

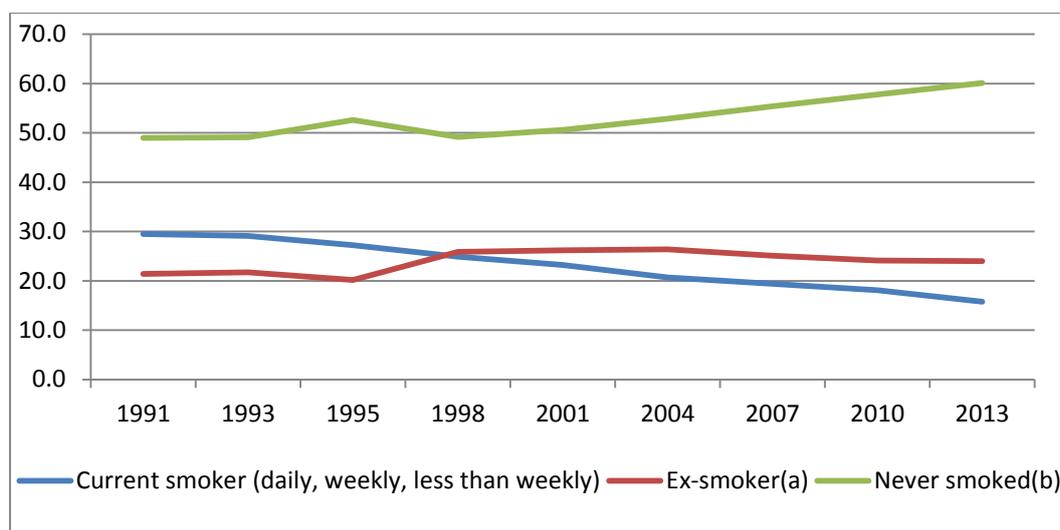
# Questions and answers on plain packaging in Australia

*Prepared by the Cancer Council Victoria*

## Fact sheet no. 4:

# What is happening to the prevalence of smoking in Australia?

On 17 July 2014, the independent statutory authority, the Australian Institute of Health and Welfare (AIHW), [released highlights](#) from the 2013 National Drug Strategy Household Survey.<sup>1</sup> This and the [detailed report](#) published on the 25 November 2014<sup>2</sup> revealed a >15% drop in daily smoking among Australians 14 years and over since 2010.<sup>3</sup>



**Figure 1** Percentage of Australians 14 yrs and over reporting daily smoking, never smoking and ex-smoking— 1991 to 2013

Source: National Drug Strategy Household Survey; AIHW 2014 <http://www.aihw.gov.au/alcohol-and-other-drugs/ndshs/2013/data-and-references/>

(a) 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.

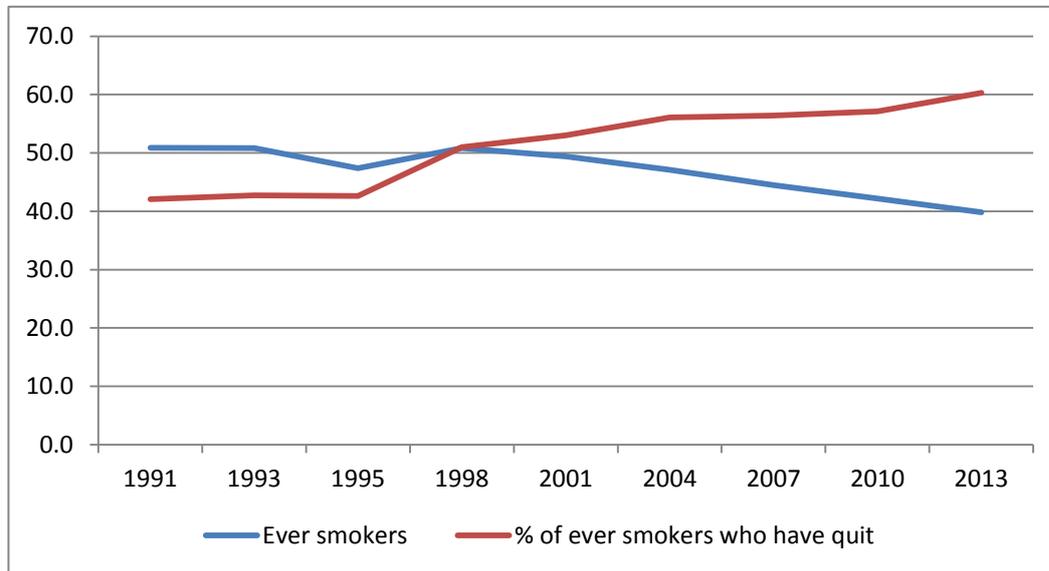
(b) Never smoked 100 cigarettes (manufactured and/or roll-your-own) or the equivalent amount of tobacco.

