

WHITE OUT

How Dental Industry Insiders Thwart Competition
From Teeth-whitening Entrepreneurs



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TABLE OF CONTENTS

Introduction	2
Background on Occupational Licensure	3
Research Methods	3
Defining Dentistry and Teeth Whitening	4
The Nationwide Landscape of Teeth-whitening Regulations	6
The Dental Industry Lobby and the Adoption and Enforcement of Teeth-whitening Regulation	11
Legislative Change	13
Policy/Regulatory Change	15
Enforcement	17
The “Need” for Regulation	23
Implications and Recommendations	25



EXECUTIVE SUMMARY

In recent years, teeth whitening has exploded into an \$11 billion industry encompassing products like gum and toothpaste as well as services offered by dentists, salons, spas and mall kiosks. At the same time, state dental boards and dental associations have pushed for laws and regulations that would enable licensed dentists and hygienists to capture a greater share of that market by banning anyone else from offering teeth-whitening services. This study investigates this expansion of dental licensing as a form of economic protectionism, where industry insiders seek laws that limit competition.

Since 2005, at least 14 states have changed their laws or regulations to exclude all but licensed dentists, hygienists or dental assistants from offering teeth-whitening services. Meanwhile, at least 25 state dental boards have ordered teeth-whitening businesses to shut down, while nine states have brought legal actions against such businesses. A review of records from legislatures, boards and associations shows that, far more often than not, dental-industry interests, not consumers, drove these actions.

Their economic incentives are clear: Eighty percent of dentists offer teeth whitening. For many, it is a significant source of revenue—\$25,000 annually, on average, for members of the American Academy of Cosmetic Dentistry. And dentists typically charge two to six times more for teeth whitening than salons and kiosks.

Dental boards and associations base their appeals for expanded regulation and enforcement against teeth-whitening entrepreneurs on concerns about public health and safety. But entrepreneurs in spas, salons and kiosks provide the same over-the-counter products consumers can buy on their own and apply at home, and the Food and Drug Administration regulates those products as cosmetics.

To examine the risks of teeth-whitening businesses, this report reviews complaints filed with state agencies over a five-year period. Consistent with scholarly research, the complaints show that risks are minimal. Of 97 complaints provided by 17 states, only four reported consumer harm—all reversible side effects common to teeth whitening wherever it is done. The rest of the complaints came not from consumers, but primarily from dentists, state boards, dental associations and hygienists alleging the unlicensed practice of dentistry.

Outlawing teeth-whitening entrepreneurs serves only to raise prices for consumers and protect dentists from honest competition. Legislators and dental boards should resist protectionist calls to expand dental licensing and instead legalize teeth whitening to allow new businesses to flourish.

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INTRODUCTION

Introduced in 2001, Crest Whitestrips revolutionized how people think of teeth whitening. Whitestrips and similar over-the-counter products made it easy for consumers to achieve brighter smiles with simple disposable strips or mouthpieces containing whitening gel, and consumers responded with skyrocketing demand. The teeth-whitening industry, which includes both products like toothpaste, mouthwash, Whitestrips and gum and services offered by dentists, spas, salons and mall kiosks, is now worth \$11 billion per year.¹

Lisa Martinez is an aspiring entrepreneur who saw opportunity in this burgeoning industry: “It looked like a simple business and a stepping stone to opening and operating my own business.” In 2008, she opened Connecticut White Smile in the Crystal Mall in Waterford, Conn., where she sold over-the-counter whitening products that can be purchased online by anyone. Lisa provided a clean, comfortable place for customers to apply the product to their own teeth, just as they would at home. This service was at a convenient location and for bargain prices—between \$109 and \$139 depending on the length of the service—compared to similar services offered by dentists.

Lisa’s business provided reliable income and a flexible schedule to spend time caring for her young children. But it wasn’t easy. Though some dentists came in and told Lisa it was a great idea, other dentists and dental hygienists accused her of breaking the law or threatened to have her business shut down. In 2011, the Connecticut Dental Commission issued a declaratory ruling that effectively did just that.


The ruling made it a crime punishable by up to five years in jail for anyone but a licensed dentist to provide the type of teeth-whitening service Lisa offered. Staying open would have meant risking thousands of dollars in fines and potentially years in prison. So Lisa shut down her profitable business and took a job as a flight attendant. She no longer has the flexibility to spend as much time with her children or the satisfaction of being an entrepreneur.

The ruling also left Lisa’s clients without a service they wanted. “Since I’ve been out of business I’ve had 37 different voicemails from clients trying to find me for appointments,” she said.

The popularity and low cost of services like Lisa’s may explain the hostility from dentists and hygienists. Eighty percent of dentists offer teeth whitening,² and for many it is a significant source of revenue. The American Academy of Cosmetic Dentistry (AACD) reports that in 2006 AACD dentists performed an average of 70 teeth-whitening procedures per year for average annual revenues of \$25,000³—\$350 per procedure. Laws putting lower-cost competitors out of business would enable dentists to capture a greater share of the market and maintain (or even raise) high prices.

This study investigates the expansion of dental licensing laws as a form of economic protectionism, where industry interests seek laws that limit competition. Studying the regulation of teeth-whitening services is advantageous because it is a relatively new and flourishing market. Many documents from dental boards, associations and legislatures illustrate how industry-driven regulation functions from the inside.

Since 2005, at least 14 states have changed their laws or regulations and now exclude all but licensed dentists, hygienists or dental assistants from offering teeth-whitening services. Meanwhile, at least 25 state dental boards have ordered teeth-whitening businesses to shut down, while nine states have brought legal actions against such businesses. Far more often than not, dental-industry interests, not consumers, drove these actions.





BACKGROUND ON OCCUPATIONAL LICENSURE

Occupational licensure is government permission to work in a particular field. Historically, occupations tend to become licensed through the creation of new regulatory schemes. Such schemes often come at the behest of practitioners seeking to fence off their occupations in order to block out competition and enjoy the consequent economic advantages,⁴ such as higher prices and wages.⁵

Licensing in the teeth-whitening industry differs, however, in that those who offer only whitening services in a manner like Lisa Martinez do not face the imposition of a new teeth-whitening license. Instead, lawmakers or regulators expand the scope of an existing licensing regime to cover a different occupation—one that presents new competition to an established trade. This can be thought of as “license creep.” In this case, license creep comes from expanding dentist licenses to cover those who offer only teeth-whitening services or products.

License creep and the establishment of new licenses are often similarly justified by licensure advocates. Proponents cite the need to maintain quality of services and to protect public health, safety and welfare. To that end, aspiring practitioners must complete training, experience, examinations and/or various other requirements intended to ensure aspirants meet a minimum threshold of skill and knowledge.⁶ In states that have expanded dental licensure to include teeth whitening, this means whitening entrepreneurs must become licensed dentists.

The evidence that licensing improves quality of service and protects the public health, safety and welfare, however, is very limited, and research suggests licensing may actually reduce the quality of service.⁷ That is because licensed service providers feel no competitive “heat” to offer or maintain the highest quality service, and limiting new entrants who may have new ideas or techniques retards innovation.⁸

Moreover, licenses are rarely established by threatened consumers demanding protection.

Instead, those already practicing an occupation agitate for their own brand of protection—protection from competition. Using the power of concentrated interests, industry insiders lobby state legislatures for new or expanded licensing laws.⁹ Once these laws are in place, insiders exert significant influence over licensing boards and agencies to ensure the laws are tightly enforced. This report demonstrates how the dental establishment has been doing just that in the teeth-whitening industry.

RESEARCH METHODS

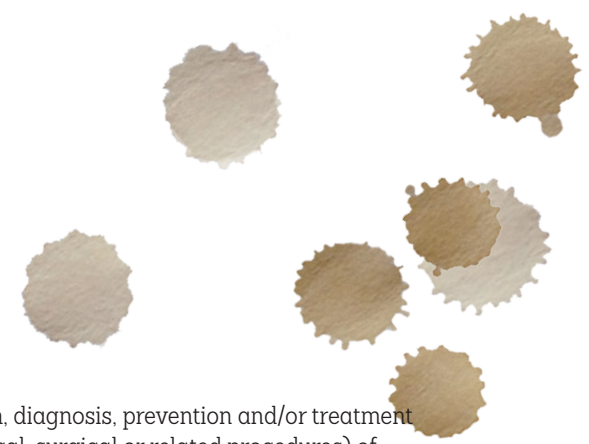
This research begins with two primary questions:

1. Is there significant evidence of efforts to use regulation to limit competition in the teeth-whitening industry?
If so,
 - a. To what extent are representatives of the dental industry advocating for such regulation?
 - b. By what process is teeth-whitening regulation developed?
2. Do data indicate a need for regulation of teeth-whitening businesses and inclusion in dental licensing laws?

The first question is examined through an analysis of legislative, regulatory and enforcement history regarding teeth-whitening services in all 50 states and the District of Columbia. This required the collection and systematic analysis of policy and policy-related documents generated by dental associations, dental boards, health agencies and other organizations and departments. This includes:

1. Proposed and enacted teeth-whitening legislation and statutes.
2. Legislative and administrative agency records, including meeting minutes, transcripts, recordings, correspondence and investigation files.
3. Industry records, including newsletters, board-meeting minutes, correspondence and reports.

All correspondence obtained through public record requests is on file with the Institute for Justice.



The second question is examined by using complaint data available from state boards and a survey of scholarly articles regarding teeth-whitening products. State dental boards oversee the licensure requirements for the dental industry, respond to consumer complaints and address issues of compliance with relevant laws. They also determine disciplinary actions for their licensees and take legal action against those they believe to be practicing dentistry without a license.

The complaint data provided by the dental boards came with the reasons for the complaints and some came with disciplinary actions, including cease-and-desist letters sent and fines levied. Complaint data were received from 16 states and the District of Columbia. The other states withheld any complaints received pursuant to their state's open records law, which in many states exempts complaints and investigative materials that have not resulted in disciplinary action. The complaint data consist of 97 complaints, 93 of which are complaints that someone was practicing without a license. The other four related to the service provided.

Because complaint data from teeth-whitening businesses are not readily available from other sources, such as the Better Business Bureau, scholarly research on teeth-whitening products was reviewed to determine whether a serious public health and safety concern exists regarding teeth-whitening businesses. The review included academic studies on in-office, take-home and over-the-counter whitening products and their effects on human teeth and gums.

DEFINING DENTISTRY AND TEETH WHITENING

According to the Bureau of Labor Statistics, the practice of dentistry is to “diagnose and treat problems with teeth and tissues in the mouth, along with giving advice and administering care to help prevent future problems.”¹⁰ The American Dental Association (ADA) defines dentistry as “the

evaluation, diagnosis, prevention and/or treatment (nonsurgical, surgical or related procedures) of diseases, disorders and/or conditions of the oral cavity, maxillofacial area and/or the adjacent and associated structures and their impact on the human body”¹¹

Every state has a dental practice act that defines dentistry—often using language similar to the ADA—and outlines requirements for dentists to become licensed. Many states include in their definitions more specific actions like the extracting of teeth, oral surgery and the adjustment of braces. As detailed below, many state laws mention teeth whitening or something related, such as bleaching, stain removal or treatment for discoloration, while others are silent.

But terms such as “teeth whitening” and “stain removal” are not interchangeable. (See “Is teeth whitening the “removal of stains?” on page 5.) Teeth-whitening uses peroxide-containing gels or serums that temporarily convert colored particles into non-colored particles through oxidization, giving teeth a whiter appearance without removing stains.¹² The Food and Drug Administration (FDA) classifies the chemicals in teeth-whitening products—hydrogen peroxide and carbamide peroxide—as cosmetics.¹³ These same chemicals are considered safe when used in such things as toothpaste, earwax remover and acne treatment.

This report focuses on the legality of teeth-whitening businesses that provide customers with a prepackaged, over-the-counter teeth-whitening product and a comfortable, clean environment in which to use it. The companies do not touch their customers, but instead instruct their customers on how to apply the products to their own teeth, just as the consumer would at home. These businesses sometimes also position (or allow the customer to position) a safe Light Emitting Diode (LED) “activating light” in front of a customer’s mouth. In a dental office, the dentist, hygienist or dental assistant, depending on state regulations, will place a similar or stronger product in the customer’s mouth and may use a light or heat treatment.

IS TEETH WHITENING THE “REMOVAL OF STAINS”?

There are three different ways to whiten the appearance of teeth: stain removal, teeth whitening or bleaching, and the use of cosmetic restorations, veneers and crowns.¹ Despite important differences, several dental boards have classified two of these processes, teeth whitening and stain removal, as the “removal of stains” under dental practice acts.

Stain removal uses abrasives to physically remove extrinsic dental stains by lightly sanding the outer surface of the tooth to reach a clean layer underneath.² Extrinsic stains are caused directly by smoking or by dietary sources such as coffee and wine or indirectly through a chemical interaction with such sources as iron supplements or mouth rinses.

At home, stain removal is done with a tooth brush and toothpaste. Whitening toothpastes typically have no bleaching material; instead they, like most toothpastes, contain fine particles to scrape the outside of the teeth and remove stains. At a dentist’s office, stain removal is done during a regular cleaning. Stains are removed by prophylaxis, the use of dental tools that scrape the enamel of the teeth, and abrasive prophylaxis pastes that sand and polish the teeth. The process of stain removal scrapes enamel from the teeth and can cause the enamel to thin and the teeth to weaken over time.

