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Staff and patient perspectives of a smoke-free health services policy in South Australia: A state-wide implementation

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ABSTRACT

Few jurisdictions have implemented and evaluated a complete smoking ban across all health sites in their jurisdiction, with no designated smoking areas. This article examines staff and patient perceptions and experiences of a mandated smoke-free policy implemented across all government health facilities in South Australia, including mental health sites. An online survey of health staff was conducted prior to policy implementation (n = 3098), 3 months post-implementation (n = 2673) and 15 months post-implementation (n = 2890). Consumer experiences of the policy were assessed via a telephone survey (n = 1722; smokers n = 254). Staff support for the policy was high across all time points. Two thirds of staff reported having witnessed some policy non-compliance, and self-reported exposure to second-hand smoke was comparable pre-implementation to 15 months post-implementation. Under the policy, 56.3% of smoking patients abstained completely whilst hospitalised and 37.6% cut down the amount that they smoked. Furthermore, 34.7% reported having been offered cessation support during hospitalisation. Whilst the smoke-free policy was viewed positively and had benefits for staff and patients, reports of witnessing some non-compliance were prevalent. While the extent of non-compliance is not known, and the measure used was sensitive, complementary strategies may be needed to reduce exposure to second-hand smoke, particularly at entrances. Health-care staff should be further encouraged to offer support to nicotine-dependent patients to foster compliance and promote abstinence during hospitalisation.

1. Introduction

The evidence regarding harm to health resulting from exposure to second-hand smoke [1,2] is a compelling reason for all health-care buildings and grounds to be smoke-free. The World Health Organization states that there is indisputable evidence that implementing 100% smoke-free environments is the only effective way to protect the population from the harmful effects of exposure to second-hand smoke [3]. Furthermore, implementing a smoke-free policy in a health setting can provide an opportunity for existing smokers to make a quit attempt in a supportive environment [4].

Worldwide, there are many instances of local health services implementing some degree of smoke-free policy on site including in the United States of America, Canada and Australia [5–8], and the results of these policies have generally been positive. Evaluation studies have demonstrated that implementing a smoke-free policy is associated with a reduction in staff smoking prevalence [9,10] and an increase in the provision of nicotine replacement therapy (NRT) to nicotine-dependant patients [6]. Using smoke-free healthcare facilities as a site for targeted smoking cessation interventions has also resulted in positive outcomes, with Rigotti et al. [11] demonstrating that smoking abstinence in hospital was a strong predictor of continued abstinence following discharge. However, other evaluation studies have identified barriers to successful smoke-free policy implementation, including a lack of policy support from staff [12,13], poor provision of cessation support to inpatients [14,15], and reluctance to respond to non-compliance and enforcement issues [7,16,17]. Furthermore, while some studies have reported a reduction in self-reported second-hand smoke exposure [10] or a reduction in the observed number of people smoking on campus [8], other studies have noted that second-hand

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smoke exposure at entrances remains problematic [15,16] and that non-compliance is common [7,16].

While a range of outcomes associated with smoke-free policies in individual settings or a small number of settings have been documented, there are few jurisdictions that have implemented and evaluated a complete smoking ban (with no designated smoking areas) across all health sites and facilities in their jurisdiction. One of the main barriers to taking a multi-facility approach in healthcare settings is that there are different challenges to implementation and different perceptions of smoking bans depending on the setting [13] and role of staff [18]. It is possible though that in addition to conveying strong leadership, an overarching policy across a large number of sites also encourages those responsible for implementation to find solutions that fit within the remit of the policy rather than adopting a less comprehensive smoke-free policy to suit their workplace. Thus, an important research question is: can a single mandated smoke-free policy across diverse health settings overcome resistance to implementing complete smoking bans in healthcare settings?

