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## Assessment of Compliance with Texas Legislation Banning Indoor UV Tanning by Minors

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Indoor tanning (IT) before age 35 years increases melanoma risk by 59%.<sup>1</sup> Indoor tanning before 18 years increases risk by 85%.<sup>2</sup> In 2013, 1.6 million US youth younger than 18 years reported IT.<sup>3</sup> Multiple states have passed legislation banning IT by minors, but compliance by IT facilities is largely unknown. We evaluated Texas IT facilities' compliance with the state's 2013 ban on IT by individuals younger than 18 years.

### Methods

Female employees, aged 17 to 19 years, of a mystery shopping firm posed as 17-year-old potential customers and called IT facilities to inquire about using tanning beds. In July 2015, 1681 facilities were identified from the Texas Department of State Health Services. Ineligible facilities were fitness centers (n = 349), campus housing and/or residential

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apartments (n = 198), retail outlets unsuitable for minors (n = 3), or not licensed (n = 302). Eligible facilities (n = 829) were contacted July through August 2015. Excluding facilities that no longer offered IT (n = 13), were unreachable (n = 173), or had missing call data (n = 8), 635 (77% of eligible) study facilities were identified: 445 (70%) free-standing establishments that provided IT exclusively and 133 (21%) beauty salons and/or spas and 57 (9%) retail businesses that housed an IT device.

Shoppers followed a script that mimicked conversation between a potential teenage customer and IT facility (Table 1). Calls were audiorecorded, transcribed, and deidentified by the firm prior to analysis. Two independent coders analyzed transcripts to determine compliance and facilities' responses to questions about tanning frequency and burn risk. Coding discrepancies were resolved through discussion. The University of Texas MD Anderson Cancer Center's institutional review board determined that this study was not human subjects research and exempted it from requiring approval.

## Results

Overall, 81% (n = 512 of 632; 95% CI, 78%-84%) of facilities reportedly complied with the ban on tanning by minors. Reported compliance was associated with facility type ( $\chi^2 = 21.74$ ,  $df = 2$ ;  $P < .001$ ) and was highest in free-standing facilities (n = 380 of 444; 86%; 95% CI, 83%-89%), followed by retail businesses (n = 43 of 57; 75%; 95% CI, 64%-86%) and salons and/or spas (n = 89 of 131; 68%; 95% CI, 60%-76%). Of noncompliant facilities (n = 120 [19%]), most responded that shoppers could tan with (n = 43 [36%]) or without (n = 10 [8%]) a parent's note, or with parental accompaniment (n = 42 [35%]). Overall, 492 (83%) reported that clients could tan daily (Table 2). Most responded directly (384 [68%]) or indirectly (139 [25%]) that a burn was possible.

## Discussion

Most Texas IT facilities complied with the ban on tanning by minors, underscoring the importance of legislation as a public health strategy for skin cancer prevention. Strategic goals of the Surgeon General's Call to Action to Prevent Skin Cancer (<http://www.surgeongeneral.gov/library/calls/prevent-skin-cancer/call-to-action-prevent-skin-cancer.pdf>) include reducing IT harms and promoting policies to advance prevention. An alarming proportion (83%) of facilities reported that clients could use tanning beds daily, in contrast to the US Food and Drug Administration's recommended schedule of no more than 3 sessions during the first week of IT.<sup>4</sup>

Study limitations include the possibility that telephone calls may produce different results than in-person visits and tanning associates' responses may not accurately reflect facilities' practices. Because data were deidentified, we were unable to characterize facilities' geographic location, limiting our ability to evaluate factors associated with compliance, an understudied area. Because fitness centers and campus and residential housing were excluded, reported compliance may have been overestimated. Access to such IT facilities by minors represents an important focus for further research.

