

# A Quantitative Analysis of the Effect of Tobacco Free Zones over Two Years

## Summary

Tobacco Free Zones were introduced on Trinity's main campus in July 2016 (see map in figure 1). Over the following two years, Smoke Free Ambassadors visited the Zones a number of times each week recording the frequency of observed smoking in each Zone and requesting compliance to the Policy when necessary. The data were analysed in MS Excel and compared to baseline and across the two years of the Zone being created. In 2017/2018 observed smoking in the Zones was 83% lower than baseline. This was a 2% improvement on the previous year. In 2017/2018 compliance when smokers were asked to move was 100%, an improvement from 94% the previous year. Smoking in Fellows' Square in 2017/2018 was reduced compared to the previous academic year, in particular after the implementation of an intensive education campaign in that area, but there were more visitors smoking in Fellows' Square in summer 2017 than 2016. This report recommends implementing as comprehensive a tobacco restricting policy as possible, encouraging compliance through positive, cross-campus communications and on-campus ambassadors and focusing on visitors as well as the Trinity community.

## Background

Tobacco Free Zones were introduced on Trinity's main campus in July 2016 (see map in figure 1). In 2017, Trinity's Tobacco Policy Committee published a report on the effectiveness of and compliance with the Tobacco Free Zones policy(1). It found an 81% decrease in frequency of observed smoking and refusal to comply of 6% (n=26) when smokers were asked to move. The findings of the report are consistent with the very limited studies available which show that policies that restrict smoking on college campuses have been shown to significantly reduce smoking and exposure to second hand smoke (2). More comprehensive policies and those that incorporate prevention and cessation programmes produce better results.

Adherence to tobacco free campus policies remains a challenge(3). One study in the US (4) that implemented a staff-led ambassador programme at campus hotspots observed continued smoking of 35% despite their intervention (n=1.93 persons per visit post-intervention compared to baseline of 5.47). Lee et al (5) counted the number of cigarette butts at 67 main building entrances on 19 community college campuses and found butts on every campus. Harris et al (6) found that efforts to increase compliance with a smoking ban within 25 feet of buildings resulted in the proportion of smokers who always complied increasing from 33% during baseline to 74% during intervention.

Trinity is one of few third level institutions that is systematically measuring compliance despite a number of authors stating the importance of doing so (4), (7), (6). A review that surveyed each of the 100% tobacco-free campuses in the US to assess their policies, procedures and practices (8) reported that enforcement is often the responsibility of all campus members. A case study from the University of Kentucky of a three pronged (tell-treat-train) strategy to institute a culture of policy compliance suggested however, that this approach is unlikely to be effective (9). For example, student smokers who were surveyed about their attitudes to a policy restricting smoking on a Canadian campus (10) were initially willing to comply with it but seeing others disregard it without consequence altered their attitude and subsequent compliance. Trinity's direct observation of smokers is a valid measure of compliance (11) used in a number of studies (4), (10), (12), (3), (9), (13), (11), (6). Other measures include self-reported smoking behaviour (14), (15), second hand smoke exposure (15), intention to smoke (15), quantities of cigarette butts on campus (4), (12), (3), (13), (11), (5), rates of sign-up to smoking cessation services (9) and attitudes to tobacco-free policies (16), (10), (14), (17), (15). Trinity's tobacco policy group has already published a baseline

study on smoking amongst Trinity undergraduates (18), is in the process of publishing the 2016/2017 report on compliance and plans to repeat the baseline study in 2018/2019.

At the request of the Trinity Board, From January to May 2018, the Tobacco Policy Committee implemented a campaign to encourage policy compliance. The campaigns were focused on Fellows' Square because the 2016/2017 report on Tobacco Free Zones found the highest frequency of observed smoking and non-compliance there. Work included:

1. Campaign to highlight cigarette butt litter: #ButtVase
2. Healthy Library initiative encouraging people to take a healthy break not a cigarette one
3. Piñata event to encourage compliance with the tobacco policy
4. Education campaign to highlight why Trinity has Tobacco Free Zones
5. Healthy Behaviours Art Competition

Full details of the campaigns are available [here](#).

This report presents a subset of the data in the 2016/2017 report and compares compliance with the policy between baseline, 2016/2017 and 2017/2018. It aims to answer the following questions:

1. Was there a reduction in the frequency of observed smoking in the Zones?
2. Did those who were smoking comply when asked to leave a Zone?