The aim of the present research is to examine staff and patient perceptions and experiences of a mandatory smoke-free policy implemented by the South Australian Government on 31 May 2010. The South Australian Government (via SA Health) is responsible for administering public hospitals, metropolitan and regional health service delivery, pathology services, drug and alcohol services, and emergency/ambulance services. To comply with the policy, all SA Health hospitals, health services and administrative units were required to implement three components: support for consumers who smoke, support for staff who smoke and smoke-free environments. All staff were to be offered training about the policy and any procedures associated with addressing non-compliance, and staff were to be trained in assisting inpatients with nicotine-withdrawal management where relevant to their role (particularly the approximately 41% of SA Health staff that are estimated to spend at least some of their time in a patient-facing role within a public hospital [19,20]). The policy states that staff are responsible for informing patients and visitors of the policy (where appropriate) and reiterating the policy in the event of breaches, and security staff/authorised officers are able to issue fines for breaches. The policy banned smoking in all areas of all SA Health sites, and South Australia was the second jurisdiction in Australia to implement such a policy (behind Western Australia). Mental health services and country aged care facilities were allowed a greater transition period and were given a six-month temporary exemption from fully implementing the smoke-free environments component of the policy. The present research examines staff perceptions and experiences of the mandatory state-wide smoke-free health services policy over three time points: pre-implementation, 3 months post-implementation and 15 months post-implementation, as well as patient perceptions and experiences within one year of policy implementation. It is intended that the results of this research will help guide policy development internationally where the aim is to implement a single smoke-free policy across diverse health settings.

2. Materials and methods

Study 1: Staff perceptions and experiences of policy at pre-implementation, 3 months and 15 months post implementation.

2.1. Procedure

All staff members employed at SA Health sites (N = 36,220) were invited to participate in a self-administered online survey sent via email at three time points: pre-implementation (1 week prior to policy implementation, May 2010), 3 months post-implementation (September 2010) and 15 months post-implementation (September 2011). Hard copies of each survey were also made available for those without on-site email access. Staff were given one week to complete the pre-implementation survey and three weeks to complete the two follow-up surveys with a reminder email sent one week prior to the deadline. The pre-implementation survey contained questions regarding support for, and expected effects of, the upcoming smoke-free policy, as well as questions on smoking behaviour, second-hand smoke exposure and demographic characteristics. The two post-implementation surveys contained questions regarding support for, and experiences of, implementing the smoke-free policy, as well as questions on smoking behaviour, second-hand smoke exposure, and witnessing non-compliance. Survey response rates at each time point are reported in Table 1. The study was funded by the South Australian Government. Ethics approval was obtained from the SA Health Human Research Ethics Committee (approval number 363/04/2013).

2.2. Analyses

Descriptive results are provided for each time-point as well as averages across all time-points where appropriate. Chi-square tests were used to compare differences across time-points and differences between groups with a p-value of less than 0.05 and adjusted standardised residuals of >2.0 determining statistical significance. Open-ended questions were analysed for common responses and manually coded into themes (where applicable); frequencies of the most common responses and themes are reported.

Study 2: Patient perspective and experiences of the policy

2.3. Procedure

Between November 2010 and May 2011, a random sample of recently discharged inpatients (N = 2307) from SA Health administered public hospitals were drawn from existing metropolitan and regional datasets (i.e. Open Architect Clinical Information System (OACIS) and Country Data Mart) and invited to participate in the South Australian Public Hospital Patient Experience Survey. The South Australian Public Hospital Consumer Experience Survey runs periodically in South Australia to monitor service quality provided by public hospitals to inpatients. It is conducted by Population Research and Outcome Studies (PROS) on behalf of the Safety and Quality Unit, SA Health. During the study period the survey also contained questions regarding awareness of the smoke-free policy, smoking behaviour before, during and after the patient's hospital stay, and the use of cessation support strategies while in hospital.

Eligible participants were those who were aged 16 years and over, had spent at least one night in a public hospital and were discharged between July 2010 and March 2011, were not admitted for maternity, psychiatry, substance abuse, chemotherapy or renal dialysis, and were not deceased in hospital or after discharge. Potential participants were contacted via telephone within one week of receiving a letter that informed them of the purpose of the research. Computer Assisted Telephone Interviews were conducted with consenting participants. The South Australian Public Hospital Consumer Experience Survey received ethics approval from the SA Health Human Research Ethics Committee.

2.4. Analyses

Patient survey data were weighted by age and sex to reflect the structure of the public hospital inpatient population in SA. Data analyses were performed using SPSS Version 17.0 [21].

Descriptive results are provided overall and by demographic subgroups where applicable. Chi-square tests were used to com-

Table 1
Demographic characteristics of staff member participants at pre-implementation, 3 months post-implementation and 15 months post-implementation.

