

SMOKE-FREE APARTMENT LAWS AND INDOOR AIR QUALITY IN U.S. JURISDICTIONS

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ABSTRACT

State and local laws prohibit smoking in most indoor public places in the United States. The initial enactment of smoke-free laws in California jurisdictions drove rapid adoption in other states. However, many people still smoke inside housing units.¹ In addition to well-established harm caused by secondhand smoke, scientific consensus is emerging around the substantial health impact of thirdhand smoke and exposure to smoke within apartments and other types of multi-unit housing (“MUH”) specifically. In response to these issues, ninety-six California cities and counties—mostly surrounding San Francisco and Los Angeles—have passed laws in the last several decades that restrict or prohibit smoking inside MUH housing units (“smoke-free MUH laws”),² largely based on model legislation from an Oakland-based think tank, ChangeLab Solutions.³

California’s early adoption of smoke-free MUH laws is consistent with its history as an initiator of tobacco-control policies,⁴ but, in this case, the idea has not spread; to our knowledge, not a single jurisdiction outside of California has a smoke-free MUH law.⁵ Compared to laws that ban smoking in public places, private spaces are harder to legislate and enforce. Legal barriers and political circumstances have discouraged other states from pursuing mandatory laws, although there are efforts to encourage landlords to adopt smoke-free policies voluntarily. There has been some pushback within the public health community about smoke-free housing policy. In particular, advocates for people experiencing homelessness argue that smoke-free MUH laws can increase evictions and housing insecurity.⁶

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¹ *Smokefree Policies in Multi-Unit Housing*, AM. LUNG ASS’N, <https://www.lung.org/policy-advocacy/tobacco/smokefree-environments/multi-unit-housing> [<https://perma.cc/FB9M-GZTY>].

² AMERICAN NONSMOKERS’ RIGHTS FOUNDATION, U.S. LAWS FOR 100% SMOKEFREE MULTI-UNIT HOUSING, (2023), <http://www.no-smoke.org/pdf/smokefreemuh.pdf> [<https://perma.cc/E2LU-TATX>].

³ CHANGE LAB SOLUTIONS, SMOKEFREE HOUSING ORDINANCE: A MODEL CALIFORNIA LAW REGULATING SMOKING IN MULTIUNIT RESIDENCES, (2018) [hereinafter MODEL CALIFORNIA LAW], https://www.changelabsolutions.org/sites/default/files/SFMUH_REVISIED_Ordinance_FINAL_20180917.doc [<https://perma.cc/9GRY-PSXP>].

⁴ *Id.*

⁵ *Id.* However, the U.S. Department of Housing and Urban Development adopted a rule in 2016 prohibiting smoking in public housing. See 24 C.F.R. § 965.653.

⁶ See NAT’L HOUS. L. PROJECT, *A Guide to Equitable Smoke-Free Public Housing* (2019), https://www.nhlp.org/wp-content/uploads/FINAL_-_A-Guide-to-Equitable-Smoke-Free-Public-Housing-2020.01.14.pdf [<https://perma.cc/6T5A-4FKV>].

This Article provides a review of the laws and scientific evidence, along with a brief discussion of corresponding policy considerations. Overall, we contend that smoke-free MUH laws are largely positive, although more systematic indoor air quality regulation is urgently needed. Smoke-free MUH laws provide what is often the only available recourse for exposure to one of the most harmful sources of indoor air pollution but require cumbersome initiative from residents for enforcement. Beyond secondhand smoke, indoor air is typically more polluted than outdoor air and almost entirely unregulated. We recommend approaching air quality within housing units as a consumer safety issue with regulations akin to that of product safety or clean water. Fortunately, the COVID-19 pandemic may accelerate the feasibility of widespread improvements, and, in 2021, Congress passed legislation with funding for building upgrades to improve air quality.

I. INTRODUCTION

Smoke-free laws covering indoor public places have been the default in the U.S. for decades, but housing typically lacks similar protections, perhaps because smoking is less visible there.⁷ This Article examines laws that prohibit smoking in individual units of multi-unit housing (“smoke-free MUH laws”). Multi-unit housing (“MUH”) generally refers to apartments and condominiums in which at least two units share walls and/or ceilings, although definitions vary.⁸ We focus on the inside of MUH units because smoke-free common areas sometimes lead to the unintended consequence of driving smokers indoors where a smoker is less likely to get caught.⁹ Additionally, the U.S. Department of Housing and Urban Development already prohibits smoking inside MUH units of all public housing agencies in the United States,¹⁰ so we focus on generally applicable laws.

As of April 2022, seventy-four California jurisdictions prohibit and nineteen restrict smoking in individual units of MUH.¹¹ In the 1980s and 1990s, California jurisdictions initiated a wave of smoke-free restaurant, bar, and workplace laws across the country.¹² In contrast, California’s smoke-free MUH laws have not established a similar trend; to our knowledge, no jurisdiction outside California has followed.

In apartments, smoke drifts from neighboring units (secondhand smoke) and leaves behind residue for future tenants (thirdhand smoke).¹³ Tenants and

⁷ U.S. DEP’T OF HEALTH & HUM. SERVS., THE HEALTH CONSEQUENCES OF SMOKING—50 YEARS OF PROGRESS: A REPORT OF THE SURGEON GENERAL 777 (2014), https://www.ncbi.nlm.nih.gov/books/NBK179276/pdf/Bookshelf_NBK179276.pdf [<https://perma.cc/BU4L-2S4B>].

⁸ MODEL CALIFORNIA LAW, *supra* note 3.

⁹ In the survey, respondents self-reported tobacco smoke incursions, which may not accurately measure smoking prevalence. See Karen M. Wilson, Michelle Torok, Robert McMillen, Susanne Tanski, Jonathan D. Klein & Jonathan P. Winickoff, *Tobacco Smoke Incursions in Multiunit Housing*, 104 AM. J. PUB. HEALTH 1445, 1445–46 (2014).

¹⁰ 24 C.F.R. § 965.653; *Smoke-Free Public Housing*, U.S. DEP’T OF HOUS. & URB. DEV. <https://www.hud.gov/smokefreepublichousing> [<https://perma.cc/7G9L-EZB2>].

¹¹ See AM. NONSMOKERS’ RTS. FOUND., *supra* note 2. The counts include jurisdictions where laws have been enacted but had yet to take effect as of April 2022.

¹² April Roeseler & David Burns, *The Quarter That Changed the World*, 19 TOBACCO CONTROL i3, i3 (2010).

¹³ Kimberley Snyder, Janice Hassett Vick & Brian A. King, *Smoke-Free Multiunit Housing: A Review of the Scientific Literature*, 25 TOBACCO CONTROL 9, 9 (2015).

advocates worry about poor air quality, respiratory problems, and fire risk.¹⁴ Even when each apartment has its own HVAC system, more than 10% of air often comes from adjacent units.¹⁵ A series of recent studies examining passive smoke exposure as it occurs within MUH have established an increasingly clear connection with negative health outcomes.¹⁶

The number of people impacted is significant. About one quarter of Americans live in MUH.¹⁷ The number of MUH residents who self-report passive smoke exposure varies considerably between studies, from 26% to 64%, and likely accounts for secondhand smoke more than thirdhand smoke.¹⁸ Households with children were more likely to report exposure.¹⁹ Of course, health impacts can occur even if a person is not aware that exposure occurred or that smoke is the cause of a health problem. About a quarter of MUH households are below the poverty line,²⁰ and, as expected, people experiencing poverty are more likely to report unwanted smoke exposure.²¹ These same households may lack the opportunity to respond by moving into healthier housing or pursuing healthcare treatment.

This Article explores existing smoke-free MUH laws and corresponding context, scientific literature, and policy considerations. Overall, we contend that smoke-free MUH laws are beneficial but place too much burden on individual tenants to take initiative. Broader, more systematic regulation of indoor air quality is urgently needed, and we recommend solutions that shift the burden from the tenant to the landlord through building, residential, and mechanical codes and through health codes that establish minimum housing air-quality requirements that must be met before a unit can be rented or sold.

II. METHODS

We reviewed the literature on secondhand and thirdhand smoke exposure in MUH, smoke-free MUH laws, and California tobacco control more generally. We reviewed the laws themselves using MAXQDA qualitative data-coding software. For each law, we highlighted provisions that address specific areas of interest. For example, we coded references to marijuana and

¹⁴ U.S. DEP'T OF HEALTH & HUM. SERVS., *supra* note 7.

¹⁵ CTR. FOR ENERGY & ENV'T, REDUCTION OF ENVIRONMENTAL TOBACCO SMOKE TRANSFER IN MINNESOTA MULTIFAMILY BUILDINGS USING AIR SEALING AND VENTILATION TREATMENTS, i, iv (2004), <https://www.mncee.org/sites/default/files/report-files/Reduction-of-Environmental-Tobacco-Smoke-Transfer-in-Minnesota-Multifamily-Buildings-Using-Air-Sealing-and-Ventilation-Treatments.pdf> [<https://perma.cc/A6ZP-ZNNX>].

¹⁶ Snyder et al., *supra* note 13, at 9–20; Karen M. Wilson, Jonathan D. Klein, Aaron K. Blumkin, Mark Gottlieb & Jonathan P. Winickoff, *Tobacco-Smoke Exposure in Children Who Live in Multiunit Housing*, 127 PEDIATRICS 85, 85–92 (2011); CTR. FOR ENERGY & ENV'T, *supra* note 15; John D. Spengler, *Buildings Operations and ETS Exposure*, 107 ENV'T HEALTH PERSPS. 313, 313 (1999); T.A. Kraev, Gary Adamkiewicz, Sally Katherine Hammond & J.D. Spengler, *Indoor Concentrations of Nicotine in Low-Income, Multi-Unit Housing: Associations with Smoking Behaviors and Housing Characteristics*, 18 TOBACCO CONTROL 438, 442 (2009); Alexander Y. Mendell, *Particulate Matter Concentrations in Social Housing*, 76 SUSTAINABLE CITIES & SOC'Y 76, 76 (2022).

¹⁷ Snyder et al., *supra* note 13, at 9.

¹⁸ *Id.* at 12; *see also* Wilson et al., *supra* note 9, at 1445–53.

¹⁹ Snyder et al., *supra* note 13, at 12.

