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GOOD FAITH: SURVEILLANCE AND EVALUATION OF 911 GOOD SAMARITAN LAWS IN THE UNITED STATES

Shane W. Reader
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GOOD FAITH: SURVEILLANCE AND EVALUATION OF 911 GOOD SAMARITAN
LAWS IN THE UNITED STATES

By

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by
Shane Wolf Reader, MA, PHD
2022

DEDICATION

To all the Good Samaritans of Texas

GOOD FAITH: SURVEILLANCE AND EVALUATION OF 911 GOOD SAMARITAN
LAWS IN THE UNITED STATES

by

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MA Texas A&M University-Corpus Christi 2017
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Presented to the Faculty of The University of Texas

School of Public Health

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of the Requirements

for the Degree of

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PREFACE

Half of Americans, myself included, have witnessed family, friends, or neighbors struggle with substance use. This disease becomes ingrained among the neurological mechanisms of salience and satisfaction, diverting a person's affect, cognition, and certainly behavior toward the pursuit of life-threatening substances. People with substance use disorder are met with doubt, stigma, and criminalization. These attitudes are crystallized in statute. The state is compelled by its interest in self-perpetuation to pursue both criminal justice, correcting offenses against the law, and also public good, preserving the constitution of its citizens by inoculating them from harm. Each state must ensconce its own values in the edifice of law, to err on the side of compliance or compassion. In adopting laws named after the Good Samaritan, a literary model of neighborly love, states nominally endorse compassion. However, legislators may coopt these laws, diverting forgiveness from citizens who do not demonstrate sufficient worthiness through obedience or rehabilitation. The following evidence is constructed to persuade these legislators of the value inherent in choosing compassion over compliance, by reminding them of the question that concludes the tale of the Good Samaritan: who among these travelers is neighbor to the man beset by thieves?

ACKNOWLEDGEMENTS

This work is the product of the insight, encouragement, and patience of allies united by a common interest in the health and dignity of our fellow Texans. These studies would not be possible without the abiding guidance of my dissertation committee: Dr. Stephen Linder, my thoughtful academic mentor and role model; Dr. Wenyaw Chan, who led me down the appropriate statistical avenues; Dr. Gretchen Walton, who helped me to cultivate the foundational legal analysis skills on which this research is based; and Dr. Ellen Breckenridge, who opened the world of legal epidemiology to me. Further gratitude is owed to Drs. Catherine Troisi and Paige Wermuth for supporting my professional development. Leah Fowler of the University of Houston, Katherine Neill Harris of Rice University, and her husband Officer Michael Harris, also helped me to find my way in this research.

This dissertation germinated from my work with the kind and tireless policy advocates of the Houston Viral Hepatitis Task Force, the Houston Recovery Initiative, the Houston Policy Initiative for Harm Reduction, and the Texas Coalition for Healthy Minds. My friends Dr. Richard Andrews, Suzanne Jarvis, Dr. Kristin Clancy, David Duffield, Michelle Carr, Eliot Davis, Seth Winick, Elizabeth Henry, and Shannon Hoffman all deserve recognition for providing me with resources and a platform from which to discuss my work.

Last, without the support of my family and friends, I would remain unaware of what I could achieve. My mentor Dr. Miguel Moreno of Texas A&M University-Corpus Christi laid the foundation from which my career is built. My friend Dr. Jordin Metz, whose patience characterizes our friendship. And my personal role model, my grandmother Judith Reader, who also served as the primary copy editor of this work.

GOOD FAITH: SURVEILLANCE AND EVALUATION OF 911 GOOD SAMARITAN
LAWS IN THE UNITED STATES

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The University of Texas
School of Public Health, 2022

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To fight soaring overdose mortality rates in the United States, lawmakers adopted a variety of harm reduction tools. Among these, 911 Good Samaritan Laws (GSLs) derive their name from the biblical parable of the Good Samaritan, a bystander who broke cultural convention to come to the aid of a man beset by thieves. These laws provide limited criminal immunity for bystanders in possession of controlled substances to encourage them to report drug overdoses. While previous studies associate GSLs with a modest reduction in opioid mortality, analyses often model them as equivocal or divide them coarsely across individual provisions. Evaluating these laws inductively reveals substantial heterogeneity. Laws passed in some states protect Good Samaritans engaged in a breadth of offenses and provide robust protection beyond immunity from arrest or prosecution. Conversely, other laws place burdensome obligations on the Good Samaritan or exempt many from immunity altogether. Differences among these laws can be charted visually to reveal patterns in their provisions. These patterns may be clustered into five groups: Minimal laws provide scant immunity for a limited range of offenses; Moderate laws are designed simply to apply to most emergency scenarios while offering constrained protection; Narrow laws are acutely described to

immunize possession of controlled substances and provide strong immunity, while excepting other offenses or violations; Rigorous laws require substantial compliance on the part of the Good Samaritan, but award potent protection to those who obey; and Strong laws, which exhibit the theme of the parable by immunizing virtually all persons in most imaginable substance-related circumstances so long as they act in good faith. These groups provide an alternative method of modeling the relationship between overdose mortality and GSLs. Indeed, Strong laws save lives. Following adoption of a Strong law, states experience a reliable decrease in overdose mortality. However, the effect is not conserved over time. Ratifying Rigorous laws, conversely, predicts an increase in general overdose mortality. Together, this evidence substantiates the ability of good faith harm reduction policy to save vulnerable lives. However, prioritizing compliance over compassion, in contravention of the parable, does more harm than good.

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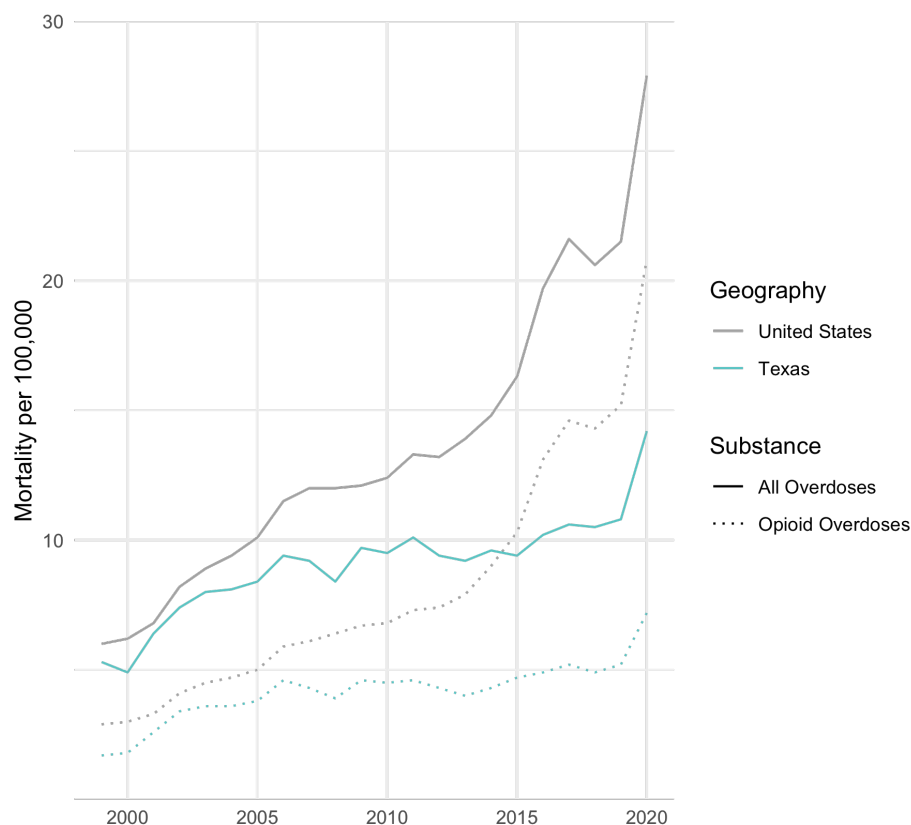
I. INTRODUCTION

From the years 2000 to 2020, the crude mortality rate for drug overdose deaths increased fourfold, from 6.2 to 27.9 per 100,000.¹ (See Figure 1.) Among these, opioid-related deaths increased nearly an order of magnitude, from 3.0 to 20.8, with the vast majority resulting from accidental rather than intentional overdoses. In Texas, the opioid mortality rate rose from 1.8 to 7.2 per 100,00 in the same period, with provisional estimates for 2021 reaching 9.4.¹ In 2016, nearly 300 people were hospitalized for opioid-related causes per 100,000 residents, with the highest rates in the Northeast and Appalachia.² Indicators suggest this epidemic is increasing in severity: the number of Medicare beneficiaries receiving treatment for opioid use disorder (OUD) reached 2.7% in 2017,³ 3% of adolescents and young adults in Medicaid engaged in risky opioid use as of 2019;⁴ and recent estimates suggest approximately 7 million people nationally experience OUD.⁵

Proliferating opioid addiction, hospitalizations, and deaths compel states to explore a variety of policy remedies. Among the popular solutions, 911 Good Samaritan Laws (GSLs) provide limited criminal immunity to Good Samaritans, bystanders who report overdose emergencies despite committing drug-related offenses such as possession of controlled substances.

To date, every state except Kansas and Wyoming have ratified a GSL, including the District of Columbia. This extends prospective immunity to 99% of the United States population. Correspondingly, these laws have captured the interest of policy analysts. Studies suggest GSLs

Figure 1. Overdose mortality nationally and in Texas, 1999 – 2020.



Note. Multiple cause of death information categorized by the International Classification of Diseases, 10th Edition. Overdose deaths include X40 – X44 (accidental), X60 – X64 (self-harm), X85 (assault), and Y10 – Y14 (undetermined intent). Deaths are divided into those involving opioids (T40.0 – T40.4 and T40.6 listed as a contributor) or those involving any substance, including but not limited to opioids.¹

reduce opioid overdose mortality by 10⁶ to 15%⁷ in subsequent years. However, findings are not unanimous.^{8,9} Additionally, people who use drugs (PWUDs) still report substantial suspicion regarding interactions with law enforcement and little faith in guarantees of immunity.¹⁰ Further, few PWUDs report recognition of their legal immunities without substantial instruction.^{11–14} Recent studies of GSL efficacy elect to model these laws dichotomously, treating all states with a GSL as equivocal, or to coarsely divide them by the presence of a single provision. These studies

have difficulty reconciling the population health outcomes of GSLs with limited awareness and wariness among PWUDs.

The adoption of such a law in Texas in 2021 illustrated these challenges.¹⁵ Following six years of advocacy, Governor Abbott signed the *Jessica Sosa Act* on June 16. The Act provides a defense to prosecution for the offense of possessing 1g or less of opioids or drug paraphernalia for persons reporting emergency overdoses, so long as they call 911 before anyone else, cooperate with first responders, and remain at the scene of the emergency, so long as they have no prior conviction for controlled substance offenses, are committing no other offenses simultaneously, have not previously used the GSL immunity, and have reported no other overdose in the preceding 18 months. Texans may doubt that they can expect the 15% reduction in opioid overdose mortality reported by McClellan et al. with this law.⁷

Table 1. Aims of the present studies.

Aim	Supporting Goal
Comprehensively catalog features of state GSLs	Create a dataset to facilitate more holistic modeling of GSLs in subsequent evaluations Scaffold advocacy and analysis with a reproducible, longitudinal policy surveillance dataset Identify overlooked provisions in the laws that may promote or constrain applicability
Create a taxonomy of GSLs based on common provisions	Reduce GSL features into a manageable taxonomy suitable for subsequent modeling Identify patterns among provisions that implicate common philosophies in policy across states Illustrate how GSLs have been amended over time Associate GSLs patterns with antecedent socioeconomic and sociopolitical factors
Determine which GSLs are associated with changes in downstream overdose mortality	Determine whether GSLs reduce overdose mortality Evaluate which patterns in GSL implementation serve as best practices for harm reduction Improve previous modeling by better accommodating occult effects of time

The present study seeks to reconcile current literature with the law in Texas. To that end, the studies are designed to address the following three compounding aims. (See Table 1.) First, to catalog GSL features across all states, longitudinally, in a reproducible policy surveillance dataset. Second, to reduce this dataset into a taxonomy of laws based on their common provisions. Third, to determine which, if any, of these patterns of feature are associated with reliable differences in downstream overdose mortality. These studies aim to improve on the current literature by incorporating information detected in the policy surveillance that was not available to previous analysts. Ultimately, this line of research may support advocates and analysts during the 88th Texas Legislative Session, where the opioid epidemic will again be a driving issue among legislators and the governor.

Context of the Opioid Epidemic

And Jesus answering said, A certain man went down from Jerusalem to Jericho, and fell among thieves, which stripped him of his raiment, and wounded him, and departed, leaving him half dead. And by chance there came down a certain priest that way: and when he saw him, he passed by on the other side. And likewise a Levite, when he was at the place, came and looked on him, and passed by on the other side. But a certain Samaritan, as he journeyed, came where he was: and when he saw him, he had compassion on him, And went to him, and bound up his wounds, pouring in oil and wine, and set him on his own beast, and brought him to an inn, and took care of him. And on the morrow when he departed, he took out two pence, and gave them to the host, and said unto him, Take care of him; and whatsoever thou spendest more, when I come again, I will repay thee. Which now of these three, thinkest thou, was neighbour unto him that fell among the thieves?

(King James Version Bible, Luke. 10:30-36)

Luke recites this discussion among Jesus and his followers, spurred by a lawyer asking in bad faith, who is my neighbor? Jesus recounts the story in response, identifying the neighbor not by ethnic identity, social station, law or custom, but by deeds. While scholars continue to debate the nuance of the message at the heart of the parable, for most it represents the power of kindness over orthodoxy. In many interpretations, in fact, the Samaritan is identified with Christ as a marginalized community member engaged in hyperbolic compassion, while other interpretations suggest that Christ is the robbed man,¹⁶ just as he said in Matthew 25:50 (*King James Version*) “Inasmuch as ye have done it unto one of the least of these my brethren, ye have done it unto me.”

Opium is a drug that would be known to Luke and his contemporaries. Opiates are chiefly analgesics, reducing the subjective experience of pain. Additionally, they soothe stress and, in some formulations, induce a sense of euphoria and profound wellbeing.¹⁷ The present opioid epidemic in the United States is preceded by an opiate epidemic in the mid to late 19th century. In his book *Dark Paradise: A History of Opiate Addiction in America*, Courtwright argues that the current opioid epidemic largely echoes a historic opiate epidemic in the 1800s.¹⁸ (*Opiate* refers to a natural product of the opium poppy, while the word *opioid* refers to any similar chemical compound, including natural opiates as well as synthetic and semi-synthetic opioids. *Opioid* is an umbrella term including opiates.¹⁹)

While many attribute American opiate use to the introduction of Chinese opium dens in California during the Gold Rush of 1849,²⁰ this belies the widespread pharmaceutical tradition of opiate prescription already in practice in the United States. Opiates were among the first line of defense when treating soldiers during war. After being appointed Surgeon General of the Army of the Republic of Texas in 1835, one of William Richardson's first duties was to order a full pound of opium and four pounds of laudanum for the troops.²¹ During the Civil War, army physicians dispensed 10 million opiate pills and 2.8 million ounces of powders and tinctures such as laudanum to the troops.¹⁸

Doctors prescribed opiates, including morphine, for anything from war wounds to asthma, from headaches to hysterics. Indeed, Courtwright indicates that opiates were prescribed to many women for common reproductive health issues including menstrual cramps, morning sickness, and the "diseases of a nervous character" with which women were so frequently diagnosed. As such, women made up almost two thirds of addicted persons at this time. Additionally, most people with addiction were wealthy enough to afford treatment, and almost

entirely white.¹⁸ Contemporary medical journals caught on by the turn of the 20th century and began to discuss opiate addiction at length, even going so far as to admonish physicians who turn too quickly to opiates as lazy or incompetent. In his exhaustive 1906 tome *Medicology*, Richardson says of opium: “It is given in various forms and quantities to relieve pain and irritation, to relax spasm, to produce sleep, to check secretions and to influence nutrition. It should be used with great caution.”^{22(p796)} Recreational opium dens run by Chinese immigrants persisted after physician prescription practices changed, and over the decades the profile of an opiate addict transformed from wealthy white women to working-class non-white immigrants. Only after this change, Courtwright argues, did legislation criminalizing opiate use gain momentum, culminating in the Harrison Narcotic Act of 1914.²³

Opioid Use Disorder (OUD) refers to the psychiatric diagnosis of an addiction to opioids. The American Psychiatric Association (APA) defines it as “a problematic pattern of opioid use leading to clinically significant impairment or distress.”^{24(p541)} Addictions compel people to repeatedly pursue the object of the addiction, either a substance, experience, or behavior. A person who is addicted is not only motivated to pursue the object of the addiction, but in fact has their brain rewired: the salience of addiction-related cues is enhanced, executive control is diminished, and emotions become increasingly labile.²⁵ People who use substances have difficulty understanding the consequences of their actions and controlling their emotions, as well as their impulses, while other pleasures gradually recede.