(n)	Pre-implementation % (3098)	3mth post-implementation % (2673)	15mth post-implementation % (2890)	χ^2
Response rate[a]	8.6	7.4	8.0	
Gender				
Male	**21.5**	**25.5**	22.9	
Female	**78.5**	**74.5**	77.1	13.3**
Age group				
18 to 35 years	**23.0**	21.7	**19.2**	
36 to 55 years	60.2	61.9	60.2	
56 years and over	16.9	**16.4**	**20.6**	27.4***
Occupation				
Administrative service officer	28.4	**30.1**	**26.2**	
Nurse	28.9	**24.2**	**30.7**	
Allied health professional	16.5	15.3	14.9	
Professional/Technical/Operational Services Officer	8.1	8.7	7.6	
Dental Officer/Medical Officer/Paramedic/Medical Scientist	6.8	**9.6**	**6.5**	
Senior management	**7.5**	6.4	6.1	
Other	**3.8**	5.7	**8.0**	101.3***
Workplace type				
Hospital care services[b]	45.7	**42.6**	**47.1**	
Community-based health service	**24.6**	**11.1**	**13.2**	
Department of Health	**6.0**	8.8	**9.9**	
Mental health services	**6.0**	6.4	**8.1**	
Emergency services	**2.6**	**11.2**	**3.2**	
Pathology	**4.7**	**6.9**	**4.9**	
Aboriginal health	**0.4**	0.6	**1.2**	
Other	**10.0**	12.5	12.3	497.3***
Contact with patients				
Has contact with patients	**73.3**	**57.7**	**62.2**	
Does not have contact with patients	**26.7**	**42.3**	**37.8**	165.4***
Smoking status[c]				
Current smoker	**13.6**	13.1	**11.1**	
Ex-smoker – recent	1.5	1.5	**2.1**	
Ex-smoker	26.7	26.7	27.6	
Never smoked	58.2	58.7	59.2	13.7*

Participants at pre-implementation were asked to name their workplace, and from these responses, 155 individual work sites were identified. From these responses, categories compromising the most common types of service providers were devised, and at 3 and 15 months post-implementation, participants were only asked to indicate from these categories which type of service their workplace primarily provides. *Note.* Statistically significant cells based on adjusted standardised residuals are shown in bold. Missing data <3% unless otherwise stated.

[a] Response rate = the number of respondents as a proportion of the total number of SA Health staff (N = 36,220).

[b] The proportion of respondents working in patient-facing roles within hospital care services was 35.8% at pre-implementation, 27.2% at 3 months post-implementation, and 32.7% at 15 months post-implementation.

[c] Current smoker = participants who indicated that they smoked daily, weekly or less than weekly. Ex-smoker – recent = pre-implementation and 3 months post-implementation participants who indicated that they quit smoking within the past three months, and 15 months post-implementation participants who indicated that they quit smoking within the past 12 months.

* $p < 0.05$.

** $p < 0.01$.

*** $p < 0.001$.

pare differences between groups with a *p*-value of less than 0.05 determined to be statistically significant.

3. Results

Study 1: Staff perspectives at pre-implementation, 3 months post-implementation and 15 months post-implementation.

3.1. Survey response and staff characteristics

A total of 8661 surveys were completed by SA Health staff members: 3098 were completed prior to the implementation of the smoke-free policy, 2673 were completed 3 months post-implementation and 2890 were completed 15 months post-implementation. Demographic and work characteristics of respondents are displayed in Table 1. There were statistically significant differences in the demographic characteristics of staff member participants across the three time-points, however, deviation from the average rate across all time-points was less than 5% for most characteristics. The gender composition was largely comparable to that of the SA Health workforce (i.e. the SA Health workforce in 2010 was 78.5% female) [20]; and all SA Health regions were represented in the sample. Nurses were slightly underrepresented based on the composition of the SA Health workforce and Allied Health professionals were slightly overrepresented [20].

3.2. Staff member agreement with smoke-free policy

Prior to implementation, more than three quarters (79.6%) of staff members agreed or strongly agreed with the smoke-free policy (see Table 2). There was a statistically significant increase in overall agreement with the policy at 15 months post-implementation, and this trend was observed within a range of demographic subgroups marked in Table 2.

There were also differences in the level of agreement within all staff demographic and work characteristics at 15 months post-implementation, with the exception of gender (Table 2).

Table 2
Staff member agreement[a] with SA Health smoke-free policy at pre-implementation, 3 months post-implementation and 15 months post-implementation by demographic characteristics.

