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***Tobacco Free Communities George Town: Evaluation  
Summary***

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*The views expressed within this report are those of the authors and do not necessarily reflect the position of the  
University of Tasmania.*

# **Tobacco Free Communities Program - George Town Evaluation Summary**

**March 2019 – March 2020**

## **Background**

Smoking is one of the largest yet most preventable contributors to morbidity and mortality in Australia and around the world.<sup>1,2</sup> It increases the risk of many diseases, including myocardial infarction, stroke, and numerous cancers.<sup>1</sup> Quitting can reduce the risk of these diseases and increase life expectancy, with those who quit at younger ages obtaining the greatest improvements.<sup>3</sup> Despite this, 16.9% of Tasmanian adults continue to smoke daily; a rate higher than the national average of 13.8% and the second highest of all Australian states and territories.<sup>4</sup> Additionally, people living in rural and remote localities are more likely to smoke and have reduced access to smoking cessation services.<sup>5</sup> More work is needed to both reduce rates of smoking in Tasmania and increase access to effective smoking cessation services in rural areas.

One increasingly investigated method to aid smoking cessation is financial incentive (FI) programs, wherein monetary rewards are provided contingent upon cessation. These programs can increase cessation rates in the short- to medium-term, with a growing body of evidence suggesting effects are maintained long-term.<sup>6</sup> Theoretically, the benefits of incentivisation may be twofold. First, as described within learning theories like Operant Conditioning<sup>7</sup>, providing rewards can positively reinforce behaviour and aid the formation of new habits.<sup>8</sup> Second, providing FIs may encourage decisions to abstain through utilisation of temporal discounting principles; a preference for immediate over delayed rewards, even when the delayed reward is of higher value.<sup>9,10</sup> Smokers wishing to quit encounter the choice between the immediately available rewarding effects of smoking (e.g., relieving nicotine withdrawal), or the greater yet distant benefits (e.g., to health) of quitting.<sup>11</sup> In this situation, many will select the immediately available rewarding option and continue smoking. Incentive programs may alter this decision by providing alternative, more immediate rewards for smoking abstinence, thereby motivating sustained quit attempts.

As one of the most accessible health professionals, pharmacists regularly and effectively provide advice on smoking cessation<sup>12,13</sup>, and can effectively provide cessation interventions.<sup>13,14</sup> While scarce, some research also shows pharmacists can effectively provide FI programs.<sup>15</sup> Adding FI programs to pharmacy quit smoking practices may further enhance this profession's ability to engage smokers and motivate cessation. Implementing FI programs in pharmacies could also enhance FI program viability by utilising health professionals that are trained and effective at providing quitting advice.

The viability of implementing FI programs in pharmacies was piloted through the Tobacco Free Communities program (TFCP). The first iteration of this trial was implemented in Glamorgan-Spring Bay, Tasmania in 2018. A second trial has since occurred in George Town, Tasmania (March 2019 – March 2020). This report discusses the findings from this second pilot program.

## **TFCP – George Town**

Within the TFCP George Town, smokers attended either the local pharmacy or Neighbourhood House to enrol in the program and receive brief cessation advice. All participants set a quit date during the enrolment session; while it was encouraged that this date should occur before the first check-in, this was not required. Six "check-ins" then occurred over three months, beginning one week after enrolment. Check-ins occurred once weekly for a month, then once at the end of the second and third months. Participants received cessation support and pharmacological advice at each check-in. They received \$10 for enrolling, and \$50 for every check-in attended where they self-reported smoking no cigarettes in the previous week and were verified as not smoking through expired carbon monoxide (CO) testing ( $CO \leq 4\text{ppm}$  indicated abstinence). A

maximum \$300 in abstinence contingent vouchers could be obtained. All vouchers were for local businesses: the pharmacy, local butcher, hairdresser, home electrical retailer, and a clothing store. To try and improve data collection efficiency, iPads and REDCap software was used to electronically administer and record participant data in this program.