Increasing dose tolerance and an aversion to withdrawal symptoms push users to pursue greater and greater quantities of opioids. Many people with OUD will eventually experience a drug overdose. Richardson, in 1906, describes opioid overdoses: “Opium causes mild excitement or contentment, followed quickly by sleepiness, stupor. Cyanotic face, contracted pupils,

gradually decreased frequency of breathing, respiratory failure.” “For treatment evacuate stomach with pump; give strong coffee by mouth or rectum; use flagellation or the battery to keep patient awake; keeping victim in motion by walking is also useful for the purpose, but may exhaust him. Give hypodermic injection of strychnine; apply heat; use artificial respiration.”^{22(p727)}

Strategies to respond to an opioid overdose have, fortunately, become increasingly effective and less distressing. The Food and Drug Administration approved naloxone as an overdose-reversal drug in 1971. This drug is a competitive antagonist of the receptor in the brain activated by opioids, acting as gum shoved in the lock of the door that opioids seek to open. Naloxone, also known by the brand name *Narcan*®, is simple and safe, resuscitating people experiencing opioid overdoses while exhibiting no effect on those without the substance in their system. Over the decades naloxone overcame the chief alternative, nalorphine, to become a pillar in the fight against the opioid epidemic.²⁶

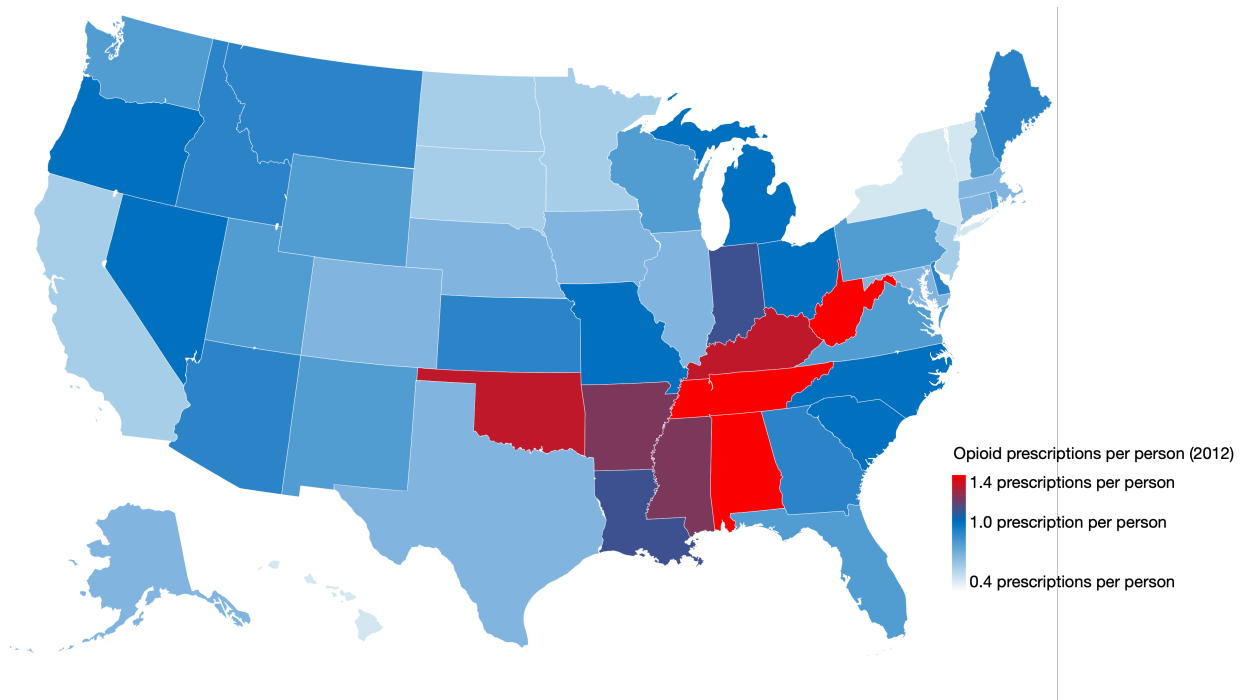
In 2019, almost 50,000 people in the United States died of an opioid overdose, resulting in a crude mortality rate of 15.2 per 100,000 people. In 2020, at the height of the SARS-CoV-2 pandemic, overdoses reached more than 68,000, or 20.8 deaths per 100,000.²⁷ Similarly, in Texas, opioid overdose deaths increased from more than 1,500 to 2,100, or from 5.2 to 7.2 deaths per 100,00 Texans. (See Figure 1.)

The contemporary groundswell of opioid mortality is a result of several overlapping events in the domain of medicine, pharmacy, and health policy. Importantly, two 1980s publications of low quality but high profile countered a historic disinclination toward opioid analgesics outside of inpatient settings.^{28,29} These pieces challenged the prevailing aversion to prescription opioids among providers that itself was the result of the 19th century American

opiate epidemic.¹⁸ Despite their limited evidence, these publications would be cited hundreds of times in subsequent literature.³⁰ Changing attitudes regarding opioids among providers became institutionalized. The World Health Organization called for the loosening of regulations concerning opioid analgesics in a 1986 report.³¹ In 1995, the American Pain Society launched a campaign to brand pain “the fifth vital sign,” influencing the adoption of rigorous pain management standards by the Department of Veterans Affairs in 1999 and the Joint Commission on the Accreditation of Healthcare Organization in 2000.³²⁻³⁴ (The American Pain Society filed for bankruptcy in 2019 as a response to innumerable lawsuits for their promoting opioid analgesic prescriptions.³⁵)

Purdue Pharma received approval to distribute OxyContin®, a slow-release formulation of the opioid oxycodone, in 1995.³⁶ Despite almost immediate concerns from staff, Purdue aggressively marketed OxyContin® to providers as a tool for chronic pain management, lying about its addictive potential, tolerance, and euphoric effects.³⁷⁻⁴⁰ Purdue could not be ignorant to the effects of OxyContin. Dispensation patterns indicated more people received prescriptions than could possibly be experiencing chronic pain.⁴¹ (See Figure 2.) While Purdue and other pharmaceutical manufacturers engaged in reckless sales tactics, changes in pain management standards created a market amenable to the over-prescription of addictive opioid analgesics.⁴¹ People with OUD often turn to street drugs. With strong demand for illicit opioids established, the epidemic became self-sustaining. Mortality rates continue to rise even following the bankruptcy of Purdue,⁴² compelling states to evaluate and adopt life-saving harm reduction policy.

Figure 2: Opioid dispensation in 2012.



Note. Data from the Centers for Disease Control.⁴¹ States with more opioid prescriptions than residents colored red.

Review of 911 Good Samaritan Law literature

In 2007, New Mexico became the first state to extend limited immunity from prosecution for persons reporting overdose emergencies and to the people experiencing them. This law received remarkably little attention given that it set a precedent that would be followed by 47 of the other 49 states in the nation. Only a lone *New York Times* article seemed to mark its passage, as even local newspapers in New Mexico fail to mention it in their archives. The *New York Times* writes, “Struggling with an epidemic of drug fatalities, New Mexico has enacted a groundbreaking law providing immunity from prosecution for people who come forward to help drug users suffering overdoses.”^{43(p1)}

As many as 85% of overdose events occur with bystanders present, yet they call 911 less than half the time.⁴⁴ In the United States, the universal phone number for emergencies is 911,

which alerts both emergency medical services (EMS) and law enforcement officers (LEOs). As these two first responder organizations may both be alerted by a single call, in order to report a medical emergency a person must open themselves to scrutiny for any illicit activity. The purpose of New Mexico's law, which would come to be known as a GSL, was to assuage bystanders calling 911 that they would be protected from criminal consequences for substance-related activity even if LEOs arrive at the scene. These laws encourage bystanders to engage in a radical act of compassion despite their transgressions, evoking the parable of the Good Samaritan.

The ubiquity of GSLs and the burden of the overdose epidemic have inspired a small but comprehensive body of literature. In short, PWUDs without specific instruction from stakeholders express little awareness of their protections when reporting overdoses. Additionally, historic antipathy between PWUDs and law enforcement leaves bystanders suspicious of LEOs even when they are aware of their protections. However, after specific GSL instruction, PWUDs retain an understanding of their immunity and are three times as likely to report overdoses to 911. Ultimately, these effects appear to accrue at the population level, resulting in more emergency care for overdoses and an unreliable decrease in overdose mortality.

Public awareness and attitudes

Overall, PWUDs without training do not indicate substantial awareness of their GSL immunity. Banta-Green and colleagues indicate one third of PWUDs had heard of the Washington GSL one year after ratification,⁴⁵ Jakubowski et al. reported 43% in New York two years after ratification,¹² and for Schneider and team in Maryland, only 19% indicated GSL knowledge seven years out.¹⁴ However, knowledge in Jakubowski's sample increased to 78% after repeated instruction, and in Indiana 77% of PWUDs receiving a take-home naloxone kit

reported knowledge of their protections.^{12,46} The naloxone kits were provided by local health departments and likely included instruction on the administration of the substance, which in Indiana is necessary for GSL immunity.⁴⁷ Hence, the naloxone kit likely included GSL information.

Qualitative research corroborates the fact that many PWUDs are unaware of their state's GSL.^{48,49} However, even amongst PWUDs aware of GSL protections, many still fear adverse consequences when reporting overdoses. They worry they may still be arrested regardless of the law, suffer other forms of retaliation by the police, or may lose custody of children or their public housing.^{10,50} Wagner and colleagues say "PWUDs often fear calling 911, particularly if law enforcement officers routinely attend overdoses. In the United States, '911 Good Samaritan Laws,' which provide nominal protections to 911 callers for minor drug-related offenses, have failed to overcome this barrier."^{51(p. 1281)} Results from one focus group suggest a willingness on the part of PWUDs to report overdoses regardless of GSLs. These participants indicated that they would or have called 911 in order to report overdoses, but they take steps inconsistent with the GSL in order to mitigate any expected consequences, steps such as leaving the scene of the event before police arrive or moving the person experiencing an overdose to a public location.¹⁰ As many state GSLs require the person reporting the overdose to remain on the scene of the emergency and cooperate with local law enforcement in order to receive the protection of the law, these individuals are potentially exposing themselves to further criminal liability.

Emergency Medical Services encounters

To date, only a few studies directly evaluate the relationship between GSL knowledge and 911 calls. In their longitudinal study of trained PWUDs in New York, Jakubowski and colleagues demonstrated that participants aware of the protections of the GSL were three times

as likely to call 911 when witnessing an overdose.¹² Similarly, Watson and colleagues' study in Indiana found that 85% of persons with knowledge of Indiana's GSL called 911 at the most recent overdose they witnessed, compared to only 15% of persons without such knowledge.⁴⁶ At the systems level, in a classic difference-in-difference study, Nguyen and colleagues found that emergency admission for heroin increased in New York hospitals compared to New Jersey hospitals after New York adopted a GSL.

Overdose mortality

Four published studies evaluate GSLs and overdose mortality. To facilitate comparison, Table 2 reports their estimates for opioid overdose mortality specifically. All studies model GSLs using difference-in-difference methods, associating the ratification of laws with an instant and enduring reduction in mortality. (Even models using lagged outcomes do not accommodate gradual changes over time, making these similarly "instant.") However, substantial diversity exists among their other features, including the model, covariates, and certainly results.

McClellan and colleagues, the pioneers, use a simple negative binomial model to associate GSL ratification with a 15% decrease in the incidence of opioid overdose mortality.⁷ While they conduct subgroup analyses on laws providing protection from arrest or violations of probation, these results do not produce statistically reliable results. Rees and coauthors use a similar model, albeit Poisson, to associate GSLs with a 0.15 reduction in the logarithm of opioid overdose mortality while controlling for naloxone access laws (NALs).⁸ While this result is statistically unreliable, it proves comparable in effect size to other findings. In a more scrutinizing analysis, Atkins and colleagues associate GSLs with an unreliable 0.07 reduction in logged opioid mortality when controlling for a wealth of policy covariates.⁹ Hamilton and team use similar covariates trained on a more recent time frame to associate GSLs with a 0.10

reduction in logged opioid mortality.⁶ Importantly, however, these results are exclusive to GSLs offering protection from arrest in combination with NALs.

Table 2: Summary of 911 Good Samaritan Law evaluation studies.

Study	Years	Model	Policy Covariates	Other Covariates	Result	Significance
McClellan, Lambdin, Ali, Mutter, Davis, Wheeler, Pemberton, & Kral (2018)	2000-2014	Negative Binomial		State Population	15% reduction in opioid overdose deaths	Significant
Rees, Sabia, Argys, Dave, & Latshaw (2019)	1999-2014	Poisson	NAL	State Population	0.15 reduction in logarithm of opioid overdose deaths	Not Significant
Atkins, Durance, & Kim (2019)	1999-2016	Poisson	NAL PDMP PMC MM	Black Population (%) Median Income Unemployment (%)	0.07 reduction in logarithm of opioid overdose deaths per 100,000	Not significant
Hamilton, Davis, Kravitz-Wirtz, Ponicki, & Cerdá (2021)	2013-2018	Hierarchical Bayesian Spatio-temporal Poisson	NAL PDMP PMC MM	Age (% 0–19, 20–44, 45–64, 65+) Ethnicity (% White, Black, Hispanic) Gender (% Male) Families in Poverty (%) Median Income County Population State Population Density (Pop. per mile ²)	0.10 reduction in logarithm of opioid mortality with NALs among laws offering protection from arrest	Significant

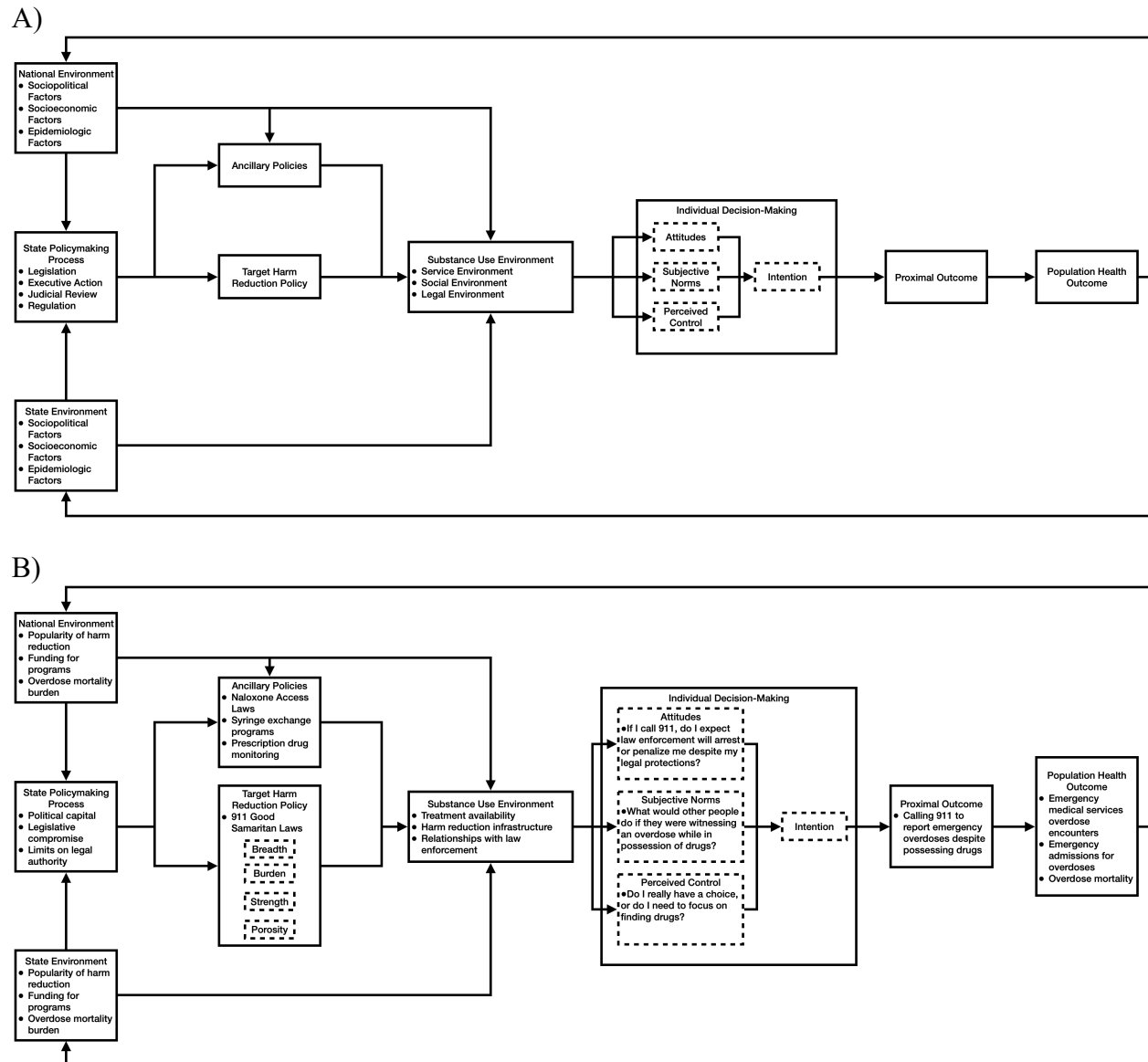
Note: Medical marijuana policy (MM); Naloxone access law (NAL); Prescription drug monitoring program (PDMP); Pain management clinic policy (PMC). Where authors present multiple models, the results of the most generalized definition of opioid overdose and 911 Good Samaritan Law is included.

Several challenges emerge when considering these studies in the shadow of the *Jessica Sosa Act*. Half the studies treat GSLs as fungible, while the remaining two divide them by individual provisions. Additionally, by overlooking the profound effects of time, these studies lose their external validity. If states adopting GSLs by 2014 can expect a 15% reduction in opioid mortality, per McClellan et al., are these reductions conserved in the present day?

Conceptual Framework

To constellate the present literature and scaffold the following studies, Figure 3 presents a Legal Epidemiologic Framework for the Evaluation of 911 Good Samaritan Laws. In short, the framework posits that policymakers and the constituents who elect them are motivated to address public problems, such as SUD, they perceived in the state and federal environment. The constraints and compromises of the policymaking process determine the probability of adopting a law and its subsequent shape. This includes both the GSL itself as well as ancillary policies that contribute to social determinants of health. All these factors influence the environment that surrounds each PWUD, determining the range of their available resources and choices. Within this environment, the ultimate decision of whether to call 911 to report an overdose is determined by each bystander's combination of attitudes, expectations, and perceived control. If the policy effectively and consistently influences PWUD behavior, evaluators may detect population-level changes in overdose mortality. These outcomes ultimately influence the policymaking environment, creating a cycle.

Figure 3. Legal epidemiologic framework for the evaluation of 911 Good Samaritan Laws.



Note. Figure (A) demonstrates the structure of the framework, and figure (B) illustrates concrete examples.