By contrast, teeth whitening does not use an abrasive nor does it remove stains. Modern teeth-whitening practices started in 1989 by applying a high concentration of hydrogen peroxide or carbamide peroxide with trays that fit over the teeth. This was called “night guard vital bleaching” and was patient-applied, either under the supervision of a dentist or prescribed for home use and worn at night for two weeks. The oxidizing properties of peroxides whiten the appearance of teeth by converting colored particles into non-colored particles within the teeth’s enamel and dentin.³

Since 1989, the growing teeth-whitening industry has developed many new products that use either hydrogen peroxide or carbamide peroxide to bleach teeth. Similar products are now used in dental offices, malls and spas and sold at pharmacies and online.

1 Sulieman, M. (2004). An overview of bleaching techniques: I. History, chemistry, safety and legal aspects. *Restorative Dentistry*, 31(10), 608-616.

2 Darby, M., & Walsh, M. (2010). Chapter 27: Management of extrinsic and intrinsic stains. *Dental Hygiene Theory and Practice*, 3rd ed. Saunders. 132-140. St. Louis,

MO; LaCross, I. (2007). Posing the polishing question. *The Journal of Professional Excellence: Dimensions of Dental Hygiene*, 5(6), 20, 22-23.

3 Joiner, A. (2006). The bleaching of teeth: A review of the literature. *Journal of Dentistry*, 34, 412-419.

THE NATIONWIDE LANDSCAPE OF TEETH-WHITENING REGULATIONS

The first attempts to regulate teeth whitening began in 2005 when Nevada amended its practice act and Wisconsin's dental board adopted a new policy on teeth whitening. Table 1 lists all such dental practice acts and known state dental board policies that may refer to whitening. Policies include administrative rulings, declaratory actions and position statements that were voted on by a dental board. The Institute for Justice obtained these via public records requests. The table also provides the year the current dental practice act was enacted, the year it was amended to include whitening or related language (if relevant), and the year the policy position was declared.

Table 1 also includes several dental practice acts that mention stain removal. Even though stain removal is a different process and these acts generally pre-date modern teeth-whitening practices, some states have relied on this language to regulate teeth whitening.

Table 1 excludes practice acts that are silent on teeth whitening, as well as those that mention stain removal but refer directly to prophylaxis, polishing and cleaning—all practices that are distinct from modern teeth-whitening. In all, 22 states and the District of Columbia are excluded from Table 1, though as discussed below, this does not necessarily mean that dental boards in these states will not take action against whitening businesses.

The 'Legal?' column in Table 1 indicates whether teeth-whitening services outside dentists' offices are legal based solely on the state's law and official board policy. Unfortunately, this is not always clear-cut. Indeed, the table classifies 12 of the 28 states listed as "unclear."

Figure 1 provides the same information in map format. States in orange clearly permit teeth-whitening businesses, while those in purple do not. As the map shows, most states are unclear or there is no relevant statutory or regulatory language. The map also notes whether a state has specific statutory or regulatory language on teeth whitening and whether states have engaged in enforcement actions against teeth-whitening businesses.

Only Illinois and Ohio explicitly allow teeth-whitening services by non-dentists. Illinois passed a bill in 2009 that allows non-dentists to provide teeth-whitening services after they disclose to consumers that they are not licensed dentists.¹⁴ Ohio is the only state in which a board adopted a policy statement that permits teeth-whitening businesses. In Ohio, businesses may provide products, a location to use them and instruction to customers.

According to this report's definition of teeth-whitening services, 14 states clearly define such services as the practice of dentistry, either by law or by written position of the state board, making the business illegal for anyone but dentists, hygienists or dental assistants.

Five of those states, Alabama, Arizona, Iowa, Kentucky and North Dakota, outlaw teeth-whitening services by non-dentists by statute. For example, the Iowa statute defines the practice of dentistry to include:

Persons who offer to perform, perform, or assist with any phase of any operation incident to tooth whitening, including the instruction or application of tooth whitening materials or procedures at any geographic location.¹⁵

Similarly, the Alabama dental practice act includes anyone who:

Professes to the public by any method to bleach human teeth, performs bleaching of the human teeth alone or within his or her business, or instructs the public within his or her business, or through any agent or employee of his or her business, in the use of any tooth bleaching product.¹⁶

Arizona adopted an amendment to its practice act in 2011 declaring the removal of stains and discolorations the practice of dentistry. Legislative records demonstrate the intent of the language was to target teeth-whitening businesses.¹⁷ North Dakota amended its practice act to include treatment for discoloration of teeth in 2009.

Table 1: Current State Laws and Written Dental Board Policies Regarding Teeth Whitening

STATE		DESCRIPTION	YEAR	LEGAL?
Alabama	Law	Dentistry includes instruction or application of teeth whitening materials or procedures. ¹⁸	1959, amended 2011	No
	Policy	None	NA	
Arizona	Law	Dentistry includes the removal of stains and discolorations. ¹⁹	1972, amended 2011	No
	Policy	None	NA	
Connecticut	Law	None	1949	No
	Declaratory Ruling	Dentistry includes "personalized instruction to a consumer and instructing a person based on an assessment or supervising the use and application of tooth bleaching [product. . .]" ²⁰	2011	
Delaware	Law	None	1953	Unclear
	Policy	"[T]he application of teeth whitening products to a consumer by individuals other than dentists or hygienists constitutes the practice of dentistry." ²¹	2011	
Florida	Law	None	1979	No
	Policy	"Bleaching of the teeth constitutes the practice of dentistry." ²²	2007	
Illinois	Law	Teeth whitening providers must disclose that they are not dentists. ²³	1984, amended 2009	Yes
	Policy	None	NA	
Iowa	Law	Dentistry includes instruction or application of teeth whitening materials or procedures. ²⁴	1988, amended 2009	No
	Policy	Dentistry includes "not only the sale of the tooth whitening product, but the offering of advice regarding the use of the product, providing a location for use of that product, and the provision of any other services to facilitate use of the product." ²⁵	2008	
Kansas	Law	None	1943	No
	Administrative Ruling	Dentistry includes altering the color of teeth or requiring the adjustment of equipment for the purpose of altering the color of teeth. ²⁶	2009	
Kentucky	Law	Dentistry includes performing or advertising to perform whitening of teeth. ²⁷	2010	No
	Policy	None	NA	
Louisiana	Law	None	1988	No
	Policy	Using a light for whitening is the practice of dentistry. ²⁸	2008	
Maine	Law	None	1981	Unclear
	Policy	Teeth whitening products have the "potential for tissue damage or tooth sensitivity and require their application and follow up by a licensed dentist." ²⁹	2011	
Massachusetts	Law	None	1962	No
	Policy	Practice of dentistry includes "tooth whitening services offered to the public." ³⁰	2008	
Minnesota	Law	Dentistry includes the removal of stains. ³¹	1969	Unclear
	Policy	None	NA	
Missouri	Law	Dentistry includes providing teeth-whitening services with products not readily available to the public. ³²	1969, amended 2009	Unclear
	Policy	None	NA	

Montana	Law	None	1969	No
	Administrative Ruling	Dentistry includes "services or procedures that alter the color or physical condition of a tooth or teeth." ³³	2010	
Nevada	Law	Dentistry includes whitening teeth by any means unless using an over-the-counter product for the person's own use. ³⁴	1977, amended 2005	Unclear
	Policy	None	NA	
New Hampshire	Law	Dentistry includes whitening teeth by any means unless using an over-the-counter product for the person's own use. ³⁵	1971, amended 2010	Unclear
	Policy	None	NA	
New Jersey	Law	Dentistry includes the removal of stains. ³⁶	1941	Unclear
	Policy	None	NA	
New Mexico	Law	None	1978	No
	Policy	Tooth whitening "can only be performed by a licensed dental hygienist under the supervision of a licensed dentist and after the patient has been examined by a licensed dentist." ³⁷	2008	
North Carolina	Law	Dentistry includes the removal of stains. ³⁸	1935	Unclear
	Policy	None	NA	
North Dakota	Law	Dentistry includes treatment of "discoloration" of teeth. ³⁹	1959, amended 2009	No
	Policy	Dentistry includes "any physical act leading to the application of teeth whitening or teeth bleaching materials (such as fabrication or trays, insertion of bleaching jell into a tray or insertion of trays into the mouth" ⁴⁰	2008	
Ohio	Law	None	1982	Yes
	Policy	Teeth whitening "is permissible so long as the consumer applies the whitening material to their own teeth, and no one else places their hands in the consumer's mouth." ⁴¹	2008	
Oklahoma	Law	Dentistry includes the removal of stains and discolorations. ⁴²	1970	Unclear
	Policy	None	NA	
Rhode Island	Law	None	1959	No
	Administrative Ruling	Dentistry includes "any service or product that may change the anatomy, appearance or arrangement of teeth" ⁴³	2011	
South Dakota	Law	Dentistry includes the removal of stains. ⁴⁴	1975	No
	Policy	Practice of dentistry includes "tooth whitening services offered to the public." ⁴⁵	2010	
Texas	Law	Dentistry includes the removal of stains. ⁴⁶	1999	Unclear
	Policy	None	NA	
Washington	Law	Dentistry includes the removal of stains. ⁴⁷	1957	Unclear
	Policy	None	NA	
Wisconsin	Law	None	1989	Unclear
	Policy*	Whitening requires a diagnosis by a licensed dentist. ⁴⁸	2005	

Note: Known adopted written policies, 2005-2011

*The Wisconsin Attorney General's Office disagrees and will not prosecute teeth whitening operations.

In nine states—Connecticut, Florida, Kansas, Louisiana, Massachusetts, Montana, New Mexico, Rhode Island and South Dakota—dental boards have issued written policy statements, administrative rulings or declaratory judgments explicitly defining teeth-whitening services as the practice of dentistry. Yet seven of these states' dental practice acts are silent on teeth whitening, while South Dakota's law refers only to the removal of stains. Boards in Florida, Kansas and New Mexico have adopted such broadly written policies that, if enforced, appear to outlaw even the personal use of over-the-counter whitening products like Crest Whitestrips.

Among the 12 states listed as unclear, Missouri, Nevada and New Hampshire recently passed statutes apparently to address teeth-whitening, but for various reasons it is not clear they outlaw such businesses.

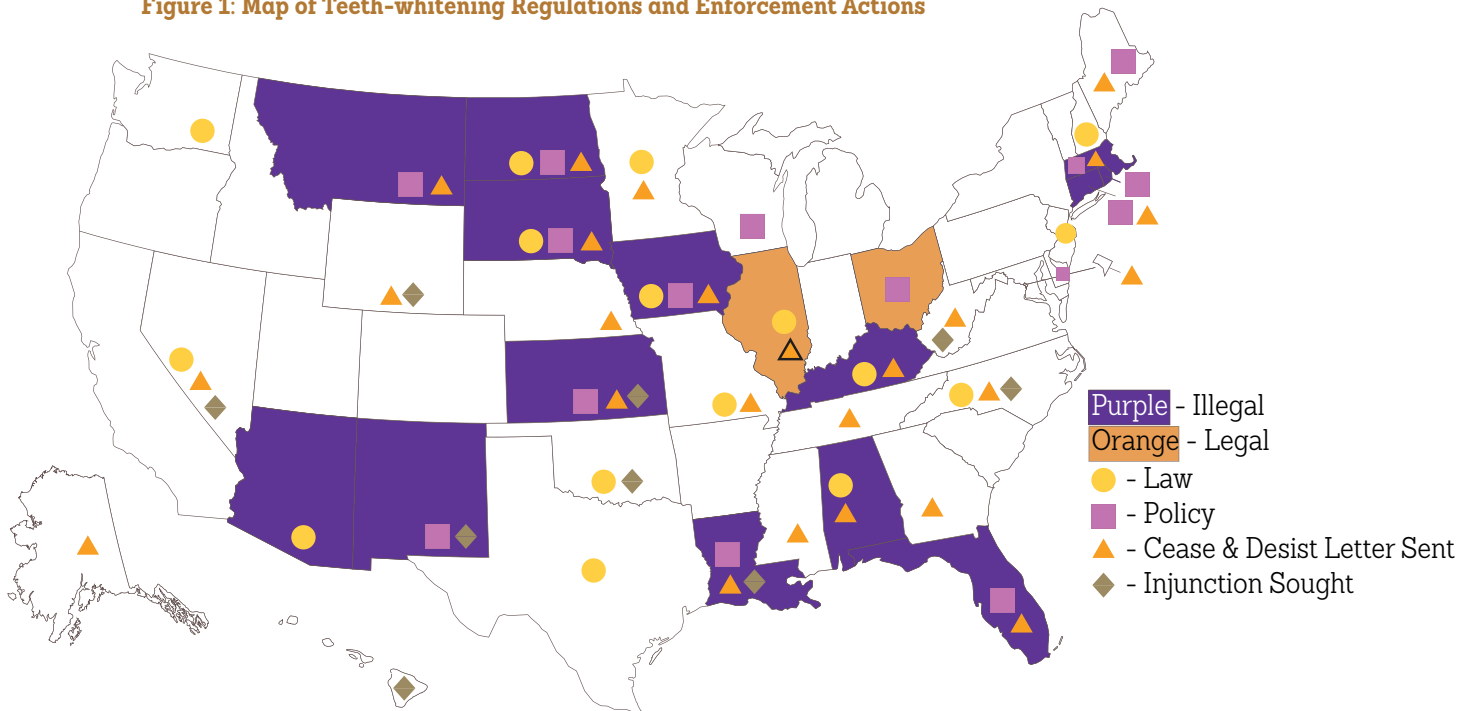
Missouri's statute includes whitening services with products not readily available to the public, but it is not

clear what "readily available" means. Is a kit purchased at a spa "readily available"? Is an over-the-counter product that can be purchased online?

