ENVIRONMENT

De-Sludging California's Prop 65

The carcinogen disclosure requirement has not been shown to provide benefits that justify its high cost.

BY MICHAEL L. MARLOW

Proposition 65, formally titled the Safe Drinking Water and Toxic Enforcement Act, became law in 1986 and requires businesses to notify Californians about significant amounts of toxic chemicals in the products they purchase, in their homes or workplaces, or that are released into the environment. The list of substances requiring notification now totals about 920 chemicals and contains a wide range of naturally occurring and synthetic substances known to cause cancer or reproductive harm. These include some additives or ingredients in pesticides, common household products, food, drugs, dyes, and solvents. Listed chemicals may also be used in manufacturing and construction, or they may be byproducts of chemical processes, such as motor vehicle exhaust.

California's attorney general has declared that the law's educating the public about toxic exposures has led to a significant reduction of toxic chemicals in products and the air. However, there is no empirical evidence of improved public health resulting from this law, despite its being in effect for over 33 years. It is noteworthy that the California Department of Health lists the decline in smoking as the only obvious factor behind declining rates of common types of cancer over 2004–2014. Moreover, the only published study of Proposition 65's effectiveness—one undertaken by me and appearing in these pages (See "Too Much (Questionable) Information?" Winter 2013–2014.)—found no empirical support for the hypothesis that California's cancer rates fell when compared to other states without similar mandated disclosure.

This article argues that Proposition 65 is a prime candidate for what Nobel laureate Richard Thaler refers to as "sludge cleanup campaigns." In a 2018 *Science* editorial entitled "Nudge, Not Sludge," Thaler argues that government nudges act more like "sludges" when they discourage behavior that is in a person's best interest. Proposition 65 is a perfect example of a mandated disclosure law that is not backed by science, has never been shown to be beneficial, and is incorrectly believed to be of little cost with no possible harm. Benefits and low costs are, in effect, taken on faith, and without retrospective review, counter-evidence is little to none. This article develops recommendations to "de-sludge" Proposition 65.

MICHAEL L. MARLOW is professor of economics at the California Polytechnic State University in San Luis Obispo. **This paper is based partly on a study conducted for the American Chemistry Council. The views expressed are the author's and do not necessarily reflect those of the American Chemistry Council.**

GAUGING EFFECTIVENESS

Mandated disclosure attempts to correct problems of asymmetric information where one or more parties know more about product attributes than other parties. In these cases, manufacturers are deemed to have more information about the chemical safety of their products and byproducts than do consumers or the public, and the requirements are intended to force the release of that information. These requirements have become increasingly common, as seen on food labels, travel tickets, leases, copyright warnings, timeshare agreements, house sales, store return policies, college crime reports, flight-safety announcements, parking garage stubs, and car and home repairs. Warnings that help consumers make more-informed decisions ostensibly reduce market failures that stem from imperfect information on product risk.

Mandated disclosure fits within the behavioral economics literature that prescribes various government nudges to remedy market failings. Behavioral economists argue that well-designed nudges can steer individuals toward smarter decisions that enhance their welfare. This hypothesis presumes that consumers should be protected from businesses that may fail to fully disclose risk because it adversely affects profits. Mandated disclosure appears to exert little harm or cost, whereas direct regulation and taxation are perceived to be more heavy-handed, clumsy, and come with large bureaucracies.

But are these requirements effective? Gauging effectiveness is more complicated than assuming a simple linear relationship between disclosure and improving public health. A more sophisticated model assumes health improvements are proportional to the occurrence of each of four steps:

- Consumers read disclosures.
- Consumers understand the disclosures.
- As a result of the disclosures, consumers improve their choices.
- As a further result, consumers experience improved health.

Even assuming a 50% probability for each of these four steps, the joint probability of all four steps occurring is 50% × 50% × 50% × 50% = 6.25%. That is, roughly 1 in 15 people would experience improved health. A 10% probability for each step means the joint probability of all four steps occurring would yield 10% × 10% × 10% × 10% = 0.01% under this scenario. That is, only one in 10,000 people would benefit. (See "Label Nudges?" Spring 2017.)

California law specifies a probability risk threshold of near zero for Step 4. Disclosures are mandated for products carrying a cancer risk if there is a 1 in 100,000 chance of any person exposed to the product over a period of 70 years ("lifetime risk") contracting cancer. This risk threshold roughly implies an annual risk of 1 in 7 million (i.e., a probability of 0.0000143), or on a daily basis somewhere below 1 chance in 2 million (i.e., a probability of 0.00000005) of acquiring cancer from any given exposure from product consumption. This legal threshold means that products carrying risks near the lower bound are unlikely to pose serious health risks for many Californians. Even if probabilities attached to steps 1, 2 and 3 are each 100% (a highly unlikely scenario), joint probabilities of improving health are close to zero.