The aim of this framework is to describe the theoretized causal relationships between the policymaking processes that give rise to these harm reduction policies, the implementation of the laws themselves, and their ultimate influence on overdose mortality. It has been adapted in part from the Bay Area Regional Health Inequities Initiative's *Public Health Framework for Reducing Health Inequities* and Ajzen's *Theory of Planned Behavior*.^{52,53}

First, the state and national environments consist of the factors that drive the policymaking process by identifying salient issues, raising them to the status of public problems, and motivating political appetite for a policy response. These are the factors that determine the need and will for harm reduction policy. For convenience, these can be divided coarsely into *sociopolitical*, *socioeconomic*, and *epidemiologic* factors. Sociopolitical factors include political constituencies, representation in government, and the public values that determine the palatability of potential policy alternatives.⁵⁴ Socioeconomic factors are those that constrain program funding for SUD treatment centers, drive people to engage in substance use, or may divert attention to other policy problems. Epidemiologic factors, such as the prevalence of SUD, overdose mortality, or risk factors that give rise to these conditions, are particularly salient for harm reduction policy. Voters identify and coalesce around pertinent issues as a function of personal experience, community organizing, media, and other forms of cultural exchange, ultimately funding, electing, and directing political representatives to ratify policies to address their interests. Both the state and national environment influence the state policymaking process through shared cultural, economic, and media climates,^{55,56} the federalist structure of American government, and the disrespect epidemics exhibit to political borders. In short, these are the factors determining the demand for harm reduction policy such as GSLs.

The state policymaking process mediates these compelling factors, giving rise to GSLs and other harm reduction policies. While most such policy is legislative, it may theoretically consist of executive action, agency regulation, judicial review, or a combination of all systems in concert. The policymaking process is relevant not only for the target harm reduction policies it produces, (in this case GSLs,) but also for the ancillary policies that also influence PWUD health and attitudes. Ancillary policies in the present research include NALs, as well as other covariates in previous GSL evaluations such as prescription drug monitoring programs (PDMPs) or syringe exchange programs.

All these prior factors contribute to the substance use environment, the spectrum of proximal influences that initiate, maintain, cease, or otherwise influence the course of addiction. We decompose the substance use environment into several constituent elements. The service environment reflects the availability and affordability of local SUD treatment programs, non-SUD healthcare, community-based programs for PWUDs, and the built environment that may facilitate or deter PWUDs seeking resources. The social environment is composed of the cultural attitudes and stigmas regarding SUD, in the community, media, and among healthcare providers. Last, the legal environment shapes the range of interactions between PWUDs and LEOs, their criminal exposure for SUD, as well as the availability of naloxone and other harm reduction measures.

Extending the Health in All Policies model,⁵⁷ this framework posits a Harm Reduction in all Policies approach when evaluating laws. While harm reduction policies can be surveilled and indexed individually through traditional policy mapping methods, their influence on PWUD decision-making is likely cumulative and compounding. Syringe exchange programs, for instance, reduce the spread of infectious diseases among PWUDs sharing and re-using needs.⁵⁸

While these programs have little direct influence on overdose mortality, they may provide a convenient platform from which to share GSL information with PWUDs, a community that is notoriously difficult to reach.⁵⁹ Syringe exchange programs, then, may amplify GSLs.

Alternatively, PDMPs may staunch access to non-prescription opioids, forcing PWUDs to turn to more dangerous street drugs such as heroin.⁶⁰ These policies may unintentionally constrain other harm reduction efforts by encouraging PWUDs to engage in increasingly illicit activities.

Similarly, policies that further criminalize substance use, such as calls to prosecute drug dealers for murder, encourage PWUDs to self-identify as criminals and avoid interactions with LEOs even when immunized.^{10,61,62}

Policy changes influence the ecological context in which individual PWUDs make health-related decisions. To model this individual decision-making process, this framework integrates Ajzen's *Theory of Planned Behavior*.⁵³ This model has extensive history in health-related behavior,⁶³ substance use,^{64,65} and even in harm reduction policy.⁶⁶ It models decision-making as the result of three interrelated factors that give rise to the intention to engage in voluntary behavior.^{53,67} The first factor, *attitudes*, represents the actor's expectations regarding the likely outcomes of the behavior, its cost and consequences. *Subjective norms* include the actor's belief about what behavior is socially-acceptable in that scenario and how others may behave. Last, *perceived control* indicates an actor's belief that the potential behavior is under their control, and may be compared to the related concepts of locus of control or self-efficacy. While PWUDs may hold aversive attitudes and perceived norms regarding substance use behavior, their perceived self-control over their sobriety is strongly associated with ultimate cessation.⁶⁸

In qualitative research, PWUDs often endorse the importance of saving lives by calling 911 when witnessing overdoses,^{10,13} suggesting that subjective norms are appropriately aligned with health outcomes. However, they frequently decline to call 911 due to fear of LEO interactions,^{50,69} or, when doing so, leave the scene of the emergency or relocate the overdosed person to a public place to avoid interactions with LEOs.¹⁰ Many GSLs and other harm-reduction policies may not have sufficiently changed attitudes regarding outcomes of LEO interactions.⁵⁰ However, when informed and trained specifically on GSL protections, 911 reports increase.^{12,46} Training such as this may enhance both attitudes regarding LEO interactions and perceived norms about appropriate behavior in such an emergency. Perceived control may prove more difficult to influence with harm reduction policies.

GSL outcomes are divided into proximal and population-level outcomes. Most immediately, GSLs encourage PWUDs to call 911 to report emergency overdoses, so the completion of such a call serves as an individual observation reflecting the efficacy of GSLs. If the local GSL is effective and knowledgeable PWUDs report overdoses consistently, this may lead to a noticeable increase in opioid-related hospital admissions, consistent with results from Nguyen et al.⁷⁰ Ultimately, increased bystander reporting and timelier emergency care lead to population-level decreases in opioid overdose mortality.⁶⁻⁸

Importantly, population health changes in the state or national environment resulting from policy interventions themselves influence subsequent policy and the shape of the substance use environment. First, harm reduction policy is a response to the explosive rise in overdose mortality, which itself is attributable in part to changing pain management policies in healthcare practice.³⁴ Many states have notably expanded their GSLs, suggesting that, after ratifying these policies, their perceived effectiveness or popularity paved the way for further harm reduction.

The aims of the present studies conform to this framework. Aims 1 and 2 identify GSL provisions and then associate them with policy antecedents from the state environment. Existing qualitative literature describes the relationships between GSLs, the substance use environment, and individual PWUD decision-making. Last, Aim 3 predicts overdose mortality (population health outcomes) from the harm reduction policy while controlling for important covariates from across the framework. Taken together, these studies tell the complete story of these essential laws, themselves named after an ancient tale.

Abstract

Background: 911 Good Samaritan Laws (GSLs) confer limited legal immunity to bystanders in possession of controlled substances who report emergency overdoses. While these laws may decrease opioid overdose mortality, current literature reduces GSLs to a small number of variables, overlooking substantial differences in implementation and statutory context which dramatically alter their applicability.

Methods: We identified all state GSLs and their legislative history, characterizing features into four categories using a novel framework: breadth of protected activities, burden placed on Good Samaritans, strength of protection, and exemption in coverage. When protections depended on the nature of the controlled substance, heroin served as a common point of comparison.

Results: GSLs vary substantially across states and time. Protections depend on the quantity of substances involved and may extend to the person experiencing the overdose or persons reporting their own overdose. Protected offenses range from possession of controlled substances to drug-induced homicide. In some states, Good Samaritans must complete substance use treatment or administer naloxone to retain protections. Immunity ranges from protection from arrest to merely procedural protections at trial, and may even exclude persons in possession of opioids. Exemptions target persons engaging in chronic substance use, such as persons invoking protection multiple times or previously reporting an overdose.

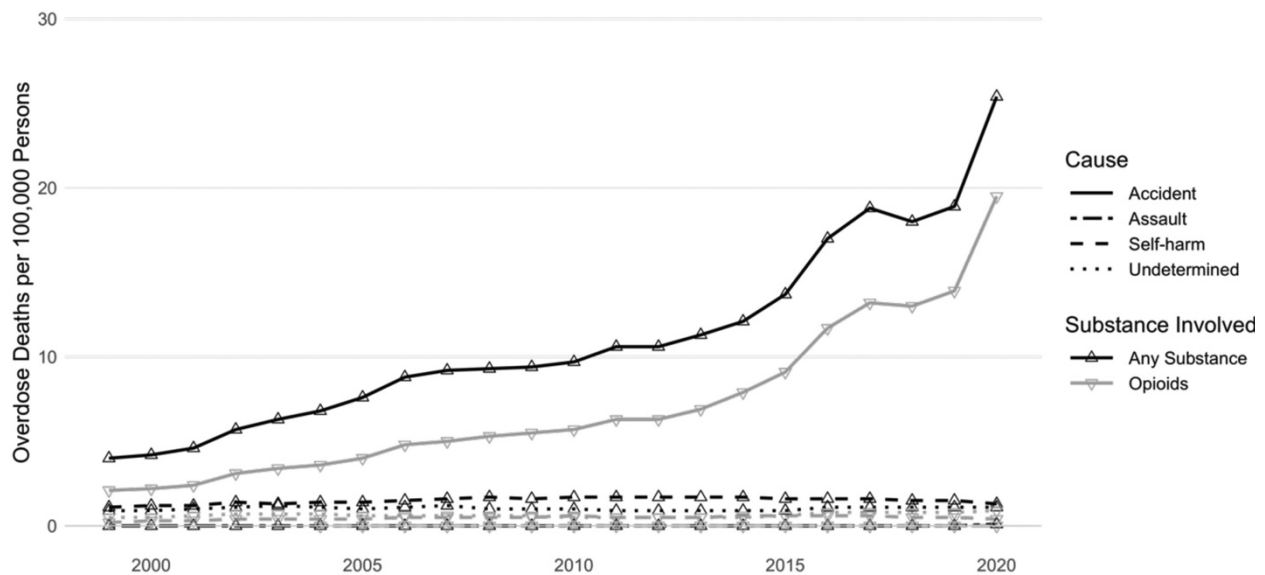
Conclusion: States offer Good Samaritans substantially different protections even when the statutes confer nominally comparable immunities. Accommodating this heterogeneity will enhance the validity of future studies into these laws and their efficacy.

Keywords: Good Samaritan; Overdose; Opioids; Harm reduction; State policy

Review and inventory of 911 Good Samaritan Law Provisions in the United States

Opioid overdose mortality in the United States increased dramatically in 2020 as social distancing measures for the COVID-19 pandemic imposed barriers between persons who use drugs (PWUDs) and their recovery support systems, both clinical and social (Nguyen & Buxton, 2021) (See Figure 5.) In the United States, calling 911 to report a medical emergency summons both law enforcement officers (LEOs) and emergency medical services (EMS). While bystanders witness as many as 85% of opioid overdoses, they may call 911 to report the emergency less than half the time because they fear criminal consequences for illicit substance use (Baca & Grant, 2007). 911 Good Samaritan Laws (GSLs) extend limited legal protection to persons reporting overdoses to encourage them to render assistance (Moallef & Hayashi, 2021). Named after the

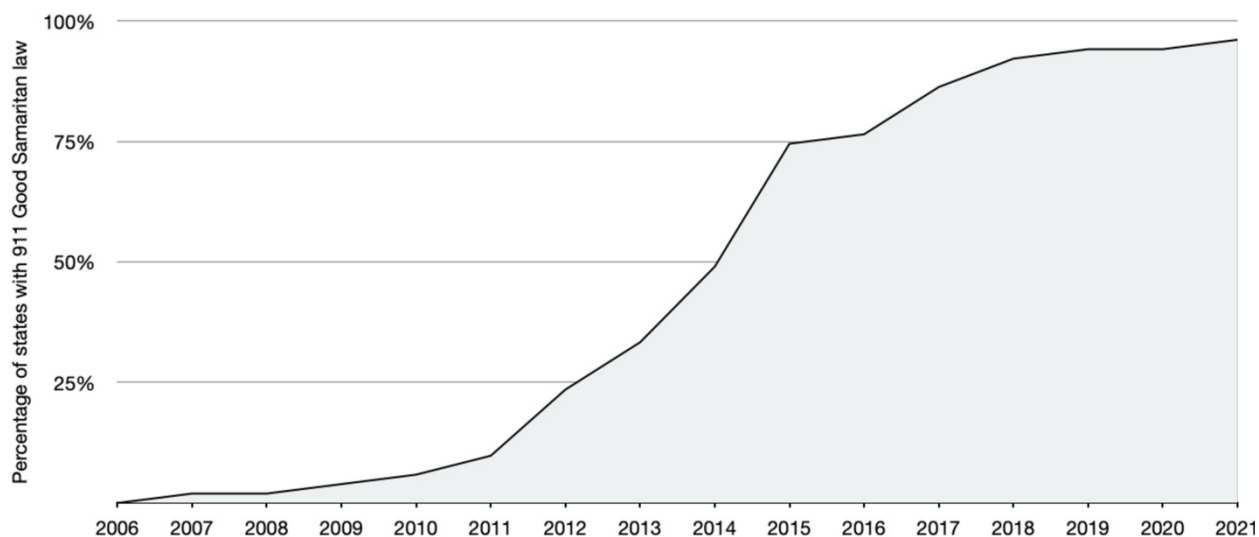
Figure 5. Overdose mortality in the United States by cause and substance, 1999 – 2020.



Note. Multiple cause of death information categorized by the International Classification of Diseases, 10th Edition. Overdose deaths include X40 – X44 (accidental), X60 – X64 (self-harm), X85 (assault), and Y10 – Y14 (undetermined intent). Deaths are divided into those involving opioids (T40.0 – T40.4 and T40.6 listed as a contributor) or those involving any substance, including but not limited to opioids. (National Center for Health Statistics, 2022)

biblical Good Samaritan's act of radical compassion, these laws currently protect 99% of the United States population in 49 states and the District of Columbia (United States Census Bureau, 2022; Center for Public Health Law Research, 2021) (See Figure 6). Agglomerative policy surveillance databases, such as the Prescription Drug Abuse Policy System (PDAPS) (Center for Public Health Law Research, 2021), describe GSLs using a small number of features identified a priori to facilitate population-level research into their effect on downstream opioid overdose mortality. However, this and similar databases reduce substantial diversity among GSL features. The present review complements these databases by inductively cataloging the features of state GSLs from the perspective of the intensifying opioid epidemic. We aim to promote further research into population health outcomes of GSLs by identifying overlooked provisions and important statutory context which constrain the applicability of individual laws.

Figure 6. Percentage of states and the District of Columbia ratifying 911 Good Samaritan Laws.



Note. The first 911 Good Samaritan Law (GSL) was passed in 2007 in New Mexico. Presently, 49 states and the District of Columbia, representing 99% of the United States population, have active GSLs. (Center for Public Health Law Research, 2021)

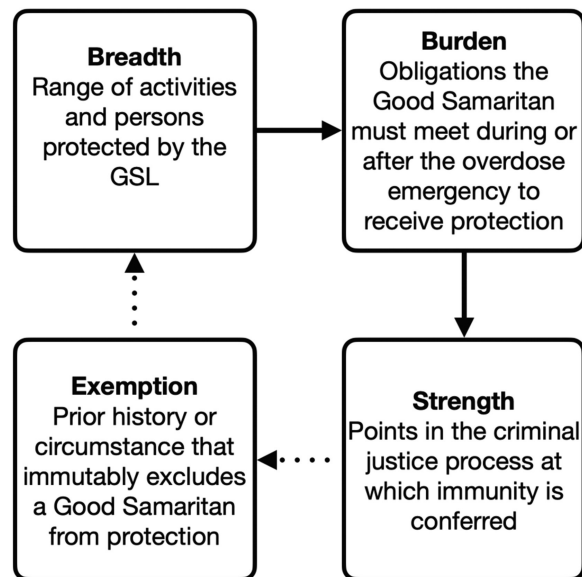
Limited evidence suggests GSLs reduce downstream opioid overdose mortality. McClellan et al. and Rees et al. both associated GSLs with a modest decrease in mortality in the years following ratification, although the latter's finding did not reach statistical significance (McClellan et al., 2018; Rees, Sabia, Argys, Latshaw, & Dave, 2017). Atkins, Durance, and Kim found no reduction in mortality after controlling for other policy covariates. Hamilton and colleagues used similar covariates to ascribe a reduction in opioid overdose mortality in states enacting GSLs providing defense to arrest for controlled substance offenses, in combination with naloxone access laws (NALs) (Atkins, Durrance, & Kim, 2019; Hamilton, Davis, Kravitz-Wirtz, Ponicki, & Cerdá, 2021). All of these studies rely on or compare their results to PDAPS, which facilitates the comparison of GSLs across states by abstracting a small number of features.

While the existing studies evidence the value of PDAPS, its deductive construction ignores over important differences in GSL implementation. For instance, PDAPS categorizes Alabama, Michigan, and South Carolina as states providing equivocal immunity from prosecution (Center for Public Health Law Research, 2021). Upon further inspection, in Michigan a Good Samaritan is in fact “not in violation” of the substance possession statute so long as the quantity of opioids in their possession only constitutes “personal use” (Mich. Comp. Laws §§ 333.7403-7404, 2022), while in South Carolina they are protected from prosecution for other activities including delivering opioids or selling drug paraphernalia (S.C. Code Ann. § 44-53-1920, 2022). In Alabama a person in possession of opioids is not protected at all, as opioid possession is a Class D Felony and the GSL only applies to misdemeanors (Ala. Code § 13A-12-212, 2022). Importantly, this diversity across states may contribute to substantial differences in opioid overdose mortality that have escaped empirical evaluation. Only two studies considered differences among GSLs in their analyses, and of these Hamilton suggests GSLs protecting

against arrest, in combination with NALs, result in greater reductions in opioid overdose mortality (Hamilton et al., 2021; McClellan et al., 2018). However, the true advantage of these laws may not lie in the protection from arrest itself. Rather, overdose mortality reductions in these states may be attributable to the breadth of protected offenses or ancillary immunities that correlate with arrest protections yet remained undescribed in surveillance databases.

The present study identifies and characterizes the diversity of GSL features in order to promote further evaluation of these essential public health policies. We employ a simple

Figure 7. Framework for the characterization of 911 Good Samaritan Laws.