	Pre-implementation		3mth post-implementation[c]		15mth post-implementation		Change over time	Demographic groups[d]
	n	%	n	χ^2	n	%	χ^2	χ^2
Overall (agree/strongly agree)	3098	79.6	2673	81.6	2890	**84.0**	19.8***	
Gender								ns
Male	657	78.2	673	78.2	652	82.8	ns	–
Female	2401	**80.2**	1962	82.8	2192	**84.5**	15.0**	–
Age group								18.5***
18 to 35 years	702	**81.9**	573	86.2	547	**89.9**	16.4***	↑
36 to 55 years	1840	**78.0**	1632	79.3	1711	**82.2**	10.1**	↓
56 years and over	516	83.1	431	84.5	585	84.3	ns	–
Occupation								58.9***
Administrative service officer	863	**80.6**	791	83.6	744	**87.8**	15.0**	↑
Nurse	878	74.1	638	78.5	870	76.8	ns	↓
Allied health professional	501	82.8	402	82.6	422	**88.4**	7.1*	↑
Professional/Technical/Operational Services Officer	245	84.1	230	80.0	215	87.0	ns	–
Dental Officer/Medical Officer/Paramedic/Medical Scientist	208	88.5	252	85.3	185	87.6	ns	–
Senior management	228	86.4	169	85.8	174	91.4	ns	↑
Other	117	**68.4**	149	74.5	226	**82.3**	8.9*	–
Workplace type								80.2***
Hospital care services	1415	**79.6**	1118	81.3	1334	**84.4**	10.7**	–
Community-based health service	761	**80.2**	290	**87.6**	374	**87.4**	13.9**	–
Department of Health	186	88.2	232	88.4	281	90.7	ns	↑
Mental health services	187	69.5	167	70.1	230	64.8	ns	↓
Emergency services	82	81.7	293	82.3	92	81.5	ns	–
Pathology	145	86.2	180	79.4	138	87.0	ns	–
Aboriginal health	13	61.5	15	66.7	33	87.9	[b]	-
Other	309	**76.1**	329	80.9	349	**86.5**	12.0**	–
Contact with patients								30.7***
Had contact with patients	2270	**77.1**	1542	79.8	1797	**81.1**	10.2**	↓
Did not have contact with patients	828	86.5	1131	**84.2**	1093	**88.9**	10.8**	↑
Smoking status								505.8***
Current smoker	422	36.5	351	44.4	321	41.4	ns	↓
Ex-smoker – recent	48	62.5	39	**51.3**	62	**75.8**	6.5*	–
Ex-smoker	826	82.4	715	82.9	797	**86.7**	6.4*	↑
Never smoked	1802	88.8	1568	90.1	1710	91.1	ns	↑
Daily cigarette consumption								5.6*
Less than 10 cigarettes per day	172	51.2	141	53.2	145	49.0	ns	↑
10 or more cigarettes per day	242	**26.9**	210	**38.6**	176	35.2	7.5*	↓

Note. Statistically significant cells (change over time) based on adjusted standardised residuals are shown in bold. Missing data <3% unless otherwise stated.

[a] Agreement was assessed via the question: "The SA Health Smoke-free Policy came into effect on 31 May 2010. This Policy states that smoking is prohibited at all South Australian public health facilities, including all buildings, structures, outdoor areas and government vehicles. To what extent do you agree or disagree with this Policy?".

[b] Too few for reliable result; ↑denotes significantly higher than group marked with↓ and vice versa.

[c] This includes 224 respondents that worked at inpatient mental health or country aged care facilities that were still under the temporary 6 month policy exemption for inpatient mental health facilities at 3 months post-implementation.

[d] Differences in agreement between demographic groups calculated at 15 months post-implementation only.

* $p < 0.05$.

** $p < 0.01$.

*** $p < 0.001$, ns = not significant.

A small proportion of respondents at each time point (16.2%, 14.6% and 13.1% across the three time points) disagreed with the smoke-free policy. The most commonly cited reasons for disagreeing with the smoke-free policy at 15 months post-implementation (coded from open responses) were a preference for designated smoking areas (38.9%), followed by perceived infringements on 'smoker rights/freedoms' (28.7%), concerns regarding implementing the policy with mental health clients (20.5%) and visibility of smokers and cigarette butts near healthcare facilities (20.5%).