A recent incident demonstrates how poorly Proposition 65 communicates risk. In 2018, a Los Angeles judge agreed with a lawsuit filed in 2010 arguing that coffee should carry a warning that it contains a chemical (acrylamide) that may cause cancer. However, the risk is so low that the U.S. Federal Drug Administration has stated that requiring coffee to carry a warning label would be tantamount to making a "false or misleading statement." FDA Commissioner Scott Gottlieb wrote on the agency's website: "Although acrylamide at high doses has been linked to cancer in animals, and coffee contains acrylamide, current science indicates that consuming coffee poses no significant risk of cancer." The article mentions a comprehensive review by the World Health Organization and current federal dietary guidelines that say that a healthful diet can include up to five cups of coffee a day. Gottlieb recommended that reducing cancer risk is more aligned with reducing consumption of saturated fats, trans fats, sodium, and added sugars.

Re-focusing toward significantly higher-probability risks is one step that would improve communication. For example, smoking tobacco is estimated to be associated with over 10,000-fold greater risk than Proposition 65's legal risk trigger level. The law's simple "yes or no" warning, despite wide variance in possible harm, nudges consumers to mistakenly equate risks of products with vastly different risk levels. Removing disclosure mandates for products carrying low-probability risks nudges consumers to heed warnings more likely to affect their lives.

Another reform would be to require the California government to actually help consumers understand potential risks and whether they should avoid various products. It is safe to say that most Californians are not statisticians or chemists, and thus are unlikely to understand (or even know) the legal requirements for mandatory disclosure. Nonetheless, the following statement from the California attorney general's office indicates a "punting" of responsibility in helping citizens make informed decisions:

> Proposition 65 warning informs a consumer that s/he is being exposed to carcinogens or reproductive toxins that exceed certain threshold levels. This is not the same as a regulatory decision that a product is "safe" or "unsafe." A consumer can seek information about the actual levels of exposure from the business that produces the product or causes the exposure in order to decide whether to accept, avoid, or take measures to mitigate the exposure risk.

Again, raising the legal risk threshold is a step in the direction of nudging Californians toward focusing on products that are more likely to cause them harm.

CLUELESS IN SACRAMENTO

Despite its enactment in 1986, the California government remains much in the dark about whether Proposition 65 promotes public health. A state-funded 2015 University of California, Davis study acknowledged, "There was only anecdotal evidence regarding the effectiveness of the current warnings to inform the public of health risks." This study was commissioned to assess whether the existing or proposed disclosure content more clearly communicates risk.

Instead of reconsidering the value of Proposition 65, California policymakers decided to make the warnings more frightening. Where the original specified text was either "WARNING: This area contains a chemical known to the State of California to cause cancer," or "WARNING: This area contains a chemical known to the State of California to cause birth defects or other reproductive harm," the new warnings are required to include the name of one or more chemicals that the public may be exposed to, the source of the exposure, and the address for a Proposition 65 informational website. The amended warnings must also include a warning symbol consisting of a black exclamation point in a yellow equilateral triangle with a bold black outline. The word "WARNING," must appear in all capital letters and bold print, followed by more explicit language: "This product can expose you to [name of one or more chemicals], which is (are) known to the State of California to cause [cancer or birth defects or other reproductive harm]. For more information go to www.P65Warnings.ca.gov."

The 2015 California, Davis study collected data from impromptu

opinions of 1,527 state residents waiting in line at 19 Department of Motor Vehicle (DMV) offices. The study claims, without further explanation, that this sample is "similar to the population of California." But it is unlikely that people waiting in line at 19 DMVs are a representative sample of Californians. There are 172 DMV field offices and 5,378 other locations (186 Auto Clubs, 5,192 Business Partner sites). This sample is also probably biased toward less tech-savvy individuals because many DMV services are conducted online and customers can also make appointments that obviate waiting in lines. Nonetheless, the survey instrument presented the old and new warnings side-by-side and asked, "Which warning is more helpful?" The study found that the new warnings were identified as "more helpful" 75% of the time.

The study questioned respondents about six chemicals (acrylamide, chlorinated tris, phthalates, lead, mercury, and carbon monoxide) despite there being over 900 chemicals on the Proposition 65 list. No knowledge beyond name recognition was assessed, such as how these chemicals might affect health or which products might carry warnings. While lead, mercury, and carbon monoxide elicited 90% or above in name recognition, the other three failed to reach 20%. Lead, mercury, and carbon monoxide were perhaps "cherry-picked" because of expectations of high name recognition, despite low name recognition of the other three chemicals.