<sup>1</sup> Australian Institute of Health and Welfare. Highlights from the 2013 survey: Tobacco Smoking. Canberra: AIHW, 2014. Last update: 27 July; Viewed AIHW cat. no. PHE 145. Available from: <http://www.aihw.gov.au/alcohol-and-other-drugs/ndshs/2013/data-and-references/>

<sup>2</sup> Australian Institute of Health and Welfare. National Drug Strategy Household Survey detailed report: 2013. Cat. no. PHE 183 Canberra: AIHW, 2014. Available from: <http://www.aihw.gov.au/publication-detail/?id=60129549469&tab=3>

<sup>3</sup> Australian Institute of Health and Welfare. National Drug Strategy Household Survey detailed report: 2013. Cat. no. PHE 183 Canberra: AIHW, 2014. Available from: <http://www.aihw.gov.au/publication-detail/?id=60129549469&tab=3>

Australia’s National Drug Strategy Household Survey is conducted every three years. It is a drop-and-collect survey of households involving over 23,000 respondents. The decline in smoking in Australia has been driven by both an increase in the proportion of Australians who have never taken up smoking, and also an increase in the proportion of people who have ever smoked, quitting—see **Figure 2**.



**Figure 2** Percentage of Australians 14 yrs and over reporting ever smoking and proportion of ever smokers who have quit— 1991 to 2013

Source: National Drug Strategy Household Survey; AIHW 2014 <http://www.aihw.gov.au/alcohol-and-other-drugs/ndshs/2013/data-and-references/>

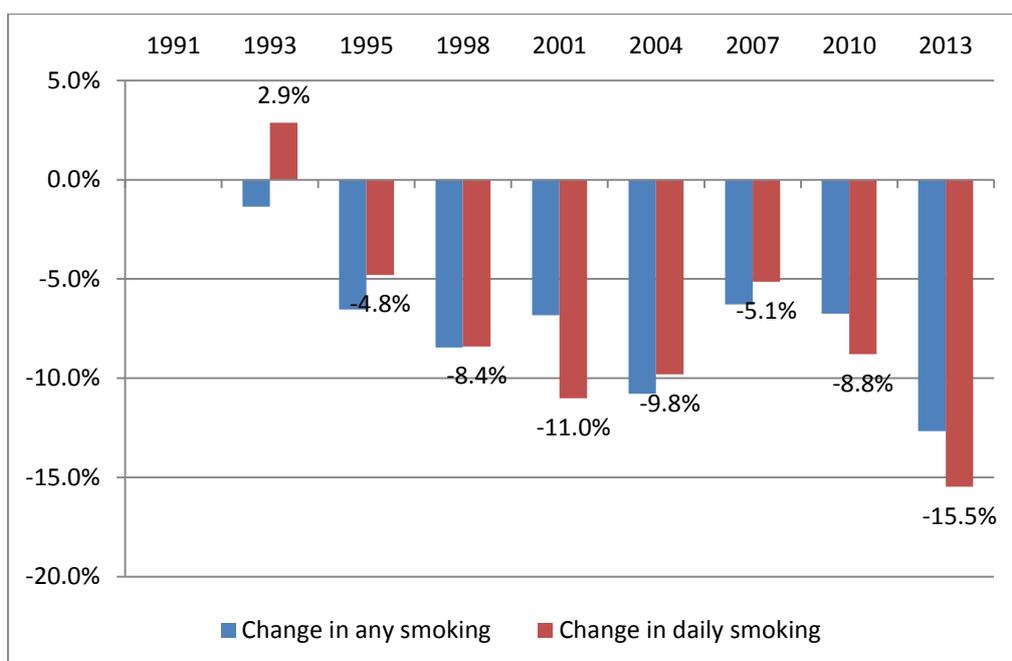
(a) Smoked at least 100 cigarettes (manufactured and/or roll-your-own) or the equivalent amount of tobacco in their life, and reported no longer smoking.

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

#### 4.1. But wasn’t the decline in smoking in line with existing trends?

In response to release of the findings, Imperial Tobacco told Australia’s ABC radio that the survey showed there was [no departure from the existing trends](#) in relation to declines in smoking prevalence. In fact the 15% drop between 2010 and 2013 is more than twice as large as the average drop between surveys since 1991 <http://www.aihw.gov.au/alcohol-and-other-drugs/ndshs/2013/tobacco/>—see **Figure 3**.

The drop in smoking prevalence appeared to be larger than in the previous three years, larger than the average drop over each three-year period since 1998 and larger than the drop between 1998 and 2001, the previous largest drop which coincided with Australia’s most far-reaching national anti-smoking campaign and changes to cigarette taxes resulting in 20% increases in the price of budget brands.



**Figure 3** Changes in prevalence of any and daily smoking (labelled) between three-yearly surveys—Australia 1991 to 2013

Source: National Drug Strategy Household Survey; AIHW 2014 <http://www.aihw.gov.au/alcohol-and-other-drugs/ndshs/2013/data-and-references/>

#### 4.2. But couldn't the decline between 2010 and 2013 be attributable to the large increase in excise and customs duty on tobacco in April 2010?