Note. 911 Good Samaritan Law (GSL) features can be classified in the order in which they apply when reporting an emergency overdose. Breadth is the range of activities for which a person may receive protection (e.g., possession of controlled substances or paraphernalia, keeping a place where substances are used) and the persons who may be protected (e.g., the reporter, the person experiencing the overdose, or a person self-reporting an overdose). Burdens are the obligations the person must meet when reporting the overdose event to receive protection (e.g., remain at the scene, cooperate with first responders, complete substance use treatment). Strength refers to the nature of the immunity conferred in the criminal justice process (e.g., protection from arrest, defense to prosecution, immunity for violations of parole). Exemption includes qualities preceding the current overdose which exempts a person from protection (e.g., prior criminal convictions, previous use of GSL immunity). Many exemptions arise from previous use of GSL immunity.

framework to organize our results, categorizing features into *breadth*, *burden*, *strength*, and *exemption*. (See Figure 7.) Of these, PDAPS and associated literature only consider strength (cataloging the nature of the protection, including immunization for probation and parole violations) and breadth (protection for paraphernalia offenses). No current studies evaluate GSLs along the dimensions of burden or exemption. This framework may have utility for future researchers planning inquiries into GSLs and their effectiveness.

Method

We define GSLs as state statutes which prevent or mitigate criminal consequences for activities pertaining to controlled substances for persons who call 911 to report a drug overdose. This definition of GSL excludes related policies such as those granting amnesty for minors in possession of alcohol, as well as similarly named Good Samaritan Laws that immunize bystanders assisting at the scene of emergencies from civil liability for inadvertent harm.

Identification

During Spring 2022, we identified GSLs in all states and the District of Columbia by searching the statutes at their respective legislature's websites using the search terms “overdose,” “opioid,” or “Good Samaritan.” When this proved insufficient, PDAPS provided direct citations. Searching *de novo* allowed for the identification of new statutes outside the present date range of PDAPS, including Texas’ GSL (Tex. Health & Safety Code Ann. §§ 481.115-119, 481.121, 481.125, 483.041, 483.031, 2022). In addition to current statutes, we located each GSL's original enrolled text and its subsequent amendments through the statute's annotations. In the absence of annotations, we found bills by comparing year-over-year differences in state statutes in public legal databases to identify the year of the GSL's ratification and then searching state session laws. This created a record of not only current GSLs but also their change over time.

Abstraction

We recorded each protected activity, condition or requirement placed on the person receiving protection, the nature of the protection, and exemptions which exclude persons from protection. We used an inductive instrument to record all features, adding a new feature to code for each novel element that distinguished a GSL. If a feature is not present in the text of a GSL, it is not indicated in this review. For instance, Alaska does not criminalize possession of drug paraphernalia, and no protection for paraphernalia is present in the GSL, so this feature is not indicated in Alaska. It would be unreasonable to evaluate every criminal offense in every state in order to distinguish between which GSLs lack this protection and which states merely lack this offense.

States differ substantially in their conceptualization and criminalization of controlled substances. Further, GSL protections for offenses such as possession are frequently constrained by the severity of the offense (e.g., felony or misdemeanor), which may depend on the substance involved. We use heroin as a benchmark across states to compare the breadth of protected offenses. When the severity of an offense and resulting immunity depend on the substance involved (e.g., possession, manufacturing, delivery), heroin serves as the point of comparison. Some states may immunize additional offenses or may not penalize the given offenses if they pertain to other controlled substances, such as marijuana. GSL burden, strength, and exemption, however, do not differ as a function of substance involved, so long as the criminal offense is immunized.

Where possible, we compared our data to PDAPS to ensure accurate abstraction. Additionally, GSL case law and municipal policies are beyond the scope of the present review.

Framework

We categorize GSL features into the four domains using an evaluation framework consisting of *breadth*, *burden*, *strength*, and *exemption*. This framework is organized chronologically through the theoretical steps of reporting an emergency overdose and receiving GSL immunity. First, breadth refers to the range of offenses against which a Good Samaritan is immunized. Broader GSLs cover a more diverse range of offenses beyond controlled substance possession, such as paraphernalia possession, manufacturing, or even drug-induced homicide, and apply to more individuals involved in the emergency.

After an overdose is reported, burdens are obligations with which Good Samaritans must comply in order to maintain immunity. Examples include the requirement to provide identification to LEOs or complete substance use disorder (SUD) treatment.

Next, strength is the immunity conferred by the GSL, so long as a Good Samaritan complies with the necessary burdens. This has historically received the most attention in the literature. Stronger GSLs intervene sooner, preventing the arrest or charge of Good Samaritans, while weaker GSLs only immunize against subsequent proceedings such as prosecution, or only confer procedural benefits at trial. Additionally, we include protections for violations of court-ordered supervision to be strengths, rather than breadths. These features provide immunity at different points in the criminal justice system, rather than protection for additional unique offenses.

Last, exemption refers to caveats that foreclose the possibility of Good Samaritan protections for certain classes of people or circumstances. While one may choose whether to comply with a burden, exemptions are immutable. In Texas, a Good Samaritan who has called 911 to report a separate overdose in the preceding 18 months, regardless of the reason, is exempt

from GSL immunity. We designate this an exemption, rather than a burden, as the potential Good Samaritan has no possibility of attaining immunity at a subsequent overdose emergency. We place these last as they consist primarily of pores or loopholes. Additionally, most are the result of prior use of GSL immunity, and as such result from the preceding factors, leading to the arrangement of the framework as a cycle. A small number of features unrelated to immunity are categorized as *Additional Features*.

Results

Tables 3 and 4 present a synopsis of current GSLs as of June 2022. Additionally, the complete results of the present review are available via Mendeley Data (Reader, 2022). We identified 49 GSLs among the 50 states and the District of Columbia, leaving only Kansas and Wyoming with no such protection. The earliest such law was ratified in New Mexico in 2007, and the most recent in Texas in 2021. We include the District of Columbia equivocally with states below, including in the denominator of percentages ($n = 51$). For clarity, the term *bystander* describes a person reporting another person's overdose, *overdose patient* indicates the person whose overdose is reported, and *self-reporter* refers to a person reporting their own overdose to 911. *Good Samaritan* indicates any protected person.

Breadth

Persons protected

In 41 states (80%), GSL protections extend to the bystander, the overdose patient, as well as self-reporters. As opioid overdoses are characterized by loss of consciousness (White & Irvine, 1999), self-reporting is exceptionally difficult. West Virginia shields the overdose patient but not a self-reporter (W. Va. Code § 16-47, 2022). Alaska and South Dakota grant immunity to reporters only, including bystanders and self-reporters but not the overdose patient (Alaska Stat.

§ 11.71.311, 2022; S.D. Codified Laws §§ 34-20A-109 to 113, 2022;). However, in Alabama, Indiana, New Jersey, Oklahoma, and Wisconsin, only the bystander receives the benefits of the GSL (Ala. Code § 20-2-281, 2022; Ind. Code § 16-42-27-2, 2022; N.J. Rev. Stat. § 2C:35-30, 2022; Okla. Stat. tit. 63, § 2-413.1, 2022; Wis. Stat. Ann. § 961.443, 2022). In the District of Columbia, in addition to the bystander, overdose patient, and self-reporter, the statute also extends to a bystander who does not assist in reporting the emergency (D.C. Code § 7-403, 2022).

Table 3. Breadth and burden of state 911 Good Samaritan Laws in 2022.

State	Good Samaritan statute	Year Ratified	Maximum Heroin Protected	Persons protected	Other protected activities	Other Protected Emergencies	Good Samaritan requirements
Alabama	Ala. Code § 20–2–281	2015	0g	Bystander	Paraphernalia		First to call Remain at the scene Provide identification
Alaska	Alaska Stat. § 11.71.311	2014	Any	Bystander, self-report			Cooperate with first responders Provide identification
Arizona	Ariz. Rev. Stat. § 13-3423	2018	Any	Bystander, overdose patient, self-report	Paraphernalia		
Arkansas	Ark. Code Ann. §§ 20-13-1701 to 1705	2015	200g	Bystander, overdose patient, self-report	Violation of restraining or protection order		
California	Cal. Health & Safety Code § 11376.5	2012	Personal Use	Bystander, overdose patient, self-report	Paraphernalia		Must not obstruct first responders
Colorado	Colo. Rev. Stat. § 18-1-711	2012	Any	Bystander, overdose patient, self-report	Paraphernalia		Cooperate with first responders Provide identification
Connecticut	Conn. Gen. Stat. §§ 21a-279; 21a-267	2011	Any	Bystander, overdose patient, self-report	Paraphernalia		
Delaware	Del. Code Ann. tit. 16, § 4769	2013	2g	Bystander, overdose patient, self-report	Paraphernalia Manufacturing or delivering controlled substances Acquiring controlled substances through fraud or theft Frequenting or keeping a drug-involved premises Possession of drug masking agents		Provide all relevant medical information

State	Good Samaritan statute	Year Ratified	Maximum Heroin Protected	Persons protected	Other protected activities	Other Protected Emergencies	Good Samaritan requirements
District of Columbia	D.C. Code § 7-403	2012	Any	Bystander, overdose patient, self-report	Paraphernalia	Protects others at the scene not engaged in providing assistance	
Florida	Fla. Stat. §§ 893.22; 921.0026	2012	5g	Bystander, overdose patient, self-report	Paraphernalia		
Georgia	Ga. Code Ann. § 16-13-5	2014	4g	Bystander, overdose patient, self-report	Paraphernalia Violation of restraining or protection order		Remain at the scene
Hawaii	Haw. Rev. Stat. § 329-43.6	2015	Any	Bystander, overdose patient, self-report	Paraphernalia Violation of restraining or protection order		
Idaho	Idaho Code § 37-2739C	2018	Any	Bystander, overdose patient, self-report	Paraphernalia		
Illinois	720 Ill. Comp. Stat. §§ 570/414; 646/115 730 Ill. Comp. Stat. § 5/5-5-3.1	2012	3g	Bystander, overdose patient, self-report	Paraphernalia Manufacturing or delivering controlled substances Drug-induced homicide Aggravated battery (harm following drug delivery)		
Indiana	Ind. Code §§ 35-38-1-7.1; 16-42-27-2	2014	28g	Bystander	Paraphernalia		Legally obtain and administer naloxone Cooperate with first responders Provide identification
Iowa	Iowa Code § 124.418	2018	Any	Bystander, overdose patient, self-report	Paraphernalia Frequenting or keeping a drug-involved premises		First to call Cooperate with first responders Provide identification

State	Good Samaritan statute	Year Ratified	Maximum Heroin Protected	Persons protected	Other protected activities	Other Protected Emergencies	Good Samaritan requirements
Kansas							
Kentucky	Ky. Rev. Stat. Ann. § 218A.133	2015	Any	Bystander, overdose patient, self-report	Paraphernalia		Remain at the scene
Louisiana	La. Stat. Ann. § 14:403.10	2014	Any	Bystander, overdose patient, self-report			
Maine	Me. Rev. Stat. Ann. tit. 17-A, § 1111-B	2019	Any	Bystander, overdose patient, self-report	Paraphernalia Acquiring controlled substances through fraud or theft	Administering naloxone qualifies as seeking emergency assistance	
Maryland	Md. Code Ann., Crim. Proc. § 1-210	2009	Any	Bystander, overdose patient, self-report	Paraphernalia Acquiring controlled substances through fraud or theft		
Massachusetts	Mass. Gen. Laws ch. 94c, § 34a	2012	Any	Bystander, overdose patient, self-report			
Michigan	Mich. Comp. Laws §§ 333.7403 to 7404	2015	Personal Use	Bystander, overdose patient, self-report			
Minnesota	Minn. Stat. § 604A.05	2014	3g	Bystander, overdose patient, self-report	Paraphernalia Acquiring controlled substances through fraud or theft Possession of controlled substances in a school zone		First to call Cooperate with first responders Provide identification
Mississippi	Miss. Code Ann. § 41-29-149.1	2015	4g	Bystander, overdose patient, self-report	Paraphernalia Violation of restraining or protection order		

State	Good Samaritan statute	Year Ratified	Maximum Heroin Protected	Persons protected	Other protected activities	Other Protected Emergencies	Good Samaritan requirements
Missouri	Miss. Rev. Stat. § 195.205	2017	30g	Bystander, overdose patient, self-report	Paraphernalia Violation of restraining or protection order Frequenting or keeping a drug-involved premises		
Montana	Mont. Code Ann. § 50-32-609	2017	Any	Bystander, overdose patient, self-report	Paraphernalia	Pregnant women seeking SUD treatment Persons engaged in prostitution reporting sexual assault	
Nebraska	Neb. Rev. Stat. § 28-472	2017	Any	Bystander, overdose patient, self-report	Paraphernalia		Cooperate with first responders
Nevada	Nev. Rev. Stat. § 453C.150	2015	100g	Bystander, overdose patient, self-report	Paraphernalia Violation of restraining or protection order Violation of local ordinances penalizing controlled substance possession		
New Hampshire	N.H. Rev. Stat. Ann. § 318-B:28-b	2015	Any	Bystander, overdose patient, self-report		Persons reporting violent crimes	
New Jersey	N.J. Rev. Stat. § 2C:35-30	2013	Any	Bystander	Paraphernalia Acquiring controlled substances through fraud or theft		
New Mexico	N.M. Stat. Ann. § 30-31-27.1	2007	Any	Bystander, overdose patient, self-report	Paraphernalia Violation of restraining or protection order		

State	Good Samaritan statute	Year Ratified	Maximum Heroin Protected	Persons protected	Other protected activities	Other Protected Emergencies	Good Samaritan requirements
New York	N.Y. Penal § 220.78	2011	226.8g	Bystander, overdose patient, self-report	Paraphernalia		
North Carolina	N.C. Gen. Stat. § 90-96.2	2013	1g	Bystander, overdose patient, self-report	Paraphernalia		First to call Provide identification
North Dakota	N.D. Cent. Code § 19-03.1-23.4	2015	Any	Bystander, overdose patient, self-report	Paraphernalia		Cooperate with first responders
Ohio	Ohio Rev. Code § 2925.11	2016	1g	Bystander, overdose patient, self-report			Must receive screening and referral for SUD treatment
Oklahoma	Okla. Stat. tit. 63, § 2-413.1	2018	10g	Bystander	Paraphernalia		Cooperate with first responders Provide identification
Oregon	Or. Rev. Stat. § 475.898	2015	Any	Bystander, overdose patient, self-report	Paraphernalia Frequenting or keeping a drug-involved premises		
Pennsylvania	35 Pa. Cons. Stat. § 780-113.7	2014	Any	Bystander, overdose patient, self-report	Paraphernalia Acquiring controlled substances through fraud or theft		Cooperate with first responders Provide identification
Rhode Island	21 R.I. Gen Laws § 28.8 (2012 - 2015); 21 R.I. Gen. Laws 28.9 (2016 - present)	2012	Any	Bystander, overdose patient, self-report	Paraphernalia Frequenting or keeping a drug-involved premises		
South Carolina	S.C. Code Ann. § 44-53-1920	2017	4g	Bystander, overdose patient, self-report	Paraphernalia Delivering controlled substances Sale of paraphernalia		First to call Cooperate with first responders Provide identification

State	Good Samaritan statute	Year Ratified	Maximum Heroin Protected	Persons protected	Other protected activities	Other Protected Emergencies	Good Samaritan requirements
South Dakota	S.D. Codified Laws §§ 34-20A-109 to 113	2017	Any	Bystander, self-report			Cooperate with first responders
Tennessee	Tenn. Code Ann. § 63-1-156	2015	Any	Bystander, overdose patient, self-report	Paraphernalia Violation of restraining or protection order		
Texas	Tex. Health & Safety Code Ann. §§ 481.115-119; 481.121; 481.125; 483.041; 483.031	2021	1g	Bystander, overdose patient, self-report	Paraphernalia		First to call Cooperate with first responders
Utah	Utah Code §§ 58-37-8; 76-3-203.11	2014	Any	Bystander, overdose patient, self-report	Paraphernalia		Provide first responders with information on ingested substances Cooperate with first responders
Vermont	Vt. Stat. Ann. tit. 18, § 4254	2013	Any	Bystander, overdose patient, self-report	Frequenting or keeping a drug-involved premises Manufacturing or delivering controlled substances Violation of restraining or protection order		
Virginia	Va. Code § 18.2-251.03	2015	Any	Bystander, overdose patient, self-report	Paraphernalia Public Intoxication		Cooperate with first responders Provide identification
Washington	Wash. Rev. Code. § 69.50.315	2010	Any	Bystander, overdose patient, self-report			

State	Good Samaritan statute	Year Ratified	Maximum Heroin Protected	Persons protected	Other protected activities	Other Protected Emergencies	Good Samaritan requirements
West Virginia	W. Va. Code §16-47	2015	Any	Bystander, overdose patient	Public intoxication		Overdosed person must complete SUD treatment program Cooperate with first responders
Wisconsin	Wis. Stat. Ann. § 961.443	2014	Any	Bystander	Paraphernalia Defeating a drug test		
Wyoming							

Note. Data represent 911 Good Samaritan Law (GSL) provisions as of June 1, 2022. If protection depends on the controlled substance, heroin is used. Records exclude protections for offenses unrelated to opioid possession (e.g., cannabis or possession of alcohol by minors). Data is abstracted from legislative statutes and does not reflect case law. Maximum heroin protected indicates greatest quantity of heroin a Good Samaritan may possess without intent to manufacture or distribute while still retaining GSL immunity. Other protected activities indicate additional offenses receiving immunity under the GSL. States lacking protection for certain offenses may not criminalize such activity (e.g., Alaska does not criminalize possession of paraphernalia, and as such does not immunize Good Samaritans against paraphernalia possession offenses).

Table 4. Strength and exemptions of state 911 Good Samaritan Laws in 2022.

