

## Special Article - Tobacco and Smoking Cessation

# Smoking Ban Implementation in Psychiatric Inpatient Hospitals: Update and Opportunity for Performance Improvement

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Falls Church, USA**Received:** October 15, 2015; **Accepted:** November 20,  
2015; **Published:** November 23, 2015**Abstract**

**Objectives:** To determine the incidence and prevalence of smoking bans in psychiatric inpatient hospitals. To evaluate the differences between hospitals that prohibit and those that allow smoking on the identification of smoking risks, availability of educational resources, treatments offered, and documentation of the patients' smoking status in the continuing care plan. To identify opportunities for performance improvement for the psychiatric care provided to patients.

**Methods:** A survey on smoking policies and practices was completed by 165 hospital directors and quality assurance managers. Cross-tabulation and frequency determined the incidence and prevalence of smoking bans. Chi-square analysis tested for differences between hospitals that prohibit and hospitals that allow smoking and the characteristics under study.

**Results:** The incidence and prevalence rates of smoking bans were 70% and 79%, respectively. Significant differences between hospitals prohibiting and allowing smoking were found in the identification of smoking risks during formal screenings.

**Conclusion:** The incidence and prevalence rates of smoking bans continue at an increased rate, as evidenced by more psychiatric hospitals enacting smoking bans and removing barriers to policy implementation. Psychiatric hospitals that have not adopted smoking bans may not be aware of their readiness to enact a formal tobacco-free policy, given their similarity to hospitals that prohibit smoking. However, hospitals included the patients' smoking status in the continuing care plan at a very similar low rate. Hospitals could maximize the reporting of the Hospital Based Inpatient Psychiatric Services (HBIPS) performance measure including patients' smoking status at discharge and treatments into the next level of care recommendations to heighten awareness of the risks for smoking and promote continuation of tobacco cessation treatments.

**Keywords:** Smoking cessation; Smoking ban implementation; Smoking ban incidence; Smoking ban prevalence; Psychiatric inpatient hospitals; Performance improvement

**Introduction**

Compared to the general hospitals in the United States, psychiatric inpatient hospitals have been slower to implement tobacco control standards [1]. It is estimated that 36% of adults with mental illness use tobacco products compared to 18% of adults in the general population, and 31% of all cigarettes are smoked by adults with mental illness [2], a significant contributor to early mortality and chronic disease [3]. Motivators for tobacco control include requirements from accrediting entities [4], health concerns for patients and hospital staff [5,6], and effects of secondhand smoke [7]; while challenges include the assumed therapeutic effects of smoking on patients with mental illness [8,9], resistance from patients and hospital staff, and lack of training and resources [10]. Research has demonstrated that it is possible to ban smoking in psychiatric inpatient hospitals [11,12]. Reports from 2006 and 2008 showed a continuing trend toward increased numbers of psychiatric inpatient hospitals adopting

tobacco-free policies (from 41% to 49%, respectively). These reports, however, also indicated that a group of hospitals do not intend to adopt such policy [13,14] in spite of the adverse effects of smoking [15], the fact that the consequences of smoking are more challenging for individuals with psychiatric illness [16], and that individuals with mental illness have substantial quit rates [17].

A study comparing data from 2008 and 2011, found a significant movement in adopting smoking bans in psychiatric inpatient hospitals and examined the penetration of the critical components of smoking cessation care (such as assessment of smoking at admission, provision of smoking cessation treatments, availability of smoking cessation resources, and follow-up after discharge) [18]. However, the study did not compare the penetration of the critical components of the smoking cessation care by hospital type (prohibiting versus allowing smoking). This comparison is critical as hospitals that still permit smoking could compare their own delivery of the critical components

of smoking cessation care, with hospitals prohibiting smoking, and could incite a motivation for a smoking ban implementation. Moreover, continued monitoring of the smoke-free policy status in psychiatric inpatient hospitals is necessary to evaluate changes that are driven by states, local entities, or hospitals themselves.

In 2011, 165 psychiatric inpatient hospitals completed a survey on smoking policies and practices. This research determined the incidence and prevalence rates of smoking bans in psychiatric inpatient hospitals, and evaluated the differences between hospitals that prohibit and allow smoking on the critical components of smoking cessation care, particularly the promotion and education about the risks of smoking, the availability of educational resources, the smoking cessation treatments offered, and the frequency with which psychiatric inpatient hospitals included the patients' smoking status in the patient's continuing care plan at discharge. The study also offers implications for performance measures addressing this significant health issue and for improving the quality of psychiatric inpatient care.