Figure 1: Tobacco Free Zones marked in pink

## Methodology

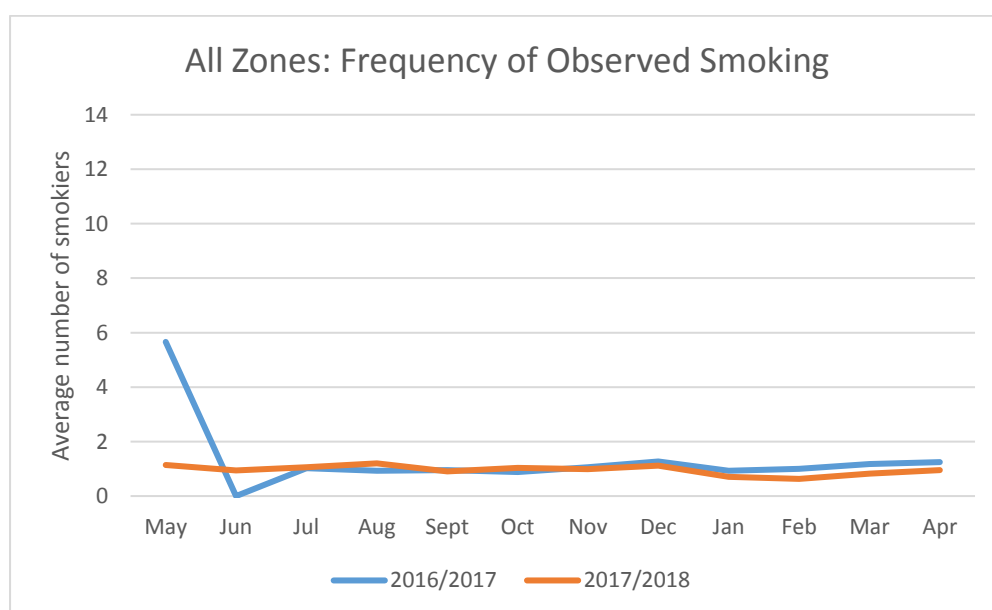
Ambassadors who had been trained in a brief intervention technique to encourage compliance which was developed by the University of Kentucky(4), recorded the number of smokers they observed on each circuit of the tobacco free zones. Data were analysed in Excel and where appropriate, compared to baseline and 2016/2017 data on frequency of observed smoking.