State	Highest level of protection provided	Mitigating factor in sentencing	Protections for supervisory condition violations	Other protections	Conditions exempting persons from protection	Other features
Alabama						Does not protect possession of opioids
Alaska	Defense to prosecution or affirmative defense	Mitigation for reporter for controlled substances				
Arizona	Protection from charge	Mitigation for reporter for controlled substances				Arizona law will sunset July 2023
Arkansas	Protection from arrest		Pretrial Release Probation Parole			
California	Protected activity is not a crime					
Colorado	Protection from arrest					
Connecticut	Protected activity is not a crime					Statute specifies Good Samaritan protections cannot be used during the serving of an arrest or search warrant
Delaware	Protection from arrest		Probation			

State	Highest level of protection provided	Mitigating factor in sentencing	Protections for supervisory condition violations	Other protections	Conditions exempting persons from protection	Other features
District of Columbia	Protected activity is not a crime	Mitigation for reporter, patient, and self-reporter for any crime	Supervised release or conditional discharge			Statute specifies Good Samaritan protections cannot be used during the serving of an arrest or search warrant Law enforcement cannot be held responsible for violations of Good Samaritan protection
Florida	Protection from arrest	Mitigation for reporter and self-reporter for any crime	Pretrial Release Probation Parole			
Georgia	Protection from arrest		Pretrial Release Probation Parole			
Hawaii	Protection from arrest	Mitigation for reporter for controlled substances	Probation Parole	Civil forfeiture		
Idaho	Protection from charge					
Illinois	Protection from arrest	Mitigation for reporter and self-reporter for any crime	Pretrial Release Probation Parole Supervised release or conditional discharge Furlough	Civil forfeiture		Statute specifies Good Samaritan protections cannot be used during the serving of an arrest or search warrant Less than 15g of opioids is not

State	Highest level of protection provided	Mitigating factor in sentencing	Protections for supervisory condition violations	Other protections	Conditions exempting persons from protection	Other features
						penalized in Illinois
Indiana	Protection from arrest	Mitigation for reporter for controlled substances				
Iowa	Collected evidence is not admissible at trial	Mitigation for reporter for any crime	Pretrial Release Probation Parole	Protects against probable cause	Previously used Good Samaritan protections	Statute specifies Good Samaritan protections cannot be used during the serving of an arrest or search warrant
Kansas						
Kentucky	Protection from charge					Statute specifies Good Samaritan protections cannot be used during the serving of an arrest or search warrant Law enforcement cannot be held responsible for violations of Good Samaritan protection Persons referred to substance use treatment

State	Highest level of protection provided	Mitigating factor in sentencing	Protections for supervisory condition violations	Other protections	Conditions exempting persons from protection	Other features
Louisiana	Protection from charge				Reporter illegally provided the controlled substance to the overdose patient	
Maine	Protection from arrest		Probation			
Maryland	Protection from arrest	Mitigation for reporter and self-reporter for any crime	Pretrial Release Probation Parole			
Massachusetts	Protection from charge		Pretrial Release Probation Parole	May be a mitigating factor in sentencing for federal drug crimes		
Michigan	Protected activity is not a crime					
Minnesota	Protection from charge	Mitigation for reporter for any crime	Pretrial Release Probation Parole Supervised release or conditional discharge Furlough			Statute specifies Good Samaritan protections cannot be used during the serving of an arrest or search warrant
Mississippi	Protection from arrest		Pretrial Release Probation Parole	Civil forfeiture		

State	Highest level of protection provided	Mitigating factor in sentencing	Protections for supervisory condition violations	Other protections	Conditions exempting persons from protection	Other features
Missouri	Protection from arrest		Probation Parole	Civil forfeiture Being otherwise penalized		Statute specifies Good Samaritan protections cannot be used during the serving of an arrest or search warrant Persons referred to substance use treatment
Montana	Protected activity is not a crime	Mitigation for reporter for any crime	Pretrial Release Probation Parole Supervised release or conditional discharge Furlough			
Nebraska	Protected activity is not a crime					Law enforcement cannot be held responsible for violations of Good Samaritan protection
Nevada	Protection from arrest	Mitigation for reporter for controlled substances	Probation Parole	Civil forfeiture		
New Hampshire	Protection from arrest					
New Jersey	Protection from arrest		Probation Parole			Circumstances of parole or probation may be reconsidered

State	Highest level of protection provided	Mitigating factor in sentencing	Protections for supervisory condition violations	Other protections	Conditions exempting persons from protection	Other features
New Mexico	Protection from arrest	Mitigation for reporter for controlled substances	Probation Parole	Civil forfeiture Being otherwise penalized		
New York	Protection from charge	Mitigation for reporter for controlled substances		Affirmative defense for selling controlled substances for reporters with no B or higher felonies		
North Carolina	Defense to prosecution or affirmative defense		Pretrial Release Probation Parole Supervised release or conditional discharge			Statute specifies Good Samaritan protections cannot be used during the serving of an arrest or search warrant Law enforcement cannot be held responsible for violations of Good Samaritan protection
North Dakota	Defense to prosecution or affirmative defense					Statute specifies Good Samaritan protections cannot be used during the serving of an arrest or search warrant

State	Highest level of protection provided	Mitigating factor in sentencing	Protections for supervisory condition violations	Other protections	Conditions exempting persons from protection	Other features
Ohio	Protection from arrest			Being otherwise penalized Provides mitigating circumstances for parole or probation violations	Current parole Current probation Previously used Good Samaritan protections twice	911 Operators trained to inform persons of Good Samaritan protections if appropriate
Oklahoma	Protection from arrest					Law enforcement cannot be held responsible for violations of Good Samaritan protection
Oregon	Protection from arrest		Pretrial Release Probation Parole Supervised release or conditional discharge	Outstanding warrants for possession offenses		
Pennsylvania	Protection from charge		Probation Parole			Law enforcement cannot be held responsible for violations of Good Samaritan protection
Rhode Island	Protection from charge		Probation Parole			
South Carolina	Defense to prosecution or affirmative defense	Mitigation for reporter, patient, and self-reporter for controlled substances			Court may consider previously Good Samaritan immunity in granting immunity for current emergency	Statute specifies Good Samaritan protections cannot be used during the serving of an arrest or search warrant

State	Highest level of protection provided	Mitigating factor in sentencing	Protections for supervisory condition violations	Other protections	Conditions exempting persons from protection	Other features
South Dakota	Protection from arrest	Mitigation for reporter for any crime				
Tennessee	Protection from arrest	Mitigation for reporter for any crime	Pretrial Release Probation Parole		Overdose patient previously used GSL	
Texas	Defense to prosecution or affirmative defense				Previous substance-related conviction Current or previous substance-related probation Previously used Good Samaritan protections Reported previous overdose to 911 in last 18 months Another crime is being committed	Statute specifies Good Samaritan protections cannot be used during the serving of an arrest or search warrant
Utah	Defense to prosecution or affirmative defense	Mitigation for reporter and self-reporter for any controlled substances				Statute specifies Good Samaritan protections cannot be used during the serving of an arrest or search warrant
Vermont	Protection from arrest	Mitigation for reporter and self-reporter for any crime	Pretrial Release Probation Parole Furlough	Citation Civil Forfeiture		Law enforcement cannot be held responsible for violations of Good Samaritan protection

State	Highest level of protection provided	Mitigating factor in sentencing	Protections for supervisory condition violations	Other protections	Conditions exempting persons from protection	Other features
Virginia	Protection from arrest					Statute specifies Good Samaritan protections cannot be used during the serving of an arrest or search warrant
Washington	Protection from charge	Mitigation for reporter for any crime				
West Virginia	Protected activity is not a crime	Mitigation for reporter for any crime	Pretrial Release Probation Parole Furlough			Law enforcement cannot be held responsible for violations of Good Samaritan protection Does not protect against civil claims
Wisconsin	Defense to prosecution or affirmative defense					
Wyoming						

Note. Data represent 911 Good Samaritan Law (GSL) provisions as of June 1, 2022. If protection depends on the controlled substance, heroin is used. Records exclude protections for offenses unrelated to opioid possession (e.g., cannabis or possession of alcohol by minors). Data is abstracted from legislative statutes and does not reflect case law.

Possession

GSLs “encourage persons who otherwise would be reluctant to report [an emergency drug overdose] due to a fear of criminal prosecution to do so without delay” (S.B. 12-020, Colorado 68th General Assembly 2012). As such, they primarily protect persons from possession of controlled substance offenses (“possession”), the activity which most directly contributes to the overdose. This excludes persons with intent to sell or deliver substances, which is frequently proscribed by a separate statute. For example, Texas’ GSL applies to Tex. Health & Safety Code Ann. § 481.115, Offense: Possession of Substance in Penalty Group 1 or 1-B, but omits Tex. Health & Safety Code Ann. § 481.112, Manufacture or Delivery of Substance in Penalty Group 1. Currently 30 states (59%) protect against possession regardless of the quantity of heroin possessed. California and Michigan protect no more than “personal use” but do not define this quantity (Cal. Health & Safety Code § 11376.5, 2022; Mich. Comp. Laws §§ 333.7403-7404, 2022). Among the 16 states (31%) who reserve protections by mass of heroin possessed, the admissible quantity ranges from 1g in Ohio, North Carolina, and Texas to 226.8g (8 ounces) in New York, with a median value of 4g (N.Y. Penal § 220.78, 2020; N.C. Gen. Stat. § 90-96.2, 2022; Ohio Rev. Code § 2925.11, 2022; Tex. Health & Safety Code Ann. § 481.115, 2022, 2022). These limits are usually the point at which a quantity is so large as to intrinsically indicate an intent to sell or to constitute drug trafficking. Further, these thresholds vary according to the controlled substance, with states frequently allowing Good Samaritans to possess greater quantities of other substances, such as cocaine or marijuana, than heroin. For instance, in Delaware, a person is protected if they possess no more than 2g of heroin, 6g of other Schedule II narcotics (e.g., oxycodone), 10g of methamphetamine, or 1500g of marijuana (Del. Code Ann. tit. 16, § 4751C, 4753, 4754, 2022).

Alabama's GSL does not extend to opioid possession. In Alabama, “an individual may not be prosecuted for a misdemeanor-controlled substance offense if law enforcement became aware of the offense solely because” of the Good Samaritan report (Ala. Code § 20-2-281, 2022). However, possession of a “controlled substance in Schedules I through V,” meaning any scheduled substance except marijuana, is at minimum a Class D felony (Ala. Code § 13A-12-212, 2022). Good Samaritans in Alabama are still vulnerable to criminal consequences despite reporting overdose emergencies in good faith.

Paraphernalia

The most common protected offense across states, beyond possession, is possession of drug paraphernalia. Paraphernalia is commonly defined as any items or materials used to produce, ingest, or conceal controlled substances (National Drug Intelligence Center, 2003). The statutory definition of paraphernalia varies across states, but often includes items for private use of controlled substances such as pipes, syringes, and spoons, as well as objects to facilitate sale or distribution, including wax paper wraps and encapsulators. Paraphernalia is criminalized at the federal level, and state paraphernalia laws frequently constrain harm reduction interventions such as syringe exchange programs (Jones, 2019) and distribution of fentanyl test strips (Davis, Lieberman, & O'Kelley-Bangsberg, 2022). The extent to which PWUDs not engaged in manufacturing or distribution may face criminal culpability for paraphernalia remains unclear, and likely depends on the state. Currently, 38 states (75%) protect Good Samaritans from criminal liability related to possession of drug paraphernalia. Additionally, South Carolina protects persons selling paraphernalia (S.C. Code Ann. § 44-53-1920, 2022).

Environment offenses

Delaware, Iowa, Missouri, Oregon, Rhode Island, and Vermont specifically protect Good Samaritans from exposure for frequenting or maintaining places where controlled substances are used, also called “public nuisances” (Del. Code Ann. tit. 16, § 4769, 2022; Iowa Code § 124.418, 2022; Mo. Rev. Stat. § 195.205, 2022; Or. Rev. Stat. § 475.898, 2022; 21 R.I. Gen. Laws § 28.9, 2022; Vt. Stat. Ann. tit. 18, § 4254, 2022). These criminal offenses usually pertain to property-owners whose behavior or negligence detracts from the health of the community, not to individual PWUDs (Walker & Cottingham, 1994). Incidentally, public nuisance torts are being used increasingly against pharmaceutical manufacturers for instigating the opioid epidemic in the United States (Purcell, 2018). The first draft of the GSL in Massachusetts protected Good Samaritans from violations relating to being “knowingly present at a place where heroin is kept or deposited,” as well as being “in the company of a person, knowing that said person is in possession of heroin” (Mass. Gen. Laws ch. 94c, § 35, 2017). These offenses evoke language from the U.S. War on Drugs, and were indeed repealed in 2018 along with related policies such as mandatory minimum sentences for controlled substance crimes (Brown, 2018; Berg, 1985).

Possessing any quantity of controlled narcotics “in a school zone, a park zone, a public housing zone, or a drug treatment facility” in Minnesota is a separate and more severe crime than simple possession (Minn. Stat. § 152.023, 2022), although in many states (e.g., Texas) (Tex. Health & Safety Code Ann. § 481.134, 2022) this is an aggravating factor at sentencing. In Virginia and West Virginia, a Good Samaritan may not be held criminally responsible for public intoxication (Va. Code Ann. § 18.2-251.03, 2022; W. Va. Code § 16-47, 2022).

Manufacture and delivery

Vermont is the only state whose amnesty extends to manufacture or delivery of opioids in any quantity. The GSL protects a Good Samaritan from any violation enumerated in Chapter 84: Possession and Control of Regulated Drugs of Vermont's Title 18 (Vt. Stat. Ann. tit. 18, § 4254, 2022). This chapter includes heroin manufacturing and trafficking, among other offenses (Vt. Stat. Ann. tit. 18, § 4233).

Delaware immunizes Good Samaritans who “manufacture, deliver, or possess with the intent to manufacture or deliver” less than 1g of heroin (Del. Code Ann. tit. 16, §§ 4751C, 5753, 4754, 4769, 2022). Similarly, Illinois protects the manufacture or delivery of controlled substances, although these protections only extend to 40g for Schedule II narcotics and 3g for heroin specifically (720 Ill. Comp. Stat. § 570/414, 2022). As such, in most practical circumstances, a person manufacturing opioids is unlikely to qualify for protections in these states. South Carolina extends protections to persons who dispense or deliver substances directly to a person experiencing an overdose, but not manufacturing (S.D. Codified Laws §§ 34-20A-109 to 113, 2022).

Acquiring and concealing controlled substances

Currently, seven GSLs (14%) extend protections to persons using misrepresentation or fraud to acquire controlled substances: Delaware, Maine, Maryland, Minnesota, New Jersey, Pennsylvania, and Vermont (Del. Code Ann. tit. 16, § 4757, 2022; Me. Rev. Stat. Ann. tit. 17-A, § 1111-B, 2022, 2022; Md. Code Ann., Crim. Proc. § 1–210, 2022; Minn. Stat. § 604A.05, 2022; N.J. Rev. Stat. § 2C:35-30, 2022; 35 Pa. Cons. Stat. § 780-113.7, 2022; Vt. Stat. Ann. tit. 18, § 4254, 2022). Among these, Delaware is distinguished by protecting persons who “acquire or

attempt to or obtain possession of a controlled substance by theft” (Del. Code Ann. tit. 16, § 4757, 2022).

Delaware also protects Good Samaritans in possession of drug masking agents used to defeat drug tests, while Wisconsin shields the offense of defeating a drug test itself (Del. Code Ann. tit. 16, § 4770, 2022; Wis. Stat. Ann. § 961.69, 2022).

Harm-related offenses

In addition to manufacture and delivery, Illinois immunizes persons from arrest for aggravated battery caused by sharing controlled substances (720 Ill. Comp. Stat. § 5/12-3.05, 2022) and drug-induced homicide (720 Ill. Comp. Stat. § 5/9-3.3, 2022).

Violations of local ordinances

Nevada's GSL is distinguished by pre-empting violations of local ordinances. In this state, “a local authority may enact an ordinance adopting the penalties set forth for misdemeanors in NRS 453.336 [Unlawful possession not for purpose of sale] for similar offenses under a local ordinance” (Nev. Rev. Stat. § 453.3361, 2022). Municipal ordinance violations generally are not criminal matters resulting in incarceration, and instead are enforced with fines (Natapoff, 2020). In Nevada, possession of a Schedule II substance may result in a fine of up to \$5,000 (Nev. Rev. Stat. § 453.336, 2022). Further, in some jurisdictions, failure to pay fines may also incur jail time. The Nevada GSL indicates a person may not be “penalized for violating . . . a local ordinance . . . that establishes an offense that is similar to an offense set forth” in the statute pertaining to possession of a controlled substance. This provision immunizes PWUDs in Nevada from these fines. Opioid possession is frequently a felony offense outside the scope of municipal courts, which have very limited jurisdiction, (Natapoff, 2020) although the

relationship between controlled substance possession and local ordinances remains largely uninvestigated.

Invoking protections

While calling 911 is sufficient to invoke protection in most states, Maine and the District of Columbia's GSLs also apply to “a person who in good faith seeks medical assistance for or administers naloxone hydrochloride to another person experiencing a drug-related overdose” (D.C. Code § 7-403, 2022; Me. Rev. Stat. Ann. tit. 17-A, § 1111-B, 2022). The equivocal language suggests a person does not need to alert EMS in order to claim Good Samaritan protections: they need only administer naloxone, and they retain protections if LEOs or EMS arrive at the scene due to an unrelated report. This contrasts with traditional protections for persons administering naloxone, which immunize against criminal or civil liability for the act of administration itself. These more standard laws, which do not protect controlled substance offenses, are common elements of NALs (Center for Public Health Law Research, 2022).

Other protected emergencies

Some policymakers find the structure of a ratified GSL provides a framework to immunize Good Samaritans against offenses unrelated to substance use or to extend immunity to emergencies other than overdoses. For example, legislators expanded Montana's GSL in 2017 to extend protections for substance-related offenses to pregnant women seeking or receiving SUD treatment (S.B. 289, Montana 67th Regular Session, 2022). The Montana GSL proved even more elastic in 2021 when it was revised again to protect persons engaging in sex work who report sexual assault crimes (H.B. 520, Montana 67th Regular Session, 2022). This adds a qualitatively distinct emergency to the domain of Good Samaritan protections and a new set of protected

activities beyond controlled substance violations. Similarly, New Hampshire amended its GSL in 2021 to protect a person who “in good faith and in a timely manner reports that another person has been the victim of a violent crime” (H.B. 546, New Hampshire Regular Session 2021). Specifically, persons reporting violent crimes are protected from arrest for the same controlled substance crimes as persons reporting overdoses. While these and similar emergencies may elicit immunity in other states, they are integrated into different statutes unrelated to GSLs.