²⁰ Brian A. King, Stephen D. Babb, Michael A. Tynan & Robert B. Gerzoff, *National and State Estimates of Secondhand Smoke Infiltration Among U.S. Multiunit Housing Residents*, 15 NICOTINE TOBACCO RSCH. 1316, 1319 (2013).

²¹ *Id.*

electronic cigarettes with the code “types of smoking.” We then used the software to generate spreadsheets that compared each jurisdiction’s provisions side-by-side. We also created a map of the laws using Esri ArcMap software and looked at very basic demographic data for the jurisdictions. Finally, we spoke with seven key informants. We conducted full interviews with three of them and spoke informally with four others over the phone and via email. We had conversations with California advocates and experts from the American Lung Association, ChangeLab Solutions, and Smokefree Air for Everyone. We spoke with two smoke-free housing advocates in Florida and one in Arizona to inquire about strategies in other states.

III. SCIENTIFIC EVIDENCE

To understand health risks, we examine three related concepts, with particular emphasis on the third: (1) secondhand smoke; (2) thirdhand smoke; and (3) how exposure to each occurs in MUH.

A. SECONDHAND SMOKE

Secondhand smoke is the smoke a bystander breathes in directly from a nearby smoker’s device or breath.²² There is broad consensus that secondhand smoke causes adverse health outcomes. The CDC estimates that secondhand smoke causes 41,000 adult deaths annually in the United States.²³ Even at very low levels of exposure, it is associated with increased risk of diverse health conditions, including everything from heart disease and respiratory illness to ear problems and cognitive decline.²⁴

B. THIRDHAND SMOKE

Thirdhand smoke refers to “residual tobacco smoke pollutants” that remain in dust, air, and surfaces after a person smokes.²⁵ Thirdhand smoke is

²² U.S. Dep’t of Health & Hum. Servs., *The Health Consequences of Involuntary Exposure to Tobacco Smoke: A Report of the Surgeon General 1* (2006), https://www.ncbi.nlm.nih.gov/books/NBK44324/pdf/Bookshelf_NBK44324.pdf [<https://perma.cc/D3VY-2YTN>]; Georg E. Matt, Penelope J.E. Quintana, Hugo Destailats, Lara A. Gundel, Mohamad Sleiman, Brett C. Singer, Peyton Jacob, III, Neal Benowitz, Jonathan P. Winickoff, Virender Rehan, Prue Talbot, Suzaynn Schick, Jonathan Samet, Yinsheng Wang, Bo Hang, Manuela Martins-Green, James F. Pankow & Melbourne F. Hovell, *Thirdhand Tobacco Smoke: Emerging Evidence and Arguments for a Multidisciplinary Research Agenda*, 119 *Env’t Health Persps.* 1218, 1219 (2011); Thomas F. Northrup, Peyton Jacob III, Neal L. Benowitz, Eunha Hoh, Penelope J.E. Quintana, Melbourne F. Hovell, Georg E. Matt & Angela L. Stotts, *Thirdhand Smoke: State of the Science and a Call for Policy Expansion*, 131 *Pub. Health Reps.* 233, 235 (2016); Jenine K. Harris, *Forty Years of Secondhand Smoke Research: The Gap Between Discovery and Delivery*, 36 *Am. J. Preventive Med.* 538 (2009); U.S. Dep’t of Health & Hum. Servs., *supra* note 7, at 9.

²³ *Diseases and Death*, CDC, https://www.cdc.gov/tobacco/data_statistics/fact_sheets/fast_facts/diseases-and-death.html [[HTTPS://PERMA.CC/22GD-NZH2](https://perma.cc/22GD-NZH2)].

²⁴ U.S. DEP’T OF HEALTH & HUM. SERVS., *supra* note 22, at 5, 9–10; Wilson et al., *supra* note 16, at 86; Susan Schoenmarklin, *Infiltration of Secondhand Smoke into Condominiums, Apartments and Other Multi-Unit Dwellings: 2009*, TOBACCO CONTROL LEGAL CONSORTIUM 1 (Oct. 2009), <https://publichealthlawcenter.org/sites/default/files/resources/tclc-syn-condos-2009.pdf> [<https://perma.cc/PQ6L-GRRZ>].

²⁵ Matt et al., *supra* note 22, at 1218–26.

difficult to remove,²⁶ and exposure can occur over longer time frames than secondhand smoke²⁷ via inhalation, ingestion, and skin absorption.²⁸

A considerable amount of thirdhand smoke is detectable long enough to impact future tenants after a smoker moves out, although it's unclear exactly how long it sticks around. One study found that nicotine contamination in homes of former smokers was an average of five times higher in living-room dust and seven times higher on living-room surfaces than that of nonsmoking homes.²⁹ A 2016 study found that six months after smoking had ceased, homes of smokers still had significant amounts of nicotine and tobacco-specific carcinogens.³⁰

Unlike secondhand smoke, thirdhand smoke has been studied only recently, and, up until a few years ago, research was insufficient to identify a relationship between exposure and health.³¹ Although much remains unknown about specific causal mechanisms, a 2014 animal study strongly indicates that thirdhand smoke harms nonsmokers.³² The study attempted to mimic the effects of thirdhand smoke exposure (in the absence of secondhand smoke) in children for six months and found that mice exhibited hyperactive behavior, impaired healing, and changes in liver metabolism that “have important implications for development of metabolic syndrome, a condition that predisposes humans to stroke, coronary artery disease and type 2 diabetes.”³³ Likewise, a 2020 study found that thirdhand smoke may induce DNA damage and alterations on human cell lines.³⁴ The study also found that children in particular are at increased risk from thirdhand smoke.³⁵

C. SMOKE EXPOSURE IN MUH

There are still unanswered scientific questions about the movement and behavior of smoke particles, but secondhand and thirdhand smoke are present in MUH in amounts that are hazardous to occupant health. Researchers have essentially studied each level of the causal chain: the amount of air that travels between units, particle concentrations in units, and the health/biomarkers of residents. A 2015 review of the scientific literature concluded that “studies of nicotine concentrations, air exchange rates and

²⁶ Northrup et al., *supra* note 22, at 233–38.

²⁷ *Id.*

²⁸ Matt et al., *supra* note 22, at 1218–26.

²⁹ *Id.*

³⁰ *Id.*

³¹ Additionally, because secondhand and thirdhand smoke exposure often overlap, it is difficult to differentiate between health effects attributable to each individually. Northrup et al., *supra* note 22, at 235.

³² Manuela Martins-Green, Neema Adhami, Michael Frankos, Mathew Valdez, Benjamin Goodwin, Julia Lyubovitsky, Sandeep Dhall, Monika Garcia, Ivie Egiebor, Bethanne Martinez, Harry W. Green, Christopher Havel, Lisa Yu, Sandy Liles, Georg Matt, Hugo Destailats, Mohammed Sleiman, Laura A. Gundel, Neal Benowitz, Peyton Jacob III, Melbourne Hovell, Jonathan P. Winickoff & Margarita Curras-Collazo, *Cigarette Smoke Toxins Deposited on Surfaces: Implications for Human Health*, 9 PLoS ONE 1, 1–12 (2014).

³³ *Id.*

³⁴ Bo Hang, Pin Wang, Yue Zhao, Hang Chang, Jian-Hua Mao & Antoine M. Sniijders, *Thirdhand Smoke: Genotoxicity and Carcinogenic Potential*, 6 CHRONIC DISEASES & TRANSLATIONAL MED. 27, 29 (2020).

³⁵ *Id.*

PM_{2.5} confirm that [secondhand smoke] can transfer between units in MUH.”³⁶

First, even if units do not share an HVAC system, tobacco smoke can travel between units through windows, ductwork, and walls, sometimes reaching even far-removed units.³⁷ The amount of air exchanged varies considerably based on architectural attributes, climate, age of building, and what floor a unit is on.³⁸ One study found that even within a single building, some units exchanged significantly more air than others.³⁹ For example, units on the bottom floor had an average of 2% inter-unit flow, whereas the upper floors had an average of 19%.⁴⁰ As expected, shared central heating, ventilating, and air conditioning systems can distribute even more air and smoke.⁴¹

Secondly, studies measuring tobacco particles have consistently found significant amounts in non-smoker apartments. For example, a 2009 study in Boston detected nicotine in 89% of low-income nonsmoker apartments.⁴² A Canadian study took a different approach and simply compared single-family homes to non-smoking apartments and found that particulate matter concentrations were double in the apartments.⁴³

Finally, evidence of exposure bears out in biological data as well. A 2011 study found that children living in apartments had 45% higher cotinine levels, a marker of smoke exposure, than children living in detached homes.⁴⁴ Cotinine was detected in residents of nonsmoking apartments at levels associated with morbidity and the authors concluded that “smoke-free multiunit housing could improve health status.”⁴⁵

It is important to note that research tends to focus on serious health impacts. But even seemingly minor problems, such as nasal irritation, can impact quality of life significantly—especially if a tenant does not have other housing options—and these minor issues likely affect many people.

D. OTHER IMPACTS

Although health is the most common justification, smoke-free laws address other concerns too, particularly for landlords. For example, smoking is the leading cause of fire deaths in MUH.⁴⁶ Smoking units can be more expensive for landlords because of things like smoking-attributable fire costs and renovation needs.⁴⁷ At least two studies have investigated the economic

³⁶ Snyder et al., *supra* note 13, at 16.

³⁷ Wilson et al., *supra* note 9, at 1445–46; Wilson et al., *supra* note 16, at 85–92.

³⁸ CTR. FOR ENERGY & ENV'T, *supra* note 15, at iv.

³⁹ *Id.* at v.

⁴⁰ CTR. FOR ENERGY & ENV'T, *supra* note 15.

⁴¹ Spengler, *supra* note 16.

⁴² Kraev et al., *supra* note 16, at 442.

⁴³ Mendell, *supra* note 16.

⁴⁴ Wilson et al., *supra* note 16, at 85, 88.

⁴⁵ *Id.* at 91.

⁴⁶ U.S. FIRE ADMIN., FEMA, RESIDENTIAL STRUCTURE AND BUILDING FIRES 1 (2008).