In a statement released to politicians and journalists on the 17<sup>th</sup> July 2014, Philip Morris International suggested that the fall in prevalence in Australia was due to increases in taxes. It is likely that higher prices contributed to the decline in smoking between 2010 and 2013. However note that the 2010 survey was conducted between March and December 2010, mostly **after** the 25% increase in excise and customs duty on the 29<sup>th</sup> April 2010. Thus, **the 2010 figure would already have been affected by smokers' responses to the higher prices.** No analysis has been performed which would enable the contribution of individual factors to be quantified. The change in prevalence between 2010 and 2013 is likely to be attributable to the net and cumulative effects of a range of policies over time.

#### 4.3. But doesn't the National Drug Strategy Household Survey (NDSHS) show that smoking rates have increased among Australian teenagers?

In November 2014, the Australian Institute of Health and Welfare (AIHW) released a full report of the results of the 2013 National Drug Strategy Household Survey (NDSHS) showing

a record level of decline in smoking rates in Australia between 2010 and 2013<sup>4</sup>. The figures on daily smoking were lower for 2013 than 2010 for most age groups, however small numbers of respondents aged under 18 reporting smoking in the surveys made it very difficult to detect change between years among this youngest age group. Australia's recognised source of data for youth smoking is not the NDSHS which surveys approximately **1,500 teenagers using a home based questionnaire**. It is the Australian Secondary School Smoking Survey which samples just under 25,000 students under much more anonymous conditions at school<sup>5</sup> and is much better able to detect small changes in the low rates of smoking participation by Australian teenagers.

The figure in the NDSHS for 12-to-17-year olds was 0.9% percentage points higher in 2013 than in 2010, but as was clear from the footnotes to the table, the change between 2010 and 2013 was not statistically significant—see Table 1 below which reproduces the first part of the relevant table. The only change between 2010 and 2013 that was significant for this age group was for ex-smokers, no doubt because rates of uptake are so low that there have been fewer smokers among whom quitting is possible. British American Tobacco Australia nevertheless put out a media release shortly after release of this data, with the headline 'Youth smoking rates soar two years post plain packs'.<sup>6</sup> When the Australian Institute of Health and Welfare was asked by a journalist to comment on this interpretation, the Institute's head of tobacco and other drugs unit, Amber Jefferson, said the report clearly stated the sample size was too small for a conclusion of a spike in uptake.

**"The results remain stable. There might appear to be a percentage point increase, but it's not statistically significant," she said.<sup>7</sup>**

Just three days after this refutation of British American Tobacco Australia's interpretation was published in *the Age* newspaper, British American Tobacco Australia put out another media release<sup>8</sup> stating "As we approach the second anniversary of the introduction of plain packaging we know that Australian Government youth smoking figures show a 32 per cent growth since the policy was introduced."

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<sup>4</sup> Australian Institute of Health and Welfare. National Drug Strategy Household Survey detailed report: 2013. Cat. no. PHE 183 Canberra: AIHW, 2014. Available from: <http://www.aihw.gov.au/publication-detail/?id=60129549469&tab=3>

<sup>5</sup> White V and Bariola E. Chapter 3. Tobacco use among Australian secondary students in 2011, in Australian secondary school students' use of tobacco, alcohol, and over-the-counter and illicit substances in 2011. Canberra: Drug Strategy Branch Australian Government Department of Health and Ageing; 2012. Available from: <http://www.nationaldrugstrategy.gov.au/internet/drugstrategy/Publishing.nsf/content/school11>

<sup>6</sup> British American Tobacco Australia. Youth smoking rates soar two years post plain packs. Sydney: BATA, 27 Nov 2014. Available from:

[http://www.bata.com.au/group/sites/BAT\\_7WYKG8.nsf/vwPagesWebLive/DO9FC38M?opendocument&SKN=1](http://www.bata.com.au/group/sites/BAT_7WYKG8.nsf/vwPagesWebLive/DO9FC38M?opendocument&SKN=1)

<sup>7</sup> Hawthorne M and Desloires V. Tobacco giants, retailers join forces in new attack on plain-packaging laws. *The Age*, 2014; 28 Nov. Available from: <http://www.theage.com.au/federal-politics/political-news/big-tobacco-distributes-report-bullying-plain-packaging-laws-20141127-11v7ov.html>

<sup>8</sup> British American Tobacco Australia. Industry consultation a must during plain pack review Sydney: BATA, 1 Dec 2014. Available from:

[http://www.bata.com.au/group/sites/BAT\\_7WYKG8.nsf/vwPagesWebLive/DO9FC38M?opendocument&SKN=1](http://www.bata.com.au/group/sites/BAT_7WYKG8.nsf/vwPagesWebLive/DO9FC38M?opendocument&SKN=1)

No mention was made of changes in smoking prevalence among the next oldest cohort— see **Table 1**. Among people aged 18 to 24 the proportion who had never smoked increased significantly between 2010 to 2013, from 72.1% to 76.8%. Daily smoking also declined among 25-to-29 year olds.