## Results

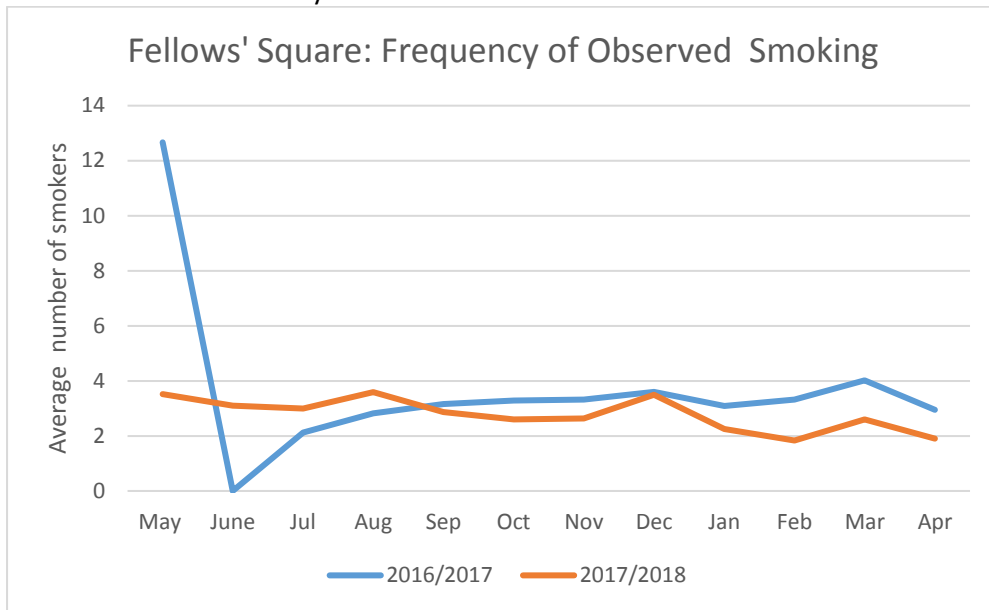
### Frequency of Observed Smoking

	Baseline before Zones Open (no monthly data) 13 <sup>th</sup> May 2016			May 2017-April 2018			Average reduction 2017/2018		Average reduction 2016/2017	
Month	No. Checks	No. Smokers	Average Smokers per check	No. Checks	No. Smokers	Average Smokers per check	N	%		
May	9	51	<b>5.66</b>	131	149	<b>1.14</b>	4.52	80%		
Jun				111	104	<b>0.94</b>	4.72	83%		
Jul				68	72	<b>1.06</b>	4.6	81%	4.64	82%
Aug				76	91	<b>1.20</b>	4.46	79%	4.73	84%
Sept				77	70	<b>0.91</b>	4.75	84%	4.71	83%
Oct				51	53	<b>1.04</b>	4.62	82%	4.78	84%
Nov				76	75	<b>0.99</b>	4.67	83%	4.6	81%
Dec				42	47	<b>1.12</b>	4.54	80%	4.39	78%
Jan				42	30	<b>0.71</b>	4.95	87%	4.73	84%
Feb				60	38	<b>0.63</b>	5.03	89%	4.66	82%
Mar				68	56	<b>0.82</b>	4.84	86%	4.48	79%
Apr				68	44	<b>0.65</b>	5.37	95%	4.41	78%
<b>Total</b>				<b>819</b>	<b>790</b>	<b>0.96</b>	<b>4.7</b>	<b>83%</b>	<b>4.58</b>	<b>81%</b>

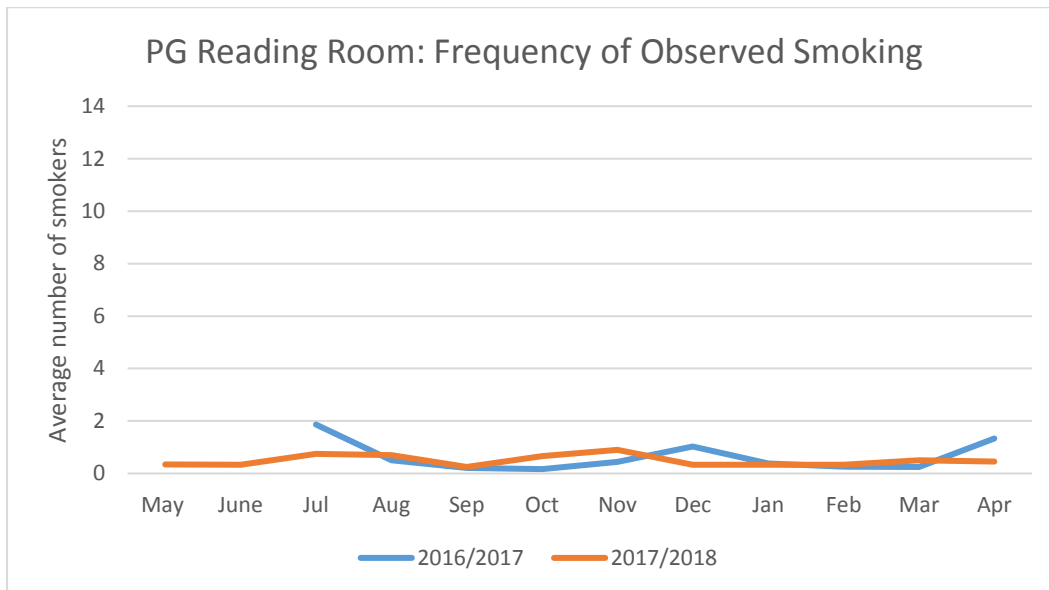
In 2017/2018 frequency of observed smoking was 83% less than baseline, compared to 81% in 2016/2017. On average there was around one person smoking per check.



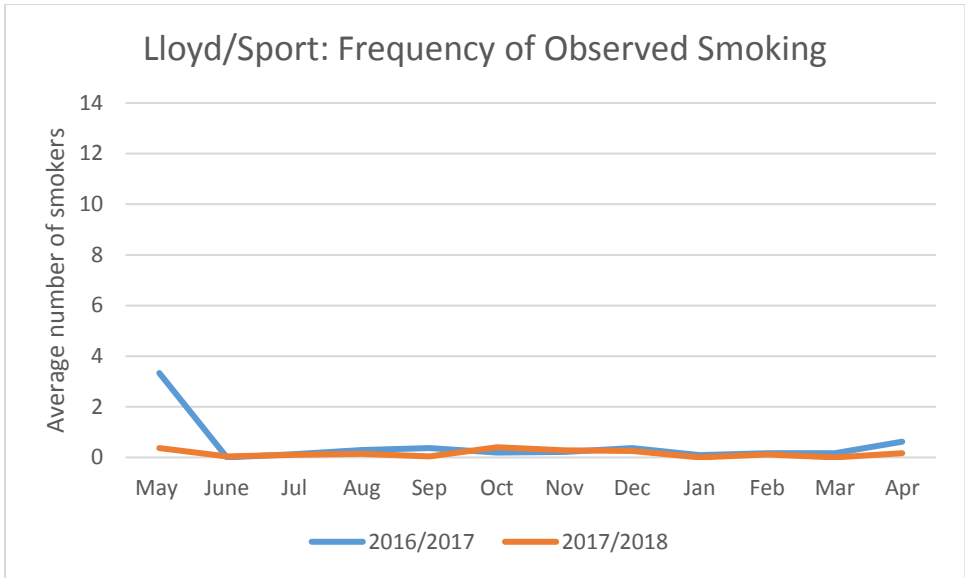
When examined across all zones, the frequency of observed smoking was much lower than baseline and similar in the second year of the zones to the first.