⁴⁷ See Michael K. Ong, Allison L. Diamant, Qiong Zhou, Hye-Youn Park & Robert M. Kaplan, *Estimates of Smoking-Related Property Costs in California Multiunit Housing*, 102 AM. J. PUB. HEALTH 490, 490 (2012); Snyder et al., *supra* note 13, at 17; Interview with Leslie Zellers, Pub. Health L. & Pol'y Consultant (Oct. 4, 2016, 10:00 MST) (on file with author); CAL. APARTMENT ASS'N, TOBACCO SMOKING AT RESIDENTIAL RENTAL PROPERTIES 7 (2008) <https://northcoastalpreventioncoalition.org/wp-content/uploads/CAA%20Background%20Paper.pdf> [<https://perma.cc/3YJ7-HEF5>].

impact of smoke-free MUH policies. One predicted that prohibiting smoking in all U.S.-subsidized housing would save \$108 million in renovation expenses and \$72 million in smoking-attributable fire losses.⁴⁸ These figures are likely overestimated because calculations assume complete compliance. Another study accounted for compliance and found that properties with complete smoke-free policies still incurred smoking-related costs, but properties with partial smoke-free policies or no policy incurred such costs about twice as often and in higher average dollar amounts.⁴⁹ The study predicted that if all MUH in California were smoke-free, housing operators would save more than \$18 million each year.⁵⁰

IV. LITERATURE ON SMOKE-FREE MUH LAWS

There are few academic articles on smoke-free housing laws. Smoke-free housing work has instead focused on practical application and policy change, so most available materials are reports, fact sheets, and other practical documents. We based our review of the laws on a list compiled and updated by the American Nonsmokers Rights Foundation: *U.S. Laws and Policies Restricting or Prohibiting Smoking in Private Units of Multi-Unit Housing*.⁵¹ In partnership with other advocacy organizations, they have published several other similar lists summarizing attributes of smoke-free housing laws.⁵² The adoption of laws has been driven in large part by model legislation from the Oakland-based think tank ChangeLab Solutions.⁵³ ChangeLab and its partners also provide guides and fact sheets for tenants, landlords, and policymakers.⁵⁴

⁴⁸ Brian A. King, Richard M. Peck & Stephen D. Babb, *Cost Savings Associated with Prohibiting Smoking in U.S. Subsidized Housing*, 44 AM. J. PREVENTIVE MED. 631, 633 (2013).

⁴⁹ Ong et al., *supra* note 47 (finding that smoke-free policies were 16.3% and \$1,866, partial smoke-free policies were 39.7% and \$9,573, and no smoke-free policies were 29.5% and \$3,425). Ong acknowledged, however, that “the latter finding was [only] marginally significant.” *Id.*

⁵⁰ *Id.* at 491–92.

⁵¹ AM. NONSMOKERS’ RTS. FOUND., *supra* note 2.

⁵² See CTR. FOR TOBACCO POL’Y & ORG., MATRIX OF STRONG LOCAL SMOKEFREE MULTI-UNIT HOUSING (2017), https://www.saysandiego.org/wp-content/uploads/4-The_Center_Matrix_of_Strong_Local_MUH_Policies.pdf [<https://perma.cc/UN6C-J86F>]; CTR. FOR TOBACCO POL’Y & ORG., LOCAL CALIFORNIA SMOKEFREE HOUSING POLICIES: DETAILED ANALYSIS (2015), <http://tobaccopolycycenter.org/wp-content/uploads/2017/11/721.pdf> [<https://perma.cc/74CT-84QY>]; CTR. FOR TOBACCO POL’Y & ORG., LIST OF COMMUNITIES THAT RESTRICT SMOKING IN OUTDOOR COMMON AREAS OF MULTI-UNIT HOUSING (2013), <https://web.archive.org/web/20140602052958/http://center4tobaccopolycycenter.org/wp-content/uploads/2013/12/List-of-Communities-that-Restrict-Smoking-in-Common-Areas-December-2013.pdf> [<https://perma.cc/L33Q-UB98>].

⁵³ MODEL CALIFORNIA LAW, *supra* note 3.

⁵⁴ CHANGE LAB SOLS., SMOKEFREE HOUSING LAW CHECKLIST (2018), https://www.changelabsolutions.org/sites/default/files/CA.SmokefreeHousing-Checklist-FINAL_201806_0.pdf [<https://perma.cc/HG2K-G72X>]; CHANGE LAB SOLS., SMOKEFREE MULTI-UNIT HOUSING POLICIES: STRATEGIES TO SUPPORT RESIDENT COMPLIANCE (2014), https://www.changelabsolutions.org/sites/default/files/Smokefree-MUH-Support-Resident-Compliance_FINAL_20140924_0.pdf [<https://perma.cc/F724-YTTP>]; CHANGE LAB SOLS., MAKING A NEW SMOKEFREE HOUSING LAW WORK: A GUIDE FOR TOBACCO CONTROL ADVOCATES AND POLICYMAKERS (2016), http://publichealth.lacounty.gov/tob/docs/Clean%20Air%20Factsheets/MakingSmokefreeHousingLawWork-FINAL_201605.pdf [<https://perma.cc/MQ6F-R74V>]; CHANGE LAB SOLS., IMPLEMENTING & ENFORCING A SMOKEFREE MULTI-UNIT HOUSING ORDINANCE: A FACT SHEET FOR LOCAL JURISDICTIONS (2014), https://www.changelabsolutions.org/sites/default/files/Implementing-Enforcing-Smokefree-MUH-Ordinance_FINAL_20140924.pdf [<https://perma.cc/Z3SC-AXK8>].

There are no law review articles about smoke-free MUH laws, but a few address related issues. For example, a 2007 Southern California Law Review note used a particular city law (not specific to MUH) to discuss legal issues surrounding both smoking legislation generally and smoke-free MUH laws specifically because advocates identified MUH as a target for advocacy efforts.⁵⁵ Likewise, a few articles have provided an overview of the legal landscape of smoking in MUH in a specific state.⁵⁶ For example, a 2013 Maine Law Review article explores all legal options for addressing secondhand tobacco smoke in multi-unit rental housing in Maine, including smoke-free housing laws.⁵⁷ Finally, authors have looked at regulatory protections from second- and third-hand smoke.⁵⁸ A 2015 article entitled *Regulations Restricting Smoking in Indoor Areas* provides a survey of regulations restricting smoking in indoor areas nationwide, finding that no smoke-free housing restrictions had been enacted as regulations.⁵⁹

A handful of studies have investigated the level of public support for smoke-free MUH laws and policies.⁶⁰ In 2012, Hood and co-authors found that 82.7% of tenants supported smoke-free policies in common areas, and 54.4% supported smoke-free policies in private units.⁶¹ In 2010, King and co-authors obtained data from MUH residents in New York State and assessed the prevalence of smoke-free policies and resident support.⁶² Fifty-five percent of respondents supported a policy banning smoking in all areas of their building, and the authors recognized an opportunity to promote smoke-free building policies.⁶³

In 2015, Snyder and co-authors reviewed literature on smoke-free multiunit housing to compare various studies on resident communities, tenants, and smoke-free policies, and concluded that “smoke-free MUH policies are supported by most MUH residents, are likely to yield considerable cost savings for individual MUH operators and society, and may improve cessation outcomes among current smokers.”⁶⁴

⁵⁵ Jordan Raphael, Note, *The Calabasas Smoking Ban: A Local Ordinance Points the Way for the Future of Environmental Tobacco Smoke Regulation*, 80 S. CAL. L. REV. 393 (2007); *Smoking*, US LEGAL, <http://smoking.uslegal.com> [https://perma.cc/BL75-CTXX].

⁵⁶ See, e.g., Amy K. Olfene, *Of Asthma and Ashtrays: Examining the Rights of and Exploring Ways to Protect Maine Tenants Living in Multi-Unit Rental Housing Who Are Involuntarily Exposed to Secondhand Tobacco Smoke in Their Homes*, 66 ME. L. REV. 291 (2013).

⁵⁷ *Id.*

⁵⁸ THOMSON REUTERS, REGULATIONS RESTRICTING SMOKING IN INDOOR AREAS, 0070 REGSURVEYS 14 (2022).

⁵⁹ *Id.*

⁶⁰ Martha J. Hewett, Sandra D. Sandell, John Anderson & Marsha Niebuhr, *Secondhand Smoke in Apartment Buildings: Renter and Owner or Manager Perspectives*, 9 NICOTINE & TOBACCO RSCH. S39 (2007); Deborah Ritchie, Amanda Amos, Richard Phillips, Sarah Cunningham-Burley & Claudia Martin, *Action to Achieve Smoke-Free Homes—An Exploration of Experts' Views*, 9 BMC PUB. HEALTH 112 (2009); Brian A. King, K. Michael Cummings, Martin C. Mahoney, Harlan R. Juster & Andrew J. Hyland, *Multiunit Housing Residents' Experiences and Attitudes Toward Smoke-Free Policies*, 12 NICOTINE & TOBACCO RSCH. 598 (2010); Nancy E. Hood, Amy K. Ferketich, Elizabeth G. Klein, Mary Ellen Wewers & Phyllis Pirie, *Individual, Social, and Environmental Factors Associated with Support for Smoke-Free Housing Policies Among Subsidized Multiunit Housing Tenants*, 15 NICOTINE & TOBACCO RSCH. 1075 (2012); Deborah Hennrikus, Paul R. Pentel & S.D. Sandell, *Preferences and Practices Among Renters Regarding Smoking Restrictions in Apartment Buildings*, 12 TOBACCO CONTROL 189 (2003).

⁶¹ Hood et al., *supra* note 60, at 1078.

⁶² King et al., *supra* note 60, at 599.

⁶³ *Id.*

⁶⁴ Snyder et al., *supra* note 13, at 18.