**Table 1** Changes in smoking among selected young people, Australia

Smoking status	2001	2004	2007	2010	2013
<b>12–17</b>					
Daily	n.a.	5.2	3.2	2.5	3.4
Occasional <sup>(a)</sup>	n.a.	1.5	0.9	1.3	*1.6
Ex-smokers <sup>(b)</sup>	n.a.	1.7	0.9	1.6	*0.3#
Never smoked <sup>(c)</sup>	n.a.	91.6	95.0	94.6	94.7
<b>18–24</b>					
Daily	24.1	20.2	16.5	15.7	13.4
Occasional <sup>(a)</sup>	7.9	5.3	4.9	4.9	5.1
Ex-smokers <sup>(b)</sup>	10.3	9.5	8.3	7.3	4.7#
Never smoked <sup>(c)</sup>	57.7	65.1	70.3	72.1	76.8#

Source: AIWH report of National Drug Strategy Household Survey, 2013<sup>9</sup>

Notes

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

# Statistically significant change between 2010 and 2013.

The much more reliable data on youth smoking from the Australian Secondary School Survey of smoking was collected in 2014 and will be available late in 2015.

#### 4.4. Didn't tobacco control experts predict that prevalence of smoking would reduce by 3% among children and 1% among adults 'within two years'?

John Player tobacco company in the Republic of Ireland has recently posted an information brochure repeating the claims above in relation to the teenage smoking figures from the National Drug Strategy Household Survey and contrasting these with findings of a paper by Pechey *et al.*<sup>10</sup> which reported results of a survey of tobacco control experts predicting a decline of smoking within two years. The brochure states 'the two years are up'.

Notwithstanding the fact that the NDSHS data were collected in 2013 (one not two years after implementation!) and are in any case not an optimal indication of teenage smoking rates in Australia, this claim ignores several important qualifications reported in the study.

<sup>9</sup> Australian Institute of Health and Welfare. National Drug Strategy Household Survey detailed report: 2013. Cat. no. PHE 183 Canberra: AIHW, 2014. Available from: <http://www.aihw.gov.au/publication-detail/?id=60129549469&tab=3>

<sup>10</sup> Pechey R, Spiegelhalter D, and Marteau TM. Impact of plain packaging of tobacco products on smoking in adults and children: an elicitation of international experts' estimates. BMC Public Health, 2013; 13:18. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/23302325>

First, many experts felt the Pechey study was simplistic and refused to participate, and several participated but refused to provide an estimate arguing that strategies worked in concert and that effects cannot always be disaggregated. Those who did provide an estimate did so on the assumption that ‘all else would be equal’... a condition clearly not met in relation to spending on mass media campaigns—see 4.8 below, and detailed analysis [here](#).

#### **4.5. But haven't Kaul and Wolf demonstrated that smoking increased among teenagers using data from the monthly Roy Morgan survey immediately before and after implementation?**

The Kaul and Wolf report<sup>11</sup> was funded, and its release closely directed, by Philip Morris International.<sup>12</sup> It was based on a survey of population smoking by the Roy Morgan Research Company which is not intended to provide reliable estimates of smoking specifically among teenagers. The authors describe the sample as being between 200 to 350 adolescents per month, although they neglect to point out the sample size in the last several years has been reduced to closer to 200 per month. The authors conclude no impact of plain packaging on youth smoking because they can detect no immediate drop in prevalence, however the small sample size would have made it much more difficult to detect anything but extremely large changes in prevalence. In any case, **the effects of plain packaging are more likely to be gradual,<sup>13</sup> affecting prevalence only as adolescents mature into the age in which they are vulnerable to experimenting, with effects amplified over time as fewer older role models and peers influence others through example and peer pressure.** See [here](#) for a detailed critique of the Kaul and Wolf study.<sup>14</sup>

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<sup>11</sup> Kaul A and Wolf M. The (possible) effect of plain packaging on smoking prevalence in Australia: a trend analysis. 165.Zurich, Switzerland: University of Zurich, 2014. Available from: [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2460704](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2460704).