Amendments in Nevada and New Hampshire include within dentistry any teeth whitening except the personal use of an over-the-counter product.⁴⁹ In New Hampshire it appears that the board proposed this language to ensure that whitening businesses operate without touching the customer. Legislative testimony points to whitening businesses as the reason for the new language, but unlike Illinois, New Hampshire's amendment does not explicitly permit a business to provide a location, instruction or an LED light.⁵⁰

In 2011, dental boards in Delaware and Maine adopted written policies that appear to target teeth-whitening services, but both boards refer to the "application" of teeth-whitening products. Again, because in most retail establishments, consumers apply the products

Figure 1: Map of Teeth-whitening Regulations and Enforcement Actions



Large version of this map available at www.ij.org/WhiteOutMap

themselves, Delaware and Maine are listed as unclear here. The Wisconsin board's policy, while clearly intended to outlaw whitening services outside dentists' offices, is opposed by the state attorney general, who has refused to prosecute teeth-whitening businesses.⁵¹

In most of the remaining states in Table 1, practice acts refer only to the removal of stains and typically pre-date modern teeth-whitening practices and are therefore considered unclear. Oklahoma's practice acts refers to treatment for discoloration, but it was passed in 1970, so it cannot have been intended to address teeth-whitening practices that did not develop until the late 1980s. It, too, is considered unclear.

Lack of clarity about the legality of teeth whitening is unfortunately not confined to these 12 states. As Figure 1 illustrates, and as will be discussed below, dental boards often interpret their states' practice acts broadly and enforce them against teeth-whitening businesses in the absence of clear and specific legal authority. This can also be seen by comparing Table 1 to the results of a 2007 survey by the Academy of General Dentistry (AGD).

The AGD surveyed state dental boards to see which regulated teeth-whitening businesses.⁵² Of the 31 states that responded, nine claimed they regulated teeth-whitening procedures—Arizona, Georgia, Minnesota, Nevada, North Carolina, Oklahoma, Tennessee, West Virginia and Wyoming. Yet at that time, all of those nine had unclear or no known specific statutory or regulatory language that addressed modern teeth-whitening practices.

In enforcement actions against teeth-whitening businesses, boards in West Virginia and Wyoming pointed to broad terms like "condition" or "physical condition" in their practice acts.⁵³ This language is found in 43 dental practice acts, including Wisconsin's, where the state attorney general determined it is not sufficient grounds to shut down teeth-whitening businesses.

Discoloration of the teeth, the Wisconsin attorney general noted, is not a medical condition, or "state of health or disease," but rather "a normal condition

involving the external appearance of the surface of the teeth caused by contact with staining agents in ordinary food and drink or by the inescapable process of aging."⁵⁴ And adopting a broader, non-medical interpretation of "condition" would be unreasonable and should be rejected:

Otherwise, treating or caring for ordinary oral conditions such as particles caught between the teeth or deposits left on the teeth by means of flossing or brushing would constitute the practice of dentistry, so everyone would have to visit their dentist twice a day to have their teeth cleaned.⁵⁵

The same problem arises in construing the phrase "dental service" so broadly as to outlaw teeth whitening by non-dentists, as the Alabama Supreme Court did in rejecting a lawsuit brought against the dental board by a teeth-whitening business. (The lawsuit was brought before 2011 amendments specifically outlawed retail "tooth bleaching" in Alabama.) The court held that any "helpful act or useful labor of or relating to the teeth" is a "dental service."⁵⁶ Such a broad definition would certainly include teeth whitening, but it would also include things such as putting toothpaste on a toothbrush and selling it to someone or a drugstore employee reading the instructions on a box of teeth-whitening strips to someone who is unable to read them.⁵⁷

"Dental boards often interpret their states' practice acts broadly and enforce them against teeth-whitening businesses in the absence of clear and specific legal authority."

THE DENTAL INDUSTRY LOBBY AND THE ADOPTION AND ENFORCEMENT OF TEETH-WHITENING REGULATION

The key players in the adoption and enforcement of teeth-whitening laws and regulations are the national dental associations, state dental associations and state dental boards.

The American Dental Association (ADA) formed in 1859 with 26 dentists as members.⁵⁸ Today, the ADA represents more than 156,000 dentists, employs more than 400 people and is the primary accrediting organization for dental schools.⁵⁹ The ADA is set up as a tripartite system. To be part of a local dental association, a dentist must also be a member of the state and the national association. Membership benefits include discounts on continuing education classes and various services such as website design, financing of equipment, credit card processing and collections.⁶⁰ ADA members include 70 percent of dentists, down from 90 percent three decades ago, but still quite high compared to the American Medical Association, whose membership is 15 percent of licensed physicians.⁶¹ For funding, the ADA relies on dues from dentists and program service fees.

The American Association of Dental Boards (AADB)—named the American Association of Dental Examiners prior to 2009—formed just two years after the ADA to share information among members of state dental boards.⁶² Its membership includes current and past members of state dental boards, and it is funded through membership dues. The ADA building houses the AADB along with several other dental organizations. Additionally, the ADA is the primary sponsor of the AADB annual and mid-year meetings.⁶³

State dental boards network with each other through the AADB as well as the American Association of Dental Administrators (AADA). The AADA is a membership organization for those who work for state dental boards, and its officers are all also members of the administrators committee of the AADB.

The three organizations interact regularly: The ADA, AADB and AADA hold their annual conferences consecutively at the ADA national conference location,

and the AADB and AADA mid-year (spring) meetings are held at the ADA national headquarters.⁶⁴

State dental boards are charged with enforcing dental practice acts—overseeing the licensing of dentists and hygienists, investigating complaints, disciplining licensees for misconduct and in some cases policing unlicensed practice. Most board members are licensed dentists or hygienists, and boards tend to have close relationships with state dental associations. State dental board members are often members of the state association, may have been on the board of the association at one time and, in some states, may have been nominated for the state board by the association.

Through conferences, online message boards and other means, the national dental organizations provide forums for state dental boards and associations to share information. (See “National dental organizations and coordination among states” on page 12.)

The organized interests of dentists tend to dominate debate over regulation of teeth-whitening services, but the Council for Cosmetic Teeth Whitening (CCTW) is one exception. CCTW is a trade group of cosmetic teeth-whitening product manufacturers, distributors and retailers. It has a code of ethics and guidelines members must follow to ensure their teeth-whitening services do not fall within the scope of dentistry. The group’s main focus is to stop regulation that will put members out of business.

As the following sections detail, the battle for the regulation of teeth whitening has taken place on three main fronts: legislative, administrative and enforcement. In the legislative arena, dental associations and boards have advocated for laws to limit teeth-whitening services to dentists. Dental associations have also pressured state boards to adopt regulatory policies toward the same end. And state boards, often at the request of associations or individual dentists or hygienists, have used various enforcement mechanisms—cease-and-desist letters, fines and civil lawsuits—to attempt to shut down teeth-whitening services. Sometimes these enforcement actions were pursuant to legislation or an administrative policy that specifically outlaws teeth-whitening outside dentists’ offices, but oftentimes they were not.

NATIONAL DENTAL ORGANIZATIONS AND COORDINATION AMONG STATES

National dental organizations have played an important role in coordinating efforts to ban teeth-whitening businesses. While we could not request records from the national dental organizations, we were able to obtain some records from dental boards regarding the activities of these groups. These records indicate that national organizations' meetings, message boards and email lists provided venues for dental boards across the country to develop legislative language, policies and enforcement strategies on teeth whitening.

For example, attorneys for the state dental boards communicate about enforcement actions against whitening businesses by emailing attorney members of the American Association of Dental Boards (AADB). The Oklahoma assistant attorney general shared its petition for injunctive relief against Glamour White, pointing out the statutory language the board relies on to claim whitening is the practice of dentistry.¹ Before a new dental practice act specifically addressed teeth whitening, a Kentucky assistant attorney general informed AADB members that the state board was determining if a stain is a "lesion" of the tooth so it could cite language more specific than "dental operations of any kind" when targeting teeth-whitening businesses.²

Likewise, American Association of Dental Administrators (AADA) members had several discussions regarding tooth whitening on the AADA message board. For example, the executive director for the Massachusetts board posted about sending cease-and-desist letters and drafting a public advisory for "local health officials, mall managers, the cosmetology board, and others."³ The executive director for the North Dakota board noted its cease-and-desist letters and its inquiry to the cosmetology board for an opinion on the legality of whitening in salons.⁴ Additionally, members worked toward creating a model definition of dentistry that would include teeth whitening.⁵

In addition to online forums, the AADA and AADB hold biannual meetings to discuss current issues in dentistry. Teeth whitening was a main focus of these meetings in 2008 and 2009.⁶

Members at the fall 2008 AADA meeting discussed their success in shutting down whitening businesses by working with barber and cosmetology boards and local health departments.⁷ Members recommended that boards look for issues that could get local health departments involved. The North Carolina board discussed the state statutes and the

teeth whitening injunctions in West Virginia, Oklahoma and North Carolina.⁸

At the 2008 AADB attorney roundtable meeting, attorneys for the North Carolina and Kentucky dental boards and an ADA representative gave presentations about teeth-whitening businesses.⁹ The meeting emphasized that boards need to show health-and-safety concerns when investigating. Shortly after this meeting the ADA passed a resolution urging constituents to advocate the adoption of language to make whitening illegal outside of dental offices.¹⁰

The American Dental Association (ADA) both sponsors and presents at the AADB and AADA biannual meetings. For example, at the spring 2010 AADB meeting, the president of the ADA talked about the definition of dentistry being open to interpretation. He also claimed that whitening establishments ought to be regulated by dental boards because some operations are unsafe.¹¹

The AADB and AADA members discussed several teeth whitening issues at the fall 2010 meetings. At the AADA meeting the Wyoming attorney discussed how collaboration with the cosmetology board stopped whitening in their salons. He said that cease-and-desist letters generally worked but noted that the Federal Trade Commission believes cease-and-desist letters give the appearance of regulation without due process, and as long as the FTC is investigating, boards should not send them. The presentation also promoted the use of injunctive relief over criminal prosecution because a criminal defendant would have greater due process protections and a jury.¹² During the AADB meeting, members discussed the need for precise wording of cease-and-desist letters, the Alabama and North Carolina cases and a petition from the ADA to the U.S. Food and Drug Administration.¹³ In November 2009, the ADA petitioned the FDA to create a regulatory classification for teeth-whitening products. It argued that these products are "not risk-free" and should be classified as a regulated product.¹⁴

Based on the documents we were able to obtain, it appears that forums provided by the national dental organizations provided fertile ground for the sharing and development of regulatory and enforcement strategies against teeth-whitening businesses. Although many state boards were already aware of teeth whitening and some were taking action against businesses, most of the enforcement efforts occurred after AADA and AADB made it a priority on their agendas.

1 Harris, G. (2008, August 13). Email to attorney roundtable email list. Re: Teeth whitening as part of the definition of dentistry/dental hygiene.

2 Brengelman, B. (2008, August 12). Email to attorney roundtable email list. RE: Teeth whitening as part of the definition of dentistry/dental hygiene – informal response of Kentucky.

3 Atkinson, K. (2008, April 28). Email to AADA message board. Tooth whitening/scope of practice.

4 Sommers, R. (2008, April 28). Email to AADA message board. Tooth whitening/scope of practice.

5 Earle, K. (2008, July 23). Email to AADA message board. Definition: Practice of dentistry.

6 Oregon Dental Board. (2008, April 24). Board meeting minutes. Portland, OR;

Oregon Dental Board. (2009, May 15). Board meeting minutes. Portland, OR.

7 Tennessee Board of Dentistry. (2008, October). Information from American Association of Dental Administrators meeting.

8 http://aadadmin.org/Bobby_White_in_NC_Chemical_Bleaching_Presentation.pdf

9 American Association of Dental Examiners. (2008, October). AAE attorney roundtable: Program. San Antonio, TX.

10 <http://www.agd.org/education/transcriptnews/Default.asp?PubID=47&IssID=1057&ArtID=6458>

11 Tennessee Board of Dentistry. (2012, April). Information from American Association of Dental Boards mid-year meeting and the national board advisory forum.

12 Chambers, S. (2010). Teeth whitening update. Presentation to the American Association of Dental Board 2010 annual meeting. Orlando, FL.

13 Tennessee Board of Dentistry. (2010, October). Information from American Association of Dental Boards annual meeting.

14 American Dental Association. (2009, November 20). Letter to the Food and Drug Administration. Re: Regulatory treatment of tooth whitening preparations.

Legislative Change

From 2005 to 2011, 13 bills addressing teeth-whitening services were proposed in 11 states, as shown in Table 2. Nine of them passed, and all but one purport to limit such businesses. In every state, these legislative efforts were backed or even initiated by dentists, dental associations and state dental boards.