## Methods

### Instrument

The *Smoking Policies and Practices in State Psychiatric Hospitals Survey* was developed in 2006 by a group of medical directors, quality improvement managers, and researchers based on an interest from state mental health agencies and state medical directors to identify the status of their state psychiatric inpatient hospitals in the general movement toward a non-smoking environment [19]. The instrument was pilot tested by a group of psychiatric hospitals and a decision was made to create separate versions of the instrument: one for hospitals allowing smoking and one for hospitals prohibiting smoking. In 2008, the two survey versions were merged back into one instrument and questions related to current smoking policy, smoking cessation treatment options, aftercare plan, and referrals for smoking education were added. In 2011, the survey went through additional scrutiny and questions with little to no variation, high missing data, and unclearly structured were rephrased or deleted from the instrument. The updated instrument was pilot tested by seven psychiatric hospitals, recommendations were incorporated and a more refined instrument was developed. The major addition to the instrument was information related to the patient's smoking status on the aftercare plan. Therefore, the final version of the instrument contains 22 items that collect data on hospital's demographics, current smoking policy, smoking cessation practices, and outcomes and barriers of enacting a smoke-free policy.

An electronic version of the instrument was created using SNAP Surveys and distributed to a group of psychiatric hospitals directors and quality assurance managers. Four email reminders were sent to non-responders over a two-month period.

### Sample

State psychiatric inpatient hospitals were identified using and combining two data sources. A list of psychiatric inpatient hospitals from the National Association of State Mental Health Program Directors Research Institute, Inc. [NRI – a non-profit organization devoted to issues of the public mental health system [20]] database was reconciled with a list from the National Association of State Mental

Health Program Directors [NASMHPD - the only national association to represent state mental health commissioners/directors and their agencies [21]] member's directory. Two-hundred and six psychiatric inpatient hospital directors and quality assurance managers were identified through the sources and invited to participate in a survey on smoking policies and practices. Staff from psychiatric inpatient hospitals was excluded if the hospital was serving only children less than 12 years of age, if the hospital has closed or merged at the time of the study, or if the contact information for the hospital's director and/or quality assurance manager was not available. Data collection spanned from October to December 2011.

Psychiatric inpatient hospitals were categorized as "smoking prohibited" if smoking was banned on all hospital premises (defined as building, balconies, patios, courtyards, areas adjacent to exit doors, parking areas, and lawns), there were no designated smoking areas on the campus except for those not covered by the smoke-free policy, and the policy applied to patients, visitors, and staff members. Hospitals not meeting the non-smoking definition above and that allow smoking indoors or outdoors were classified as "smoking allowed." As hospitals could serve multiple populations, and for analysis purposes, they were categorized according to the age group served: youth (12-17 years), adult (18-64 years), geriatric (65 years and older), and forensic.

### Statistical analysis

Descriptive statistical analyses were calculated for the hospital's demographic characteristics by type of hospital: smoking prohibited and smoking allowed, and for the total hospital population. Cross-tabulation analysis determined the incidence (or conversion) rate of smoking bans. To calculate the conversion rate, the smoking status for a hospital in 2011 was linked with the smoking status for the hospital in 2008. Frequency analysis determined the prevalence of smoking bans in 2011. Chi-square analysis evaluated differences between psychiatric hospitals that prohibit and allow smoking on selected characteristics: promotion and education of patients about the risks of smoking, availability of educational resources that describe the risk of smoking, smoking cessation treatments offered while receiving psychiatric inpatient care, and inclusion of the patient's smoking status on the continuing care plan. All comparisons were based on  $p < 0.05$  (two-sided). Statistical analyses were conducted using SPSS version 22.0. Approval was received from the NRI Institutional Review Board.

## Results

Data from 165 distinctive psychiatric inpatient hospitals representing 44 states, territories and the District of Columbia were used for analysis for an 80% response rate. Seventy-four percent of participating psychiatric inpatient hospitals served adult populations and 47% served only one population type. The majority of hospitals serving adults provided acute (36%) or a combination of acute and long-term care services (30%). Table 1 summarizes the demographic characteristic by hospital's smoking status and for the total population. In 2011, 79% of hospitals have adopted a smoke-free policy.