Burden

A total of 26 states (51%) place no burden on the Good Samaritan except they act in good faith when reporting an overdose. While a person's earnest intention is difficult to divine, some states attempt to ensure good faith in practice by requiring the Good Samaritan meet certain conditions in order to maintain their immunity.

Timing

In the states of Alabama, Iowa, Minnesota, North Carolina, South Carolina, and Texas, the Good Samaritan or self-reporter must be the first to report the overdose to 911, and in Nebraska they must make the “request for medical assistance as soon as the drug overdose was apparent” (Ala. Code § 20-2-281, 2022; Iowa Code § 124.418, 2022; Minn. Stat. § 604A.05, 2022; Neb. Rev. Stat. § 28-472, 2022; N.C. Gen. Stat. § 90-96.2, 2022; S.C. Code Ann. § 44-53-1920, 2022; Tex. Health & Safety Code Ann. § 481.115, 2022).

Texas’ GSL requires the overdose be “an ongoing medical emergency” (Tex. Health & Safety Code Ann. § 481.115, 2022). The statute does not indicate what constitutes an “ongoing” emergency, or whether the Good Samaritan loses protection if the overdose patient resuscitates prior to the arrival of EMS. Similarly, in North Dakota, “the overdosed individual must have been in a condition a lay person would reasonably believe to be a drug overdose requiring

immediate medical assistance” (N.D. Cent. Code § 19-03.1-23.4, 2022). A person reporting a PWUD who is debilitatingly intoxicated but not in imminent danger may not receive protections in North Dakota.

Cooperation with first responders

Pennsylvania and Utah obligate the reporter to provide their location so first responders may attend (35 Pa. Cons. Stat. § 780-113.7, 2022; Utah Code §§ 58-37-8, 76-3-203.11, 2022). Most commonly, 18 GSLs (35%) require persons to remain at the scene of the emergency in order to utilize their protections. Of these, 14 (27%) demand the reporter cooperate with law enforcement and 13 (25%) also specify cooperation with EMS. Interestingly, North Dakota requires cooperation “with the medical treatment of the reported drug overdosed individual” but not LEOs (N.D. Cent. Code § 19-03.1-23.4, 2022). Conversely, in Minnesota and Virginia, reporters must cooperate with LEOs but no proscriptions are made about their cooperation with EMS (Minn. Stat. § 152.023, 2022; Va. Code Ann. § 18.2-251.03, 2022). In California reporters merely must “not obstruct” first responders (Cal. Health & Safety Code § 11376.5, 2022). In Delaware, cooperation means providing “all relevant medical information as to the cause of the overdose or other life-threatening medical emergency that the person possesses” (Del. Code Ann. tit. 16, § 4769, 2022), while in Utah they must share any information regarding what the overdose patient may have ingested (Utah Code §§ 58-37-8, 76-3-203.11, 2022). Reporters must identify themselves or provide their names to law enforcement in 11 states (22%), and in Minnesota or Iowa they must supply their contact information (Iowa Code § 124.418, 2022; Minn. Stat. § 152.023, 2022).

As originally adopted, in Virginia amnesty was reserved for an individual who “substantially cooperates in any investigation of any criminal offense reasonably related to the

controlled substance” (Va. Code Ann. § 18.2-251.03, 2015). While other states require Good Samaritans to cooperate with law enforcement at the scene of the emergency, Virginia's language implied cooperation over an extended length of time. However, this provision was removed in 2019 (Va. Code § 18.2-251.03, 2022).

Substance use disorder treatment

Two states include SUD treatment as a requirement for immunity. The Ohio Revised Code stipulates the Good Samaritan must receive a screening and referral for SUD treatment within 30 days of the incident (Ohio Rev. Code § 2925.11, 2022). This applies to reporters, overdose patients, and self-reporters. Interestingly, in Ohio, the burden only extends to the receipt of screening and a referral, not the completion of treatment.

In West Virginia, the GSL protections extend to the overdose patient “if, after receiving emergency medical assistance, the person participates in, complies with, and completes a substance abuse treatment or recovery program approved by the court” (W. Va. Code § 16-47, 2022). This burden does not apply to the reporter in West Virginia, regardless of their SUD status. However, the state allows the court to offer alternative conditions, such as pretrial diversion programs or probation, if appropriate. As few as 52% of PWUDs successfully complete SUD treatment, and significant disparities persist as a function of race/ethnicity and substance (Arndt, Acion, & White, 2013; Stahler, Mennis, & DuCette, 2016). Some evidence suggests mandated SUD treatment may result in comparable (Kiluk et al., 2015) or improved outcomes (Coviello et al., 2013) over voluntary programs by retaining persons who otherwise would exit treatment, although results are limited (Werb et al., 2016). Additionally, PWUDs aware of the treatment requirement and unwilling to comply may decide not to report overdoses

despite GSL protection, or to risk endangering the overdose patient by leaving the scene prior to LEO arrival.

Naloxone administration

In Indiana, only a person who administers naloxone to the overdose patient receives Good Samaritan protections (Ind. Code § 16-42-27-2, 2022). While Indiana designated reporting an overdose as a mitigating factor in sentencing in 2014, the GSL was only introduced in 2016 as part of a NAL and signed by Governor Mike Pence (S.B. 189. Indiana 119th General Assembly, 2016). The NAL expanded the availability of the drug, creating a standing order and limiting liability for its use, but did not legalize non-prescription naloxone. Further, as immunity is predicated on the administration of naloxone, this GSL is the only one in the country to apply exclusively to opioid overdoses.

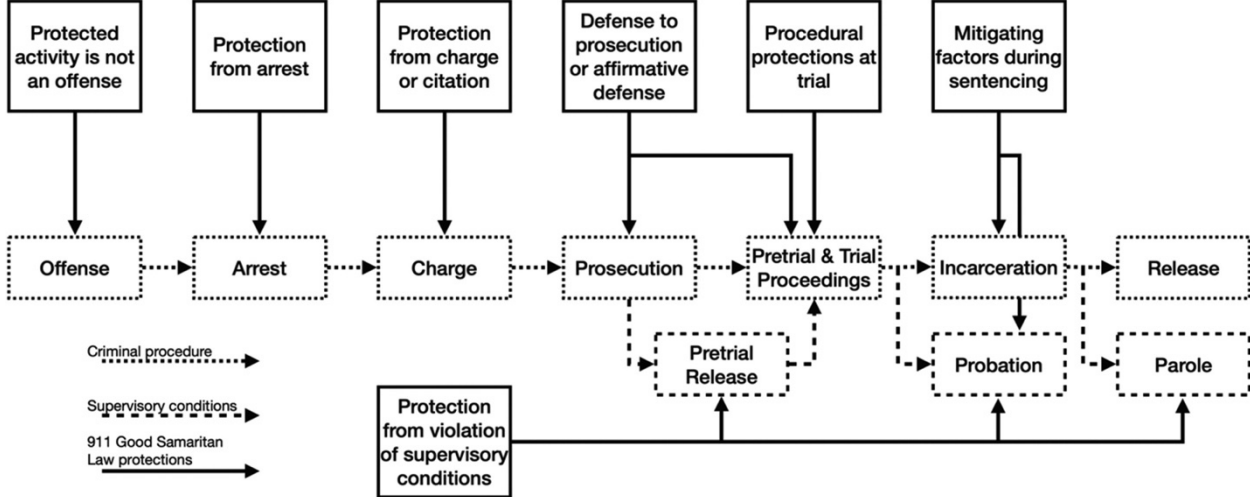
Strength

In the United States, the procedure through which an offender is arrested, prosecuted, tried, and ultimately sentenced for a criminal offense varies by jurisdiction, severity of offense, and circumstances. Figure 8 depicts a simplified overview of the steps in the criminal justice system relevant to GSLs, as well as the different points in that process at which these laws confer immunity (Bureau of Justice Statistics, 2021).

Preempting violations

California, Connecticut, the District of Columbia, Michigan, Montana, Nebraska, and West Virginia confer the strongest protections by declaring a Good Samaritan is not in violation of the law (Cal. Health & Safety Code § 11376.5, 2022; Conn. Gen. Stat. § 21a-279, 2022; D.C.

Figure 8. Simplified overview of criminal justice process and 911 Good Samaritan Law protections.



Note. Diagram depicts a simplified summary of the steps of the criminal justice process pertinent to 911 Good Samaritan Laws (GSLs) from left to right, adapted from the Bureau of Justice Statistics. Procedures may vary by offense and jurisdiction. Dotted lines indicate criminal procedures, from commission of the offense and arrest through trial, sentencing, and release. GSLs may confer immunity at any point in this process, depicted with dotted lines. Many GSLs protect persons in violation of supervisory conditions, indicated by dashed lines.

Code § 7-403, 2022; Mich. Comp. Code §§ 333.7403 to 7404, 2022; Mont. Code Ann. § 50-32-609, 2022; Neb. Rev. Stat. § 28-472, 2022; W. Va. Code § 16-47, 2022). In California, for instance, “notwithstanding any other law, it shall not be a crime for a person to be under the influence of, or to possess for personal use, a controlled substance . . . if that person, in good faith, seeks medical assistance for another person experiencing a drug-related overdose.” Alternatively, in West Virginia, a Good Samaritan “may not be held criminally responsible.” While the nuance of this protection will vary by jurisdiction, in most circumstances a person not in violation or committing an offense will be protected from arrest at the scene of the emergency as well as any subsequent criminal procedure or penalty. This language alleviates the need to enumerate each potential nullified penalty.

Protection from arrest

Currently, 23 states (45%) provide protection from arrest as their strongest level of immunity. An additional two states (California and Connecticut) include explicit protection from arrest in addition to their language pre-empting any criminal violation, above (Cal. Health & Safety Code § 11376.5, 2022; Conn. Gen. Stat. § 21a-279, 2022). Under the aegis of a GSL conferring protection from arrest, LEOs called to the scene of a drug overdose should not detain any protected Good Samaritan. Every state which immunizes against arrest also protects Good Samaritans from either charges or prosecution.

Protection from charge

In 10 states (20%) the strongest GSL protection is immunity from the filing of charges. Any GSL which does not include protection from arrest or a superordinate immunity leaves open the possibility that the Good Samaritan may be detained and transported to jail, even if charges are dropped or never filed. The length of time between a person's arrest and the filing of charges depends on the capacity of the local criminal justice system but is constrained by state law and the Sixth Amendment right to a “speedy” trial. For instance, in Washington, whose strongest protection is against criminal charges, a person may only be detained for a maximum of 72 hours, excluding weekends and holidays (Washington State Court, 2022). However, three days is sufficient for a person to lose their job or suffer other deleterious consequences. In addition, the arrest reports filed by LEOs are often publicly-available and may follow a person despite Good Samaritan protections.

Defense to prosecution

To date, six states (12%) provide defense to prosecution as their highest level of protection: Alaska, North Carolina, North Dakota, South Carolina, Texas, and Wisconsin (Alaska Stat. § 11.71.311, 2022; N.C. Gen. Stat. § 90-96.2, 2022; N.D. Cent. Code § 19-03.1-23.4, 2022; S.C. Code Ann. § 44-53-1920, 2022; Tex. Health & Safety Code Ann. § 481.115, 2022; Wis. Stat. Ann. § 961.443, 2022). (While textually Alabama protects Good Samaritans from prosecution, for the reasons discussed previously, this does not extend to opioids.) A person protected by a defense to prosecution admits to the facts alleged in the charge but is protected from criminal liability due to additional circumstances. Commonly, a defense to prosecution requires the prosecutor to prove that the defense does not apply to this violation in order to proceed with the case. A Good Samaritan does not receive the benefit of a defense to prosecution until after they have been arrested. Additionally, district attorneys may still file charges against them. While this may seem futile, defendants unaware of their GSL protections may feel pressured to plead guilty in order to accept lenient sentences (Blume & Helm, 2014).

In Wisconsin, while the text of the GSL provides a defense to prosecution, the annotations indicate “the defendant bears the burden of proving by a preponderance of the evidence his or her entitlement to immunity,” making this protection akin to an affirmative defense (Wis. State. Ann. § 961.443, 2022).

Affirmative defense

Currently Utah is the only state to provide an affirmative defense to prosecution as its greatest protection, although Virginia's GSL was enhanced from an affirmative defense to protection from arrest in 2020 (Utah Code §§ 58-37-8, 76-3-203.11, 2022; S. 667 Virginia Legislative Session, 2020). Whereas a prosecutor must surmount a defendant's defense to

prosecution, the onus is on the defendant to present evidence at trial that they qualify for an affirmative defense. That is, without sufficient evidence, it is assumed the person does not qualify for Good Samaritan protection. However, in practice, Utah's statute carries the same meaning as traditional defense to prosecution protections (State v. Swenson, UT 838 P.2d 1136, 1992).

In New York, the primary GSL protection is a defense to charges, although the state also extends an affirmative defense to Good Samaritans selling controlled substances so long as they have no severe offense on their record (N.Y. Penal § 220.78, 2022).

Procedural protections

Iowa offers a unique protection. When a law enforcement officer arrives at the scene of an overdose, the evidence they find as a result of the Good Samaritan's actions “shall not be considered to support probable cause and shall not be admissible as evidence against an overdose patient or overdose reporter” (Iowa Code § 124.418, 2022). The Fourth Amendment protects persons from unreasonable searches and seizures, including arrests, in the absence of probable cause. While a reasonable LEO may interpret this to protect Good Samaritans from arrest, Iowa stops short of making this explicit. In fact, by determining what evidence is and is not admissible at trial, the statute implies prosecutions will continue. However, the inability to introduce evidence collected as a direct result of the Good Samaritan report undermines any resulting prosecution. This may reduce any prosecutor's interest in pursuing charges.

Mitigating factors during sentencing

While GSLs are primarily designed to avert convictions, many states also include Good Samaritan circumstances as mitigating factors during sentencing. These provisions may reduce the length of time the person spends incarcerated or divert them to probation, although guidance for mitigating sentences varies across states and application depends in great part on judicial discretion (Bushway & Piehl, 2001). Indiana and Maryland both ratified GSLs establishing mitigating factors before subsequently expanding them to include stronger protections (S.B. 227, Indiana 118th General Assembly, 2014; H.V. 1273, Maryland Regular Session, 2009). Currently, all states which designate reporting an overdose as a mitigating factor also provide protections that immunize Good Samaritans prior to sentencing. As such, the mitigating factor only applies to offenses not protected by the GSL. In 20 states (39%), reporting another person's overdose is a mitigating factor for controlled substance crimes. Further, in 11 states (22%), reporting an overdose is a mitigating factor for any criminal sentence, including activities unrelated to controlled substances. The District of Columbia and Maryland apply the mitigating factor to the overdose patient's sentencing in addition to the bystander for both substance and non-substance offenses, while in South Carolina the overdose patient only receives mitigation for substance offenses. In South Carolina and Utah, self-reporters receive mitigated sentences for controlled substance crimes, while in Illinois, Vermont, and the District of Columbia a person self-reporting an overdose earns mitigation for non-drug crimes as well (D.C. Code § 7-403, 2022; 720 Ill. Comp. Stat. § 5/5-5-3.1, 2022; Md. Code Ann., Crim. Proc. § 1-210, 2022; S.C. Code Ann. § 44-53-1920, 2022; Utah Code § 76-3-203.11, 2022 Vt. Stat. Ann. tit. 18, § 4254, 2022).

Massachusetts asserts Good Samaritan circumstances “may be used as a mitigating factor in a criminal prosecution under the Controlled Substance Act, 1970 P.L. 91–513, 21 U.S.C.

section 801, et seq” (Mass. Gen. Laws ch. 94c, § 34a, 2022). The use of permissive rather than imperative language belies the fact that state legislatures, constitutionally, cannot intervene in federal drug crimes prosecuted under the U.S. Controlled Substance Act. However, federal judges may already exercise such discretion in their sentencing.

Arrest warrants

Oregon is the only state to prevent the execution of an arrest warrant in some circumstances. Specifically, “A person may not be arrested on an outstanding warrant for any [controlled substance offense in this subsection], or on an outstanding warrant for a violation, other than commission of a new crime, of the conditions of the person's probation, post-prison supervision or parole for conduct . . . if the location of the person was obtained” because any person called 911 (Or. Rev. Stat. § 475.898, 2022). The enumerated protections are for possession or frequenting a place where substances are used, two activities unlikely to form the exclusive basis of an arrest warrant.

Violations of supervisory conditions

Pretrial release, probation, and parole

Persons under court-ordered supervisory conditions may be subject to drug testing, monitoring, mandatory SUD treatment, and other scrutiny in order to ensure their compliance. The most common supervisory conditions in the United States justice system include pretrial release, probation, and parole. Pretrial release, also known as bail, “refers to the conditions of release from custody to which defendants must adhere during the time period between the filing of charges by law enforcement and court adjudication” (Bureau of Justice Statistics, 2022). After adjudication, a convicted person may be placed on probation, a period of supervision following a

person's commission of a crime serving as an alternative to imprisonment (Black, 1968). However, violating the terms of probation may result in its revocation and the person being incarcerated. Parole is a conditional early release from prison, the “condition being that, if prisoner makes good, he will receive an absolute discharge from the balance of sentence, but, if he does not, he will be returned to serve unexpired time” (Black, 1968). The consequences for a violation of any of these supervisory conditions may include incarceration.