In what would become a familiar pattern, the first legislative proposal, in Nevada in 2005, came straight from the state's dental board.⁶⁵ Lobbyists for the board and the hygienists association defended the bill during a legislative committee meeting, and the Nevada Dental Association also voiced support for the bill.⁶⁶ By 2008, boards elsewhere, including Arizona, Hawaii, Iowa and Minnesota, were sharing ideas on the AADA message board on regulatory language to outlaw teeth-whitening businesses. That same year, the ADA House of Delegates adopted Resolution 73H-2008, which urged ADA constituents to make legislative and regulatory efforts to define the administering or application of whitening as illegal for anyone other than a dentist or the consumer of the product.⁶⁷

Based on the ADA resolution, the Minnesota Dental Association resolved to “work with the appropriate governmental bodies to develop legislation or regulation concerning retail whitening outlets,”⁶⁸ and in 2009 and 2010, the state's dental board indeed drafted legislation to regulate teeth whitening that was introduced in the legislature.⁶⁹

These were the most active years for legislative proposals across the country, and in every case, state dental boards or dental associations were behind them. A bill in Missouri was prompted by a dental student who encouraged a state representative to limit teeth whitening by non-dentists—an effort the Missouri Dental Association quickly and successfully got behind.⁷⁰ The Hawaii Dental Association supported legislative efforts with a letter-writing campaign, including 44 emails from dentists, and testimony from the group's president and lobbyist.⁷¹

The Arizona Dental Association gathered more than a dozen dentists and dental students to appear at a legislative committee meeting in support of a bill to add treatment for “discoloration” to the definition of dentistry. The association, Western Dental (a dental and oral health maintenance organization) and the Arizona Dental Board all employed lobbyists in support of the bill.⁷²

Iowa's Board of Dental Examiners voted to pursue legislative change after legal wrangling with BleachBright, a teeth-whitening company that it had ordered to cease and desist, and after their executive director returned from an AADA meeting.⁷³ The main concern at the meeting was a Federal Trade Commission investigation of the North Carolina board's actions against whitening businesses and other states “treading lightly” as a result.⁷⁴ With lobbying help from dental organizations, the proposed bill passed the state legislature in 2009.⁷⁵

State dental boards also proposed legislation in North Dakota,⁷⁶ Kentucky⁷⁷ and New Hampshire.⁷⁸ Alabama's dental board passed a motion to draft whitening legislation in 2008 and sought input from the Alabama Dental Association in 2010.⁷⁹ But the bill was not introduced and passed until 2011, after the Alabama Supreme Court's ruling that teeth whitening is a “dental service.”

North Dakota's language change, adding the word “discoloration” to the definition of dentistry, was part of an unrelated dental bill. Similarly, Kentucky's whitening language was part of a larger overhaul and reworking of the entire dental practice act, making it a side-fixtured on a bigger piece of legislation.

In support of proposals to limit teeth whitening to dentists, dental boards and dental organizations typically point to health and safety concerns. For example, the president of the Hawaii Dental Association claimed, “Misuse and negligence on the part of kiosk operators has resulted in the public receiving burned gums and choking, and hydrogen peroxide being swallowed.” But he provided no evidence of this to the legislature.⁸⁰ In fact, the state's Regulated Industries Complaints Office testified that it received four complaints about teeth-whitening businesses—all pertaining to unlicensed practice and none regarding health or safety issues.⁸¹



From 2005 to 2011, 13 bills addressing teeth-whitening services were proposed in 11 states. . . In every state, these legislative efforts were backed or even initiated by dentists, dental associations and state dental boards.

Similarly, the director of the Arizona Dental Association told a legislative committee that teeth whitening presents a health and safety concern, but provided no actual evidence of harm to the public.⁸² The executive director of New Hampshire's Board of Dental Examiners could point to only one complaint from a customer of a teeth whitening business.⁸³ As detailed below, such consumer complaints are rare.

Nearly every legislative effort to restrict teeth whitening from 2005 to 2011 succeeded. The exceptions are bills in Minnesota and Hawaii that each failed twice. The Hawaii bill never made it to a vote, while Minnesota is a rare case where advocates other than those associated with dentists or hygienists spoke out. The Council for Cosmetic Teeth Whitening testified against the bill, as did the manager of a retail whitening outlet who argued that teeth whitening is cosmetic, safe and provides jobs.⁸⁴

CCTW also got involved when Illinois state Rep. David E. Miller, a practicing dentist, filed a bill to limit the sale, application of or instruction about teeth whitening products to licensed dentists.⁸⁵ This initial version of the bill was intended to prevent non-dentists from providing teeth whitening services. The chair of the Illinois Dental Society's Committee on Governmental Affairs testified that whitening poses a threat to health and safety (though he noted the Society is not concerned with FDA-approved products like Crest Whitestrips).⁸⁶ But after CCTW sent letters to a handful of representatives explaining the teeth-whitening process used outside

of dental offices,⁸⁷ the senate version of the bill was amended to provide an exception for people who disclose that they are not dentists. It was this version that passed, making Illinois the only state to explicitly permit teeth whitening by statute.⁸⁸

Besides the states listed in Table 2, lobbying efforts may have existed in other states that never resulted in bills being introduced. For example, the Florida Dental Association attempted to get a teeth-whitening bill introduced and failed. The association then tried to get increased funding for board investigations with the specific purpose of investigating teeth-whitening businesses. This effort also failed.⁸⁹

At the same time that states were considering legislation to expand the definition of dentistry to include teeth whitening, a few states made it a felony to practice dentistry without a license. Some of the penalty increases may have been intended to deter teeth-whitening businesses. For example, in an email to AADA members, the executive director for the Nevada State Board of Dental Examiners noted the state's 2007 change from misdemeanor to felony in relation to concerns about teeth whitening.⁹⁰ Oklahoma made it a felony in 2008, the same year the dental board took legal actions against two teeth-whitening businesses.⁹¹ And during a board discussion about teeth-whitening businesses, a North Carolina board member "reiterated the need to approach the Dental Society with a request to change the unlawful practice of dentistry from a misdemeanor to a felony."⁹²

Table 2: Teeth-whitening Legislation, 2005 to 2011

State	Act	Language
2005		
Nevada*	SB250	Dentistry includes dispensing tooth-whitening agents or bleaching teeth unless using a product purchased over-the-counter for person's own use
2009		
Hawaii	HB1209 & SB51	Dentistry includes instructing or applying teeth-whitening materials or procedures
Illinois*	SB0290 & HB1010	A person must disclose that s/he is not a licensed dentists in order to provide on-site equipment and instruction for teeth whitening
Iowa*	HF380	Dentistry includes instructing or applying teeth-whitening materials or procedures
Minnesota	SF1911 & HF2273	Dentistry includes whitening teeth by any means or method unless using a product purchased over-the-counter for person's own use

Missouri*	SB296 & HB766	Dentistry includes whitening services using products not readily available to the public
North Dakota*	HB1176	Dentistry includes treatment of “discoloration” of teeth
2010		
Hawaii	SB2188	Dentistry includes instructing or applying teeth-whitening materials or procedures
Kentucky*	HB179	Dentistry includes performing or advertising to perform teeth whitening
Minnesota	SF2823 & HF3356	Dentistry includes whitening teeth by any means or method unless using a product purchased over-the-counter for person’s own use
New Hampshire*	HB1235	Dentistry includes whitening teeth by any means unless using an over-the-counter product for the person’s own use
2011		
Alabama*	HB451 & SB214	Dentistry includes teeth whitening even with prepackaged or over-the-counter products
Arizona*	HB2530	Dentistry includes the “removal of stains, discolorations and concretions”

* Legislation enacted

Policy/Regulatory Change

As shown in Table 1, 15 state dental boards adopted policies regarding teeth whitening from 2005 to 2011, with activity heating up in 2008. These policies reflect the boards’ interpretation of their dental practice acts and whether those acts outlaw teeth-whitening businesses. Only one board, Ohio’s, took the position that state law permits such services.

In at least nine states, there is evidence that the adoption of teeth-whitening policies by dental boards came after industry pressure. For example, in 2007, the Kansas Dental Association pressured the state’s board to file a lawsuit against teeth-whitening businesses.⁹³ But the Attorney General’s office told the board that Kansas’ dental practice act did not clearly outlaw such businesses.⁹⁴ The board’s executive director then researched other states’ approaches to the issue and sought input on the AADA message boards.⁹⁵

After a public hearing, the Kansas Dental Board adopted an administrative regulation that includes the altering of the color of teeth as the practice of dentistry. Of the people who provided comments in favor of the regulation, nine were dentists, one was the executive director of the dental association and one was the wife of a dentist.⁹⁶ One of the dentists argued, “[T]hough the procedure is safe for many patients

there are those that mistake the technicians for providers in the dental field and may mistake the ‘exam’ they get as a ‘checkup.’”⁹⁷

Those who provided comments opposed to the regulation included one teeth-whitening business owner and six members of the public who found teeth whitening to be safe, effective and affordable.⁹⁸ One member of the public stated, “I am against the proposed regulation as it will make it unfeasible for me or members of my family to afford further treatments in Kansas.”⁹⁹ Another member of the public wrote regarding her experience with teeth whitening outside a dentist’s office, “It was a very relaxing event, effective and reasonably priced. . . . I would oppose this legislation and ask you not to suppress my right or ability to whiten my teeth at a price I can afford.”¹⁰⁰

In both Maine and Rhode Island a dentist or the association explicitly asked for a position statement.¹⁰¹ In the other states—Connecticut, Delaware, Florida, Iowa, New Mexico and South Dakota—associations, dentists and hygienists sent numerous complaints, inquiries and requests for boards to take action on the issue of teeth-whitening businesses.¹⁰² (Sometimes, teeth-whitening businesses themselves sent inquiries—see “Businesses fight back” on page 16.) In South Dakota, the state dental association asked the board “to investigate the settings in which the teeth whitening services are being provided,” while

BUSINESSES FIGHT BACK

Interests representing dentists have dominated public debates over the definition of dentistry and regulation of teeth whitening, though in a handful of cases, teeth-whitening businesses have spoken out. Their efforts have met with mixed success.

The Council for Cosmetic Teeth Whitening (CCTW) was crucial in preventing the passage of legislation that would have killed its members' businesses in Illinois and Minnesota. In Minnesota, the CCTW and a manager of a retail whitening outlet testified against a bill to regulate teeth whitening as dentistry, arguing that the process is cosmetic, safe and a job creator.¹ CCTW sent letters to a handful of representatives in Illinois that explained the teeth-whitening process used outside dentists' offices.²

But whitening businesses have not had this same success in front of state dental boards. Before opening up shop, some businesses and distributors asked state dental boards what services they could offer when selling teeth-whitening products. Responses were mixed. Delaware and Ohio approved proposed operations. Ohio published an official policy permitting retail teeth whitening,³ and the Delaware dental board told Beyond Dental & Health that its procedure "does not constitute the practice of dentistry."⁴ Though not an explicit approval, Vermont said that it was outside the board's purview.⁵

But other dental boards told businesses that their proposed operations were dentistry. For example, the Maine dental board told Beyond Dental & Health that its whitening procedure "is a dental procedure, and only a licensed dentist can perform this."⁶ Still other dental boards either pointed to state statutes that do not mention whitening or noted that the board cannot provide legal advice. For example, the Virginia board told White Smiles, Inc. that it "cannot give [them] legal advice on the business [they] propose to operate in Virginia" and noted the statutes to look at for clarification.⁷

Teeth-whitening businesses and distributors have also spoken against policy proposals to regulate whitening in Kansas, Montana and Tennessee. None of these efforts were successful. Each of those proposals was adopted, though the Tennessee policy was later rescinded.

When targeted for enforcement of dental statutes via notices or cease-and-desist letters, some businesses have tried to explain their procedures to boards or asked why retail outlets can sell the same products.⁸ For example, a business owner in Montana who received notice of a complaint stated, "We do not perform or instruct in the performance of dental operations, oral surgery or dental services. We merely sell products and allow activity that is cosmetic in description."⁹ This letter did not persuade the board, which followed up with a cease-and-desist letter.

The Mississippi dental board and White Smile USA's attorney had an in-depth written exchange regarding whether the board has the right to tell the distributor to cease and desist. In his final written correspondence with the Mississippi board, White Smile USA's attorney stated, "We continue to disagree with your position that self-applied teeth whitening constitutes the 'treating of a disease, disorder or condition or the oral cavity.' We also seriously question your analogizing the application of dental veneers or orthodontic appliances to over-the-counter teeth whitening."¹⁰ White Smile USA's attorney requested a face-to-face meeting, though whether it ever took place is unclear. The Mississippi dental board continued to send cease-and-desist letters to businesses.

1 Minnesota Dental Association. (2010, March 13). Action item report from board of trustees meeting. Minneapolis, MN.

2 Burgett, T. (2009, March 23). Letter to Senator W. Haine.

3 Miller, K. (2006, September 12). Letter to F. Recker.

4 Delaware Board of Dental Examiners. (2010, June 3). Letter to J. Granson.

5 Lafaille, D. (2008, November 24). Letter to E. Jewell.

6 Theriault, D. (2009, May 28). Letter to G. Sbraccia.

7 Reen, S. (2006, July 11). Letter to A. Drew.

8 Chambers, S. (2010). Teeth whitening update. Presentation to the American Association of Dental Boards 2010 annual meeting. Orlando, FL; Alaska Board of Dental Examiners. (2008, December 12). Minutes of meeting. Anchorage, AK.

9 Judson, G. (2010, March 15). Letter to Montana Department of Labor and Industry.

10 Augustine, A. (2008, November 12). Letter to S. Ingram.

in Connecticut, the dental association provided the board copies of its policy and the ADA policy regarding whitening along with complaints about whitening businesses. In order to respond, the boards were compelled to decide how they were going to enforce their dental practice acts with respect to teeth-whitening businesses.

At least one state's policy change was prompted by action the Federal Trade Commission (FTC) took against the North Carolina State Board of Dental Examiners. As detailed below, the FTC found the North Carolina board's enforcement actions against teeth whiteners to be anti-competitive. Part of the complaint was that state law did not clearly address teeth whitening. Seeking to avoid a similar problem, Connecticut's Attorney General told that state's board that to continue regulating teeth whitening, it needed firmer legal ground.¹⁰³

So in 2011, the Connecticut board adopted a declaratory ruling concluding that teeth whitening is the practice of dentistry.¹⁰⁴ At a hearing debating the ruling, the state dental, dental assistant and hygienist associations all provided testimony in support of forbidding teeth-whitening services by non-dentists.¹⁰⁵

Unfortunately, there is little direct evidence of what prompted other boards—Louisiana, Massachusetts, North Dakota and Wisconsin—to adopt restrictions on teeth whitening.