3.3. Passive smoke exposure and reported non-compliance with smoke-free policy

One-third of respondents indicated that they were currently exposed to passive smoke at work at pre-implementation and 15 months post-implementation (see Table 3). The locations where respondents most commonly reported cigarette smoke exposure across all time points were at entrances to buildings/grounds, within the grounds and from general non-compliance throughout grounds, and from interactions with patients/clients who smoke. There was a significant increase in the proportion of exposed respondents that reported being exposed within/throughout the grounds and a significant decrease in the proportion that reported being exposed from patients/clients who smoke and from smoke blowing through doors, windows etc.

Participants were asked: *"Have you seen people smoking on your worksite/premises in the last 3/12 months?"* ('3 months' at 3 months post implementation and '12 months' at 15 months post-implementation). Witnessing non-compliance with the smoke-free policy was common, especially noncompliance from patients and visitors. The rate of witnessing non-compliance increased from 3 months post-implementation (59.0%) to 15 months post-implementation (66.9%), albeit with a different reporting time frame. Notably, the majority (75.2%) of those that had witnessed any non-compliance at 15 months-post implementation survey indicated that they thought the amount of smoking on their work premises had reduced since the policy implementation. Participants were also asked if they had a role in enforcing compliance of the no-smoking on site component of the smoke-free policy. Approximately 25% of respondents indicated that they had a role in enforcing compliance, and about 11% did not know if they had a role in enforcing compliance.

3.4. Staff smoking behaviour and use of cessation support

The majority of smokers indicated that the smoke-free policy had no impact on their smoking, although 20.3% reported that the policy motivated them to cut down their smoking, and 6.4% were motivated to try to quit smoking by the policy (3 months and 15 months post-implementation combined). Approximately 1 in 5 (21.6%) recent ex-smokers (n = 148) across all time points combined indicated that the smoke-free policy was a factor in their decision to quit. The proportion of smokers indicating that they smoke during work hours decreased significantly at 15 months post-implementation compared to pre-implementation (71.0% vs. 57.7%, $\chi^2 = 14.1$ $p < 0.001$). A small proportion of staff smokers (15.5%) had accessed cessation support through their workplace since the implementation of the policy. The most common type of strategy that was accessed amongst those who accessed any support (n = 104) was cost-price nicotine replacement therapy (40.3%), followed by pharmaceutical medication (e.g. Champix (varenicline), Zyban (bupropion); 26.9%) and written materials (24.8%).

Study 2: Patient perspectives

Interviews were completed with 1722 former in-patients (smokers n = 254) attending public hospitals in South Australia (74.6% response rate). The sample was 50.1% female and had a mean age of 61.6 years (SD = 19.3) (minimum age = 16, maximum age = 99); 69.9% were Australian-born, and 94.4% spoke English at home as their main language. The majority of patients were aware of the smoke-free policy prior to admission (71.1%), with smokers (81.4%) having a significantly higher awareness rate compared to non-smokers (68.4%, $\chi^2 = 15.3$ $p < 0.001$). Most smokers indicated that they either abstained from smoking completely or cut down while hospitalised (Table 4). Older patients were more likely to quit than cut down smoking while in hospital whereas the reverse was true for younger patients. Nearly three-quarters (72.7%) of smokers who cut down or quit while in hospital reported that it was not difficult to refrain from smoking. Just over one third of smokers were offered some form of cessation support while in hospital, and a higher proportion of males were offered support compared to females. Further analyses revealed a lower proportion of smokers aged 16–34 years and 75 years and over were offered cessation support (20.0% and 12.0%, respectively) compared to those aged 55–74 years (44.8%, $\chi^2 = 15.9$ $p < 0.01$). Nicotine replacement therapy (26.5%) was the most common support strategy offered to patients, followed by written information (8.1%).

Most patients who were offered support were satisfied with what was offered whereas only one-third of smokers who were not offered support were satisfied. Since leaving hospital, close to half of all smokers indicated that they had changed their smoking habits by either quitting (9.1%) or cutting down (38.9%). The proportion of smokers who had quit since leaving hospital was higher among those who were offered cessation support and those who quit smoking while in hospital. There were no significant differences between lighter smokers (<10 cigarettes per day) and heavier smokers (10 or more cigarettes per day) for smoking behaviour or cessation support access and satisfaction.