V. CURRENT SMOKE-FREE MUH LAWS

A. PROVISIONS

Our review of primary and secondary literature shows some diversity in smoke-free MUH laws, particularly among those adopted early on,⁶⁵ although the vast majority (if not all) are based on ChangeLab Solutions' model legislation.⁶⁶ The model law provides a detailed outline of options and explanations, and ChangeLab Solutions updated it in 2018 based on feedback from tobacco-control professionals and advocates.⁶⁷

Jurisdictions vary in their definition of MUH, and some only include complexes with more than a certain number of units or specify a level of attachment between units. Most jurisdictions provide a longer grace period for existing units, and some allow only existing units to be designated as smoking. In almost all cases, restrictions apply not only to units themselves, but also to common areas and associated exclusive-use areas such as balconies.⁶⁸

Enforcement options are the biggest difference between an actual law versus a smoke-free policy at an individual apartment complex. The latter is left to the discretion of the landlord. Under a smoke-free MUH law, tenants can choose who to contact and what remedy to pursue—without depending on their landlord for support. More than half of jurisdictions require smoke-free lease terms and deem other residents “third-party beneficiaries,” which allows them to enforce lease terms even when the landlord fails to do so. As suggested by the model law, some go a step further and provide legal standing to tenants seeking damages or an injunction for smoking in violation of the lease by stating that violators are liable to both the landlord and any occupant of the MUH residence “who is exposed to Smoke or who suffers damages as a result of the breach.”⁶⁹ The model legislation recommends designating a primary enforcement agency, but allowing any enforcement agency to enforce the law.⁷⁰ Options include:

- *Ticket from law enforcement officers*: Every instance of smoking is subject to a \$100 fine.⁷¹ For other violations, the district attorney has the discretion to treat it as either an infraction (that is, similar to a parking ticket) or a misdemeanor (punishable by up to a \$1,000 fine and/or six months in jail).⁷²
- *Civil action*: The city or county can file a civil suit for a fine of \$250—\$1000.⁷³ Other types of remedies are also allowed.
- *Nuisance*: Violations are declared a nuisance.⁷⁴

⁶⁵ Interview with Leslie Zellers, *supra* note 47.

⁶⁶ MODEL CALIFORNIA LAW, *supra* note 3; Interview with Leslie Zellers, *supra* note 47.

⁶⁷ MODEL CALIFORNIA LAW, *supra* note 3.

⁶⁸ *Id.* § 2(a).

⁶⁹ *Id.* § 5(d).

⁷⁰ *Id.* § 8(b) Comment.

⁷¹ *Id.* § 8(b).

⁷² *See id.*

⁷³ *Id.* § 8(c).

⁷⁴ *Id.* § 8(f). The authors are careful to distinguish between declaring a violation a nuisance and declaring smoke itself a nuisance.

- *Enforceable by anyone*: “Any Person, including a legal entity or organization acting for the interests of itself, its members, or the general public” can sue seeking conditional judgment, injunction, or damages.⁷⁵

While no jurisdiction explicitly allows tenants to break their lease as a remedy, on a practical level, moving is often the simplest resolution.⁷⁶ Regardless of the enforcement provisions included in the laws, it is challenging to get cities to enforce the laws,⁷⁷ and funding issues limit enforcement efforts.⁷⁸ It is also difficult to measure how effectively enforcement deters smoking, since there is no easy way to know how often residents smoke without getting caught. Anecdotally, advocates and experts perceive discrepancies in jurisdictions’ level of follow-through, implementation, and enforcement and have identified this as a potentially fruitful area of study to identify and improve the laws’ efficacy.⁷⁹

B. TRENDS

While many California jurisdictions have adopted smoke-free MUH laws in recent years, the 96 jurisdictions with smoke-free MUH laws⁸⁰ still represent a minority of California’s 482 cities⁸¹ and 58 counties.⁸² However, the number of jurisdictions with laws is steadily increasing, and those that are adopting them now are opting for stronger prohibitions. Initially, most laws prohibited smoking in only a percentage of units, but all of the laws that passed in 2018–2020 cover all units (either immediately or at a future date).⁸³

Cities that have successfully passed smoke-free MUH laws are diverse in terms of median income, city size, racial composition, and so forth.⁸⁴ For example, median household income ranges from \$53,368 in Fresno⁸⁵ to \$201,046 in Saratoga,⁸⁶ and population ranges from 4,668 in Brisbane to 544,510 in Fresno.⁸⁷ However, the majority of the cities are small (20,000–

⁷⁵ *Id.* § 8(h).

⁷⁶ Interview with Leslie Zellers, *supra* note 47.

⁷⁷ Interview with Esther Schiller, Exec. Dir. & Co-Founder, Smokefree Air for Everyone (Sept. 23, 2016, 15:00 MST) (on file with author).

⁷⁸ *Id.*

⁷⁹ Interview with Leslie Zellers, *supra* note 47.

⁸⁰ See AM. NONSMOKERS’ RTS. FOUND., *supra* note 2.

⁸¹ See LEAGUE OF CAL. CITIES, LIST OF CITIES BY DIVISION, https://www.calcities.org/docs/default-source/legal-advocacy/list-of-all-cities-by-division-2018.pdf?sfvrsn=95b4f937_3 [<https://perma.cc/DL3Z-43P9>].

⁸² See *NACo County Explorer: County Authority Profiles*, NAT’L ASS’N OF CNTYS., <https://explorer.naco.org/?dset=County%20Authority&ind=County%20Authority%20Profiles> [<https://perma.cc/LKK8-QDAH>].

⁸³ AM. NONSMOKERS’ RTS. FOUND., *supra* note 2.

⁸⁴ Interview with Sarah Bartel, Staff Att’y, ChangeLab Sols. (July 14, 2016 15:30 EST) (on file with author); E-mail from Vanessa Marvin, Vice President of Pub. Pol’y & Advoc., Am. Lung Ass’n in Cal., to author (Sept. 19, 2016, 5:20 MST) (on file with author).

⁸⁵ U.S. CENSUS BUREAU, QUICK FACTS: FRESNO CITY, CALIFORNIA (2022) <https://www.census.gov/quickfacts/fresnocitycalifornia> [<https://perma.cc/T9TV-ZA96>].

⁸⁶ U.S. CENSUS BUREAU, QUICK FACTS: SARATOGA CITY, CALIFORNIA (2022) <https://www.census.gov/quickfacts/saratogacitycalifornia> [<https://perma.cc/BMV6-88HS>].

⁸⁷ U.S. CENSUS BUREAU, ANNUAL ESTIMATES OF THE RESIDENT POPULATION FOR INCORPORATED PLACES IN CALIFORNIA: APRIL 1, 2020 TO JULY 1, 2021 [hereinafter ANNUAL ESTIMATES], <https://www2.census.gov/programs-surveys/popest/tables/2020-2021/cities/totals/SUB-IP-EST2021-POP-06.xlsx> [<https://perma.cc/KZ76-P6EQ>].

100,000 people); none of California's largest cities have passed smoke-free MUH laws.

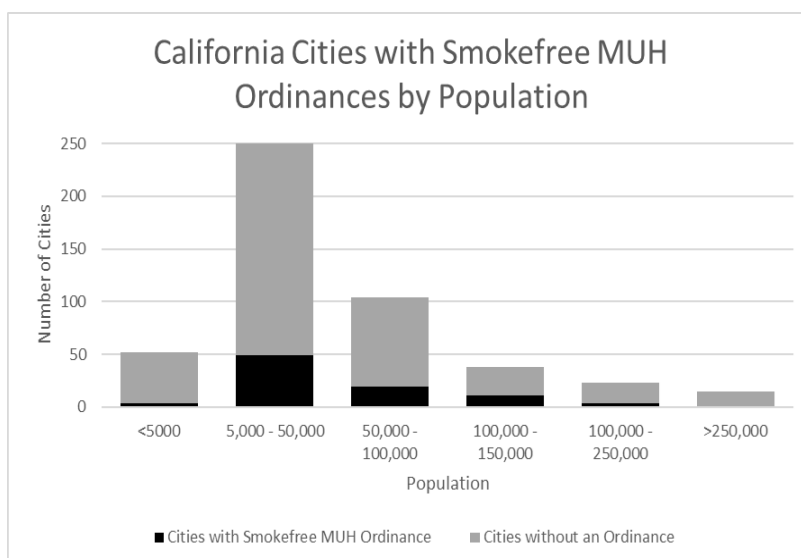
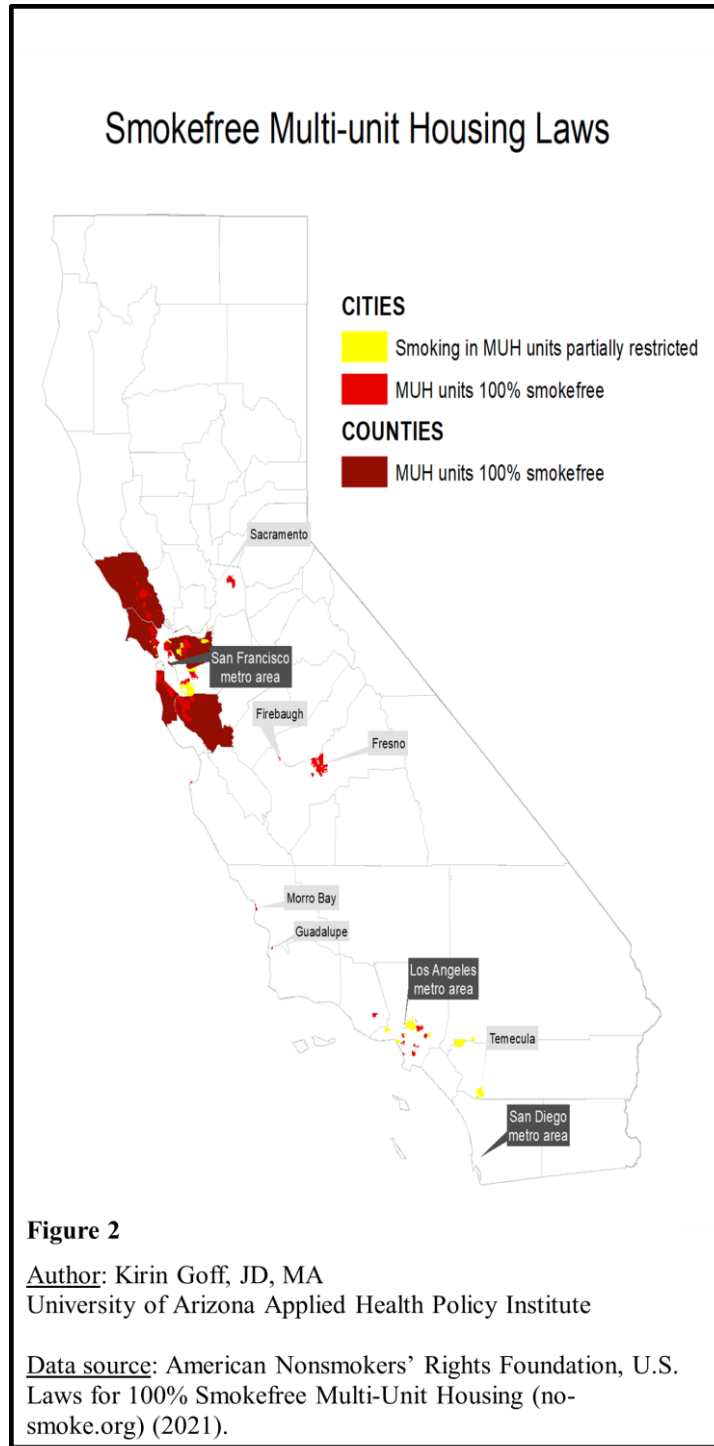


Figure 1

Data sources: U.S. Census Bureau, Population Division Annual Estimates of the Resident Population for Incorporated Places in California: April 1, 2020 to July 1, 2021, www2.census.gov/programs-surveys/popest/tables/2020-2021/cities/totals/SUB-IP-EST2021-POP-06.xlsx; American Nonsmokers' Rights Foundation, U.S. Laws and Policies Restricting or Prohibiting Smoking in Private Units of Multi-Unit Housing (2021), www.no-smoke.org/pdf/smokefreemuh.pdf.