Enforcement

Table 3 details the most common type of enforcement action state boards have taken against teeth-whitening businesses—cease-and-desist letters. Through public records requests, IJ sought such letters from every state dental board from 2007 to 2011. In that time, at least 24 dental boards and the District of Columbia sent nearly 200 letters telling teeth-whitening businesses to halt their operations. These states are also marked on the map in Figure 1.

Illinois was the only state that failed to respond to the request, and Alaska's letters were not obtained due to cost. Additionally, eight states—Alabama, Delaware,

Georgia, New Hampshire, Nevada, Pennsylvania, Tennessee and Wisconsin—withheld any cease-and-desist letters due to provisions in their open records laws that exempt complaints and investigative materials that have not resulted in disciplinary action. From other documentation provided, it is clear that some of these states did send cease-and-desist letters, and these are noted in Table 3.

The tone of cease-and-desist letters may be threatening, as in Nebraska:

[T]he Nebraska Board of Dentistry orders you to cease and desist providing teeth whitening services . . . until such time as you have a valid Nebraska dental license. Failure to obey an order to cease and desist is a Class III felony and punishable by one to twenty years in prison and up to a \$25,000 fine.¹⁰⁶

Or it may be mild as in Florida's "letter of guidance," which states, "The Department of Health is confident, by receipt of this letter, you will adjust any acts or behavior that may be construed as unlicensed activity . . ."¹⁰⁷

By far the most aggressive state board was the North Carolina State Board of Dental Examiners, which sent 43 cease-and-desist letters from 2006 to 2009. The board also sent 12 letters to the management of malls claiming that teeth-whitening kiosks in the malls were illegal.¹⁰⁸ And the dental board urged the state's cosmetology board to post a "Teeth Whitening Bulletin" on its website informing cosmetologists that any process that removes stains from teeth constitutes the practice of dentistry.¹⁰⁹ (Similar actions happened in other states. See "Dental boards enlist cosmetology boards" on page 22.) The board also brought lawsuits against two teeth-whitening businesses, both of which agreed to halt operations.¹¹⁰

The North Carolina board's enforcement tactics drew the attention of the FTC, which opened an investigation in 2008. In June 2010, the FTC issued an administrative complaint that concluded, "Dentists in North Carolina, acting through the instrument of the [board], are colluding to exclude non-dentists from

competing with dentists in the provision of teeth whitening services.” It further noted that six of the board’s eight members are licensed dentists and that these members “can and do control the operation” of the board. The complaint charged that the board’s anti-competitive actions led to higher prices and fewer consumer choices.¹¹¹

The board appealed, but in 2011, an administrative law judge sided with the FTC and ordered the board to stop its actions against teeth whiteners.¹¹² The

judge pointed out that nearly all complaints received by the board came from licensed dentists or their employees, many of them referenced or included copies of ads that listed prices for whitening services, and several complaining dentists offered competing teeth-whitening services. Meanwhile, only three of the investigations opened by the board included reports of harm to a consumer, and these were temporary conditions.¹¹³ The board is continuing to fight the judgment in federal court.

Table 3: Dental Board Cease-and-desist Letters, Orders and Fines

State	Description	Sent	Year(s)
Alabama*	Cease-and-desist letters ¹¹⁴	1+	2010
Alaska*	2 cease-and-desist letters and 4 warning letters ¹¹⁵	6	2008
Connecticut	Cease-and-desist letters	4	2008, 2011
DC	Fines - \$500 and \$1,000	2	2009
Florida	Guidance letters	9	2009
Georgia*	Cease-and-desist orders	2	2008-2010
Illinois*	Cease-and-desist letter ¹¹⁶	1	2008
Iowa	Cease-and-desist letters	20	2002, 2004, 2007-2011
Kansas	Cease-and-desist letters	39	2009-2011
Kentucky	Cease-and-desist orders and signed affidavits	4	2007-2009
Louisiana	Cease-and-desist letters	2	2009
Maine	Warning letters	2	2005
Massachusetts	Cease-and-desist letter	1	2008
Minnesota	Cease-and-desist letter sent to a producer	1	2007
Mississippi	Cease-and-desist letters	17	2008-2010
Missouri	8 cease-and-desist letters and 1 warning letter	9	2001, 2008-2011
Montana	Cease-and-desist letters	10	2009-2011
Nebraska	Cease-and-desist letters	2	2008, 2010
Nevada*	Cease-and-desist letters ¹¹⁷	1+	2007
North Carolina	Cease-and-desist letters	43	2006-2009
North Dakota	Cease-and-desist letters	4	2007-2008, 2010
South Dakota	2 cease-and-desist letters and 1 warning letter	3	2010
Tennessee*	Cease-and-desist letters	10	2009
West Virginia	Cease-and-desist letters	3	2006, 2008-2009
Wyoming	Cease-and-desist letters	10	2004-2010

*Cease-and-desist letters were not obtained. Tennessee had previously released letters for a shorter time period.

Figure 2: People Who Filed Complaints

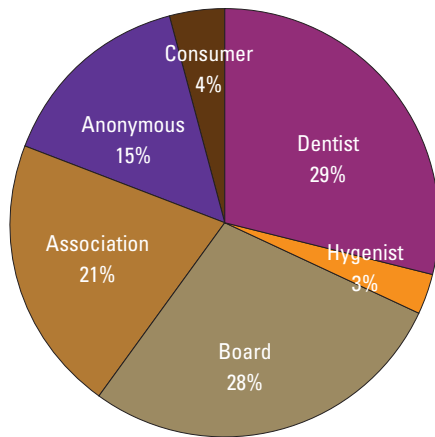
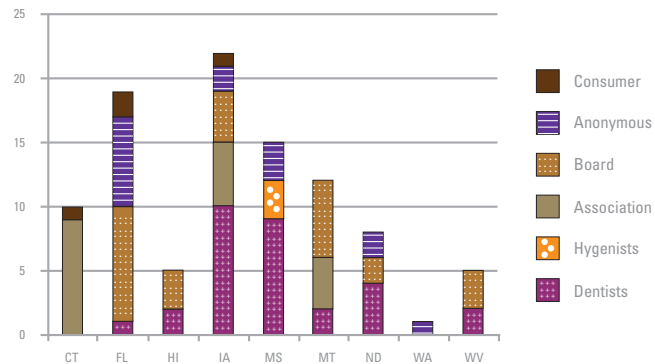


Figure 3: People Who Filed Complaints by State



Complaint data collected by the Institute for Justice show a similar pattern elsewhere. Overall, of the complaints IJ obtained, 21 percent came from state dental associations, 32 percent came from dentists and hygienists, 28 percent from boards themselves, 4 percent from consumers and 15 percent were anonymous, as shown in Figure 2. (In many cases a board would file a complaint so that an investigation of the whitening business could be opened.) And, as Figure 3 shows, the pattern holds in individual states. As discussed in detail below, the vast majority of complaints are about unlicensed practice, not allegations of harm to consumers.


State dental associations often exerted significant pressure on state dental boards to pursue teeth-whitening businesses. Not only did associations send their own complaints about unlicensed practice to state boards, they urged their members to do likewise. The Massachusetts Dental Association even dedicated a portion of its “For Professionals” website to “Information on filing complaints about the mall tooth whitening trend.”¹¹⁸

The Florida Dental Association encouraged its members to file complaints and sent its own letter to the health department director urging action, including a request that the attorney general prosecute teeth whit-

eners.¹¹⁹ The health department, through the Florida Board of Dentistry, eventually did open investigations, and the board sent nine “guidance” letters to teeth-whitening businesses.¹²⁰ In several cases, the board also sent a letter notifying the local chief of police of a business engaged in the unlicensed practice of dentistry even though law enforcement and the state’s attorneys refused to take action against these businesses.¹²¹

The Missouri Dental Board had several discussions with the state association and with dentists regarding teeth-whitening businesses.¹²² While the association worked on an education campaign to encourage consumers not to patronize teeth-whitening businesses, the Missouri Dental Board sent seven cease-and-desist letters threatening legal action. (A letter sent to Sam’s Club, a large corporation with ample legal resources, made no such threat.)¹²³

The Virginia Dental Association went so far as asking the governor to make the board enforce unlicensed practice laws against teeth whitening providers.¹²⁴ Despite this pressure, the board did not to take enforcement actions because it is not authorized to address unlicensed practice, and the Attorney General’s Office decided to deal with teeth whitening on a case-by-case basis.¹²⁵



As the map in Figure 1 illustrates, at least 13 states sent cease-and-desist letters in the absence of either a law or board policy that, according to this report, clearly outlawed teeth whitening outside a dentist's office. Additionally, some states pursued enforcement before a specific law or policy was in place. In both cases, the boards often relied on vague statutory language defining the practice of dentistry.

For example, the Wyoming dental board sent 10 cease-and-desist letters charging teeth whiteners with providing a "dental service of any kind"¹²⁶ Iowa likewise claimed that teeth-whitening businesses were illegally treating a dental "condition" in the five letters it sent prior to the adoption of a law or policy on teeth whitening.¹²⁷ The six letters Montana's board sent before passing an administrative ruling on teeth-whitening referenced "dental operations . . . [and] dental service[s] of any kind."¹²⁸

The lack of an express prohibition on teeth-whitening in North Carolina's dental practice act was a key factor in the FTC's complaint, and other states took notice. As the Louisiana dental board executive director wrote on an AADA message board at the time, "The issue is important, but now that the feds are involved, we must proceed cautiously."¹²⁹

After the FTC complaint, the executive director of the Missouri dental board told the executive director of the state association that the cease-and-desist letters it sent before a 2009 amendment to the dental practice act may open the door to a lawsuit.¹³⁰ Prompted both by the FTC action and a state attorney general opinion, the Tennessee Board of Dentistry in 2010 rescinded a policy it had adopted in 2009 declaring it illegal for anyone but a dentist to provide teeth-whitening services.¹³¹ The board had sent 10 cease-and-desist letters, but the attorney general said that the policy was "legally indefensible and unenforceable."¹³²

In the wake of the FTC complaint, Wyoming has stopped sending cease-and-desist letters and instead reviews teeth-whitening businesses on a "case-by-case" basis.¹³³ In 2011, the Mississippi board likewise decided to hold off on investigating teeth-whitening businesses until after the resolution of the FTC action.¹³⁴ The FTC complaint may have prompted other states to pull back on enforcement efforts as well.

Based on letters IJ received through public records requests, as of 2011, only six state boards were still sending cease-and-desist letters—Connecticut, Iowa, Kansas, Missouri, Montana and North Dakota. Each of these six states have laws or policies that pertain to teeth whitening, though Missouri's is considered unclear in this report.

After the Kansas Dental Board passed its administrative ruling—with the support of the industry and opposition from consumers—the board sent out at least 39 cease-and-desist letters telling businesses to discontinue teeth-whitening services, making Kansas the most aggressive state next to North Carolina.

Some dental boards went one step further than a cease-and-desist letter and issued signed and notarized orders and/or fines. The Kentucky board ordered the owners of teeth-whitening businesses to declare in a notarized affidavit that they will no longer provide teeth-whitening services. The board sent these orders before Kentucky passed their whitening statute in 2010. The District of Columbia dental board fined two businesses without any warning, cease-and-desist order or law on the books.

As shown in Table 4 and indicated on Figure 1, at least nine states have taken legal action against teeth-whitening businesses, asking courts to enjoin them from offering teeth-whitening services.

In seven states, these actions halted teeth-whitening services. In West Virginia, a court granted the dental board's motion for an injunction, forcing a business to stop providing teeth-whitening services but allowing it to sell the product for personal use.¹³⁵

Despite having no clear statute or policy pertaining to teeth whitening, the Oklahoma dental board filed for an injunction against a mall kiosk, Glamour White, in 2008 and received a temporary restraining order to shut down a teeth-whitening business, EuroShine USA, at the state fair in October 2012.¹³⁶ Glamour White and EuroShine USA both came to an agreement with the board to stop providing teeth-whitening services.¹³⁷ As noted above, though Oklahoma's practice act refers to treatment for "discoloration," it was adopted in 1970, long before modern teeth-whitening practices developed. Lawsuits in North Carolina and

Hawaii, also states without specific statutory or regulatory whitening language, likewise forced companies to agree to halt teeth whitening.¹³⁸

After Wyoming state prosecutors said they were “not interested” in pursuing criminal charges against teeth-whitening businesses, the dental board brought a civil suit.¹³⁹ The business settled and stopped whitening teeth.¹⁴⁰ The Nevada dental board sued and secured a settlement halting teeth-whitening services at a spa because the spa did not sell the light used in the whitening process, and therefore it could not be considered “over-the-counter” under the state’s amended dental practice act.¹⁴¹

The New Mexico board filed two cases after it passed a policy statement, but the board voluntarily dis-

missed the cases three months later.¹⁴² Kansas and Louisiana sought injunctions against teeth-whitening businesses, but both dismissed or stopped pursuing their cases shortly after the FTC complaint.¹⁴³ In Louisiana, Laser Therapy shut down after the injunction was filed, but the case continued to be fought by BleachBright.