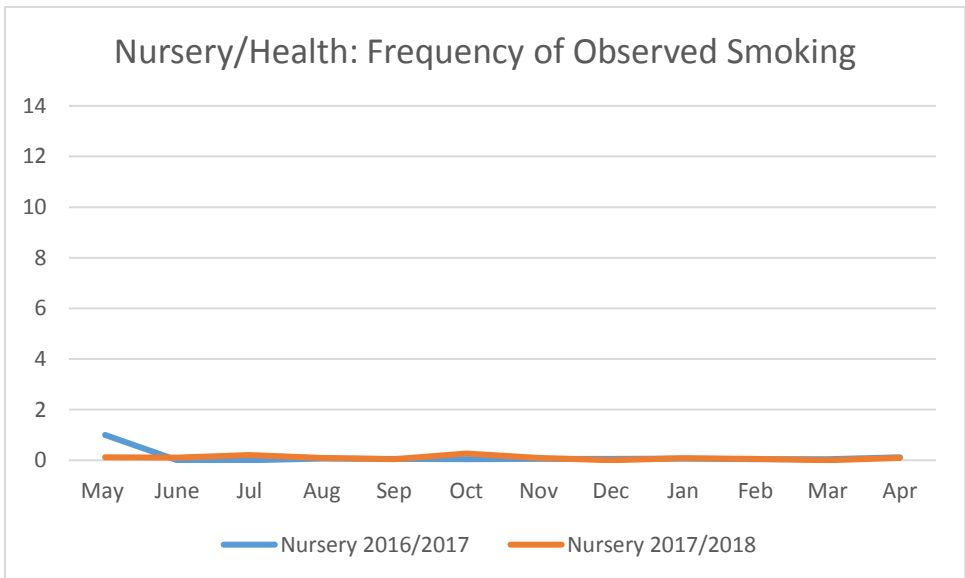
During 2017/2018 there were 249 checks in the Fellows' Square Zone. Frequency of observed smoking was higher during the second summer in 2017 and lower when the academic year started. There was less smoking throughout the second academic year and a marked decrease in observed smoking from January 2018 onwards.



There were 123 checks outside the postgraduate reading room and compliance was better in 2017/2018 except in October and November.



The 249 checks in the Lloyd/Sport Zone found a very small number of people smoking, there were less in the second year than the first with the exception of October



There were 249 checks in the Nursery/Health Zone in 2017/2018. There continued to be little or no smoking in the Zone except in October.

**Compliance**

There were no refusals to comply with the policy when people smoking were asked to leave a Zone.

**Discussion**

Overall, there was less observed smoking in the Tobacco Free Zones in the second year of their implementation than in the first. Consistent with international studies on compliance with tobacco policies however, some people continue to smoke on campus. In Fellows' Square, there was an encouraging reduction in observed smoking during and after the education campaigns from January-April 2018 and no refusals to comply when asked to do so. The larger quantities of observed smoking in Fellows' Square during the summer of the second year of the Zones suggests that further work to educate visitors about the policy is required. The slightly higher numbers smoking in Zones other than Fellows' Square are difficult to interpret because the numbers are so small but they may

indicate that where education campaigns have a physical (as opposed to online) location, the Tobacco Policy Committee should broaden it beyond Fellows' Square.

## Conclusions & Recommendations

This report aimed to answer the following two questions:

**1. Was there a reduction in the frequency of observed smoking in the Zones?**

Yes, in 2017/2018 observed smoking in the Zones was 83% lower than baseline. This was a 2% improvement on the previous year. It is likely that people will continue to smoke on campus in the coming year. Students appear to be respecting the policy more in Fellows' Square but the Committee must address how visitors can be encouraged to do the same. The other Zones had slightly higher frequency of observed smoking although the numbers are so low as to be difficult to interpret.

**Recommendation:** Trinity should further restrict smoking on campus by implementing a policy that is as comprehensive as possible. As it is unlikely that all will comply with the policy, Trinity should continue to promote compliance by running further education campaigns for students and staff across all areas of the campus. The Committee should consider how visitors can be encouraged to comply. The PG reading room should be checked as often as other Zones.

**2. Did those who were smoking comply when asked to leave a Zone?**

Yes, there was 100% compliance when smokers were asked to move.

## References

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