All county-level smoke-free MUH laws are in northern California and most of the jurisdictions are near Los Angeles or San Francisco. However, these anchor cities themselves and the counties in which they are located do not have ordinances.⁸⁸ There are no jurisdictions with MUH laws near San Diego.

⁸⁸ In December 2020, San Francisco's Board of Supervisors initially voted 10-1 to enact a smoke-free MUH law. However, the board subsequently reversed course and rejected the measure 6-5 in a second vote, citing tenant opposition. Mallory Moench, S.F. Reverses Course on Tobacco Smoking Ban, Seeks More Review, S.F. Chron. (Dec. 8, 2020), <https://www.sfchronicle.com/bayarea/article/S-F-reverses-course-on-tobacco-smoking-ban-15785819.php> [<https://perma.cc/ULG3-T7TT>].



VI. CONTEXT

A. CALIFORNIA STATEWIDE EFFORTS

A few laws related to smoke-free MUH units have been proposed in California at the state level.⁸⁹ In 2001, S.B. 332 became law, providing that landlords have the right to prohibit smoking in MUH units.⁹⁰ Landlords already had that right prior to S.B. 332. However, the bill was intended to clarify confusion among non-lawyers and reassure landlords that smoke-free policies are legal. The law explicitly states that it does not preempt any local law.⁹¹

Additionally, during the 2013–2014 session, legislators introduced A.B. 746, which, as initially written, would have prohibited smoking of any tobacco product in all areas of multifamily dwellings except designated areas. The bill was later amended to simply state that “[a]s a matter of state policy, every person in the State of California has the right to a 100% smoke-free home by 2030.”⁹² The bill died in January 2014 without passing either chamber.⁹³ Venessa Marvin of the *American Lung Association* thinks the attempt simply happened too early.⁹⁴ According to Marvin, California’s history is to “pass a lot of local laws and then it bubbles up to the state level.”⁹⁵ The bill was introduced at a time when only a few local laws had passed, and key tenants’ rights groups, such as the Western Center on Law and Poverty, opposed the bill.⁹⁶ Some advocates plan to again advance statewide legislation in the future,⁹⁷ but are cautious because they fear the unintended consequence of enacting a state law that preempts stricter local laws.⁹⁸

B. OTHER STATES

No jurisdictions outside California have laws that restrict smoking inside units of private MUH, although people are working on other approaches. However, five states (Hawaii, Maine, Montana, New Hampshire, and North Carolina) prohibit smoking inside all units of buildings that receive certain tax credits through state housing tax-credit programs.⁹⁹ Other states have laws that statutorily define secondhand smoke as a nuisance¹⁰⁰ or require landlords to disclose their smoking policy and the location of smoking

⁸⁹ S.B. 332, 2011 Leg., Reg. Sess. (Cal. 2011).

⁹⁰ *Id.*

⁹¹ *Id.* at § 1947.5(d).

⁹² A.B. 746, 2013 Leg., Reg. Sess. (Cal. 2013).

⁹³ *Id.*

⁹⁴ E-mail from Vanessa Marvin to author, *supra* note 84.

⁹⁵ *Id.*

⁹⁶ *Id.*

⁹⁷ *Id.*

⁹⁸ Interview with Leslie Zellers, *supra* note 47.

⁹⁹ AM. NONSMOKERS’ RTS. FOUND., *supra* note 2, at 4–17.

¹⁰⁰ See Utah Code Ann. § 78B-6-1101 (West 2021); Warren Ortland, *Comparison of Smoke-Free Housing Policy Factors: Private Market Rate Versus Publicly Subsidized Multi-Unit Housing*, PUB. HEALTH L. CTR. AT WM. MITCHELL COLL. OF L. (Jan. 2015), <http://www.publichealthlawcenter.org/sites/default/files/resources/phlc-fs-chart-multiunit-housing-comparison-2014.pdf> [https://perma.cc/V7Q6-7SY6].

units.¹⁰¹ Voluntary policies are also becoming increasingly popular, and NGOs and health departments in a number of states promote them among landlords.¹⁰²

C. FEDERAL EFFORTS

No smoke-free MUH legislation has been introduced at the federal level. However, the U.S. Department of Housing and Urban Development (“HUD”) adopted a rule in 2016 prohibiting smoking inside MUH units of all public housing agencies in the United States.¹⁰³ The HUD rule was preceded by significant trends in smaller jurisdictions; by January 2017, 479 local communities (mostly housing authorities) in 42 states restricted or prohibited smoking in public housing.¹⁰⁴

D. WHY ONLY CALIFORNIA?

1. Historical Context

California started the national trend toward smoke-free laws.¹⁰⁵ In 1988, voters passed Proposition 99, which established a cigarette tax and created the California Department of Public Health’s California Tobacco Control Program (“CTCP”).¹⁰⁶ CTCP built upon more than 250 smoke-free workplace laws that had already been enacted in cities and counties.¹⁰⁷ The CTCP integrates multiple complementary interventions, including policy change, and a portion of the cigarette tax revenue is dedicated toward policy.¹⁰⁸ CTCP focuses policy efforts locally, in part because tobacco industry campaign donations made the political environment more challenging at the state level.¹⁰⁹ CTCP led to a wave of local policies, and the momentum of local change eventually led to statewide laws to reduce secondhand smoke.¹¹⁰ The first one hundred percent smoke-free restaurant law and the first smoke-free bar law in the United States emerged in California cities in the early 1990s, and by 1994, there were over one hundred local smoke-free restaurant laws in California.¹¹¹ One year later, the legislature passed a bill that made workplaces and restaurants one hundred percent smoke-free statewide.¹¹² California also banned smoking at bars and

¹⁰¹ Orland, *supra* note 100.

¹⁰² TOBACCO CONTROL LEGAL CONSORTIUM, REGULATING SMOKING IN MULTI-UNIT HOUSING 2–4 (2015), <https://publichealthlawcenter.org/sites/default/files/resources/Regulating%20Smoking%20in%20Multi-Unit%20Housing%202015.pdf> [<https://perma.cc/Q9AA-W4F2>]; Barbara Pizacani, Diane Laughter, Kylie Menagh, Michael Stark, Linda Drach & Colleen Hermann-Franzen, *Moving Multiunit Housing Providers Toward Adoption of Smoke-Free Policies*, 8 PREVENTING CHRONIC DISEASE A21 (2011).

¹⁰³ 24 C.F.R. § 965.653.

¹⁰⁴ AM. NONSMOKERS’ RTS. FOUND., *supra* note 2, at 4–16.

¹⁰⁵ Roeseler & Burns, *supra* note 12, at i3.

¹⁰⁶ *Id.*

¹⁰⁷ John A. Francis, Erin M. Abramssohn & Hye-Youn Park, *Policy-Driven Tobacco Control*, 19 TOBACCO CONTROL (Supplement 1) i16, i16–i17 (2010).

¹⁰⁸ Roeseler & Burns, *supra* note 12, at i7.

¹⁰⁹ *Id.*; Francis et al., *supra* note 107, at i17.

¹¹⁰ Roeseler & Burns, *supra* note 12, at i7.

¹¹¹ Francis et al., *supra* note 107, at i17.

¹¹² *Id.*

playgrounds over the next several years.¹¹³ California's efforts have had a strong influence on the spread of clean air legislation across the country.¹¹⁴

Prohibitions on smoking in public places led to a cultural shift, and Californians came to expect smoke-free spaces.¹¹⁵ According to Esther Schiller, a public health advocate from the nonprofit Smokefree Air for Everyone, “[P]eople were breathing smoke-free air where they worked, but they were going home to apartments and condos where they were breathing their neighbor’s tobacco smoke.”¹¹⁶ The smoke-free housing movement started out as a grassroots effort and tenants began reaching out to local health departments, tobacco control advocates, and lawmakers.¹¹⁷ Meanwhile, more and more landlords responded to tenant demands by voluntarily enacting smoke-free policies, and UCLA received a grant from the Center for Disease Control and Prevention to encourage landlords to do so.¹¹⁸ According to advocates, the popularity of voluntary policies contributed to a political environment that was accepting of smoke-free MUH laws.¹¹⁹ Initially, voluntary policies included smoke-free common areas only.¹²⁰ Likewise, jurisdictions began passing smoke-free MUH common-area laws with the help of technical assistance from ChangeLab Solutions, a legal nonprofit that provides technical assistance to lawmakers seeking to introduce public-health-related legislation.¹²¹ ChangeLab was funded to provide legal technical assistance to all tobacco-tax-funded public health projects in California.¹²² Fortunately, ChangeLab knew communities were interested in smoke-free MUH housing laws and already had sample legislation drafted and ready by the time the first jurisdictions began pursuing them.¹²³ Smokefree Air for Everyone and the American Lung Association advocated for it.

In 2006, Belmont was the first jurisdiction in the United States to pass a smoke-free MUH law that placed restrictions on smoking inside individual units.¹²⁴ Belmont’s law was based on ChangeLab’s model law and resulted from the grassroots efforts of residents at one particular housing complex for low-income seniors.¹²⁵ Their activism was fueled by a fire at the complex, which was caused by a cigarette and injured residents, coupled with some residents’ severe smoke-sensitive health conditions.¹²⁶ Belmont’s law was considered radical at the time.¹²⁷ It received media attention worldwide, and

¹¹³ Roeseler & Burns, *supra* note 12, at i7.