In an unusual twist, the New Jersey Dental Association (NJDA), not the state board, filed a lawsuit in 2010 against Beach Bum Tanning, arguing that its teeth-whitening services constitute the practice of dentistry. The court initially ruled against NJDA because it does not have the ability to enforce the law, only the board does. But on appeal the court decided to transfer the matter to the dental board, which is currently investigating the business.¹⁴⁴

Table 4: Legal Actions Against Teeth-whitening Services

State	Case	Description
2008		
New Mexico	<i>Board v. Scott A. Bushey</i> <i>Board v. Great White Smile, LLC</i>	Board voluntarily dismissed
North Carolina	<i>Board v. Signature Spas of Hickory</i> <i>Board v. Carmel Day Spa</i>	Consent orders to stop whitening services
Oklahoma	<i>Board v. Glamour White</i>	Agreed order to stop whitening services
West Virginia	<i>Board v. Brighten Smile USA, LLC</i>	Preliminary injunction to stop whitening services
2009		
Hawaii	<i>State v. Ultrabright Hawaii, LLC</i>	Consent judgment to stop whitening services
2010		
Kansas	<i>Board v. Caribbean Sun</i>	Board voluntarily dismissed
Louisiana	<i>Board v. Laser Therapy, LLC</i>	Board stopped pursuing
Nevada	<i>Board v. Y&M Incorporated</i>	Stipulation order, judgment and injunction
Wyoming	<i>Board v. Hollis Investments, LLC</i>	Settlement agreement to stop whitening services
2012		
New Jersey	<i>NJDA v. Beach Bum Tanning</i>	The board is given the authority to determine the legality of teeth whitening
Oklahoma	<i>Board v. Euroshine USA</i>	Agreement to stop whitening services

DENTAL BOARDS ENLIST HELP FROM COSMETOLOGY BOARDS

In addition to sending cease-and-desist letters to teeth-whitening businesses, dental boards urged cosmetology boards in Maine, Minnesota, Montana, North Dakota, South Dakota and West Virginia to stop teeth-whitening services by their licensees.¹

According to former salon owner Gary Burton, Montana's cosmetology board had pre-approved whitening products for use by cosmetology licensees in 2008.² But after a request from the dental board, the cosmetology board instead passed an administrative ruling forbidding use of whitening products by cosmetologists, stating that it is a dental procedure.³ Similarly, the West Virginia cosmetology board sent cease-and-desist letters to its licensees who provided teeth whitening, not because whitening is prohibited under their practice act but because the dental board considers it the practice of dentistry.⁴

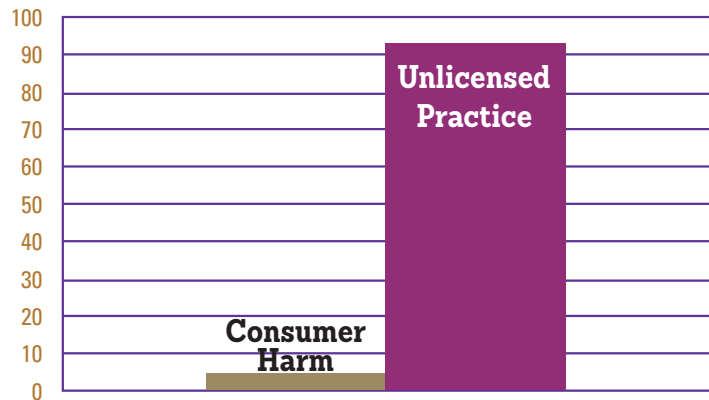
1 Faulkner, J. (2004, July 12). Letter to Board of Cosmetology; Minnesota Board of Dentistry. (2008, June 13). Joint complaint committee agenda. Minneapolis, MN; Montana Board of Barbers and Cosmetologists. (2009, July 20). Full board open minutes. Helena, MT; Peterson, B. (2008, March 4). Letter to D. Schank; Boyd, K. (2010, March 23). Email to South Dakota Board of Dentistry. RE: Teeth whitening; Harman, M. (2007, March 12). Letter to WV State Board of Barbers and Cosmetologists.

2 http://missoulian.com/news/local/article_10a68b16-6ba2-55d7-a408-0798f72d89c7.html

3 Mont. Admin. R. 24.121.1509(12).

4 Absten, L. (2007, December 6). Letter to K. Hurley.

Figure 4: Complaint Type



THE “NEED” FOR REGULATION

Much of the advocacy for regulating teeth whitening as the practice of dentistry involves a conundrum: While dental boards and associations commonly argue that, to protect public health and safety, those without dental licenses must not be allowed to offer teeth-whitening services, they allow that the same practices are safe when done by consumers in their own homes. For example, the Pennsylvania Dental Association (PDA) patient website asks if whitening kiosks are safe and responds, “NO! Tooth whitening procedures, outside of those readily available for over-the-counter purchase by the consumer for self-use, should be performed only by a licensed dentist within a registered dental office.”¹⁴⁵ In a letter to the board, the PDA argues that regulating whitening—except for products “readily available over the counter for purchase by the consumer for self-use”—as dentistry protects the health and safety of citizens.¹⁴⁶

Advocates of limiting teeth whitening frequently invoke health and safety concerns. When asked by an Arizona state senator the reason for the new scope of practice language, the dental association executive director said:

There are considerations when having your teeth whitened where there are caustic materials that are being used. If someone has cracks or problems or periodontal disease, the bleach materials that are used

for whitening can severely irritate the soft tissue and possibly penetrate the teeth and cause severe pain and discomfort.¹⁴⁷

Similarly, an Illinois Dental Society representative and testimony by the president-elect of the Hawaii Dental Association pointed to health and safety risks in allowing non-dentists to offer teeth whitening.¹⁴⁸

Yet while theories and assertions abound, evidence that teeth whitening in malls or salons poses a greater risk than the same practice at home is rarely offered. To examine the risks involved with retail teeth whitening, this report reviews complaints to state dental boards and scholarly literature.¹⁴⁹

IJ requested complaint data from all state dental boards and state health departments between the years 2007 and 2011. As noted, 16 states and the District of Columbia responded to this request and did not withhold data. Nine of those states—Connecticut, Florida, Hawaii, Iowa, Mississippi, Montana, North Dakota, Washington and West Virginia—produced complaints. The others—District of Columbia, Kentucky, Illinois, Indiana, Maine, Rhode Island, South Dakota and Wyoming—reported no relevant complaints during the time period.

Of the 97 complaints obtained, only four reported consumer harm, and all were about burnt or irritated gums (see Figure 4), which are temporary conditions. None of them had permanent harm from the

teeth whitening. During this time, dental associations urged dentists to report any whitening harm they saw,¹⁵⁰ and despite this only four people stepped forward to complain in those 17 states. As noted, the other 93 complaints were about unlicensed practice and came from dentists (29 percent), state boards (28 percent), associations (21 percent), hygienists (3 percent) and anonymous persons (15 percent).

The complaint data fail to indicate a threat to public health and safety. Only four health-and-safety-related complaints were filed across 17 states over a five-year period, and each reported common, reversible side effects, according to research.

Indeed, academic literature finds that the most common side effects of bleaching are tooth sensitivity and gum irritation.¹⁵¹ Tooth sensitivity is common in 15 to 78 percent of consumers depending on the method and concentration of the whitening product.¹⁵² A study using at-home bleaching treatment for six weeks found that 31 percent of consumers experienced irritated gums.¹⁵³ Tooth sensitivity and gum irritation are reversible and generally take only a couple of days to resolve.¹⁵⁴ There are no published reports of anyone ever having suffered permanent harm as a result of peroxide-based teeth whitening. In fact, the American Dental Association informed patients and dentists that there are “no significant, long-term oral or systemic health risks associated with professional at-home tooth bleaching materials containing 10% carbamide peroxide.”¹⁵⁵

Some states have banned the use of an LED light by teeth-whitening businesses. However, several studies have found no harm from adding LED lights to the whitening process.¹⁵⁶ In fact, the blue LED lights used generate little heat and no ultraviolet or infrared radiation, making them as safe as a household flashlight.¹⁵⁷ A 2011 study reported “LED photoactivation results in high whitening efficiency, a very small increase in intrapulpal temperature, and no morphological changes on the treated enamel.”¹⁵⁸

A clinical study from the University of Rochester Eastman Dental Center questioned how teeth-whitening products stack up to products we consume ev-

eryday—fruit juices and carbonated sodas. The study on orange juice found significant changes to tooth enamel from exposure to orange juice and very little change from the teeth-whitening product. In other words, orange juice has far more detrimental effects than teeth-whitening products.¹⁵⁹

Three dentists who authored one study concluded, “Based on the patient’s existing condition and desired whitening effects, in-office, at home, or OTC modalities can be used to safely and effectively address a variety of aesthetic concerns.”¹⁶⁰

Whatever minimal risks are associated with teeth whitening, they are the same whether customers apply a product to their teeth at home, at a salon or at a shopping mall. The American Dental Association has apparently recognized the flaw in the public health and safety argument while dentists administer similar products. According to the North Dakota dental board, the ADA now refuses to comment or endorse state attempts to prohibit teeth-whitening businesses.¹⁶¹

“Whatever minimal risks are associated with teeth whitening, they are the same whether customers apply a product to their teeth at home, at a salon or at a shopping mall.”

IMPLICATIONS AND RECOMMENDATIONS

Joyce Osborn Wilson is the developer of Britewhite teeth-whitening products and the founder of the Council for Cosmetic Teeth Whitening (CCTW). She has been a businesswoman for 31 years. She is a cosmetologist and esthetician by training, and like all successful entrepreneurs she recognized an unmet demand—cosmetic teeth whitening in salons and day spas—and decided to do something about it. “When I provided beautiful lips using permanent makeup, I often felt the yellow teeth ruined the entire look when the client smiled,” she said. “I realized the need for teeth whitening in the spas and salons. When I researched regulations for this service, I learned it was labeled ‘cosmetic’ by the FDA.”

Joyce was excited to bring a new revenue flow to her industry, and judging by the response she received at tradeshow, the industry was also excited. Joyce found that teeth whitening would cost a patient between \$600 and \$1200 in dental offices. The product she developed only cost \$150.

But in 2008, the North Carolina dental board brought a lawsuit against a spa she sold products to and demanded information about the spa’s clients and customers. The spa eventually settled and went out of business. Afraid of the risk to her own business’s reputation, Joyce stopped selling in North Carolina.¹⁶²

The second blow to Joyce’s business came in 2009 when the Alabama Supreme Court sided with the state board and effectively outlawed teeth whitening outside dentists’ offices, and she was forced to stop practicing and distributing in her home state. “I thought I had a business that would secure me for a lifetime,” she said. “I had the rug yanked out under me. I should have been able to retire five years ago but I couldn’t. I had to fight for my rights.” So Joyce organized her competitors and started the CCTW to fight restrictions on teeth whitening and educate teeth-whitening businesses about the legal landscape and proper practices.

Joyce’s fight illustrates how the expansion of licensing regimes can crush entrepreneurs, halt new services and limit consumer choice. Dental boards have the power to define the scope of dental practice, either directly, through regulations interpreting state law, or indirectly, by using their influence and authority to secure legislative change. Dental interests are well-organized and hold considerable sway with state boards—and oftentimes share members with the boards. And their economic interests lie in pushing the boundaries of licensing regimes to keep out upstart competitors offering similar services at lower prices.

Dental boards and associations are persuasive because they claim to be acting in the interest of public health and safety. But consumers rarely demand expanded licensing. Indeed,

this report finds that consumers hardly ever complain about teeth-whitening services. Most complaints come from dental interests and are about unlicensed practice, not consumer harm. And, consistent with scholarly research, the few genuine complaints are about reversible side-effects typical of teeth whitening wherever it is done, such as temporary gum irritation and tooth sensitivity.

Legislators considering outlawing teeth whitening outside dentists’ offices would do well to examine whether there is truly a need to limit the trade. As the Wisconsin Attorney General concluded, “Whitening is primarily a cosmetic exercise with no significant health implications Those who are harmed by these ventures are not without a remedy . . . they may complain to the Office of Consumer Protection for redress.”¹⁶³ In addition to state consumer protection agencies, consumers can also register dissatisfaction with—and learn about service-providers from—third-party websites such as Angie’s List and Yelp. And groups like CCTW can be helpful in setting industry standards that promote viable businesses and protect consumers.

State boards should resist calls by dental associations to expand the practice of dentistry to include teeth whitening and halt efforts to shut down entrepreneurs who simply provide over-the-counter products and convenient, comfortable and clean places for consumers to use them.

Even better, legislators should formally legalize teeth whitening businesses, as Illinois did. Removing legal uncertainty and lifting outright bans on the practice would allow new businesses to flourish.

Legislators should also consider lessening the influence of the dental industry on state boards by severing the formal links that exist in some states between dental boards and state dental associations. For example, 11 states require that the state dental association recommend board members who will then be appointed by the governor. In Alabama, one of the board members is appointed directly by the association. Rules like these ensure that industry insiders can influence regulatory matters and make it difficult for dentists with views that differ from the association’s to attain a seat on the board.

Licensing rules and regulatory boards are supposed to protect consumers from harm, but there is no health or safety reason to make it illegal for anyone but dentists to offer teeth-whitening services. Outlawing teeth-whitening entrepreneurs serves only to raise prices for consumers and protect dentists from honest competition.