4. Discussion

Smoke-free policies in health settings represent an important opportunity to promote smoking abstinence and cessation, as well as to protect staff, patients and visitors from the harmful effects of second-hand smoke. The results of the present research indicate that a single mandated premises-wide smoke-free policy can be implemented across a diverse, large number health settings with benefit to staff and patients, but that non-compliance can be prevalent, at least in the early stages of policy implementation.

The high level of staff support for the smoke-free policy across regions and facility types should encourage policy-makers considering mandating a multi-site smoke-free policy. Although some staff did not support the policy (particularly smokers), the insights gained from these staff will allow for common grievances to be pre-emptively addressed during the initial policy implementation phase in other jurisdictions. For example, based on the findings of this research, policy-makers should anticipate that some staff will perceive a smoke-free policy as a violation of 'the right to smoke'. Therefore, it should be emphasised to staff that a smoke-free policy is not a blanket ban on smoking, but rather, is designed to protect others from the harmful effects of passive smoke on site and to provide an environment conducive to patient recovery in acute healthcare settings. It should also be expected that some staff will express a preference for designated on-site smoking areas, and therefore the policy should emphasise the harmful levels of second-hand smoke exposure that can occur in and around designated smoking areas, as well as the importance of de-normalising smoking in health facilities. Additional consultation time may also need to be allocated for the specific facility-types and staff occupations that were identified as having lower levels of support for the policy e.g. nurses, staff working in mental health facilities. It should also be noted that Australia already had relatively strong smoke-free laws

Table 3
Environmental smoke at pre-implementation, 3 months post-implementation and 15 months post-implementation by demographic characteristics.

	Pre-implementation		3mth post-implementation[a]		15mth post-implementation		
	n	%	n	%	n	%	χ^2
Currently exposed to passive smoke at work	3098	**32.9**	2449	**26.7**	2890	**32.3**	28.9***
Exposed to passive smoke by workplace type							
Hospital care services	1415	**39.6**	1023	**30.3**	1334	**40.9**	31.8***
Community-based health service	761	23.1	280	17.5	374	19.3	ns
Department of Health	186	18.8	227	16.7	281	21.0	ns
Mental health services	187	44.9	94	**23.4**	230	42.6	13.3**
Emergency services	82	42.7	293	39.6	92	35.9	ns
Pathology	145	28.3	177	28.8	138	31.9	ns
Aboriginal health	13	69.2	15	13.3	33	12.1	[b]
Other	309	24.9	295	19.3	349	21.2	ns
Where exposed (coded from open response)							
Entering/exiting building/grounds	1019	39.2	653	39.4	934	39.4	ns
Within/throughout grounds (non-specific), boundary of grounds	1019	**14.1**	653	**12.9**	934	**20.3**	20.5***
From clients/patients that smoke	1019	**12.0**	653	11.8	934	**7.5**	12.6**
Designated smoking area	1019	9.8	–	–	–	–	–
Smoke blows through doors, windows etc.	1019	**11.4**	653	**6.1**	934	**5.9**	24.3***
Car parks	1019	4.8	653	5.5	934	6.3	ns
Witnessed people smoking onsite where smoking is not permitted (i.e. non-compliance)[c]	–	–	2449	**59.0**	2890	**66.9**	36.1***
Seen staff[d]	–	–	1444	**55.6**	1934	**59.6**	5.4*
Seen patients[d]	–	–	1444	**76.9**	1934	**84.8**	34.3***
Seen visitors[d]	–	–	1444	72.4	1934	75.4	ns
Seen others[d]	–	–	1444	9.7	1934	9.0	ns
Where was non-compliance witnessed[c] (coded from open response)							
Within/throughout grounds, on/within boundary, general non-specific onsite non-compliance[d]	–	–	1444	36.8	1934	**30.1**	17.0***
Entrance/exit points to buildings/grounds[d]			1444	30.5	1934	33.8	ns
Near/within buildings (not entrance points)[d]			1444	23.7	1934	**28.3**	8.6**
Car parks[d]			1444	21.7	1934	21.3	ns
Has a role in enforcing compliance with smoke-free policy[c]			2449		2890		30.9***
Yes	–	–		**21.8**		**26.4**	
No	–	–		**69.0**		**61.7**	
Don't know	–	–		**9.2**		**11.9**	

Note. Statistically significant cells based on adjusted standardised residuals are shown in bold. Missing data <3% unless otherwise stated.

* $p < 0.05$.