¹¹⁴ *Id.* at i8–i9.

¹¹⁵ Interview with Esther Schiller, *supra* note 77; Interview with Leslie Zellers, *supra* note 47.

¹¹⁶ Interview with Esther Schiller, *supra* note 77.

¹¹⁷ *Making History with Smokefree Homes: Belmont, CA*, CHANGELAB SOLS., <https://www.changelabsolutions.org/story/making-history-smokefree-homes> [<https://perma.cc/7B4S-3EW3>]; Interview with Esther Schiller, *supra* note 77; Interview with Leslie Zellers, *supra* note 47.

¹¹⁸ U.S. DEP’T OF HEALTH AND HUM. SERVS., HEALTHY HOMES MANUAL: SMOKE-FREE POLICIES IN MULTIUNIT HOUSING 10 (2011); Interview with Esther Schiller, *supra* note 77.

¹¹⁹ Interview with Leslie Zellers, *supra* note 47.

¹²⁰ *Id.*

¹²¹ *Who We Are*, CHANGELAB SOLS., <https://www.changelabsolutions.org/who-we-are> [<https://perma.cc/G8GZ-TPMV>].

¹²² Interview with Leslie Zellers, *supra* note 47.

¹²³ *Id.*

¹²⁴ BELMONT, CAL., CODE OF ORDINANCES § 20.5-3(a) (2007).

¹²⁵ *Who We Are*, *supra* note 121.

¹²⁶ *Id.*

¹²⁷ Interview with Leslie Zellers, *supra* note 47.

city officials received letters and emails from all over expressing support and opposition.¹²⁸

Belmont's action generated momentum and other laws followed.¹²⁹ While outsiders might perceive California tobacco laws as progressive and rapidly emerging, advocates contend that progress has been gradual.¹³⁰ For example, Shiller and her allies "spent ten years working in Santa Monica and we are still working there because the law that was passed is not as effective as we had hoped."¹³¹

2. What Made California Successful?

Why have so many California jurisdictions enacted smoke-free MUH laws when no jurisdictions outside the state have done so? Although there is no clear answer, California has long been culturally and politically receptive to tobacco control efforts. Within the California tobacco control movement, there is consensus around an approach based on social norm change through public policy.¹³² In particular, Proposition 99 funding dedicated to policy efforts provided resources to the movement. MUH presented a logical frontier once laws covered restaurants, bars, and so forth. However, Sarah Bartel, a staff attorney who works on the topic at ChangeLab Solutions, cautions that communities differ, so new efforts need not follow the same pattern.¹³³

Additionally, city attorneys are not generally experts in tobacco control, so the presence of a technical assistance legal center in the state reduced barriers to entry and streamlined the process.¹³⁴ Without it, city attorneys may have had to start from scratch and conduct substantial legal research.¹³⁵

Another factor contributing to the success of laws in California was the California Apartment Association's ("CAA") moderate response.¹³⁶ CAA is a powerful political group that represents the interests of landlords.¹³⁷ It has not taken a strong stance against smoke-free MUH laws. The CAA initially opposed smoke-free MUH laws because voluntary policies allow more flexibility. However, in recent years, the CAA has changed its position in response to a demand for smoke-free properties among not only tenants but also landlords. Leslie Zellers, a Public Health Law and Policy Consultant and former Vice President of Programs for ChangeLab Solutions, recounted that during her recent work on a proposed smoke-free MUH law in Sunnyvale, when she told the local chapter of the CAA about the law, chapter

¹²⁸ Dana Yates, *Belmont to Be First U.S. City to Ban All Smoking*, DAILY J., https://www.sm-dailyjournal.com/news/local/belmont-to-be-first-u-s-city-to-ban-all-smoking/article_d784bf68-ea8b-5ca5-88f2-39ae28674fad.html [<https://perma.cc/3FCZ-WWDL>].

¹²⁹ Interview with Leslie Zellers, *supra* note 47.

¹³⁰ *Id.*; Interview with Esther Schiller, *supra* note 77.

¹³¹ Interview with Esther Schiller, *supra* note 77.

¹³² E-mail from Vanessa Marvin to author, *supra* note 84.

¹³³ Interview with Leslie Zellers, *supra* note 47; Interview with Sarah Bartel, *supra* note 84.

¹³⁴ Interview with Leslie Zellers, *supra* note 47.

¹³⁵ *Id.*

¹³⁶ *Id.*; *Burlingame OKs Anti-Smoking Ordinance Negotiated with CAA*, CAL. APARTMENT ASS'N (July 10, 2015), <https://caanet.org/burlingame-oks-anti-smoking-law-negotiated-with-caa/> [<https://perma.cc/JX2F-76LR>].

¹³⁷ *About CCA*, CAL. APARTMENT ASS'N, <https://caanet.org/about/> [<https://perma.cc/5LN8-4YXW>]; Interview with Leslie Zellers, *supra* note 47.

representatives said that that ship had sailed and they would take a neutral position as long as the law met certain requirements.¹³⁸

There also seems to have been a certain amount of momentum and peer pressure once jurisdictions began enacting smoke-free MUH laws. Shortly after Belmont enacted its law, California’s Clean Air Project awarded Belmont a California Clean Air Award for taking “great strides to protect its citizens from Secondhand Smoke.”¹³⁹ Likewise, jurisdictions may be motivated by positive reviews from organizations. The American Lung Association releases a “State of Tobacco Control” report for each state periodically and gives grades to indicate how they are doing with various areas of tobacco control.¹⁴⁰ In California, the American Lung Association also releases a local report and includes smoke-free MUH laws in its grading criteria.¹⁴¹ Zellers suggests that the report card encourages jurisdictions to enact laws in response to competition with one another.¹⁴²

Smokefree Housing

	1 Point	2 Points	3 Points	4 Points	Total Points
Nonsmoking Units in Apartments	Prohibits smoking in 75% or more of new apartment units	75% of new and existing apartment units		100% of units for both new and existing apartments	
Nonsmoking Units in Condominiums	Prohibits smoking in 75% or more of new condos units	75% of new and existing condos units		100% of units for both new and existing condos	
Nonsmoking Common Areas		Indoor common areas		Indoor and outdoor common areas	
Prohibits smoking within 75% of units under control of Housing Authority	Prohibits smoking within 75% of units for multi-unit housing complexes under control of Housing Authority				
					TOTAL:

If jurisdiction has Housing Authority: If jurisdiction does not have Housing Authority:

11+ Points – **A** 2-4 Points – **D** 10+ Points – **A** 1-3 Points – **D**
 8-10 Points – **B** 0-1 Points – **F** 7-9 Points – **B** 0 Points – **F**
 5-7 Points – **C** 4-6 Points – **C**

Figure 3 Excerpt from American Lung Association in California, State of Tobacco Control California Local Grades 29 (American Lung Association in California 2016).

3. Barriers to Smoke-Free MUH Laws

Why haven’t jurisdictions outside California pursued smoke-free MUH laws? One factor is politics. Whether or not smoke-free MUH laws are a practical political priority depends in part on the stance of local apartment associations. In Florida, for example, Tobacco Free Florida (the state’s tobacco education and prevention program) focuses its smoke-free MUH efforts on voluntary policies, largely because of its relationship with the

¹³⁸ Interview with Leslie Zellers, *supra* note 47.
¹³⁹ SERENA CHEN, BELMONT CASE STUDY: BELMONT, CA SECONDHAND SMOKE/MULTI-UNIT HOUSING ORDINANCE 4 (2007), <https://www.myctb.org/wst/healthylawrence/livewell/TobaccoFreeLiving/American%20Lung%20Association%20Advocates%20Toolbox/Module-3/Belmont-Case-Study.pdf> [<https://perma.cc/SAM8-8NWB>].
¹⁴⁰ *State of Tobacco Control 2022*, AM. LUNG ASS’N, <https://www.lung.org/research/sotc> [<https://perma.cc/7DMK-35QJ>].
¹⁴¹ *Id.*
¹⁴² Interview with Leslie Zellers, *supra* note 47.

Florida Apartment Association (“FAA”).¹⁴³ The FAA holds considerable political influence, and the partnership is somewhat contingent upon Tobacco Free Florida’s pursuit of voluntary policies in lieu of legislation.¹⁴⁴ According to Ron Davis, Statewide Tobacco Policy Manager for Tobacco Free Florida, the FAA supports smoke-free housing, but values owner/manager discretion; a law “would be viewed as a mandate, and, by the nature of their role with the apartments across the state . . . would put them on defense.”¹⁴⁵ Attempting to convince property owners that voluntary smoke-free policies are in their best interest is seen as a better use of resources.

Limits on the powers of local governments are another obstacle to smoke-free MUH laws. Local government powers are limited to those enumerated in the constitution and laws of their state.¹⁴⁶ Some states have “home rule provisions,” which are state laws that grant some independent lawmaking authority to local governments.¹⁴⁷ In the absence of home rule provisions, explicit state authorization is sometimes required for a variety of local government activities.¹⁴⁸

Additionally, because local authority is granted by states, state law preempts conflicting local laws. Preemption is often the “greatest barrier to a smoke-free agenda.”¹⁴⁹ In recent years, there is a trend toward increasing state legislation that explicitly preempts local authority in a variety of areas, including smoke-free laws.¹⁵⁰ Some states have pursued preemptive state legislation as a direct response to local attempts to legislate particular topics.¹⁵¹ As of January 2021, thirteen states have laws that fully preempt local smoking legislation. Thus, passing a law in these states would be futile without change to state law.

The tobacco industry usually holds more influence at the state level than the local level, so industry lobbying efforts seek state preemption.¹⁵² Therefore, even in states without preemptive laws, local governments may avoid certain topics out of fear of state retaliation. Indeed, the backlash from a well-intentioned attempt to pass a local law could extend beyond preemptive state law. Arizona, for example, passed a law that threatened state-shared revenue if the attorney general determines that a locality has passed a law conflicting with state law.¹⁵³ Professor Erin Scharff, a federalism expert at the Arizona State University College of Law, argues that local governments proceed with caution because even if they are within their legal authority to act, too much money is at stake.¹⁵⁴

¹⁴³ E-mail from Ronald Davis, Statewide Tobacco Pol’y Manager, Tobacco Free Florida, to author (Oct. 6, 2016, 6:31 MST) (on file with author).