ENDNOTES

- 1 http://c-hit.newhavenindependent.org/health/entry/dental_board_to_rule_.
- 2 Complaint Counsel's Proposed Final Stipulations of Law, Fact, and Authenticity, February 8, 2011, *In re N.C. Bd. of Dental Exam'rs*, at 7 (No. 9343), available at <http://www.ftc.gov/os/adjpro/d9343/110208ccproposedfinalstip.pdf>.
- 3 Complaint Counsel's Memorandum in Support of its Motion for Partial Summary Decision, November 8, 2010, *In re N.C. Bd. of Dental Exam'rs*, at 6-7 (No. 9343), available at <http://www.ftc.gov/os/adjpro/d9343/101108northcarolinacmpt.pdf>.
- 4 Carpenter, D. (2008). Regulation through titling laws: A case study of occupational regulation. *Regulation & Governance*, 2, 340-359; Maurizi, A. (1974). Occupational licensing and the public interest. *Journal of Political Economy*, 82(2), 399-413; Shepard, L. (1978). Licensing restrictions and the cost of dental care. *Journal of Law and Economics*, 21(1), 187-201.
- 5 Adams, A., Jackson, J., & Ekelund, R. (2002). Occupational licensing in a 'competitive' labor market: The case of cosmetology. *Journal of Labor Research*, 23(2), 261-278; Kleiner, M., & Kudrle, R. (2000). Does regulation affect economic outcomes? The case of dentistry. *Journal of Law & Economics*, 43, 547-582.
- 6 Pagliero, M. (2007). The impact of potential labor supply on licensing exam difficulty in the US market for lawyers. *Carlo Alberto Notebooks*, 53.
- 7 Carpenter, D. (2011). Blooming nonsense: Do claims about the consumer benefit of licensure withstand empirical scrutiny? *Regulation*, 34(1)44-47; Carpenter, 2008; Carroll, S., & Gaston, R. (1981). Occupational restrictions and the quality of service received: Some evidence. *Southern Economic Journal*, 47, 959-976; Cox, C., & Foster, S. (1990). The costs and benefits of occupational regulation. Washington, DC: Federal Trade Commission; Kleiner, M. (2000). Occupational licensing. *Journal of Economic Perspectives*, 14, 189-202; Kleiner and Kudrle, 2000.
- 8 Johnson, S., & Corgel, J. (1982-1983). Market intervention by the courts: The economics of occupational boundary-setting. *Harvard Journal of Law and Public Policy*, 6, 200-218; Timmermans, S. (2008). Professions and their work: Do market shelters protect professional interests? *Work and Occupations*, 35(2), 164-188.
- 9 Carpenter, 2008; Young, S. (1991). Interest group politics and the licensing of public accountants. *Accounting Review*, 66, 809-817.
- 10 <http://www.bls.gov/oco/ocos072.htm>
- 11 <http://www.ada.org/2555.aspx#definition>
- 12 Joiner, A. (2006). The bleaching of teeth: A review of the literature. *Journal of Dentistry*, 34, 412-419.
- 13 Food, Drug, and Cosmetic Act of 1938 § 201(i).
- 14 225 Ill. Comp. Stat. § 25/17-11.
- 15 Iowa Code § 153.13.3.
- 16 Ala. Code § 34-9-6 (12).
- 17 Earl, K. (2011, March 9). Testimony before the Arizona Committee on Healthcare and Medical Liability Reform. Phoenix, AZ: Arizona State Legislature.
- 18 Ala. Code § 34-9-6 (12).
- 19 Ariz. Rev. Stat. Ann. § 32-1202.
- 20 Connecticut State Dental Commission, June 8, 2011, Declaratory Ruling, available at http://www.ct.gov/dph/lib/dph/phho/dental_commission/declaratory_rulings/2011_teeth_whitening_declaratory_ruling_-_corrected.pdf.
- 21 Board of Dentistry and Dental Hygiene. (2011). Teeth whitening outside dental offices. Dover, DE.
- 22 Florida Board of Dentistry. (2007, September 14). General business meeting. Gainesville, FL.
- 23 225 Ill. Comp. Stat. § 25/17-11.
- 24 Iowa Code § 153.13.3.
- 25 Iowa Dental Board. (2008). Position statement: Tooth whitening/bleaching services by non-licensed persons. Des Moines, IA.
- 26 Kan. Admin. Regs. § 71-11-1.
- 27 Ky. Rev. Stat. Ann. § 313.010-11.
- 28 Louisiana State Board of Dentistry. (2008, December 6). Minutes of the annual meeting. New Orleans, LA.
- 29 The Maine State Board of Dental Examiners. (2010). Board policy on bleaching/whitening as it relates to IPDH/RDH. Augusta, ME.
- 30 Board of Registration in Dentistry. (2008). BORID policy on tooth whitening services. Boston, MA.
- 31 Minn. Stat. § 150A.05-6.
- 32 Mo. Rev. Stat. § 332.366.
- 33 Mont. Admin. R. 24.138.306.

- 34 Nev. Rev. Stat. § 631.215(1)(m).
- 35 N.H. Rev. Stat. Ann. § 317-A:20.
- 36 N.J. Stat. Ann. 45 § 6-19.
- 37 New Mexico Regulation and Licensing Department. (2008). Press release: State regulators warn public of possible health risk posed by unlicensed teeth whitening operations. Santa Fe, NM.
- 38 N.C. Gen. Stat. § 90-29.
- 39 N.D. Cent. Code § 43-28-01.
- 40 North Dakota State Board of Dental Examiners. (2008, January 11). Minutes. Bismarck, ND.
- 41 Ohio State Dental Board. (2008, February 27). Policy regarding bleaching services offered in mall kiosks and salons by non-licensed dental personnel. Columbus, OH.
- 42 Okla. Stat. Tit. 59, § 328-19.
- 43 R.I. Code R. § 14-140-007.
- 44 S.D. Codified Laws § 36-6A-32.
- 45 South Dakota State Board of Dentistry. (2010, January 4). Special meeting. Pierre, SD.
- 46 Tex. Occ. Code § 251.003.
- 47 Wash. Rev. Code Ann. § 18.32.020.
- 48 Wisconsin Dental Examining Board. (2005). Teeth whitening. Madison, WI.
- 49 In enforcing its dental practice act against non-dentist teeth-whiteners, the Nevada board has pointed to regulations that designate various duties to different licensees, such as dental hygienists: "A dentist who is licensed in this State may authorize a dental hygienist in his employ and under his supervision to . . . Apply and activate agents for bleaching teeth with a light source" (Nev. Admin. Code § 631.210-2, emphasis added). The board claims that this language makes it illegal for anyone other than a licensed dentist or hygienist to use an LED light in teeth whitening. However, the Nevada code discusses the application of whitening agents, and non-dentist teeth whiteners do not apply the materials, customers do. Moreover, while trial courts in Nevada have accepted the board's argument, we are only aware of only one other state, Louisiana, using language that merely assigns duties among dental licensees to exclude non-dentists from teeth whitening, though another dozen have similar codes or statutes. The Louisiana board stopped pursuing that case (*Louisiana State Board of Dentistry v. Laser Therapy, LLC*).
- 50 New Hampshire Board of Dental Examiners. (2010, April 5). Meeting minutes. Concord, NH; Jarvis, J. (2010, April 27). Testimony before the New Hampshire Senate Committee on Executive Departments and Administration. Concord, NH: New Hampshire General Court.
- 51 Balistreri, T. (2005, February 22). Letter to S. Rowe.
- 52 <http://www.agd.org/education/transcriptnews/Default.asp?PubID=47&IssID=659&ArtID=2738>
- 53 Complaint for Injunction, April 30, 2010, *In re Wyoming Board of Dental Examiners v. Hollis Investments, LLC*, (No. 91897C); Complaint for Injunctive Relief, July 25, 2008, *In re West Virginia Board of Dental Examiners v. Brighten Smile USA, LLC*, (No. 08-C-1379).
- 54 Balistreri, 2005.
- 55 Balistreri, 2005.
- 56 *White Smile USA, Inc., and D'Markos, L.L.C. v. Board of Dental Examiners of Alabama*, 36 So. 3d 9 (Ala. 2009).
- 57 Brief of the Institute for Justice as Amicus Curiae, June 3, 2009, *In re White Smile USA, Inc., and D'Markos, L.L.C. v. Board of Dental Examiners of Alabama*, (No. 1080780).
- 58 <http://www.ada.org/adatimeline.aspx>
- 59 <http://www.ada.org/3804.aspx>
- 60 http://www.iowadental.org/be_a_member/benefits-services.cfm
- 61 Collier, R. (2011). American Medical Association membership woes continue. *Canadian Medical Association Journal*, 183(11), E713.
- 62 <http://www.dentalboards.org/Clearinghouse%20History.htm>
- 63 <http://www.dentalboards.org/SponsorAnnualMeeting.htm>
- 64 <http://www.dentalboards.org/SponsorAnnualMeeting.htm>
- 65 Nevada Senate Committee on Commerce and Labor. (2005, April 6). Minutes. Carson City, NV: Nevada Legislature.
- 66 Nevada Senate Committee on Commerce and Labor. (2005, April 6). Minutes. Carson City, NV: Nevada Legislature; <http://www.kcnvlaw.com/Details/Fred-L.-Hillerby.html?Itemid=->; http://www.nvdha.org/index.php?option=com_contact&view=contact&id=3:neena-laxalt&catid=12:contacts.
- 67 <http://www.agd.org/education/transcriptnews/Default.asp?PubID=47&IssID=1057&ArtID=6458>

- 68 Minnesota Dental Association. (2008, October 1). Minutes of the legislative committee. Minneapolis, MN.
- 69 Minnesota Board of Dentistry. (2010, February 19). Minutes of the public board meeting. Minneapolis, MN; Minnesota Board of Dentistry. (2009, February 11). Minutes of the policy committee meeting. Minneapolis, MN.
- 70 Washburn, A. (2009). 2009: A successful session. *Focus*, 3.
- 71 Hawaii Senate Committee on Health. (2010, February 3). Testimony on SB 2188. Honolulu, HI: Hawaii State Legislature; Hawaii House Committee on Health. (10, March 13). Testimony on SB 51. Honolulu, HI: Hawaii State Legislature; Hawaii House Committee on Health. (2009, February 13). Testimony on HB 1209. Honolulu, HI: Hawaii State Legislature.
- 72 Arizona Committee on Health and Human Services. (2011, February 16). Meeting on HB2530 – board of dental examiners. Phoenix, AZ: Arizona State Legislature; Arizona Committee on Healthcare and Medical Liability Reform. (2011, March 9). Meeting on HB2530 – board of dental examiners. Phoenix, AZ: Arizona State Legislature.
- 73 Iowa Dental Board. (2008, July 16). Meeting minutes. Des Moines, IA; Iowa Dental Board. (2008, October 28-29). Meeting minutes. Des Moines, IA.
- 74 Oregon Board of Dentistry. (2008, December 5). Board meeting minutes. Portland, OR.
- 75 Iowa Dental Board. (2009, January 15-16). Meeting minutes. Portland, OR.
- 76 Cichy, J. (2009) News from the central office. *North Dakota Dental Association Newsletter, Summer*.
- 77 Kentucky Senate Health and Welfare Committee. (2010, March 26). Audio cassette of meeting. Frankfort, KY: Kentucky Legislature.
- 78 New Hampshire Board of Dental Examiners. (2009, September 28). Meeting minutes. Concord, NH.
- 79 Board of Dental Examiners of Alabama. (2008, October 2). Meeting minutes. Hoover, AL; Board of Dental Examiners of Alabama. (2010, February 4). Meeting minutes. Hoover, AL.
- 80 Mason, C. (2009, March 20). Testimony before the Hawaii House Committee on Health. Honolulu, HI: Hawaii State Legislature.
- 81 Uchida, J. (2010, March 16). Testimony before the Hawaii House Committee on Health. Honolulu, HI: Hawaii State Legislature.
- 82 Arizona Committee on Healthcare and Medical Liability Reform. (2011, March 9). Meeting on HB2530 – board of dental examiners. Phoenix, AZ: Arizona State Legislature; Arizona has a sunrise law (Ariz. Rev. Stat. § 32-3106.), but no report was created for the 2011 amendment intended to bring teeth whitening within the practice of dentistry.
- 83 New Hampshire Board of Dental Examiners. (2011, August 11). Meeting minutes. Concord, NH; New Hampshire Senate Committee on Executive Departments and Administrative Hearing. (2010, April 27). Meeting. Concord, NH: New Hampshire General Court.
- 84 Minnesota Dental Association. (2010, March 13). Action item report from board of trustees meeting. Minneapolis, MN.
- 85 <http://www.ilga.gov/legislation/BillStatus.asp?DocNum=1010&GAID=10&DocTypeID=HB&LegID=76&SpecSess=&Session=&GA=96>
- 86 Cross, C. (2009, March 4). Testimony before the Illinois Health Care Licenses Committee. Springfield, IL: Illinois General Assembly.
- 87 Burgett, T. (2009, March 23). Letter to Senator W. Haine.
- 88 <http://www.ilga.gov/legislation/BillStatus.asp?DocNum=290&GAID=10&DocTypeID=SB&LegID=41011&SessionID=76>
- 89 Florida Dental Association. (2008, June 11-12). House of delegates minutes. Orlando, FL.
- 90 Kelly, K. (2007, December 20). Email to C. Price. Re: Question on malpractice insurance.
- 91 Oklahoma Board of Dentistry. (2008, November 7). Regular meeting minutes. Oklahoma City, OK; Oklahoma Board of Dentistry. (2008, August 1). Regularly scheduled meeting minutes. Oklahoma City, OK.
- 92 North Carolina State Board of Dental Examiners. (2007, February 9). Board meeting minutes. Morrisville, NC.
- 93 Wright, B. (2007, January 4). Email to S. Combs. RE: Kansas issues – Vegas meeting.
- 94 Six, S. (2008, June 5). Memo to B. Wright. Attorney General Opinion No. 2008-13.
- 95 Member emails to AADA message board. (2008, August 12). Tooth whitening/bleaching, seeking good language for reg on whitening.
- 96 Kansas Dental Board. (2009, July 24). Minutes. Topeka, KS.
- 97 Williams, J. (2009, July 22). Email to B. Wright. Tooth whitening.