The incidence (or conversion) rate was calculated based on the group of hospitals that allowed smoking in 2008 ( $n=53$ ) and that enacted a smoke-free policy by 2011 ( $n=37$ ) for a 70% rate. Thirty

**Table 1:** Demographic characteristics of psychiatric inpatient hospitals in 2011.

	Smoking Prohibited N=131 (79%)		Smoking Allowed N=34 (21%)		Total Hospitals N=165	
	N	%	N	%	N	%
<b>Type of population served*</b>						
Youth#	33	25	6	18	39	24
Adult	98	75	25	74	123	75
Geriatrics	32	24	7	21	39	24
Forensic	79	60	11	32	90	55
<b>Number of population served</b>						
1	57	44	20	59	77	47
2	42	32	9	26	51	31
3	24	18	4	12	28	17
4	8	6	1	3	9	5
<b>Percentage of patients smoking tobacco daily at admission</b>						
0% - 40%	52	40	10	29	62	38
41% - 80%	53	40	21	62	74	45
81% - 100%	3	2	1	3	4	2
Unknown	23	18	2	6	25	15
<b>Assessment of patients' smoking status at admission</b>						
Yes	127	97	34	100	161	98
Hospital size						
Number of beds	244 ± 268		206 ± 171		236 ± 251	

\*Hospitals could serve more than one type of population. # There was no hospital serving purely youth populations.

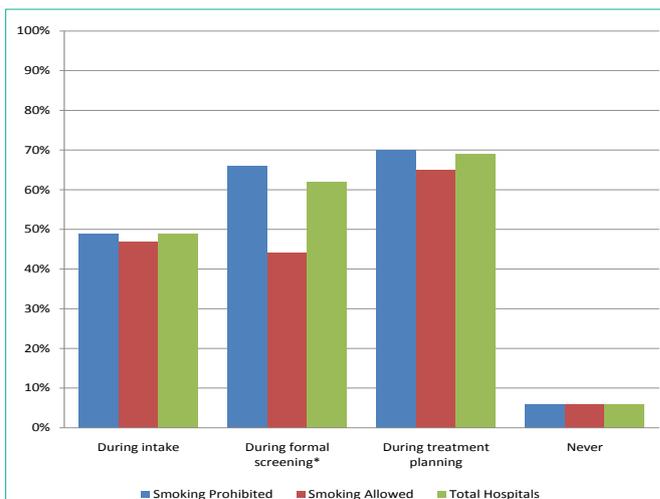
percent (16/53) of hospitals that allowed smoking in 2008 continued to allow smoking in 2011, and they control access to smoking by mainly having designated smoking areas (9%); by having privileges that clients use to access designated smoking areas (9%); by escorting their patients to smoking areas (10%); and by having established smoking times (10%).

Promotion and education of patients about the risks of smoking occurs at a higher frequency during treatment planning (69%, 114/165) but it was non-significant by hospital smoking status. Significantly more hospitals that prohibit smoking promote and educate patients on the risks of smoking during formal screenings than hospitals that allow smoking ( $X^2=5.684, df=1, p<.05$ ). Only 6% (10/165) of hospitals do not educate patients on the risk of smoking (Figure 1).

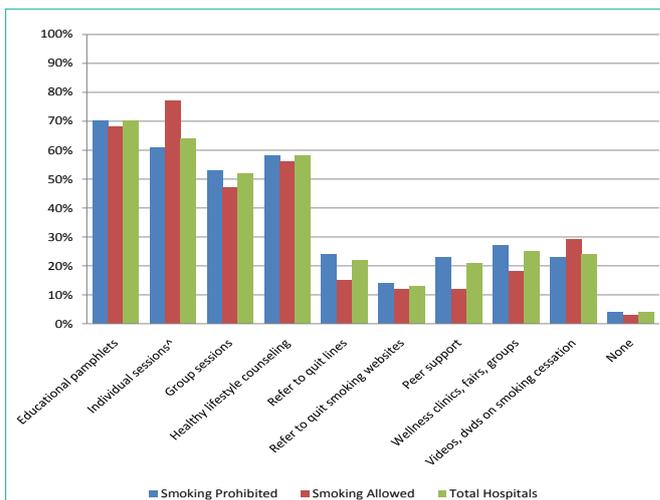
Educational pamphlets are the resources most frequently available in hospitals (70%, 115/165). Hospitals that allow smoking have higher proportion of educational resources that describe the risks of smoking available during individual sessions with clinical staff than hospitals that prohibit smoking ( $X^2= 2.788, df=1, p=.09$ ). Only 4% (6/165) of hospitals do not have educational resources available (Figure 2).

Overall, smoking counseling (76%) and the Nicotine Replacement Therapy-Patch (80%) were the most frequently available smoking cessation treatments (Figure 3). The patterns of treatment options did not differ by hospital smoking status.

