimate has a relative standard error of 25% to 50% and should be used with caution.

** Estimate has a high level of sampling error (relative standard error of 51% to 90%), meaning that it is unsuitable for most uses.

(a) Response to the question 'At the time you first used an electronic cigarette, would you say that you were...'

(b) Includes 'a social smoker', 'an occasional smoker' and 'a regular smoker'.

Note: Base is people who had used electronic cigarettes in their lifetime

Noting the equations recommended by the Australian Bureau of Statistics:

Equation (1):

$$MOE(y) \approx \frac{RSE(y) * y}{100} * 1.96$$

Equation (2):

$$RSE\left(\frac{x}{y}\right) \approx \sqrt{[RSE(x)]^2 - [RSE(y)]^2}$$

References

1. Australian Institute of Health and Welfare. National Drug Strategy Household Survey 2019. Tobacco Smoking supplementary data tables. Canberra: AIHW; 2020.
2. Banks E, Beckwith K, Joshy G. Summary report on use of e-cigarettes and impact on tobacco smoking uptake and cessation, relevant to the Australian context. *Report for the Australian Government Department of Health*, September 2020. <http://hdl.handle.net/1885/211618>.