- 98 Kansas Dental Board. (2009, July 24). Minutes. Topeka, KS.
- 99 Champion, J. (2009, July 16). Email to B. Wright. Kansas Reg. K.A.R. 71-11-1—Attention Betty Wright.
- 100 Wiley, G. (2009, July 19). Email to B. Wright. Proposed legislation – Teeth whitening service.
- 101 Maine Board of Dental Examiners. (2010, January 22). Board meeting minutes. August, ME; Rhode Island Board of Examiners in Dentistry. (2008, September 17). Minutes of open meeting. Providence, RI; Rhode Island Board of Examiners in Dentistry. (2009, February 18). Minutes of open meeting. Providence, RI; CRIR 14-140-007.
- 102 Dingeldej, C. (2008, June 13). Email to J. Flippone. Tooth whitening outside of the dental office; Delaware Board of Dental Examiners. (2010, May 20). Meeting minutes. Dover, DE; Florida Board of Dentistry. (2007, September 14). General business meeting minutes. Gainesville, FL; Iowa Dental Board. (2008, October 28-29). Meeting minutes. Des Moines, IA; New Mexico Dental Health Care. (2008, April 25). Regular meeting minutes. Santa Fe, NM; South Dakota Dental Association. (2008, September 5). Board of trustees meeting minutes. Chamberlin, SD.
- 103 Connecticut State Dental Commission. (2010, March 31). Minutes of meeting. Hartford, CT.
- 104 Connecticut State Dental Commission, June 8, 2011, Declaratory Ruling, available at http://www.ct.gov/dph/lib/dph/phho/dental_commission/declaratory_rulings/2011_teeth_whitening_declaratory_ruling_-_corrected.pdf.
- 105 Connecticut State Dental Commission, June 8, 2011, Declaratory Ruling, available at http://www.ct.gov/dph/lib/dph/phho/dental_commission/declaratory_rulings/2011_teeth_whitening_declaratory_ruling_-_corrected.pdf.
- 106 Nebraska Board of Dentistry. (2008, June 20). Letter to K. Rooda.
- 107 French, T. (2009, August 24). Letter to J. Caudill.
- 108 Complaint, *In re N.C. Bd. of Dental Exam'rs*, June 17, 2010, (No. 9343), available at <http://www.ftc.gov/os/adjpro/d9343/100617dentalexamcmpt.pdf>.
- 109 Kilts, B. (2007, March). Letter to NC Board of Dental Examiners.
- 110 *North Carolina State Board of Dental Examiners v. Signature Spas of Hickory*, (No. 06-CVS-3843) Catawba County; *North Carolina State Board of Dental Examiners v. Carmel Day Spa*, (No. 08-CVS-1542) Mecklenburg County.
- 111 Complaint, *In re N.C. Bd. of Dental Exam'rs*, June 17, 2010, (No. 9343), available at <http://www.ftc.gov/os/adjpro/d9343/100617dentalexamcmpt.pdf>.
- 112 Initial Decision, *In re N.C. Bd. of Dental Exam'rs*, July 14, 2011, (No. 9343), available at <http://www.ftc.gov/os/adjpro/d9343/110719ncb-decision.pdf>.
- 113 Initial Decision, *In re N.C. Bd. of Dental Exam'rs*, July 14, 2011, (No. 9343), available at <http://www.ftc.gov/os/adjpro/d9343/110719ncb-decision.pdf>.
- 114 Board of Dental Examiners of Alabama. (2010, June 30). Minutes. Hoover, AL.
- 115 State of Alaska Board of Dental Examiners. (2008, December 12). Minutes of meeting. Anchorage, AK.
- 116 Illinois State Board of Dentistry. (2008, January 17). Minutes. Springfield, IL.
- 117 Kelly, K. (2007, December 20). Email to C. Price. Re: Question on malpractice insurance.
- 118 Massachusetts Dental Association. (2009). Featured on the web. *MDS Connection*, 1.
- 119 Florida Dental Association. (2008). FDA addresses illegal whitening practices. *Today's FDA*, 20(8); Florida Dental Association. (2008, May). Legal department highlights advertising, teeth whitening, bleaching and unlicensed activity. *News Bites*.
- 120 Tom, State of Florida Department of Health. (2009, January 8). Memo to Erma. Unlicensed activity file: DN 2009-00601.
- 121 French, T. (2009, February 10). Letter to chief of police; Friedman, M. (2010, November 9). Investigative report. Orlando, FL: Department of Health.
- 122 Missouri Dental Association. (2008). Bleaching kiosks. *Focus*, 1.
- 123 Barnett, B. (2011, August 11). Letter to F. Adams; Barnett, B. (2010, March 22). Letter to S. Green.
- 124 Virginia Board of Dentistry. (2008, September 12). Minutes of board meeting. Richmond, VA.
- 125 Virginia Board of Dentistry. (2006, June 9). Minutes of board meeting. Richmond, VA.
- 126 Chambers, S. (2010, June 9). Letter to Sunsations Tanning Salon.
- 127 Price, C., & Kuemper, D. (2008, November 24). Letter to R. Johannesen.

- 128 Moe, D. (2010, January 5). Letter to K. Anderson.
- 129 Ogden, B. (2008, April 25). Email to AADA message board. Tooth whitening/bleaching, tooth whitening/scope of practice.
- 130 Barnett, B. (2010, June 22). Email to V. Wilbers. RE: FYI – Teeth bleaching enforcement setback.
- 131 Miller, E. (2010, June 28). Email to C. Allen. Re: Media request re: Teeth whitening; Smith, D. (2010, June 28). Email to C. Allen. Re: Media request re: teeth whitening; Smith, D. (2010, June 28). Email to E. Miller. Re: Fwd: Re-cap of June 2010 board meeting; Tennessee Board of Dentistry. (2009, January 8). Policy: Clinical techniques-teeth whitening. Nashville, TN.
- 132 Miller, E. (2010, June 28). Email to C. Allen. Re: Media request re: Teeth whitening.
- 133 Wyoming Board of Dental Examiners. (2010, October 29). Minutes. Cheyenne, WY.
- 134 Wilson, K. (2011, August 19). Memo to file: Report of investigation.
- 135 Ratliff, D. (2008, August 5). Email to S. Combs. WV Dental Association news.
- 136 Temporary Restraining Order, October 2, 2012, *In re State of Oklahoma Board of Dentistry v. Euroshine USA*, (No. CV-2012-1253).
- 137 Casway, H. (2008, August 15). Email to S. Reen. FW: Teeth whitening as a part of definition of dentistry/dental hygiene; Permanent Restraining Order and Injunction, October 12, 2012, *In re State of Oklahoma Board of Dentistry v. Euroshine USA*, (No. CV-2012-1253).
- 138 Consent Judgment, April 28, 2009, *In re State of Hawaii v. Ultrabright Hawaii, LLC*, (No. 09-1-0136); *North Carolina State Board of Dental Examiners v. Signature Spas of Hickory*, (No. 06-CVS-3843), Catawba County; *North Carolina State Board of Dental Examiners v. Carmel Day Spa*, (No. 08-CVS-1542), Mecklenburg County.
- 139 Chambers, S. (2010). Teeth whitening update. Presentation to American Association of Dental Boards 2010 annual meeting. Orlando, FL; Complaint for Injunction, April 30, 2010, *In re Wyoming Board of Dental Examiners v. Hollis Investments, LLC*, (No. 91897C).
- 140 http://trib.com/news/local/article_262fdca6-d221-59d1-87d0-6996bad80e1c.html
- 141 Stipulation, Order, Judgment, & Permanent Injunction, September 2, 2010, *In re: Nevada State Board of Dental Examiners v. Y & M Incorporated*, (No. A-10-620735-C).
- 142 Petition for Preliminary and Permanent Injunction, August 5, 2008, *In re: New Mexico Board of Dental Health Care v. Great White Smile, LLC* (No. D-0101-CV-200802165); Voluntary Dismissal, November 20, 2008, *In re: New Mexico Board of Dental Health Care v. Scott A. Bushey*, (No. D-0101-CV-200802164).
- 143 Notice of Dismissal, January 31, 2011, *In re: Kansas Dental Board v. Caribbean Sun*, (No. 10C1833); Petition for Injunctive Relief, December 23, 2010, *In re: Kansas Dental Board v. Caribbean Sun*, (No. 10C1833); Plaintiff's First Amended Petition For Injunction Relief, February 6, 2010, *In re: Louisiana State Board of Dentistry v. Laser Therapy USA, LLC*, (No. 671283).
- 144 Decision, February 24, 2012, *In re: New Jersey Dental Association v. Beach Bum Tanning*, (No. A-4521-10T1), available at <http://www.leagle.com/xmlResult.aspx?xmlDoc=In%20NJCO%2020120224355.xml&docbase=CSLWAR3-2007-CURR>; New Jersey State Board of Dentistry. (2012, June 6). Public session minutes. Newark, NJ.
- 145 <http://www.padental.org/AM/Template.cfm?Section=Patients1&Template=/CM/HTMLDisplay.cfm&ContentID=12501>
- 146 Gamba, T. (2009, January 13). Letter to Pennsylvania State Board of Dentistry.
- 147 Arizona Senate Healthcare and Medical Liability Committee. (2011, March 9). Video recording of meeting. Phoenix, AZ: Arizona State Legislature.
- 148 Cross, C. (2009, March 4). Testimony before the Illinois Health Care Licenses Committee. Springfield, IL: Illinois General Assembly; Mason, C. (2009, March 20). Testimony before the Hawaii House Committee on Health. Honolulu, HI: Hawaii State Legislature.
- 149 A third possible source would be state reports on the health and safety risks of teeth whitening and the need for regulation to offset them. Such "sunrise" reports, usually produced by state agencies, are required in a number of states whenever the legislature considers new or expanded occupational regulation. Yet, to date, no state has completed a sunrise review of teeth whitening.
- 150 <http://www.ada.org/news/2503.aspx>
- 151 Phojola, R., Browning, W., Hackman, S., Myers, M., & Downey, M. (2002). Sensitivity and tooth whitening agents. *Journal of Esthetic and Restorative Dentistry*, 14, 85-91; White, D., Kozak, K., & Zoladz, J. (2003). Effects of crest whitestrips bleaching on surface morphology and fracture susceptibility of teeth in vitro. *Journal of Clinical Dentistry*, 14, 82-87.
- 152 Dahl, J., & Pallesen, U. (2003). Tooth bleaching-A critical review of the biological aspects. *Critical Reviews in Oral Biology and Medicine*, 14, 292-304; Hayward, R., Osoman, Y., & Grobler S. (2012). *Open Dentistry Journal*, 6, 143-147; Jor-

- gensen, M., & Carroll, W. (2002). Incidence of tooth sensitivity after home whitening treatment. *Journal of the American Dental Association*, 133, 1076-1082; Kihn, P., Barnes, D., Romber, E., & Peterson, R. (2000). A clinical evaluation of 10 percent vs. 15 percent carbamide peroxide tooth-whitening agents. *Journal of the American Dental Association*, 131, 1478-1484; Tredwin, C., Naik, S., Lewis, N., & Sully, C. (2006). Hydrogen peroxide tooth-whitening (bleaching) products: Review of adverse effects and safety issues. *British Dental Journal*, 200(7), 371-376.
- 153 Haywood, V., Leonard, R., Nelson, C., & Brunson, W. (1994). Effectiveness, side effects and long-term status of nightguard vital bleaching. *Journal of the American Dental Association*, 125, 1219-1226.
- 154 Auschill, T., Hellwig, E., Schmidale, S., Sculean, A., & Arweiler, N. (2005). Efficacy, side-effects and patients' acceptance of different bleaching techniques (OTS, in-office, at-home). *Operative Dentistry*, 30(2), 156-163.
- 155 http://www.ada.org/sections/about/pdfs/HOD_whitening_rpt.pdf
- 156 Dominguez, A., Garcia, J., Costela, A., & Gomez, C. (2011). Influence of the light source and bleaching gel on the efficacy of the tooth whitening process. *Photomedicine and Laser Surgery*, 29(1), 53-59; Gomes, M., Francci, C., Medeiros, S., Salgado, R., Riehl, H., Marasca, J., & Muench, A. (2009). Effect of light irradiation on tooth whitening: Enamel microhardness and color change. *Journal of Esthetic and Restorative Dentistry*, 21(6), 387-94; Gurgan, S., Cakir, F., & Yazici, E. (2010). Different light-activated in-office bleaching systems: A clinical evaluation. *Lasers and Medical Science*, 25, 817-822.
- 157 Buchalla, W., & Attin, T. (2007). External bleaching therapy with activation by heat, light or laser—A systematic review. *Dental Materials*, 23(5), 586-596; Eldeniz, A., Usumez, A., Usumez, S., & Ozturk, N. (2005). Pulpal temperature rise during light-activated bleaching. *Journal of Biomedical Materials Research*, 72(2), 254-259; Hahn, P., Wolkewitz, M., & Polydorou, O. (2013). Efficacy of tooth bleaching with and without light activation and its effect on the pulp temperature: An in vitro study. *Odontology*, 101, 67-74; Torres, C., Barcellos, D., Batista, G., Borges, A., Cassiano, K., & Pucci, C. (2011). Assessment of the effectiveness of light-emitting diode and diode laser hybrid light sources to intensify dental bleaching treatment. *Acta Odontologica Scandinavica*, 69, 176-181.
- 158 Dominguez, 2011.
- 159 Ren, Y., Armin, A., & Malmstrom, H. (2009). Effects of tooth whitening and orange juice on surface properties of dental enamel. *Journal of Dentistry*, 37(6), 424-431.
- 160 Perdigao, J., Baratieri, L., & Arcari, G. (2004). Contemporary trends and techniques in tooth whitening: A review. *Practical Procedures and Aesthetic Dentistry*, 16(3), 185-192.
- 161 North Dakota State Board of Dental Examiners. (2010, June 18). Minutes. Bismarck, ND.
- 162 Initial Decision, *In re N.C. Bd. of Dental Exam'rs*, July 14, 2011, (No. 9343), available at <http://www.ftc.gov/os/adjpro/d9343/110719ncb-decision.pdf>.
- 163 Balistreri, 2005.

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