<sup>12</sup> Angeli T. Universität Zürich lässt «Review» einer Studie durch Philip Morris zu. Zurich: angelisansichten, 2015. Last update: Viewed February 2015. Available from: <http://angelisansichten.ch/universitaet-zuerich-laesst-review-einer-studie-durch-philip-morris-zu/>; Doward J. Row over Marlboro-funded research that undermined plain cigarette packs. The Guardian, 2015. Available from: <http://www.theguardian.com/business/2015/feb/14/ow-over-arlboro-funded-research-that-undermined-plain-cigarette-packs>

<sup>13</sup> Lavery AA, Watt HC, Arnott D, and Hopkinson NS. Standardised packaging and tobacco-industry-funded research. Lancet, 2014; 383(9926):1384. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/24726722>

<sup>14</sup> And for a detailed critique of statistical analysis see Lavery AA, Diethelm P, Hopkinson NS, Watt HC, and McKee M. Use and abuse of statistics in tobacco industry-funded research on standardised packaging. Tobacco Control, 2015. Available from: <http://tobaccocontrol.bmj.com/content/early/2015/02/03/tobaccocontrol-2014-052051.abstract>

#### **4.6. Don't other industry studies (e.g. London Economics) also suggest that there has been no change in prevalence among adults immediately following the implementation of plain packaging?**

A Philip Morris-funded report by London Economics was released on Monday 25 November 2013, shortly before the one-year anniversary of plain packaging. This brief report outlines the results of three cross-sectional surveys of Australian adults—one conducted in July–October 2012 prior to the implementation of plain packaging and larger graphic health warnings—and two conducted shortly after implementation, in March 2013 and in July 2013, five and 8 months after implementation. The report describes itself as “one of the first comprehensive studies considering smoking prevalence following plain packaging” and draws a conclusion that there has been no change in smoking prevalence since the introduction of plain packaging. This Philip Morris-funded survey was conducted on the mistaken assumption that adult smoking prevalence ought to have markedly declined immediately following the introduction of plain packaging and refreshed larger graphic health warnings in Australia. It failed to use a probability-based sampling approach. (It is a basic tenet of population survey research that the most representative samples are those where every population member has an equal probability of being included in the survey.) Because it used an online panel to obtain responses from Australians and it used those responses to estimate prevalence, only Australians who are members of online market research panels could be included. While panel members comprise people of a wide range of demographic characteristics, these people opt-in to become members of an ongoing online panel for the purpose of taking part in many different surveys or studies and they earn rewards each time they participate. In this way, they are going to be different from a representative cross-section of the Australian population. And, even if the aim had been to prompt an immediate drop in prevalence, the Philip Morris study was not sufficiently powered to find one. See [here](#) for a detailed critique of this study.

#### **4.7. Hasn't British American Tobacco shown that a survey by the NSW Cancer Institute suggests that prevalence increased in New South Wales following implementation?**

**British American Tobacco UK misrepresented data from the Cancer Institute NSW Tobacco Tracking Survey data to UK Government's 2014 plain packaging consultation.**

On the 7<sup>th</sup> August 2014, British American Tobacco UK lodged a submission to the UK Department of Health in response to its consultation on the proposed introduction of regulations for the standardised packaging of tobacco products in the United Kingdom.<sup>15</sup> In this submission it claimed that the British Government had not considered the results of a

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<sup>15</sup> British American Tobacco UK. Consultation on the introduction of regulations for the standardised packaging of tobacco products. Response of British American Tobacco UK Limited. London: BATA UK, 2014. Available from: [http://www.bat.com/group/sites/uk\\_9d9kcy.nsf/vwPagesWebLive/DO9DKJEB/\\$FILE/medMD9MWB4B.pdf?openement](http://www.bat.com/group/sites/uk_9d9kcy.nsf/vwPagesWebLive/DO9DKJEB/$FILE/medMD9MWB4B.pdf?openement)

study conducted by The Cancer Institute New South Wales—a report which had not been published at the time that Sir Cyril Chantler visited Australia in February 2014 as part of his independent review of the evidence on plain packaging conducted to assist the UK with its deliberations.<sup>16</sup>

British American Tobacco UK commissioned not a public health *scientist* but, rather a *consultant* with expertise in regulation, to produce a critique of the NSW Cancer Institute data (the Gibson report) which it appended to its submission to the UK consultation. The Gibson report was not peer reviewed, and it was not provided to the Cancer Institute NSW for comment or review. The Gibson report is not on-line and not available for analysis. However it is clear that British American Tobacco UK presented a highly misleading picture of the findings of the survey. By contrast with the Cancer Institute’s peer-reviewed paper on the effects of plain packaging subsequently published,<sup>17</sup> British American Tobacco UK failed to make it clear that—being a survey not of the total population but of smokers and recent ex-smokers—the survey provided no indication of smoking prevalence. Among many problems with the British American Tobacco presentation of the data...