This study demonstrates how little reform of risk communication has taken place since 1986. The reform that did occur was based on a study that did not examine whether respondents read the warnings, understand them, alter their behavior in light of the warnings, and their health improves as a result. Curiously, the study even failed to report the percentage of participants who had even heard of Proposition 65, despite the question being part of the survey instrument, though this oversight is consistent with the naive framework whereby mandated disclosure heroically translates into improved health of Californians.

RISING COSTS

Proposition 65 is not enforced by any regulatory agency. Most enforcement arises when private parties file suit against a business that allegedly has failed to warn. Lawyers who earn fees from these suits have earned the nickname "bounty hunters." Civil penalties of up to $2,500 per day for each violation are allowed, with one-quarter going to the party bringing the suit.

As displayed in Figure 1, there were 5,863 settlements of these actions over the years 2000–2017. They averaged 226 per year over 2000–2013, but escalated to 673 per year over 2014–2017, roughly tripling in the last four years.

Figure 2 shows the settlement amounts from these years. Annual settlements averaged nearly $18.9 million (in 2015 dollars) over this time period. However, the amounts accelerated in the later years just as the number of suits did. Settlements averaged a little less than $16.4 million over 2000–2013, but then rose to $27.6 million over 2014–2017, thus rising almost 69% in the last four years. All told, settlements totaled more than $339.7 million over this 18-year period, with the lawyers receiving nearly $227.4 million.

DE-SLUDGING REQUIRES RETROSPECTIVE REVIEW

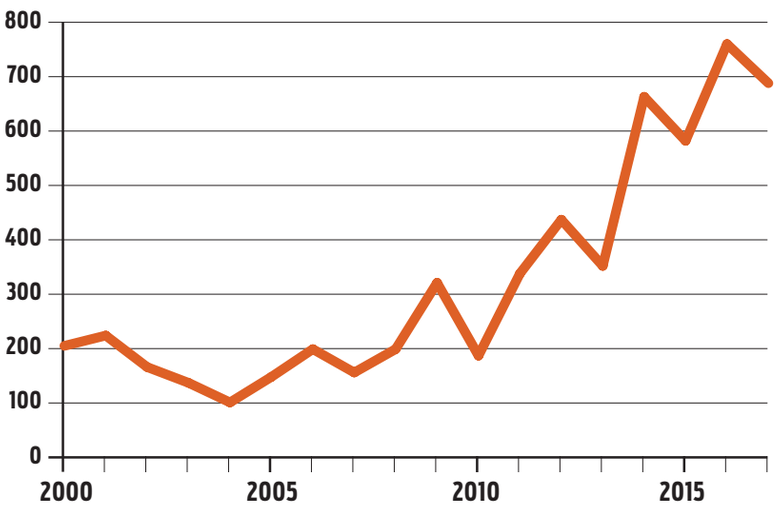
The need for retrospective review of Proposition 65 would appear obvious because mandated disclosure laws are based on theories that do not necessarily coincide with reality. Unfortunately, such review seldom occurs.

A recent study of federal mandated disclosure rules found regulatory agencies rarely conduct quantitative evaluation of their effectiveness. The study identified 357 major final rules of mandatory disclosures issued in fiscal years 2008–2013. The research focused on the Environmental Protection Agency, the Department of Energy's Office of Energy Efficiency and Renewable Energy, the FDA, and the Centers for Medicare and Medicaid Services. Their analysis concluded that agencies did not conduct any quantitative assessments of comprehension or comparable measures of effectiveness as part of their retrospective regulatory reviews. The authors did not believe that review costs explained the lack of review because data collection and analysis could be obtained relatively quickly and at low cost. A recent study of developed countries reached a similar conclusion when it examined retrospective analysis of chemical regulations, even though government guidelines required such reviews.

Proposition 65 appears little different from its federal counterparts when it comes to retrospective review. Feedback is limited

FIGURE 1

Annual Number of Proposition 65 Settlements, 2001–2017



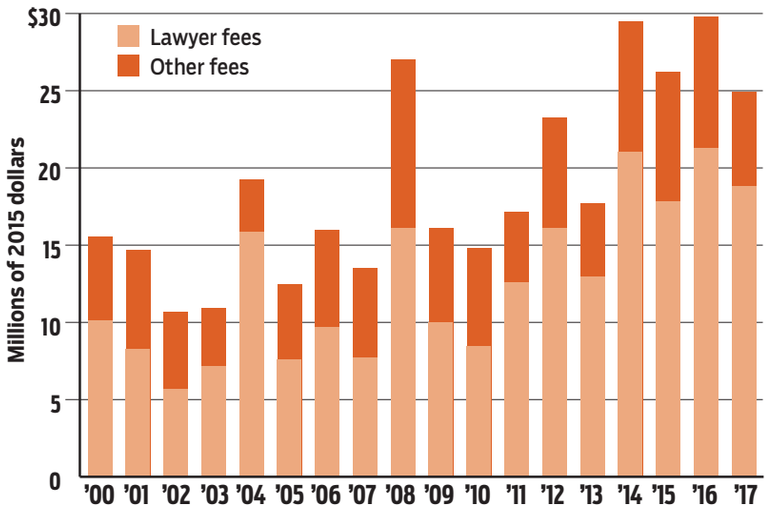
SOURCE: California Attorney General, Prop 65 Executive Settlement Summaries