Currently, 25 states (49%) protect Good Samaritans from penalties if they violate the conditions of either their probation, parole, or pretrial release. All of these states specifically shield probation violations, 23 (45%) also protect parole violations, and 15 (29%) extend protections to pretrial release. In 15 states (29%), a Good Samaritan is protected from all three. New Jersey specifies a person shall not be “subject to revocation of parole or probation based only upon a violation of offenses described” in the GSL, “provided, however, this circumstance may be considered in establishing or modifying the conditions of parole or probation supervision” (N.J. Rev. Stat. § 2C:35-30, 2022). Similarly, while Ohio's GSL does not immunize a person from violations of supervisory conditions, courts may consider ordering SUD treatment in lieu of other penalties or otherwise mitigating the violation (Ohio Rev. Code § 2925.11, 2022).

Restraining and protective orders

Currently, nine states (18%) provide explicit protection for persons whose offense is a violation of restraining orders or protective orders. At first glance, these provisions appear designed to protect stalkers or abusers from consequences if they make contact with persons under court-ordered protection. While these orders commonly pertain to domestic violence cases, judges often have discretion to require SUD treatment as a condition of the order. In New Mexico, for instance, the judge may “order the restrained party to participate in . . . professional

counseling programs deemed appropriate by the court, including counseling programs for . . . abuse of controlled substances” (N.M. Stat. Ann. § 40-13-5, 2022). These provisions may in fact be intended to save the life of the person subject to the restraining order, rather than the person protected by it.

Other supervisory conditions

Illinois, Minnesota, Montana, Vermont, and West Virginia also protect reporters from violations of furlough, a temporary release from a correctional facility during which an incarcerated person may attend to family needs such as funerals or receive specialized healthcare unavailable in the facility (720 Ill. Comp. Stat. § 570/401, 2022; Minn. Stat. § 152.023, 2022; Mont. Code Ann. § 50-32-609, 2022; Vt. Stat. Ann. ch. 18, § 4254, 2022; W. Va. Code § 16-47, 2022). Illinois, Minnesota, Montana, North Carolina, Oregon, and the District of Columbia protect persons on supervised release or conditional discharge, as separate supervisory conditions in addition to parole (D.C. Code § 7-403, 2022; 720 Ill. Comp. Stat. § 570/401, 2022; Minn Stat. § 152.023, 2022; Mont. Code Ann. § 50-32-609, 2022; N.C. Gen. Stat. § 90-96.2, 2022; Or. Rev. Stat. § 475.898, 2022;).

Civil forfeiture

Hawaii, Illinois, Mississippi, Missouri, Nevada, New Mexico, and Vermont immunize the property of Good Samaritans against civil forfeiture (Haw. Rev. Stat. § 329-43.6, 2022; 720 Ill. Comp. Stat. § 570/401, 2022; Miss. Code Ann. § 41-29-149.1, 2022; Mo. Rev. Stat. § 195.205, 2022; Nev. Rev. Stat. § 453C.150, 2022; N.M. Stat. Ann. § 30-31-27.1, 2022; Vt. Stat. Ann. ch. 18, § 4254, 2022). In this process, which has received historic scrutiny, physical assets used or associated with criminal activity can be confiscated by law enforcement. This extends

not only to contraband materials such as controlled substances or paraphernalia, but also to any objects which law enforcement believe may be involved in the activity (Legal Information Institute, 2017). A person does not need to be convicted or charged with a crime in order to be subject to civil forfeiture. While proponents argue civil forfeiture allows law enforcement to disable drug manufacturing and delivery operations, high-profile cases demonstrate the capacity for this procedure to penalize people who may not be committing offenses (Wimer, 2021). Only Missouri and Vermont explicitly except “prima facie contraband” from the civil forfeiture protections.

Other penalties

Missouri, New Mexico, and Ohio protect a Good Samaritan from being “otherwise penalized.” The GSLs in these states are sufficiently thorough that little further penalty may be interpreted. In New Mexico and Ohio, the protection from penalization follows the protections from arrest, charge, or prosecution (and, in Ohio's case, conviction), suggesting the averted penalization is a criminal sentence (N.M. Stat. Ann. § 30-31-27.1, 2022; Ohio Rev. Code § 2925.11, 2022). However, all of these states also extend explicit protections to persons on probation or parole. In Missouri, a Good Samaritan may not “have his or her property subject to civil forfeiture or otherwise be penalized,” suggesting the protection may extend to fines or extrajudicial consequences (Mo. Rev. Stat. § 195.205, 2022).

Civil liability

No GSL explicitly protects a Good Samaritan from civil suits resulting from the overdose event. In fact, West Virginia indicates “the limited immunity provided by this section does not preclude claims asserted in a civil action” (W. Va. Code § 16-47, 2022). While this unique

specification leaves open the possibility of civil suits concerning controlled substance possession which other states implicitly proscribe, West Virginia's GSL also protects a variety of alcohol-related offenses outside the scope of the present review, such as possession of alcohol by a minor. These offenses pertain to licensed businesses which may be more vulnerable to civil suits.

Exemption

While immunity provided by GSLs is narrowly targeted to protect persons reporting overdoses, many states go further to specifically exempt potential Good Samaritans based on their personal history. Any Good Samaritan may potentially fulfill a burden, however the pores described here exempt a person from protection based on circumstances which precede or cannot be separated from the overdose emergency.

Repeat and multiple Good Samaritans

Iowa and Texas conserve Good Samaritan immunity to persons who have, per Iowa's statute, “not previously received immunity under this section” (Iowa Code § 124.418, 2022; Tex. Health & Safety Code Ann. § 481.115, 2022). In Ohio, “no person shall be granted an immunity under [the GSL] more than two times” (Ohio Rev. Code § 2929.01, 2022). Similarly, the courts in South Carolina “may consider the circumstances of the prior incidents and the related offenses to determine whether to grant the person immunity from prosecution” a second time (S.C. Code Ann. § 44-53-1920, 2022). PWUDs who previously relied on Good Samaritan immunity may hesitate to report subsequent overdose events, particularly if they receive counsel during their initial encounter about the limited instances of protection available to them.

While in North Dakota a single person may use the GSL as many times as necessary, the original law limited “the maximum number of individuals that may be immune for any one

occurrence” to three (N.D. Cent. Code § 19-03.1-23.4, 2015). The legislature removed this requirement in 2017 (N.D. Cent. Code § 19-03.1-23.4, 2022).

Prior offenses

In Ohio, only “a person who is not on community control or post-release control” can be a Good Samaritan (Ohio Rev. Code § 2925.11, 2022). These conditions are comparable to probation and parole, respectively (Ohio Rev. Code § 2929.01, 2022). However, this limitation expires when the Good Samaritan's supervision concludes.

Similarly, Texas’ GSL does not protect any person “previously convicted of or placed on deferred adjudication community supervision for an offense” pertaining to controlled substances (Tex. Health & Safety Code Ann. § 481.115, 2022). Deferred adjudication is a form of probation in Texas in which the conviction is subject to an order of nondisclosure, removing it from the public record (Slayton, 2014). Law enforcement retains the record, however, so a Good Samaritan may be denied immunity for an offense they thought forgiven.

Concurrent offenses

In Louisiana, a Good Samaritan is not protected if they “illegally provided or administered a controlled dangerous substance to the individual” experiencing the overdose (La. Stat. Ann. § 14:403.10, 2022).

Good Samaritans in Texas forfeit their GSL immunity if they commit another criminal act simultaneously, except additional protected controlled substance or paraphernalia offenses (Tex. Health & Safety Code Ann. § 481.115, 2022). If LEOs find stolen goods when responding to a bystander overdose report, the bystander may be prosecuted not only for the thefts but also for the controlled substances in their possession despite their good-faith report.

Prior calls to 911

Texas will not protect a Good Samaritan if “at any time during the 18-month period preceding the date of the commission of the instant offense, the actor requested emergency medical assistance in response to the possible overdose of the actor or another person” (Tex. Health & Safety Code Ann. § 481.115, 2022). This provision exempts the most vulnerable PWUDs from coverage, as one of the greatest predictors of a fatal overdose is a preceding non-fatal overdose (Krawczyk et al., 2020).

Age

In Michigan, for one year the GSL only applied to “an individual who is less than 21 years of age” (Mich. Comp. Code §§ 333.7403 - 7404, 2015). While one may suspect this language is associated with GSL protections for minors in possession of alcohol, in fact the Michigan GSL was proposed de novo for controlled substance overdoses and integrated into the subchapter of the Michigan Public Health Code concerning controlled substance use and possession. The GSL was passed in 2015, but this age limitation was removed in 2016 (Mich. Comp. Code § 333.7403 to 7404, 2022).

Additional features

Law enforcement

No GSL is phrased to grant amnesty to a person who calls 911 to report an overdose while faced with the imminent service of an arrest or search warrant. However, 13 states (25%) include specific language in their statute assuring this circumstance does not invoke immunity.

Additionally, a total of eight states (16%) include provisions in the GSL which specifically exempt LEOs from penalties if they fail to comply with the statutes. Only Vermont and West Virginia specify that officers lose this immunity in the case of willful or wanton, reckless or intentional misconduct (W. Va. Code § 16-47, 2022; Vt. Stat. Ann. tit. 18, § 4254, 2022).

Ohio legislators reinforced their GSL by also enacting a new code requiring 911 operators to receive training regarding its contents and make a reasonable effort to inform Good Samaritans of their potential protection under the law (H.B. 110, Ohio 131st General Assembly, 2015).

Referral to treatment

Kentucky and Missouri both encourage voluntary enrollment in SUD treatment. In Kentucky, LEOs pass on the contact information of Good Samaritans to the local health department for referral (Ky. Rev. Stat. Ann. § 218A.133, 2022). In Missouri, LEOs themselves are tasked with providing “appropriate information and resources for substance-related assistance” (Mo. Rev. Stat. § 195.205, 2022). These provisions evoke local police-assisted SUD referral programs (PARs) (Police Assisted Addiction and Recovery Initiative, 2022). PARs equip LEOs with resources and training to refer or divert PWUDs in their community to SUD treatment programs (Formica et al., 2018; Davoust et al., 2021). Preliminary evidence suggests treatment outcomes are on par with other interventions (Reichert, Gleicher, & Adams, 2021), though relationships between LEOs and policed communities remain strained in the U.S. (Liu, Heckel, Coroiu, & Rees, 2022). These PAR-like provisions contrast with Ohio and West Virginia, where SUD treatment referrals or completion, respectively, are mandatory for GSL protections.

Changes over time

Amendments

When states amend their GSLs, they overwhelmingly decide to expand them. As of writing, seven states (14%) increased the procedural strength of their GSL to protection from arrest from previous weaker defenses: Colorado, Florida, Illinois, Indiana, Maryland, New Mexico, and Virginia (Colo. Rev. Stat. 720 § 18-1-711, 2022; Fla. Stat. § 893.22, 2022; Ill. Comp. Stat. § 570/401, 2022; Ind. Code § 16-42-27-2, 2022; Md. Code Ann., Crim. Proc. § 1-210, 2022; N.M. Stat. Ann. § 30-31-27.1, 2022; Va. Code Ann. § 18.2-251.03, 2022;). Other states have broadened protections to include more activities (D.C. Code § 7-403, 2022; Nev. Rev. Stat. § 453C.150, 2022); , extended amnesty to supervisory condition violations (Mass. Gen. Laws ch. 94c, § 34a, 2022), removed burdensome requirements (Mich. Comp. Laws § 333.7403 to 7404, 2022; N.D. Cent. Code § 19-03.1-23.4, 2022)), and expanded the scope of immunizing emergencies (Mont. Code Ann. § 50-32-609, 2022; N.H. Rev. Stat. Ann. § 318-B:28-b, 2022).

Only Arkansas and Mississippi have unequivocally weakened their GSL, by removing fentanyl possession from protection (Ark. Code Ann. § 5-64-421, 2022) and reducing the quantity of synthetic cannabinoids protected (Miss. Code Ann. § 41-29-149.1, 2022), respectively. While North Carolina imposed greater burdens on reporters, it simultaneously broadened protections (N.C. Gen. Stat. § 90-96.2, 2022). Connecticut, Maine, New York, and Vermont have made largely administrative changes in their GSLs with no changes in protection (Conn. Gen. Stat. § 21a-279, 2022; Me. Rev. Stat. Ann. tit. 17-A, § 1111-B, 2022; N.Y. Penal § 220.78, 2020; Vt. Stat. Ann. tit. 18, § 4254, 2022).

Sunset provisions

Sunset provisions are mechanisms which automatically terminate a law or some of its features at a certain date. Rhode Island's GSL sunset in July 2015, but was reinstated in January 2016, albeit without protection for the manufacture or sale of paraphernalia (Office of the Governor of Rhode Island 2016). Arizona's GSL will sunset in July 2023 barring legislative intervention (Ariz. Rev. Stat. Ann. § 13-3423, 2022). The 2017 amendment to Wisconsin's GSL expanded protections to supervisory conditions and extended a deferred prosecution agreement (probation) to the overdose patient, however these provisions were allowed to sunset in 2020 (A.B. 3. Wisconsin Joint Special Session, 2017).

Discussion

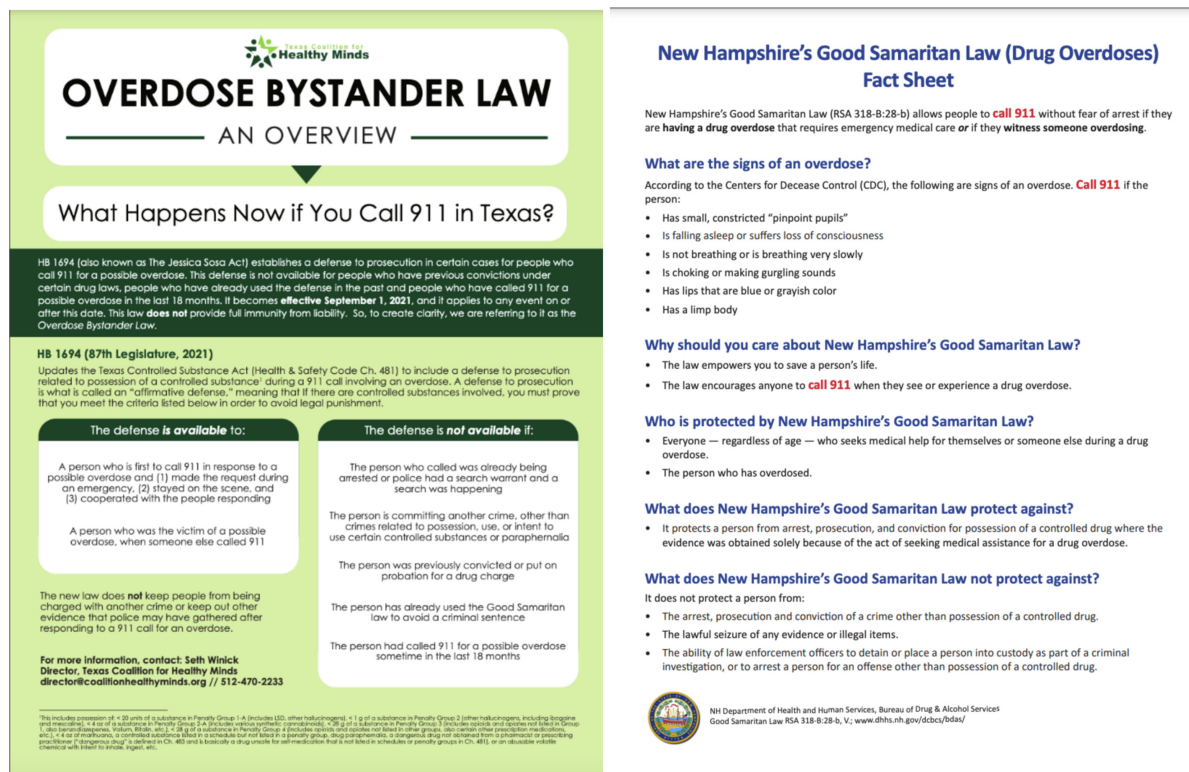
States have strongly endorsed GSLs by adopting them with overwhelming prevalence and steadily expanding their protections. However, this review uncovers a heterogenous corpus of law that varies substantially not only between states but also across time. To date, 48 states and the District of Columbia agree the good deed of reporting an overdose warrants legal protection, although they hold no consensus on the breadth, burden, strength, or exemption of this immunity. However, virtually all states which amend their protections expand them.

The strongest GSLs protect PWUDs by preempting the commission of an offense, declaring a Good Samaritan is “not in violation” of a criminal statute or, in such circumstances, possession “shall not be a crime.” These protections relieve policy-makers from the responsibility of listing all possible criminal circumstances. Protection for violations of supervisory conditions are common in GSLs but receive little attention in the literature. In 2019, 3.5 million Americans were on probation, making these provisions salient for many prospective Good Samaritans (Roth, Kajeepeta, & Boldin, 2022).

These laws protect bystanders who report overdoses in good faith, a term appearing 93 times across the current statutes. However, exemptions to their protection have the effect of constraining their applicability to persons with prior criminal justice involvement who may have the greatest need for Good Samaritan immunity. Notable examples of these provisions include language in Iowa, South Carolina, and Texas excluding persons who have used the GSL previously. Ohio exempts persons on probation while Texas excludes persons convicted or probated for substance-related activities. Another caveat in Texas bars any person who reported a separate overdose in the preceding year and a half, regardless of their criminal exposure during that call. Indeed, after vetoing the first draft of the state's GSL in 2015, Texas Governor Greg Abbott released a statement indicating his dissatisfaction with the bill's “protections for habitual drug users and drug dealers” (Abbott, 2015). Persistent stigma against PWUDs continues to curtail harm reduction policy, even in emergency circumstances. More than one million PWUDs were arrested in 2021 in the United States (Horowitz & Wertheimer, 2022), and these pores in the law remove them from coverage.

Important questions remain regarding the theoretical causal pathways between GSLs and opioid overdose mortality. While limited evidence suggests stronger GSLs result in greater mortality reductions, (Hamilton et al., 2021) the life-saving 911 call precedes the arrival of LEOs and the application of immunity. Why should stronger protections save more lives if the overdose is reported before the protections apply? While PWUDs may initially possess limited knowledge of their state's GSL (Banta-Green, Kuszler, Coffin, & Schoeppe, 2022; Schneider, Park, Allen, Weir, & Sherman, 2020), they are amenable to training (Watson et al., 2018; Jakubowski, Kunins, Huxley-Reicher, & Siegler, 2018). Comparing GSL fact sheets distributed in Texas and New Hampshire, it becomes clear that stronger GSLs are easier to describe with

Figure 9. 911 Good Samaritan Law fact sheets in New Hampshire and Texas.