¹⁴⁴ *Id.*

¹⁴⁵ *Id.*

¹⁴⁶ Erin Adele Scharff, *Hyper Preemption: A Reordering of the State–Local Relationship?* 106 GEO. L.J. 1469, 1475–76 (2018).

¹⁴⁷ *Id.* at 1476.

¹⁴⁸ *Id.*

¹⁴⁹ SAMANTHA K. GRAFF, *THERE IS NO CONSTITUTIONAL RIGHT TO SMOKE*: 2008 5 (2008).

¹⁵⁰ Scharff, *supra* note 146, at 1481.

¹⁵¹ *Id.*

¹⁵² GRAFF, *supra* note 149.

¹⁵³ Scharff, *supra* note 146, at 1495–96.

¹⁵⁴ *Id.* at 1497.

VII. OUTCOMES

A. HEALTH OUTCOMES

There has been little, if any, research on the outcomes of smoke-free MUH laws. Success and efficacy are hard to measure, and the presence of a law does not mean no one smokes inside the home. Several studies have examined the effect of other types of smoke-free laws on smoking behavior, secondhand smoke exposure, and health outcomes, but smoke-free MUH laws are harder to evaluate because the home is a uniquely non-public space. Nor is it easy to enforce laws or even identify who is smoking, and as a result smokers may be less deterred by cultural norms and fear of getting caught.

Likewise, there is a danger of unintended consequences, and public health advocates have learned some lessons. For example, when laws with partial bans did not specify that smoking units must be contiguous, some landlords dispersed smoking units throughout the building, which did little to protect nonsmokers.¹⁵⁵ Now, most of the laws specify that smoking units must be contiguous. Anecdotally, advocates also claim that when cities passed laws restricting smoking only in common areas in the early days of California smoke-free housing laws, smokers were encouraged to smoke inside their units, which in some cases increased secondhand exposure.¹⁵⁶ One 2014 national survey of MUH residents supports this assertion, finding that policies that partially restrict smoking (by prohibiting it in common areas, for example) were associated with a greater likelihood of secondhand smoke exposure inside units.¹⁵⁷

It is unclear if any similar unintended consequences occur under smoke-free MUH laws that prohibit smoking both within units and in outdoor areas. Because smoking is more easily detected on a balcony or in a common area, residents may choose to smoke inside because they are less likely to get caught, leading to an increase in indoor secondhand smoke. It is also possible that smoke-free laws prompt smokers to quit, smoke less, or switch to electronic cigarettes or smokeless tobacco.

Most studies on the impact of smoke-free laws have focused on laws covering the workplace and entertainment and hospitality venues.¹⁵⁸ These studies may not reliably predict how smoke-free housing laws affect secondhand smoke exposure, since employees have greater incentives to follow rules and smoking is much easier to detect and enforce in a public environment. Nonetheless, researchers have used a variety of methods to study the impact of smoke-free workplace and restaurant laws and have consistently found a substantial reduction in secondhand smoke exposure. For example, a 2009 review of the literature found that studies examining the effects of laws that prohibit smoking in almost all indoor workplaces

¹⁵⁵ E-mail from Vanessa Marvin to author, *supra* note 81.

¹⁵⁶ *Id.*; Interview with Leslie Zellers, *supra* note 47.

¹⁵⁷ In the survey, respondents self-reported tobacco smoke incursions, which may not accurately measure smoking prevalence. Wilson, *supra* note 9, at 1445–46.

¹⁵⁸ 13 INT'L AGENCY FOR RSCH. ON CANCER, EVALUATING THE EFFECTIVENESS OF SMOKE-FREE POLICIES 153–54 (2009), <https://www.iarc.who.int/wp-content/uploads/2018/07/handbook13.pdf> [<https://perma.cc/7PND-G8BT>].

consistently demonstrate an 80–90% reduction in secondhand smoke exposure in high-risk settings.¹⁵⁹

Measuring how laws impact health outcomes is trickier. Because lung cancer and other conditions may appear decades after initial exposure, studies of the health impact of smoke-free laws have focused almost entirely on acute respiratory illness and cardiovascular disease.¹⁶⁰ The majority of studies have found improvements in respiratory and sensory symptoms,¹⁶¹ and at least two have investigated the effect on lung function and found a small but significant improvement after legislation took effect.¹⁶² Additionally, the link between secondhand smoke and lung cancer is strong enough that a reduction in exposure is expected to lead to a reduction in incidence of the disease.¹⁶³

VIII. OTHER OPTIONS

In addition to smoke-free MUH laws, a few other approaches have been attempted. Of these, designing and updating buildings to improve air quality appears to be the most effective, particularly in tandem with smoke-free laws.¹⁶⁴ One study found a 29% median decrease in the proportion of transferred air and nicotine concentration after building improvements.¹⁶⁵ The cost of retrofitting an existing building varies, but it can be done without excessive investment.¹⁶⁶ The Center for Energy and Environment found that the average cost to seal a unit to reduce secondhand smoke movement is about \$700.¹⁶⁷ Fortunately, COVID-19 mitigation efforts have increased interest in air flow and building design.

Advocates in many states encourage landlords to voluntarily adopt smoke-free policies. As with smoke-free MUH laws, the efficacy is unclear without data on enforcement and compliance. Under a voluntary policy, enforcement is left to a landlord's discretion, and a tenant is usually not party to another tenant's lease. Market forces may incentivize landlords in both directions on this, since smoke-free environments increase desirability and decrease costs, but an eviction decreases rental income.

Other laws may offer remedies in theory but require litigation. For example, a tenant can sue under ordinary nuisance or trespass law.¹⁶⁸ Most

¹⁵⁹ *Id.* at 161.

¹⁶⁰ *Id.* at 154.

¹⁶¹ *Id.*

¹⁶² *Id.* at 153–54.

¹⁶³ *Id.*

¹⁶⁴ Snyder et al., *supra* note 13; D.L. Bohac, M.J. Hewett, S.K. Hammond & D.T. Grimsrud, *Secondhand Smoke Transfer and Reductions by Air Sealing and Ventilation in Multiunit Buildings: PFT and Nicotine Verification*, 21 *INDOOR AIR* 36, 36 (2011).

¹⁶⁵ Snyder et al., *supra* note 13, at 17; Bohac et al., *supra* note 165, at 36.

¹⁶⁶ Snyder et al., *supra* note 13; Bohac et al., *supra* note 165, at 43.

¹⁶⁷ CTR. FOR ENERGY AND ENV'T, *SECONDHAND SMOKE IN APARTMENT BUILDINGS: A SUMMARY OF MINNESOTA RESEARCH 2* (2001).

¹⁶⁸ *Birke v. Oakwood Worldwide*, 87 Cal. Rptr. 3d 602 (Cal. App. 2009); *Thomsen v. Greve*, 4 Neb. App. 742, 756 (1996); *Kepler v. Indus. Disposal Co.*, 85 N.E.2d. 308, 310 (Ohio Ct. App. 1948) (“To constitute smoke a nuisance, the annoyance and inconvenience suffered must be of a substantial character, and must be such as to produce actual, tangible, and substantial injury to neighboring property itself, or such as to interfere sensibly with its use and enjoyment by persons of ordinary sensibilities.”); *CHANGELAB SOLS., SMOKE-FREE MULTI-UNIT HOUSING: APPROACHES TO PROTECT TENANTS FROM SECONDHAND SMOKE* 3–4 (2013); David B. Ezra, “*Get Your Ashes Out of My Living Room!*”: *Controlling Tobacco Smoke in Multi-Unit Residential Housing*, 54 *RUTGERS L. REV.* 135, 156–57 (2001).

states also have laws requiring all residential leases to include the related doctrines of “implied covenant of quiet enjoyment” and “warranty of habitability,”¹⁶⁹ and at least a few nonsmoking tenants have sued landlords under each doctrine.¹⁷⁰ Under the warranty of habitability, landlords must maintain the property in a state reasonably fit for human occupation.¹⁷¹ The covenant of quiet enjoyment protects a tenant’s right to use the property without unreasonable interference from other tenants or the landlord.¹⁷² In addition to damages and reduction of smoke exposure, tenants can attempt to use the implied warranty of habitability to justify breaking a lease without penalty.¹⁷³

To some extent, secondhand smoke also falls within existing disability law, although it doesn’t appear that very many have sued under this umbrella.¹⁷⁴ The Fair Housing Act prohibits housing discrimination on the basis of disability.¹⁷⁵ This includes “a refusal to make reasonable accommodations in *rules, policies, [or] practices*” when necessary for “equal opportunity to use and enjoy a dwelling.”¹⁷⁶ Some state laws also prohibit this type of housing discrimination.¹⁷⁷

In a case before a court, a non-smoking tenant would likely prevail, particularly under the implied warranty of habitability, but smoke-free MUH laws strengthen the tenant’s position and provide more realistic mechanisms for remedy.

IX. SKEPTICISM WITHIN THE PUBLIC HEALTH COMMUNITY

In light of the Black Lives Matter movement, along with increasing homelessness, there is some concern in the public health community about how smoke-free MUH laws can impact vulnerable residents. On the one hand, tickets from police are one of the few enforcement options that can happen immediately without relying on a court. But contact with police for a minor offense creates a potential point of contact for more serious criminal justice involvement for things like drug possession, or an interaction can escalate into tension with law enforcement or use of force. Likewise, in recent years critics of the criminal justice system have highlighted how the inability to pay a fine for a minor violation can lead to debt or even criminal consequences.¹⁷⁸ Finally, there is some concern about eviction and housing security. In particular, the “housing first” approach to homelessness

¹⁶⁹ Ezra, *supra* note 168, at 160–61.

¹⁷⁰ Dworkin v. Paley, 638 N.E.2d 636, 637 (Ohio Ct. App. 1994); 50-58 Gainsborough Street Realty Trust v. Haile, Housing Court, City of Boston, MA No. 98-0/2/2/7/9/, June 8, 1998; Ezra, *supra* note 168, at 161.

¹⁷¹ Ezra, *supra* note 168, at 160–61.

¹⁷² *Id.* at 161.

¹⁷³ *Id.*

¹⁷⁴ *See id.* at 160–61.

¹⁷⁵ 42 U.S.C. § 3604(f)(1) (“[I]t shall be unlawful . . . [t]o discriminate in the sale or rental, or otherwise make unavailable or deny, a dwelling to any buyer or renter because of a handicap . . .”).