This study is only the second to evaluate a state's ban on IT by minors. Our reported compliance rate was similar to a previous report,<sup>5</sup> suggesting that overall compliance is high. Our study is the first to examine compliance by facility type: findings support the need to educate businesses that offer IT but not exclusively, and thus may be less familiar with the law. The rationale to assess compliance is strongly supported by the Food and Drug Administration's recent proposal to restrict IT to individuals 18 years or older nationwide.<sup>6</sup> Evaluating and improving compliance with bans on IT by minors is critical to achieve their goal of reducing skin cancer incidence.

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**Table 1**  
**Mystery Shopper Telephone Script**

Shopper Introduction	“Hi, I'm interested in a tan and I have some questions.”
Shopper Question 1	“I've never tanned before, can someone show me how to use a tanning bed? Are there different kinds?”
Shopper Question 2	Shopper asks one of the following questions. Shopper alternates the scenario so that the same scenario is not presented on each call.
Scenario 1	“I'm going on a vacation in a couple of weeks. I was wondering how many times I can come in and tan over the next week?”
Scenario 2	“I'm going to a wedding in a couple of weeks. I was wondering how many times I can come in and tan over the next week?”
Scenario 3	“I'm going to the beach and I want to get a base tan. I was wondering how many times I can come in and tan over the next week?”
Shopper Question 3	“Can the tanning bed burn my skin?”
Shopper Question 4 <sup>a</sup>	“I'm 17; do I need a note from my parent to tan?”

<sup>a</sup>At any time during the call prior to Shopper Question 4, if the tanning associate asked the shopper's age, the shopper responded, “17.” For Shopper Question 4, a response indicating that the shopper is too young or must be 18 years old classified the facility as compliant with the law. Responses indicating that the minor would be permitted to tan (with or without a parent's permission) or that the tanning associate did not know were classified as noncompliant.

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**Table 2**  
**Indoor Tanning Facility Responses to Shopper Questions about Tanning Frequency and Burn Risk**

Question	No. (%)
“I was wondering how many times I can come in and tan over the next week?” <sup>a</sup> (N = 602)	
7 times/every day/every 24 h/once a day/all week	492 (83)
Almost every day	2 (0.3)
As many times as you like/anytime	8 (1)
As often as possible/the more the better	5 (0.8)
6 times	2 (0.3)
5 times	3 (0.5)
4 times	9 (1)
3 times	1 (0.2)
Depends on package purchased or how you pay <sup>b</sup>	43 (7)
Depends on your skin	22 (4)
Depends on the bed	5 (0.8)
Don't know	1 (0.2)
“Can the tanning bed burn my skin?” <sup>c</sup> (N = 567)	
Yes	384 (68)
No	44 (8)
Tanning associate did not respond “yes” or “no,” but implied it was possible to experience a burn from the tanning bed	
Depends on your skin type/whether you burn in the sun/type of bed/if you tan for too long	14 (2)
You'll start with fewer minutes and work up to longer tanning times	36 (6)
Using a lotion/bronzer can prevent burn	3 (0.5)
Guidance is available to prevent burn	4 (0.7)
You can experience heat rash/skin can turn pink or discolor	2 (0.4)
Combination of 2 of the responses listed above	80 (14)

<sup>a</sup>This question was not asked of 33 of the 635 facilities. In most of these cases (n = 27), the tanning associate asked the shopper's age before the shopper could pose the question, informed the shopper she was too young to tan, and consequently the call ended early. In the remaining cases (n = 6), the question was skipped by the shopper. Valid percentages are reported. Percentages may not total 100 due to rounding.

<sup>b</sup>Tanning associates did not indicate that packages or memberships would restrict the number of times a shopper could tan over the next week. Payment could be for single session, weekly, or monthly.

<sup>c</sup>This question was not asked of 68 of the 635 facilities. In most of these cases (n = 38), the question was skipped by the shopper. In the remaining cases (n = 30), the tanning associate asked the shopper's age before the shopper could pose the question, informed the shopper she was too young to tan, and consequently the call ended early.