** $p < 0.01$.

*** $p < 0.001$.

[a] Question not asked if respondent worked for a mental health inpatient facility or a country aged care service that had a 6 month exemption from the policy at 3 months post-implementation (n = 224), does include respondents working in non-exempt mental health services.

[b] Too few respondents for reliable result.

[c] Question was not asked at pre-implementation.

[d] Of those that had witnessed non-compliance; multiple responses allowed.

for public areas at the time of the policy implementation in South Australia, and jurisdictions without strong smoke-free restrictions already in place in other public areas may experience more resistance to introducing totally smoke-free health services.

Policy-makers should be encouraged by the reduction in the proportion of staff who smoke during work hours since policy implementation. It is possible that having to leave work premises to smoke, and only during their own time (non-paid breaks) is enough of a deterrent to smoking during work hours for some staff, and this has important implications for staff health and productivity. Indeed, some staff who had recently quit smoking reported that the policy was a factor in their decision to quit. Uptake of cessation support by staff was low though, therefore it is important that support for smoking cessation is adequately promoted to staff where available to further assist staff to remain abstinent during work hours and to aid in cessation attempts if they wish to access support. It should be noted though that staff may be more likely to make changes to their smoking behaviour in response to smoke-free policy in contexts like Australia that already heavily promote smoking cessation at a population level. It is possible that health staff in jurisdictions without strong tobacco control practices already in place may be less likely to change their smoking behaviour in response to new smoke-free policy.

The majority of inpatients who were smokers reported that they had cut down or quit whilst hospitalised under the smoke-free policy. While changes to smoking behaviour during hospitalisation are likely attributable to multiple factors besides the smoke-free policy, any policy which emphasises the hospital environment as an opportunity for smoking cessation should be encouraged. This is particularly important given that quitting whilst hospitalised was associated with remaining quit six months after hospitalisation, which was similar to the findings of Rigotti et al. [11]. Patients that were offered cessation support while hospitalised were also more likely to quit smoking upon leaving hospital, which should encourage health services to increase the rate at which cessation support is offered and to include provision of cessation support within smoke-free policy (where jurisdictions have the resources to do so). The overall rate of being offered cessation support while hospitalised was low in the study period of the patient survey though, especially amongst females and smokers aged 75 years or over and smokers aged 16–34 years. It is possible that there are pre-conceptions among staff as to what kinds of patients will need or accept support. Whilst the smoke-free policy stated that cessation support

Table 4
Patient smoking behaviour during and post-hospitalisation, provision of cessation support and satisfaction with support offered, by age and gender.

Smokers[a]	All	Gender			Age in years					Cessation support			Smoking while in hospital			
		Male	Female	χ^2	16–34	35–54	55–74	75+	χ^2	Offered	Not offered	χ^2	Same	Cut down	Quit	χ^2
	%	%	%		%	%	%	%		%	%		%	%	%	
(n)	(254)	(128)	(126)		(55)	(107)	(67)	(25)		(88)	(166)		(16)	(98)	(140)	
Smoking while in hospital																
Same amount	6.2	6.2	6.3		5.5	4.5	2.9	20.0		25	75					
Cut down	38.5	38.8	38.1		**58.2**	42.7	**24.6**	**4.0**		34.7	65.3					
Quit	55.3	55.0	55.6	ns	**36.4**	52.7	**72.5**	**76.0**	36.6***	35.7	64.3	ns				
Cessation support																
Was offered	34.7	**41.7**	**27.8**		**20.0**	41.1	**44.8**	**12.0**					46.7	53.2	53.2	
Was not offered	65.3	**58.3**	**72.2**	5.4*	**80.0**	58.9	**55.2**	**88.0**	15.9**				13.3	23.4	15.8	
Satisfaction with support offered													40	23.4	30.9	ns
A little or very satisfied	52.5	**61.1**	**44.0**		90.9	88.6	82.8	100.0		**88.5**	**33.3**		0.0	**2.0**	**15.0**	
Not at all or very dissatisfied	18.9	14.3	23.2		9.1	9.1	13.8	0.0		**10.3**	**23.5**		18.8	45.9	36.4	
Don't know	28.6	24.6	32.8	7.6*	0.0	2.3	3.4	0.0	ns	**1.1**	**43.2**	73.0***	**81.3**	52.0	48.6	18.3**
Since leaving hospital																
Quit smoking	9.1	11.0	7.1		1.8	14.2	7.5	7.7		**17.0**	**4.8**					
Cut down	38.9	41.7	35.7		36.4	36.8	41.8	46.2		42.0	37.3					
No reduction	52.0	47.2	57.1	ns	61.8	49.1	50.7	46.2	ns	**40.9**	**57.8**	13.0**				