While the TFCP George Town mirrored the earlier Glamorgan-Spring Bay program, this second pilot additionally saw a partnership with the Flinders Island Aboriginal Association Inc. (FIAAI) and an additional focus on prompting smoking cessation among Aboriginal and Torres Strait Islander (ATSI) people. Smoking rates are substantially higher among ATSI people than in the general population, with approximately 41% of ATSI adults currently smoking.<sup>16</sup> Focus on this population is needed to reduce smoking rates and address the health inequalities faced by ATSI people. FIAAI provided the TFCP with specific support for ATSI smokers at the George Town Neighbourhood House.

Through the program, all residents of the George Town community were encouraged to participate as either a smoker trying to quit, as family/friends supporting a smoker to quit, a business owner at whose store vouchers could be redeemed, or simply by encouraging known community members who smoked to be part of the program. Recruitment occurred through word of mouth, within pharmacies by staff, posters and flyers in local businesses, community newsletter advertisements, and brief radio and television interviews. Pharmacy staff received training on program procedures, measuring expired CO, and updated training on how to provide best practice smoking cessation support prior to commencement of the pilot.

### **Data Collection and Analysis**

During enrolment and check-ins, participants were asked to complete short surveys (via iPad), report the number of cigarettes smoked in the previous week and provide CO samples to verify their smoking status. Reporting no cigarettes in the previous week and providing CO readings of  $\leq 4$ ppm were used to indicate abstinence. These data were recorded digitally, with access to the data of consenting participants provided to the program evaluation team (researchers from the University of Tasmania). Participants who withdrew from the TFCP or who were lost to follow-up were assumed to be smoking for analyses.

### **Overview of Results**

The TFCP George Town was initially funded to fully incentivise up to 40 smokers. In response to overwhelming community support and uptake, additional funding was received to incentivise additional participants. In total, 55 people enrolled in the program and consented to their data being analysed. Eighteen of these were excluded from analysis as they had CO readings  $\leq 4$ ppm at enrolment, meaning current smoking could not be assumed. The included sample therefore consisted of 37 smokers (see *Table 1*). On average, participants were 47 years old and had begun smoking at 20 years of age. Four participants were Aboriginal or Torres Strait Islanders. At enrolment, participants were smoking on average 16 cigarettes per day, every day. Over the course of the program, participants collected an average \$64.86 (SD = \$91.18) of the potential \$300 in quit contingent vouchers.

**Table 1:** Participant demographic and smoking characteristics at enrolment

Characteristic	Included sample ( <i>n</i> = 37)
Age (years)	46.65 (13.02)
Gender (% male)	21.62
Aboriginal and Torres Strait Islander (%)	10.8
Level of Education (%)	
Secondary School	32.43
College	18.91
TAFE	24.32
University	24.32
Age first smoked (years)	20.81 (9.64)
Previous quit attempts (% at least 1 previous attempt)	86.48
Years smoked	26.81 (13.02)
Days smoke per month	29.54 (2.96)
Cigarettes per day	16.21. (6.47)
Baseline carbon monoxide	21.76 (13.39)
Heaviness of Smoking Index (%)	
Light	8.18
Moderate	32.43
Heavy	48.65
Total FI amount received (\$)	64.86 (91.18)

Note: Values represent means with standard deviations in parentheses unless otherwise stated.

### Quitting Support

All participants received quitting advice and brief cessation counselling during enrolment. Twenty-one (56.8%) of the 37 participants included in analyses attended minimum one check-in at the pharmacy and obtained further behavioural support. Of those who attended minimum one check-in, other methods of quitting used included varenicline (Champix; 19.0%), single form NRT (38.1%), combination NRT (9.5%), and E-cigarettes in combination with NRT (9.5%). Four of these participants reported accessing the Quitline Tasmania. Remaining participants (23.9%) did not report using any other product or support (attempted to quit “cold turkey”).

### Retention

Retention across the trial is summarised in *Table 2*. Of the 37 participants in the included sample, 56.8% (*n* = 21) remained engaged at check-in 1 (week 1). Twenty seven percent (27.0%; *n* = 10) were still engaged at check-in 4 (end of month 1), 16.2% (*n* = 6) remained engaged at check-in 5 (end of month two), and 8.1% (*n* = 3) remained engaged at check-in 6 (end of month three; program conclusion).