While 98% of hospitals assess a patient's smoking status at intake, only 39% (64/161) of them included the patients' smoking status in



**Figure 1:** Promotion and education of patients about the risk of smoking. \*significant at  $p < .05$

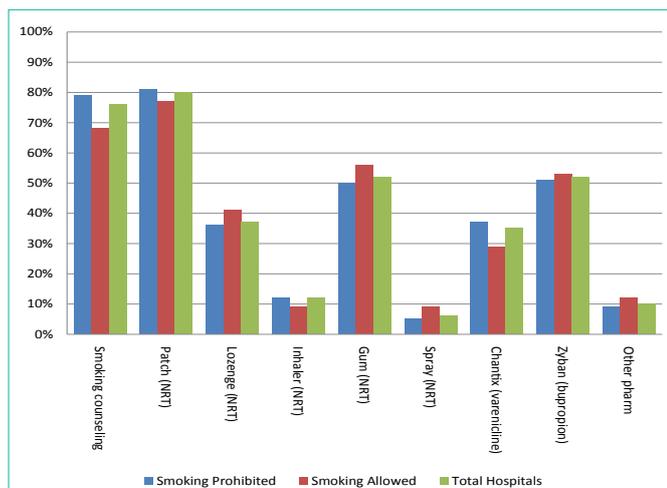


**Figure 2:** Availability of educational resources that describe the risks of smoking. ^marginal significance at  $p \leq .10$ .

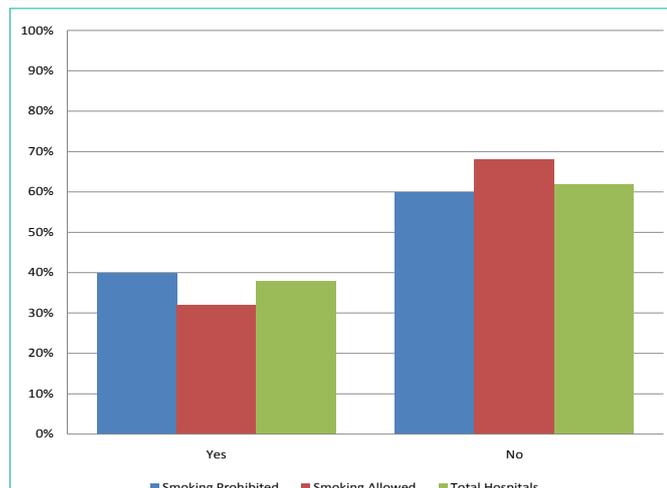
the after care plan given to the next level of care provider. This was a non-significant difference by hospital smoking status (Figure 4). Overall, 48% (79/165) of hospitals do not know if patients are referred for smoking cessation treatment upon discharge; 76% (60/79) were smoking prohibited and 24% (19/79) were smoking allowed.

## Discussion

The conversion rate of smoking bans in 2008 was 38% (25/66), and 70% (37/53) in 2011. The prevalence of smoking bans in 2008 was 49% (81/164), and in 2011 it was 79% (131/165). This upward shift in smoking bans represents a 61% decrease in smoking prevalence in psychiatric hospitals for a three-year period. Twenty-nine percent (10/34) of hospitals that allowed smoking in 2011 indicated that they could benefit from smoking cessation tools, ideas on organized wellness activities, samples of handouts, human resources to provide smoking cessation classes to patients and staff, ideas to engage patient leaders and utilize peer support, and strategies for getting buy in by union organizations in their efforts to implement a non-smoking



**Figure 3:** Smoking cessation treatment offered while receiving psychiatric inpatient care. not significant at  $p \geq .05$ .



**Figure 4:** Does aftercare plan given to the next level of care provider specify the patients' smoking status? not significant at  $p \geq .05$ .

policy. Had this group of hospitals, with the appropriate resources, implemented smoking bans, the conversion rate would have been 89% (47/53) and the prevalence rate 85% (141/165).

While 98% (161/165) of participating hospitals assess patient's smoking status at admission, less than 50% promote and educate on the risks of smoking. Assessment during the intake process provides an opportunity to gather information, from the patient, on the use of tobacco (including volume and type of smoking product) which could effect in a timely diagnosis of nicotine addiction and a prompt development of the smoking cessation treatment [22], therefore this time also provides an opportunity for process improvement for hospitals as patients could start being educated about the consequences of smoking which could translate into better health outcome for patients who smoke [18]. Hospitals that prohibit smoking significantly promote and educate at higher rates compared to hospitals that allow smoking but only during formal screening and assessments. Further exploration on the effectiveness of promoting and educating about smoking risks along the continuum of care and

the impact on smoking quitting rates are warranted particularly for program planning and implementation.