- i. The graphs contrast aggregate statistics for 2013 with those for 2012 but this ignores the fact that plain packs started to come onto the market early in October 2012, so that the total figure for 2012 in fact includes the effects of three months of the policy.
- ii. Surveys of smokers and recent ex-smokers necessarily fail to represent people who have stopped smoking and are no longer eligible to be in the survey. Given that daily smokers and heavier smokers are much less likely to quit than non-daily and lighter smokers, it is hardly surprising that the percentage of all smokers who are daily smokers would have increased between 2012 and 2013. Similarly, the percentage stating that they are affected by health warnings will be net of all the ex-smokers who have already quit that did attribute their quit attempt to the warnings.
- iii. Graphs are presented with y axes from 50 to 80% rather than 0 to 100%, exaggerating small increases and declines. Confidence intervals around statistical estimates are not presented, so that much is made of increases such as 3.7% to 3.8% (p22) which are almost certainly due to chance.
- iv. The analysis fails to acknowledge that there was a change in survey methodology in mid- 2013, so that the survey began to include mobile phone survey

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<sup>16</sup> Chantler C. Report of the independent review into standardized packaging of tobacco. London Kings College, 2014. Available from: <http://www.kcl.ac.uk/health/10035-TSO-2901853-Chantler-Review-ACCESSIBLE.PDF>.

<sup>17</sup> Dunlop SM, Dobbins T, Young JM, Perez D, and Currow DC. Impact of Australia’s introduction of tobacco plain packs on adult smokers’ pack-related perceptions and responses: results from a continuous tracking survey. *BMJ Open*, 2014; 4(12). Available from: <http://bmjopen.bmj.com/content/4/12/e005836.abstract>

participants, as well as landline survey participants. Since mobile phone users have a higher smoking prevalence than landline participants<sup>18</sup>, this artefact alone would explain change over time in most of the outcomes reported by British American Tobacco. Note that in its peer-reviewed paper, the Cancer Institute NSW limited its evaluation of plain packaging to June 2013 because of this change in sample composition.

#### **4.8. Doesn't data from state government surveys also show that prevalence of smoking has not declined since 2012? Isn't it possible that smoking declined sharply between 2010 and 2012 and then went up again in 2013?**

Philip Morris International has recently posted on its website data compiled from five disparate state surveys.<sup>19</sup> Philip Morris International uses these to purport to show that smoking rates may have increased between 2012 and 2013 in four out of five states and that the decline in New South Wales is not significant. In fact—*none* of the changes in prevalence presented on the Philip Morris website are significant, with confidence intervals around prevalence estimates overlapping in all cases—see **Figure 4**. The Philip Morris International data is also misleading in that it fails to make it clear that point estimates in each state fluctuate widely from year to year, not infrequently going up slightly year to year.

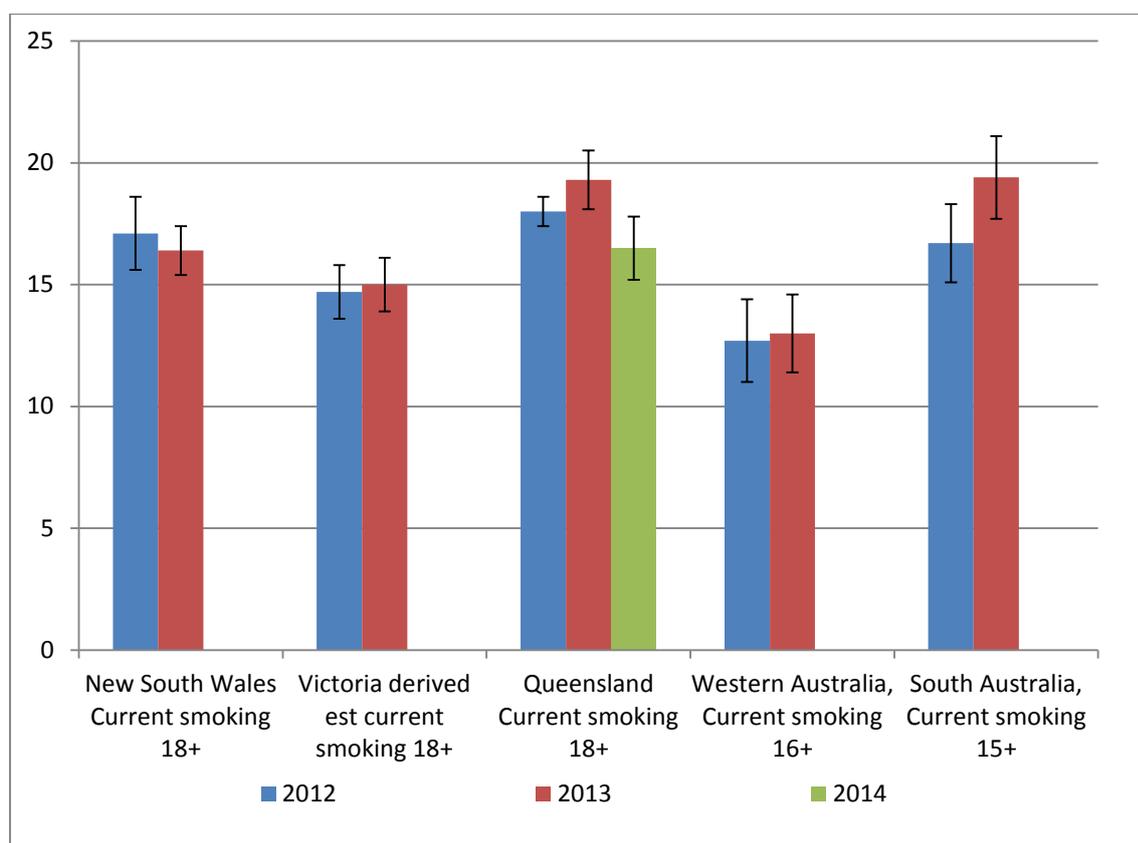
Further, in four out of five cases, the 2012 surveys were conducted over a period which spanned the period of introduction of plain packaging<sup>20</sup>—i.e. between October and December 2012—so that 2012 is not a valid 'before' period with which to compare the 2013 data.