### Smoking Across the Program

Smoking behaviour across the program is summarised in *Table 2*. A large decrease in smoking was observed between baseline and check-in one, indicating many participants had made a quit attempt or reduced their smoking. The average cigarettes smoked per day decreased from a mean of 16.2 (*SD* = 6.5) at enrolment to 2.3 (*SD* = 4.2) at check-in one, with 10 participants (27.0%) reporting smoking no cigarettes between enrolment and check-in one and a further five (13.5%) reporting reducing smoking frequency to ≤ one cigarette per day. Carbon monoxide readings likewise decreased from a mean of 21.6ppm (*SD* = 13.9) at enrolment to 9.3ppm (*SD* = 16.9) at the first check-in. **These decreases were maintained by participants who remained engaged in the trial at subsequent timepoints.** However, as participants who were sustaining abstinence were generally more likely to maintain engagement, these values should be considered with caution. The three participants (8.1%) who maintained engagement throughout the entire program were all quit at its conclusion.

**Table 2:** Retention and smoking behaviour across the program

Characteristic	Enrolment	Check-in 1	Check-in 2	Check-in 3	Check-in 4	Check-in 5	Check-in 6
Retention <i>n</i> (%)	37 (100)	21 (56.8)	13 (35.1)	15 (40.5)	10 (27.0)	6 (16.2)	3 (8.1)
Cigarettes per day	16.2 (6.5)	2.3 (4.2)	0.3 (0.7)	1.1 (2.7)	1.2 (3.3)	0.6 (1.0)	0 (0)
CO (ppm)	21.6 (13.9)	9.3 (16.9)	5.3 (7.3)	4.2 (4.8)	3.5 (2.8)	4.9 (6.5)	1.5 (0.5)
Quit (self-reported and CO verified) <i>n</i> (%)	-	13 (35.1)	10 (27.0)	11 (29.7)	7 (18.9)	4 (10.8)	3 (8.1)

Note: Values represent means with standard deviations in parentheses unless otherwise specified. The CO and cigarettes per day data summarise participants who were still retained in the trial.

### Interview Data

Follow-up interviews with consenting participants (*n* = 26) provided a valuable addition to the TFCP George Town trial. In addition to the feedback associated with the positive impacts of quitting smoking, including no longer wheezing, being able to take up exercise again, motivation to make other health changes in their lives (e.g., quitting alcohol, walking more), and reducing stress in their life, the program was overwhelmingly described as being an excellent and novel way of supporting participants to quit.

Specifically, vouchers were expressed as being a great incentive, with one participant explaining that initially the vouchers were a great motivator, until the pleasure of not smoking maintained his desire to stay abstinent. Another participant explained how the vouchers had allowed her to buy a television as her reward for quitting smoking. Checking in with pharmacy staff was also mentioned as one of the best things about the program, with pharmacy staff described as being “so good and supportive”. One participant, who joined the program with his wife (both successfully quit), expressed how the program had made them feel accountable for committing to give up. Even participants who had taken up smoking again during the study expressed how useful the program had been (“best idea ever”; “wonderful idea”) and their desire to participate again. Most of the interviewed participants who took up smoking again attributed their relapse to stress within their personal lives.

Feedback to improve the program included a desire for the program to continue at weekly schedules to boost motivation and retention, rather than extend out to monthly visits. Others wished the program had continued for longer than the 3 months.

### Discussion and Learnings

As observed in the first trial of the TFCP, the reception to the program was overwhelmingly positive. The feedback from the pharmacy staff and FIAAI workers suggested the interest and reception from the community was high and positive. Throughout the TFCP George Town pilot program, pharmacy staff were successfully able to implement CO monitoring, voucher provision, and brief cessation advice; hence supporting the viability of such a program. The large decrease in smoking observed between baseline and check-in one suggests many participants attempted to reduce or quit smoking as a result of their engagement with the program. In fact, **35% of participants were quit at check-in 1, with 20% abstinent at the end of the first month.** Although the end of program quit rates were low, every quit attempt should be considered beneficial – both in terms of health and learning - towards eventually quitting smoking.