More hospitals that allow smoking describe the risk of smoking during individual sessions compared to hospitals that prohibit smoking although a marginal significance was found. Overall, active treatment continues to have a higher focus on educational pamphlets than individual, group, and life-style counseling. In 2008, educational pamphlets were used in 75% of hospitals, and counseling was at 62%. By 2011, there had been little change in the use of these services; while the proportion of hospitals that are now smoke-free increased from 49% to 79%. Regarding smoking cessation treatments offered, there were non-significant differences found. All psychiatric inpatient hospitals, that allow or prohibit smoking, continue to use a combination of smoking counseling and medication as smoking cessation treatments in accordance with the most current federal guidelines for effective smoking cessation treatment [16].

Although 21% of hospitals have not adopted a tobacco-free policy, no major differences were found between hospitals based on smoking policy and the characteristics under study. Surprisingly, hospitals that allow smoking were offering education about the risks of smoking, and had educational resources and smoking cessation treatments available at the same rates as hospitals that prohibit smoking. Even more, hospitals that allow smoking offered individual sessions about the risks of smoking at higher rates than hospitals that prohibit smoking.

Finally, regardless of smoking policy, hospitals included the patients' smoking status in the continuing care plan at a very similar low rate. Hospitals that prohibit smoking disclosed that since they are smoke-free environments referrals for smoking cessation treatment at discharge are not completed as the patients are considered non-smokers at the time of discharge. Although patients could benefit from a non-smoking environment while hospitalized, high smoking relapse rates reported in the literature suggest that hospitals should be more active in this regard [18]. Therefore support after discharge from inpatient care is important for longer term cessation [23].

In 2011, The Joint Commission required psychiatric inpatient hospitals to implement the Hospital Based Inpatient Psychiatric Services (HBIPS) core performance measures [24]. HBIPS 6 provides the percentage of patients discharged with a continuing care plan created that includes reason for hospitalization, discharge diagnosis, discharge medications, and next level of care recommendations. HBIPS 7 provides the percentage of patients for whom the continuing care plan was transmitted to the next level of care by the fifth day post-discharge. This focus on continuing care plans provides an opportunity to expand the breadth of information critical to patient health as patients move among providers. Patient smoking status at discharge and treatments could be incorporated into the next level of care recommendations to heighten awareness of the risks for smoking and promote continuation of tobacco cessation treatments. The impact on relapse rates should be explored for those hospitals that transmit patients' smoking status to the provider of the next level of care.

**Limitations**

The findings of this study were limited by the loss of participating

hospitals from 2008 to 2011. In 2011, the smoking status was not available for 35% of hospitals that had been surveyed in 2008. The response rate may be negatively affected by the closure and merger of hospitals in the past three years (from 2008 to 2011), and the removal of pediatric hospitals from the current survey. However, the ability to document these rates for psychiatric inpatient settings is important for public health policy formulation and implementation, and for regulatory authorities.

The smoke-free policies of general hospitals with psychiatric units and private free-standing psychiatric hospitals were not assessed. Caution is warranted when making generalizations. However, the study group provides valuable information on the conversion to smoke-free environments and the needs for professional development to provide more active treatment to individuals who smoke. Finally, data for this study is for 2011, however this is the latest and the only update currently available about the smoking status among psychiatric inpatient hospitals. According to the authors knowledge, no other update has been released therefore the pressing need for disclosing it.

## Conclusion

While the incidence and prevalence of smoking bans in psychiatric inpatient hospitals has markedly increased, these rates are lower compared to US general hospitals. However, psychiatric inpatient hospitals continued enacting smoking bans and addressing barriers to policy implementation. There is opportunity of sustaining/improving this increase when appropriate resources are provided to hospitals still permitting smoking. Hospitals that have not adopted smoking bans may not be aware of their readiness to formally enact a tobacco-free policy, given their similarity in assessments, resources, and treatments for patients that smoke. There has been little movement in active treatment through counseling and continuity of care. Continuity of care issues are not addressed adequately when the patient's smoking status is not included in the aftercare plan. Therefore, there is a missed opportunity where attention is focused on critical information exchange among providers with HBIPS 6 and 7. While performance on these measures has improved, hospitals could incorporate into their existing quality improvement efforts attention to smoking status and smoking relapse prevention.

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