¹⁷⁶ 42 U.S.C. § 3604(f)(3)(B) (emphasis added).

¹⁷⁷ CAL. GOV’T. CODE § 12955; 9 V.S.A. § 4503(a)(1); Ezra, *supra* note 168, at 161–68.

¹⁷⁸ Last Week Tonight, *Municipal Violations: Last Week Tonight with John Oliver (HBO)*, YOUTUBE (Mar. 22, 2015), <https://www.youtube.com/watch?v=0UjpmT5noto> [<https://perma.cc/YQN4-42YQ>]; Devah Pager, Rebecca Goldstein, Helen Ho & Bruce Western, *Criminalizing Poverty: The Consequences of Court Fees in a Randomized Experiment*, 87 AM. SOCIO. REV. 1, 2 (2022).

emphasizes that people need housing before they are able to start tackling other issues, such as addiction.¹⁷⁹

V. RECOMMENDATIONS AND CONCLUSION

Smoke-free MUH laws are likely good policy. The need for air quality protection is urgent and smoke-free MUH laws provide some recourse against one of the largest sources of pollution. The magnitude of the benefit is unclear, largely because we do not know much about the extent of enforcement—but some protection is far better than none.

We see two main advantages to smoke-free MUH laws. First, the model ordinance fills in the gaps of existing housing laws, which tend to provide theoretical but not practical recourse for secondhand smoke exposure. Although enforcement may still rely on a court in some instances, smoke-free MUH laws make enforcement easier. Without data on enforcement, however, it is unclear how effectively smoke-free MUH laws are being enforced.

Second, and perhaps more significantly, smoke-free MUH laws may have a deterrent effect. A landlord is more likely to understand that “smoking is prohibited in all units” than that the implied warranty of habitability guarantees a smoke-free environment. Likewise, fewer tenants will smoke indoors if smoking is expressly prohibited. Moreover, if smoking is expressly prohibited by law, landlords may be less likely to oppose tenants who want to take matters into their own hands by ending their lease early and moving because of smoke exposure.

The biggest weakness of smoke-free MUH laws is that they place the onus on individuals to advocate for themselves. There are few other areas of public health or product safety that place the burden on an individual consumer to ensure safety. Smoke-free MUH laws also only provide protection from one pollutant and only if the tenant is able to adequately identify the source. Secondhand smoke is more visible than other pollutants and probably the greatest cause of harm, but indoor air pollution more broadly is a neglected hazard.¹⁸⁰ Unlike outdoor air pollution, indoor air pollution is almost entirely unregulated—and indoor air pollution is often worse. According to the EPA, some pollutants are routinely found in concentrations two to five times higher indoors.¹⁸¹ One study estimated that more than 150,000 deaths each year in the U.S. are attributable to fine particulate matter indoors and in other microenvironments, such as cars, even when only non-smoking environments were considered.¹⁸² Yet there is no government entity specifically responsible for overseeing indoor air

¹⁷⁹ *But see* 24 C.F.R. § 965.653 (prohibiting the use of tobacco products in public housing).

¹⁸⁰ ROYAL COLL. OF PHYSICIANS, *EVERY BREATH WE TAKE: THE LIFELONG IMPACT OF POLLUTION* (2016), <https://www.rcplondon.ac.uk/projects/outputs/every-breath-we-take-lifelong-impact-air-pollution> [<https://perma.cc/9PQQ-5UTB>].

¹⁸¹ *Indoor Air Quality*, EPA, <https://www.epa.gov/report-environment/indoor-air-quality> [<https://perma.cc/YXD7-EHXN>].

¹⁸² Parham Azimi & Brent Stephens, *A Framework for Estimating the US Mortality Burden of Fine Particulate Matter Exposure Attributable to Indoor and Outdoor Microenvironments*, 30 J. EXPOSURE SCI. & ENV'T. EPIDEMIOLOGY 271, 276 (2020).

quality.¹⁸³ In the long-term we would like to see expanded, more systemic air quality protections that do not require individuals to advocate for themselves.

When we purchase a lighter or a sandwich, it is safe to assume with reasonable certainty that it is not going to explode or give us salmonella. When we drive over a bridge, it is safe to assume it is not going to collapse. These assurances exist in large part because of regulatory standards. Pollution is admittedly more amorphous, but who should bear the burden of navigating that? Pollutants result from countless people and activities—everything from building materials and design, to outdoor exhaust, neighboring units, air freshener, stoves, and mold. It is not realistic to expect a tenant to identify and pursue each individual source. The tenant is a paying customer and probably the least equipped to evaluate and remedy those sources, including secondhand smoke.

A. POLICY RECOMMENDATIONS

(1) *Cities and counties should consider adopting a smoke-free MUH ordinance.*

In our view, the statutory language itself may be more impactful than any practical enforcement mechanisms because of its deterrent effect and the added leverage it gives residents. In practice, enforcement requires a tenant to take significant initiative for relief that is delayed at best. To be clear, if the alternative is no protection—and it usually is—a smoke-free MUH law is far better than nothing. There is an urgent need for air quality protections and the most effective public health policies are ones that are actually enacted.

(2) *Consider the need for a convenient outdoor space to smoke.*

Smoking is a serious addiction. The goal should be to provide actual protection for nonsmokers, not punish or send a message to smokers. Avoid approaches that are stigmatizing or logistically unworkable—both out of respect for a person's experience of addiction and autonomy, and because if there is no realistic place to smoke, he or she is much more likely to smoke inside.

(3) *In the longer-term, adopt more systematic policies that (a) don't rely on individual tenants to advocate for themselves and (b) provide protection from more pollutants.*

Indoor air quality laws lag behind the science. We recommend approaching air quality within housing units as a consumer safety issue with regulation on par with that of product safety or clean water. Air pollution is more difficult to legislate than water or other products because it emerges from diverse sources, including activities of the tenant themselves. Nonetheless, there are ways to shift the burden away from tenants. A precise regulatory framework is beyond our scope and expertise, but here are a few examples of what such an approach might look like:

- *Building, residential, and mechanical codes:* Update codes to require best practices for air quality, including ventilation and

¹⁸³ Richard J. Sima, *Indoor Air Pollution in the Time of Coronavirus*, EOS (May 31, 2022), <https://eos.org/features/indoor-air-pollution-in-the-time-of-coronavirus> [<https://perma.cc/J2RB-3YF8>].

filtration. The International Code Council’s model “I-codes” are the most widely adopted worldwide, including in the United States.¹⁸⁴ As of 2020, less than half of US jurisdictions had adopted a building I-code version updated in 2015 or later.¹⁸⁵ New versions are released every few years and more recent ones include at least minor updates to indoor air quality provisions, such as prohibition of commercial gas cooking appliances.¹⁸⁶ Early proposals of the forthcoming 2024 International Mechanical Code are particularly promising.¹⁸⁷ They include major updates for air quality, including ventilation and filtration system capacity and CO₂ sensors to monitor and adjust ventilation and set off an alarm if it is inadequate.¹⁸⁸

- *Health inspections*: Adopt air quality rules for renting or selling housing and require a health department inspection before a new resident moves into a unit. If the unit does not meet minimum standards, the landlord or seller would then be required to take steps to bring it into compliance, perhaps with the assistance of an expert. An air quality inspection would provide an objective measure of whether or not the product the landlord or seller is providing is safe. If it is unsafe, it is of course a challenge for the landlord or seller to figure out why and remedy it—perhaps by enforcing a non-smoking lease against another tenant, making building improvements, or replacing an air conditioner. Such an approach shifts the burden from the buyer or tenant (who is essentially a customer) to the landlord or seller (the person providing the product). It also provides residents with protection automatically, whether or not they are aware of the harm and whether or not they take initiative. Finally, it provides general protection from many types of pollutants regardless of the source. This type of health inspection would only be feasible before residents move in, because once they live in a unit, the air quality is heavily influenced by their own behavior via air freshener, candles, and so forth.
- *Funding*: Provide landlords with financial assistance for costly improvements. This would help avoid the unintended consequence of worsening the affordable housing crisis and avoid saddling landlords with unexpected heavy costs.

Fortunately, the COVID-19 pandemic has attracted new interest in indoor air quality and may increase the feasibility of broad regulation. In 2021, both the American Rescue Plan Act and the Infrastructure Investment

¹⁸⁴ 2021 I-Codes Building Codes, INT’L CODE COUNCIL, <https://codes.iccsafe.org/codes/i-codes/2021-icodes> [<https://perma.cc/V5LN-VJGR>].

¹⁸⁵ FED. EMERGENCY MGMT. AGENCY, BUILDING CODES STRATEGY 6 (2022), https://www.fema.gov/sites/default/files/documents/fema_building-codes-strategy.pdf [<https://perma.cc/NVE5-C7G8>].

¹⁸⁶ See INT’L CODE COUNCIL, INTERNATIONAL RESIDENTIAL CODE FOR ONE- AND TWO-FAMILY DWELLINGS (2021).

¹⁸⁷ INT’L CODE COUNCIL, 2021 GROUP A PROPOSED CHANGES TO THE I-CODES M52 (Mar. 2021), <https://www.iccsafe.org/wp-content/uploads/IMC-2021-Group-A.pdf> [<https://perma.cc/KP7H-BDJQ>]; see also Jason Hartke, *IWBI Advances New Indoor Air Quality Code Proposals*, INT’L WELL BLDG. INST. (Oct. 11, 2021), <https://resources.wellcertified.com/articles/iwbi-advances-new-indoor-air-quality-code-proposals/> [<https://perma.cc/F5PN-GHXV>].

¹⁸⁸ *Id.*

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and Jobs Act included funding for building improvements related to air quality. In an official briefing, the head of the Biden administration's White House Office of Science and Technology Policy stated, "For decades, Americans have demanded that clean water flow from our taps and pollution limits be placed on our smokestacks and tailpipes. It is time for healthy and clean indoor air to also become an expectation for us all."¹⁸⁹

¹⁸⁹ Alondra Nelson, *Let's Clear the Air on COVID*, WHITE HOUSE: OSTP BLOG (Mar. 23, 2022), <https://www.whitehouse.gov/ostp/news-updates/2022/03/23/lets-clear-the-air-on-covid/> [<https://perma.cc/4EJ6-6DJT>].