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<sup>18</sup> Barr ML, van Ritten JJ, Steel DG, and Thackway SV. Inclusion of mobile phone numbers into an ongoing population health survey in New South Wales, Australia: design, methods, call outcomes, costs and sample representativeness. *BMC Med Res Methodol*, 2012; 12:177. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/23173849>

<sup>19</sup> Philip Morris International. Data from Australian states revealed. 2015. Last update: 22 January 2015; Viewed Available from: <http://justthefacts.pmi.com/data-from-australian-states-revealed/>

<sup>20</sup> **New South Wales** Interviews are carried out continuously between February and December each year, so three of 11 months during implementation [http://www.healthstats.nsw.gov.au/Indicator/beh\\_smo\\_age](http://www.healthstats.nsw.gov.au/Indicator/beh_smo_age); **Victoria** The surveys are conducted in November, bang in the middle of implementation in 2012; **Queensland** Interviews were held between 3 October 2011 and 1 April 2012 <http://www.health.qld.gov.au/epidemiology/publications/phs-qld.asp>; **South Australia** Data collection for the Health Omnibus Survey is carried out in Spring, ie. September to November... two thirds of survey conducted during implementation [https://health.adelaide.edu.au/pros/docs/reports/hos\\_prospectus\\_spring\\_2012\\_.pdf](https://health.adelaide.edu.au/pros/docs/reports/hos_prospectus_spring_2012_.pdf); **Western Australia** Between January and December, so three of 12 months during implementation [http://www.health.wa.gov.au/Publications/documents/HWSS\\_Adult\\_Overview\\_and\\_Trends\\_2012.pdf](http://www.health.wa.gov.au/Publications/documents/HWSS_Adult_Overview_and_Trends_2012.pdf);



**Figure 4** Prevalence of current smoking selected Australian states—2012 compared to 2013

Sources: NSW Health of the people data<sup>21</sup> Victorian Smoking and Health Survey,<sup>22</sup> Queensland Preventive Health Indicators,<sup>23</sup> Western Australian Health and Wellbeing Survey,<sup>24</sup> and the SA Health Omnibus Survey.<sup>25</sup>

<sup>21</sup> Centre for Epidemiology and Evidence. Current smoking in adults by age and sex, NSW 2013, Health Statistics New South Wales. Sydney, NSW: Ministry of Health, Created 5 February 2015. Available from: [www.healthstats.nsw.gov.au](http://www.healthstats.nsw.gov.au)

<sup>22</sup> The data cited from Victoria was drawn from a study on a different topic and was not presented as a validated prevalence estimate. Like the NSW Cancer Institute, surveys in Victoria have started to contact respondents by mobile phone. Those who no longer have phone-lines at home are likely to be younger and this needs to be taken into account in the process of weighting survey results.

<sup>23</sup> Department of Health. Self reported health status 2011–12. Health indicators: chronic disease and behavioural risk factors, Queensland. Brisbane: Department of Health, Queensland Government: Brisbane, 2012. Available from: <http://www.health.qld.gov.au/epidemiology/publications/phs-qld.asp>; Department of Health. Self reported health status 2013. Preventive health indicators: Queensland., Brisbane: Department of Health, Queensland Government, 2013. Available from: <http://www.health.qld.gov.au/epidemiology/publications/phs-qld.asp>; Department of Health. Self reported health status 2014. Preventive health indicators: Queensland. Brisbane: Department of Health, Queensland Government, 2014. Available from: <http://www.health.qld.gov.au/epidemiology/publications/phs-qld.asp>.

<sup>24</sup> Tomlin S and Joyce S. Health and Wellbeing of Adults in Western Australia 2012, Overview and Trends. East Perth: Department of Health, Western Australia, 2013. Available from: [http://www.health.wa.gov.au/publications/pop\\_surveys.cfm](http://www.health.wa.gov.au/publications/pop_surveys.cfm); Radomiljac A and Joyce S. Health and Wellbeing of Adults in Western Australia 2013, Overview and Trends. East Perth: Department of Health, Western Australia, 2014. Available from: [http://www.health.wa.gov.au/publications/pop\\_surveys.cfm](http://www.health.wa.gov.au/publications/pop_surveys.cfm).