[a] Classified as daily or weekly smoker; *Note*. Statistically significant cells based on adjusted standardised residuals are shown in bold.
* $p < 0.05$.
** $p < 0.01$.
*** $p < 0.001$ ns = not significant.

be offered to all nicotine-dependent patients, it is possible that policies and/or training during the policy roll-out period may need to specifically address that any smoker can be nicotine-dependent regardless of age or gender, and that all smokers can benefit from abstinence whilst hospitalised.

Consistent with Shopik and colleagues' [15] findings from two Canadian hospitals with total smoking bans, the occurrence of second-hand smoke exposure on health facility premises was ongoing post-policy implementation, particularly at entrances to buildings/grounds. Whilst clustering of smokers at entrances may have technically occurred outside the facility premises, if unavoidable passive smoke exposure occurs for other users of a facility then the objectives of the policy are still violated. Policy-makers should therefore anticipate that smokers will likely congregate at entrances and include measures within the policy to counter this. Possible strategies could include closer collaboration with local councils prior to policy implementation to extend smoking restrictions beyond the facility boundaries and increased signage at entry points. Future research comparing passive smoke exposure at facilities with and without bans extending past entrances would be beneficial to determine whether such strategies would reduce passive smoke exposure.

Closely related to the incidence of passive smoke exposure is the incidence of non-compliance, which staff were observing or recalling at 15 months post-implementation. However, participants were asked if they had seen any non-compliance over a broad period of time (12 months), and the majority of staff that had seen any non-compliance indicated that they felt the amount of smoking onsite had indeed reduced since policy implementation. It is possible that increasing the prevalence of offering support to nicotine-dependant patients could decrease non-compliance on site, as was suggested by Shopik et al. [15]. Another method of increasing compliance is to increase enforcement of the policy. Poder et al. [8] suggested security staff be primarily responsible for enforcing smoke-free policies rather than an 'all of staff' approach, and this may reduce the ambiguity of responsibility of enforcement. However, this may also result in an overwhelming increase in workload for security staff without additional staff or extra incentives to enforce the policy. Hence, it is important that a high rate of compliance is first achieved through the provision of cessation support, signage, and education so that minimal intervention from security staff is required.

There are limitations that must be kept in mind when interpreting the results of this research. Firstly, the staff and patients who chose to respond to the surveys may have been more likely to hold particular attitudes or have had particular experiences regarding the policy, and the relatively low response rate to the staff surveys may have limited the generalisability of the views expressed by staff. It is possible that staff and patients with strong positive or negative attitudes and experiences regarding the policy may have been more likely to take advantage of the opportunity to express their views. Likewise, staff with a 'defeatist' attitude towards the smoke-free policy may also have been less likely to see value in completing the surveys i.e. if they did not believe expressing their negative views would result in any real change. Another limitation of the staff survey was that an objective measure of policy non-compliance and passive smoke exposure would have provided a more precise measure of compliance over time rather than staff self-report of witnessed non-compliance. A limitation of the patient survey was that the survey was a single cross-sectional design rather than a pre-post design, and hence was unable to gauge the effect of the policy per se, but rather was used to assess conformity with the component of the policy that deems cessation support be offered to all nicotine-dependent inpatients.

5. Conclusions

In conclusion, the results of the present research have demonstrated that a mandated smoke-free policy can be implemented across multiple health settings with high support from staff and patients. The benefit of this approach is that it is an efficient way of implementing a policy and requires each setting to adopt a best practice approach, rather than modifying policy to suit their own needs.

Policy implementation may be further improved by pre-emptively addressing common reasons for opposing smoke-free policies. However, the full potential of a smoke-free health services policy, particularly with regard to exposure to second-hand smoke, cannot be fully realised until barriers to effective implementation are overcome, namely, infrequent provision of cessation support to nicotine-dependant patients, frequent non-compliance and clustering of smokers at facility entrances. Therefore, the development and evaluation of strategies to address these barriers should be a priority for future research in the area of smoke-free policy.

Conflict of interest

None to declare.

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