because ineffective or harmful "nudges" do not directly jeopardize jobs or financial viability. Advocates may argue that nudges exert no harm, but counter-evidence is unlikely so long as retrospective review is absent. Previous discussion indicates the costs are high and growing, and the State of California has never documented its claims that public health has improved. Harm is also a valid possibility given previous discussion of how badly Proposition 65 communicates risk to Californians.

The California State Legislature cannot simply amend Proposition 65 because it was enacted on an initiative measure. Any amendment must "further the purpose" of the initiative and must be approved by a two-thirds super-majority vote. Some other action must be taken to "de-sludge" this law. Here are three recommendations:

First, examine the four-step model outlined above. Do Californians read disclosures? Do they understand them? Do they alter their behavior in light of the disclosures? And does their health improve as a result? Empirical assessment could help guide previous discussion of the need to re-focus risk communication toward higher-probability risks.

FIGURE 2
Annual Settlement and Lawyer Fees, 2001–2017



SOURCE: California Attorney General, Prop 65 Executive Settlement Summaries

Second, estimate effects on public health by comparing cancer incidence in California to areas without similar mandatory disclosure of toxic chemicals. State government has never provided good evidence that Proposition 65 has improved public health. My study appears to be the only empirical analysis of this matter, and it does not support this belief.

Third, assess the efficacy of enforcing Proposition 65 mostly through civil lawsuits. As discussed, total settlements of nearly $340 million over 2000–2017, with 67% going to the lawyers, is a steep price. Investigation should examine whether attorney fees are related to improving the public health of Californians.

CONCLUSION

Proposition 65 disclosures are premised on a simple belief: mandated disclosure of the presence of toxic chemicals improves health. A more scientific approach models improved health on the probabilities that consumers read the disclosures, understand them, change their behavior accordingly, and health improves as a result. Under optimistic assumptions, these four steps will be successfully navigated in only a small percentage of situations. More realistic assumptions suggest that percentage is close to zero for many products because California law specifies that all annual cancer exposure risks greater than 1 in 7 million trigger disclosure requirements.

A major obstacle to reform is the misplaced notion that nudging is a costless intervention because citizens may simply ignore the disclosures. This assessment probably explains general lack of interest in honest benefit–cost analysis by advocates of mandated disclosure laws. However, the reality is that Proposition 65 ultimately imposes costs on many parties. Businesses bear testing and labeling costs, lost sales from consumers wary of disclosures and price hikes, and settlement costs. Taxpayers suffer when businesses pay less tax revenue because of lost sales. Consumers bear higher prices. Workers may suffer lower income or job insecurity as a result of costs imposed on businesses. Encouraging citizens to misunderstand health risks is another harm that "nudge" advocates might prefer to ignore.

The many problems facing Proposition 65 are the same as those facing mandated disclosure laws everywhere: they are based on promises rather than evidence, do not clearly promote public welfare, are incorrectly believed to be costless, and are rarely subjected to retrospective review. Instead, we should use the scientific method to evaluate disclosure laws. *R*

READINGS

- "Bounty Hunters and the Public Interest: A Study of California Proposition 65," by Anthony Caso. *Engage* 13(1): 30–37 (2012).
- "Editorial: Nudge, not Sludge," by Richard H. Thaler. *Science* 361(6401): 431 (2018).
- "How Effective Are Federally Mandated Information Disclosures?" by Arthur G. Fraas and Randall Lutter. *Journal of Benefit–Cost Analysis* 7(2): 326–349 (2016).
- *More than You Wanted to Know: The Failure of Mandated Disclosure*, by Omri Ben-Shahar and Carl E. Schneider. Princeton University Press, 2014.
- "Proposition 65 Clear and Reasonable Warning Regulations Study," published by the University of California, Davis Extension Collaboration Center, October 27, 2015.
- "Retrospective Evaluation of Chemical Regulations," by Susan Dudley. *OECD Environment Working Papers* no. 118, 2017.
- "TMI? Why the Optimal Architecture of Disclosure Remains TBD," by Ryan Bubb. *Michigan Law Review* 113: 1021–1042 (2014).