<sup>25</sup> Dono J and Miller C. Key Smoking Statistics for SA – 2013. Adelaide, Australia: South Australian Health and Medical Research Institute (SAHMRI), April 2014. Available from: <https://www.sahmri.com/our-research/themes/cancer/research/list/key-smoking-statistics>; Harrison Health Research. The Health Omnibus Survey, Spring 2012. Adelaide: Harrison Health Research, 2012. Available from: [https://health.adelaide.edu.au/pros/docs/reports/hos\\_prospectus\\_spring\\_2012\\_.pdf](https://health.adelaide.edu.au/pros/docs/reports/hos_prospectus_spring_2012_.pdf)

The tobacco company's demand for immediate changes in prevalence after implementation of plain packaging assumes that all other policy factors are equal before and after the implementation of this policy. However—to take just one example—spending on media campaigns in Australia was substantially lower in most jurisdictions in 2013 than in 2012. Expenditure was particularly low in the second half of 2013 in Queensland, and in Victoria and South Australia (where surveys are conducted towards the end of the year). In fact, there appears to have been no expenditure on mass media campaigns at all in the latter half of 2013 in South Australia.

### *Are there more reliable estimates of changes in prevalence over time?*

The National Drug Strategy Household Survey is more easily able to detect change because sample sizes are large and surveys are conducted using a consistent method over time and only every three years. State level data from this survey<sup>26</sup> show that the drop between 2010 and 2013 observed in this survey *was* significant, both overall and in three of the four largest states where sample sizes were largest—see Table below.

**Table 2** Daily tobacco smokers, people aged 18 years and older, by state/territory, 1998 to 2013 (per cent)

State/territory	1998	2001	2004	2007	2010	2013	
NSW	21.8	18.6	17.2	17.2	15.0	12.2	#
Vic	22.9	19.9	18.2	17.4	15.5	12.6	#
Qld	24.3	21.6	20.7	17.9	17.7	15.7	
WA	23.6	20.8	16.4	15.6	16.5	12.5	#
SA	19.4	20.5	17.2	17.6	15.7	13.6	
Tas	25.3	21.4	22.3	24.0	16.9	16.7	
ACT	22.9	18.5	16.1	15.2	11.7	9.9	
NT	32.5	28.7	28.5	27.1	23.9	22.2	
Australia	22.7	20.0	18.2	17.5	15.9	13.3	#

# Statistically significant change between 2010 and 2013.

<sup>26</sup> Australian Institute of Health and Welfare. National Drug Strategy Household Survey detailed report: 2013 - Supplementary tables. State tables, Canberra: AIHW, 2014. Available from: <http://www.aihw.gov.au/publication-detail/?id=60129549469&tab=3>

## 4.9. What other evidence is there that plain packaging is likely to contribute to declining prevalence in Australia?

Two studies published to date suggest that plain packaging is likely to contribute to a strengthening of negative feelings about smoking and to intentions to quit.

A cross-sectional survey was conducted in the Australian state of Victoria in November 2012 during the transition phase of the law when some packs were already plain and some packs sold in shops were still fully branded.<sup>27</sup> The study assessed attitudes and intentions among those smokers smoking from a plain pack compared with the 27.7% of smokers whose latest pack of cigarettes was still a fully branded pack. Compared with those whose current pack was a fully branded one, those smoking from plain packs perceived their cigarettes to be lower in quality, tended to perceive their cigarettes as less satisfying than a year ago, were more likely to have thought about quitting at least once a day in the past week, and to rate quitting as a higher priority in their lives.

A study in New South Wales<sup>28</sup> found a sustained increase in calls to the Quitline after the introduction of tobacco plain packaging. This increase was not attributable to anti-tobacco advertising activity, cigarette price increases nor other identifiable causes.

Because success rates are low and rates of relapse high among people who try to quit smoking, increased quit intentions and quit attempts may take many years to translate into measurable reductions in the prevalence of smoking.

## 4.10. What can we conclude about the effects of plain packaging on prevalence of smoking in Australia?

Prevalence of smoking in Australia fell dramatically between 2010 and 2013. The available evidence suggests that plain packaging is likely to continue to contribute along with Australia's other tobacco control policies to further reducing the prevalence of smoking in Australia.

For further facts sheets on plain packaging in Australia see

<https://www.cancervic.org.au/plainfacts/browse.asp?ContainerID=factsheets1>

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<sup>27</sup> Wakefield MA, Hayes L, Durkin S, and Borland R. Introduction effects of the Australian plain packaging policy on adult smokers: a cross-sectional study. *BMJ Open*, 2013; 3(7). Available from: <http://www.ncbi.nlm.nih.gov/pubmed/23878174>

<sup>28</sup> Young JM, Stacey I, Dobbins TA, Dunlop S, Dossaix AL, et al. Association between tobacco plain packaging and Quitline calls: a population-based, interrupted time-series analysis. *Med J Aust*, 2014; 200(1):29-32. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/24438415>