Through this trial, **55 people were successfully enrolled and provided quitting advice and support.** Engaging this number of smokers was a success of this trial, with the number engaged exceeding the 40 individuals which were expected to be provided support. Yet as observed in the 2018 trial, recruitment slowed after the initial months despite pharmacy staff’s continued engagement with smokers through other services (e.g., regular script filling). There were also several individuals who did not have a CO  $\geq$  4ppm at baseline, meaning it cannot be assumed they were indeed smokers at baseline. Although these individuals were excluded from

analyses, this finding does raise concerns about the adherence to the program procedures. To further complicate recruitment issues, at least one pharmacy staff member believed participants were no longer being recruited for the program and ceased promoting it as of November 2019. It is unclear where this belief began, as all posters and flyers state the program would conclude in March 2020. Additional promotion was undertaken as a result, with some success.

As per many community programs, retention challenges were experienced. These issues included some participants not maintaining the program check-in schedule or missing check-ins. For some participants, this was due to work schedules which restricted the times they could attend check-in locations. Retention issues could also relate to participants being reluctant to attend check-ins if they relapsed. Previous FI research<sup>17</sup> suggests this may be due to feelings of failure or shame post-relapse and a desire not to let staff down. These issues did mean however, that some participants were not obtaining the full incentive amount, allowing additional smokers to be enrolled and provided cessation support (NB: original funding would have fully incentivised up to 40 participants, but 55 were enrolled). Finally, retention and program completions were also affected by the growing concerns over and eventual COVID-19 restrictions, which meant it was not safe to obtain CO readings for the last month of the program. While these participants continued to receive incentives based on their self-reported abstinence, data was not collected as this abstinence could not be verified, thus affecting the amount of available data.

Through partnership with FIAAI, it was intended a minimum six ATSI smokers would benefit from the TFCP. Only four ATSI smokers entered the program. However, there were additional participants who, although not a descendant themselves, were partners of ATSI identifying individuals. As such, assisting smokers socially connected with ATSI smokers, would indirectly positively influence and promote smoking cessation among this vulnerable group. One factor which may explain the difficulties in recruiting from this population could be the lack of ATSI community groups based in the George Town area; groups which could otherwise have been accessed for collaboration and to spread knowledge of the TFCP. Implementation in locations where these groups are present might aid recruitment for future programs.

During the TFCP implementation period, one of the participating businesses unexpectedly closed down. This created some difficulties regarding the use of vouchers, which had been purchased from the business prior to the program being implemented. Despite this, partnerships with local businesses were overall successful. The participating businesses were generally pleased with their involvement in the program and the benefits they observed from the partnership. For example, vouchers for the local butcher were one of the most popular amongst participants. Beneficially for this business, people who had never visited before went in to spend their vouchers. Some of these people had not previously visited due to the perception the butcher was too expensive; several stated they now realised this belief was incorrect. These findings highlights some of the challenges, but also the ***important local benefits that can be produced by grounding programs within communities and ensuring funds return to those communities.***

Digital recording of data was largely effective and ensured smooth transfer of information from pharmacies to researchers. However, there were some issues with surveys being incorrectly completed. This included a small number of occasions where the incorrect survey was completed (e.g., check-in one data being entered in the check-in two survey), which caused some difficulties when the participant returned for the subsequent visit. Although this issue was easily overcome, it does highlight there are some risks with digital data recording when people are not experienced with the technology.

## **Conclusions**

Within this pilot of the TFCP, pharmacy staff successfully implemented key program aspects including CO monitoring, voucher provision, and brief cessation advice – evidencing the TFCP concept's viability. Furthermore, the TFCP's acceptability and effectiveness was again demonstrated by the target of 40 participants being exceeded by almost 40%, and ***35% of participants being successfully quit at check-in 1,***

**and a further 20% abstinent at the end of the first month.** This pilot provides positive indication that FI programs can be implemented within a pharmacy to promote smoking cessation. However, further work is needed to overcome some difficulties before programs could be implemented more widely. This includes research on further strategies to help maintain engagement when programs are implemented within community settings. Future research with a control condition and a larger sample is also needed to investigate efficacy.

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