Note. Fact sheets prepared by the Texas Coalition for Healthy Minds (Hogg Foundation for Mental Health, and Texas Coalition for Healthy Minds 2021) (left) and the New Hampshire Department of Health and Human Services (New Hampshire Department of Health and Human Services, 2021) (right).

parsimonious information campaigns using plain language. (See Figure 9.) The public promotion of GSLs likely moderates their effectiveness. The present review suggests that information campaigns and outreach efforts regarding GSLs play an under-evaluated role in their success which warrants further research.

Limitations and future directions

The effects of GSLs may not be constrained entirely by their text. Officers and prosecutors may decline to pursue minor controlled substance cases, regardless of GSLs. Additionally, the ratification of GSLs may influence the criminal process even if the statutory protections do not apply. For instance, LEOs may decline to make arrests at the scene of an emergency knowing there will be limited criminal consequences in a state offering defense to

prosecution. Conversely, LEOs might continue to make arrests in contravention to GSL provisions if defendants are unaware of their protections or if the officers are shielded for violating them.

In addition to ambiguity about the application of given provisions, the present review cannot substantively assert which GSL features may be the most determinative in encouraging Good Samaritans to report overdose emergencies, or, conversely, the most discouraging. This review may be enhanced by studies conducted with PWUDs or community stakeholders to identify the most significant barriers to overdose reporting. Additionally, we developed the present framework of breadth, burden, strength, and exemption based on the logical sequence of steps when securing immunity for reporting an emergency overdose. While this framework scaffolded the present study, it remains to be seen whether it offers more internal validity than other potential frameworks or can accommodate extension to other policies, such as amnesty for minors in possession of alcohol or civil Good Samaritan Laws for persons assisting during other emergencies. If so, it may also serve as fodder for dimension reduction analyses or similar methods that can allow this unstructured information to better inform modeling studies regarding GSL effectiveness.

In cataloging these features, we aim to support further research into their potential association with population health outcomes. The exemptions in GSLs may prove more illustrative than their immunities. Specifically, limitations on the lifetime use of GSL protections or disqualifications based on criminal history likely discourage PWUDs from reporting overdose emergencies to law enforcement, even if they may be eligible for immunity. Incorporating these and other provisions into evaluations may enhance future studies into GSL effectiveness and identify best practices in harm reduction policy.

Conclusion

This review uncovers the diversity of laws which too often are summarized merely as GSLs. States implementing the most comprehensive laws expand their scope beyond protection from arrest to also inoculate against other legal penalties, expand the nature of reportable emergencies, and broaden the range of offenses protected, all to encourage as many Good Samaritans as possible to report overdoses before they become fatal. Other states ratify policies with caveats meant to exempt persons with chronic SUD which constrain the implementation and application of these laws. This catalog of GSL features aims to serve as a resource for policymakers and advocates evaluating these laws as well as future studies regarding their effectiveness.

References for Chapter I.

- Nguyen, T., & Buxton, J. A. (2021). Pathways between COVID-19 public health responses and increasing overdose risks: A rapid review and conceptual framework. *International Journal of Drug Policy*, 93, Article 103236.
- Baca, C. T., & Grant, K. J. (2007). What heroin users tell us about overdose. *Journal of Addictive Diseases*, 26, 63–68.
- Moallef, S., & Hayashi, K. (2021). The effectiveness of drug-related Good Samaritan laws: A review of the literature. *International Journal of Drug Policy*, 90, Article 102773.
- McClellan, C., et al., (2018). Opioid-overdose laws association with opioid use and overdose mortality. *Addictive Behaviors*, 86, 90–95.
- Atkins, D. N., Durrance, C. P., & Kim, Y. (2019). Good Samaritan harm reduction policy and drug overdose deaths. *Health Services Research*, 54, 407–416.
- Hamilton, L., Davis, C. S., Kravitz-Wirtz, N., Ponicki, W., & Cerdá, M. (2021). Good Samaritan laws and overdose mortality in the United States in the fentanyl era. *International Journal of Drug Policy*, 97, Article 103294.
- Reader, S. (2022). 911 Good Samaritan Law Inventory. Mendeley Data. 10.17632/r65b6hrdhm.1.
- White, J. M., & Irvine, R. J. (1999). Mechanisms of fatal opioid overdose. *Addiction*, 94, 961–972.
- National Drug Intelligence Center. (2003). Drug Paraphernalia Fast Facts. U.S. Department of Justice <https://www.justice.gov/archive/ndic/pubs6/6445/6445p.pdf>.
- Jones, C. M. (2019). Syringe services programs: An examination of legal, policy, and funding barriers in the midst of the evolving opioid crisis in the U.S. *International Journal of Drug Policy*, 70, 22–32.
- Davis, C. S., Lieberman, A. J., & O’Kelley-Bangsberg, M. (2022). Legality of drug checking equipment in the United States: A systematic legal analysis. *Drug and Alcohol Dependence*, 234, Article 109425.
- United States Census Bureau.. [Census.gov. https://www.census.gov/en.html](https://www.census.gov/en.html).
- Walker, L. M., & Cottingham, D. E. (1994). An abridged primer on the Law of Public Nuisance. *Tulsa Law Journal*, 30, 21.
- Police Assisted Addiction and Recovery Initiative. (2022). PAARI. <https://paariusa.org/>.
- Purcell, M. J. (2018). Settling high: A common Law Public Nuisance response to the opioid epidemic. *Columbia Journal of Law and Social Problems*, 52, 135.
- Berg, K. F. (1985). The bail reform act of 1984. *Emory Law Journal*, 34, 685.
- Natapoff, A. (2020). Criminal municipal courts. *Harvard Law Review*, 134, 964–1065.
- Stahler, G. J., Mennis, J., & DuCette, J. P. (2016). Residential and outpatient treatment completion for substance use disorders in the U.S.: Moderation analysis by demographics and drug of choice. *Addictive Behaviors*, 58, 129–135.
- Arndt, S., Acion, L., & White, K. (2013). How the states stack up: Disparities in substance abuse outpatient treatment completion rates for minorities. *Drug and Alcohol Dependence*, 132, 547–554.
- Kiluk, B. D., et al., (2015). Prompted to treatment by the criminal justice system: Relationships with treatment retention and outcome among cocaine users. *The American Journal on Addictions*, 24, 225–232.

- Center for Public Health Law Research. (2021). Good Samaritan Overdose Prevention Laws. Prescription Drug Abuse Policy System. Temple University <https://pdaps.org/datasets/good-samaritan-overdose-laws-1501695153>. Center for Public Health Law Research. (2022). Naloxone overdose prevention laws. Prescription drug abuse policy system. Temple University <https://pdaps.org/datasets/laws-regulating-administration-of-naloxone-1501695139>.
- Coviello, D. M., et al., (2013). Does mandating offenders to treatment improve completion rates? *Journal of Substance Abuse Treatment*, 44, 417–425.
- Werb, D., et al., (2016). The effectiveness of compulsory drug treatment: A systematic review. *International Journal of Drug Policy*, 28, 1–9.
- Brown, Steve. (2018, April). Key Provisions Of The Criminal Justice Bill. WBUR, 6, 7. <https://www.wbur.org/news/2018/04/06/criminal-justice-reform-bill-key-provisions>.
- Bureau of Justice Statistics. (2021). The justice system. Office of Justice Programs <https://bjs.ojp.gov/justice-system>.
- Blume, J. H., & Helm, R. K. (2014). The unexonerated: Factually innocent defendants who plead guilty. *Cornell Law Review*, 100, 157.
- Pretrial Release. (2022). Office of Justice Programs <https://bjs.ojp.gov/topics/courts/pretrial-release>.
- Bushway, S. D., & Piehl, A. M. (2001). Judging judicial discretion: Legal factors and racial discrimination in sentencing. *Law & Society Review*, 35, 733–764.
- Black, H. C. (1968). *Black's law dictionary*. West Publishing Co.
- Legal Information Institute. (2017). Civil forfeiture. Cornell Law School https://www.law.cornell.edu/wex/civil_forfeiture.
- Wimer, Andrew I. for J.. (2021). New proof that police use civil forfeiture to take from those who can't fight back. *Forbes* <https://www.forbes.com/sites/instituteforjustice/2021/10/25/new-proof-that-police-use-civil-forfeiture-to-take-from-those-who-cant-fight-back/?sh=1304004f34e8>.
- Slayton, D. (2014). Written Testimony for the Texas Senate Jurisprudence Committee. Texas Courts <https://www.txcourts.gov/media/662319/OCA-Written-Testimony-Expunctions-and-Non-Disclosure.pdf>.
- Krawczyk, N., et al., (2020). Predictors of overdose death among high-risk emergency department patients with substance-related encounters: A data linkage cohort study. *Annals of Emergency Medicine*, 75, 1–12.
- Formica, S. W., et al., (2018). Post opioid overdose outreach by public health and public safety agencies: Exploration of emerging programs in Massachusetts. *International Journal of Drug Policy*, 54, 43–50.
- Davoust, M., et al., (2021). Examining the implementation of police-assisted referral programs for substance use disorder services in Massachusetts. *International Journal of Drug Policy*, 92, Article 103142.
- Rees, D., Sabia, J., Argys, L., Latshaw, J., & Dave, D. (2017). With a little help from my friends: The effects of naloxone access and Good Samaritan laws on opioid-related deaths. Working Paper 23171. <http://www.nber.org/papers/w23171.pdf> doi:10.3386/w23171.
- Reichert, J., Gleicher, L., & Adams, S. (2021). A preliminary outcome evaluation of Lake County's police referral to substance use disorder treatment program.

- Liu, J., Heckel, E., Coroiu, A., & Rees, V. W. (2022). Contextual challenges in police-assisted substance use referral programs: Impact of COVID-19 and Black Lives Matter movement. *Substance Abuse*, 43, 486–494.
- Office of the Governor of Rhode Island. (2016). Raimondo, Joined By Craven, McCaffrey, Signs Life-Saving Good Samaritan Act <https://www.ri.gov/>.
- Roth, A., Kajeepeta, S., & Boldin, A. (2022). The perils of probation: How supervision contributes to jail populations. 50.
- Abbott, G. (2015). Proclamation of the Governor of the State of Texas.
- Horowitz, J., & Wertheimer, J. (2022). Drug arrests stayed high even as imprisonment fell from 2009 to 2019. Pew <https://pew.org/3GzjeVl>.
- Banta-Green, C. J., Kuszler, P. C., Coffin, P. O., & Schoeppe, J. A. (2022). Washington’s 911 Good Samaritan drug overdose law: Initial evaluation results. University of Washington Alcohol & Drug Abuse Institute <https://adai.uw.edu/pubs/infobriefs/ADAI-IB-2011-05.pdf>.
- Schneider, K. E., Park, J. N., Allen, S. T., Weir, B. W., & Sherman, S. G. (2020). Knowledge of Good Samaritan Laws and beliefs about arrests among persons who inject drugs a year after policy change in Baltimore, Maryland. *Public Health Reports*, 135, 393–400.
- Washington State Court, Rules.. Criminal Rules for Courts of Limited Jurisdiction § 3.2.1(f). https://www.courts.wa.gov/court_rules/pdf/CrRLJ/CLJ_CRRLJ_03_02_01.pdf.
- Watson, D. P., et al., (2018). Lay responder naloxone access and Good Samaritan law compliance: Postcard survey results from 20 Indiana counties. *Harm Reduction Journal*, 15, 18.
- Jakubowski, A., Kunins, H. V., Huxley-Reicher, Z., & Siegler, A. (2018). Knowledge of the 911 Good Samaritan Law and 911-calling behavior of overdose witnesses. *Substance Abuse*, 39, 233–238.
- National Center for Health Statistics. Multiple cause of death, 1999-2020 results form. CDC Wonder. <https://wonder.cdc.gov/controller/datarequest/D77;jsessionid=92C7A2D4E406247694C6A9AE185C> (2022).
- Hogg Foundation for Mental Health & Texas Coalition for Healthy Minds. (2021). What you should know about the overdose Bystander Law. Hogg Foundation <http://hogg.utexas.edu/project/overdose-bystander-law>.
- New Hampshire Department of Health and Human Services. (2021). New Hampshire’s Good Samaritan Law (Drug Overdoses) Fact Sheet. <https://www.dhhs.nh.gov/sites/g/files/ehbemt476/files/documents/2021-11/bdas-good-samaritan-factsheet.pdf>

Preface to Chapter III

The preceding review makes several substantial contributions to the literature regarding 911 Good Samaritan Laws (GSLs) and harm reduction policy more broadly. First, it amplifies important differences among laws previously unavailable to policy scientists using existing surveillance datasets. Second, the review serves as an *a la carte* menu of GSL provisions for advocates and policymakers who may seek to amend their state's laws. Third, and most importantly for subsequent studies, the results constitute a comprehensive dataset that form the basis of more holistic evaluations of GSLs and their effect on downstream overdose mortality.

However, in its present format the GSL Inventory (GSLI) is formatted in a way that defies modeling. It consists of almost one hundred variables measured across every state. Including each variable dichotomously would result in an uninterpretable, over-specified model, but choosing variables based on their perceived importance would only result in replicating existing studies.

The following study serves as an intermediary between surveillance and evaluation. In the next chapter, the GSLI data is reduced to a manageable handful of distinct groups, forming a taxonomy of laws. The process not only reveals patterns in the structure of these laws, but also converts them to a format that can be more easily modeled longitudinally. This forms the basis of the ultimate evaluation in Chapter IV.

III. DIMENSION REDUCTION OF 911 GOOD SAMARITAN LAWS

A Taxonomy of 911 Good Samaritan Laws in the United States

Prepared for the International Journal of Drug Policy

Abstract

Background: 911 Good Samaritan Laws (GSLs) extend legal immunity to people who report overdoses despite being in possession of controlled substances. These laws decrease opioid overdose mortality, but existing research largely overlooks their heterogeneity. The GSL Inventory enumerates and catalogs features of these laws into breadth of immunized offenses, burden placed on Good Samaritans, strength of immunity, and exemption of coverage, facilitating dimension reduction analyses.

Methods: We produce multidimensional scaling plots visualizing the similarity of co-occurring GSL features as well as proximity among laws. We cluster laws based on proximity into meaningful groups differentiated by common features; a decision tree identifying the most salient provisions defining group membership; their relative breadth, burden, strength, and exemption of immunity; and state sociopolitical and sociodemographic commonalities.

Results: In the feature plot, extensions and limitations of GSL immunity are divided into distinct poles. Regions in the state plot differentiate quantity of substances receiving immunity, burden of reporting requirements, and immunity for probationers. Based on proximity, state laws may be grouped into Minimal GSLs, offering little protection; Moderate, featuring delayed immunity with no caveats; Narrow, providing strong immunity only for select offenses; Rigorous laws with expansive protection for compliant Good Samaritans; and Strong GSLs, which prioritize reporting overdoses above all else.

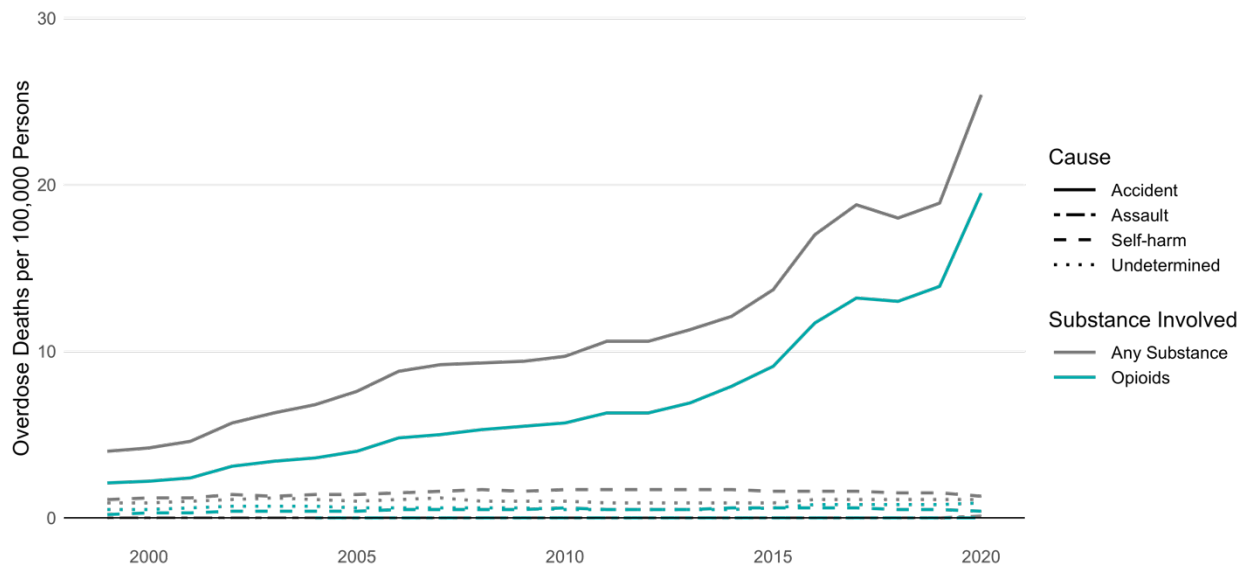
Discussion: These groups synopsise patterns in GSL provisions across states to promote more refined evaluations and reveal underlying philosophies of implementation that may guide future advocacy.

Keywords: 911 Good Samaritan Law, Harm Reduction, Multidimensional Scaling, Policy evaluation

A Taxonomy of 911 Good Samaritan Laws in the United States

Overdose mortality rates continue to rise in the United States, driven in large part by increases in the prevalence of fentanyl and other synthetic opioids.^{1,71} (See Figure 1.) 911 Good Samaritan Laws (GSLs) are adopted to save lives by encouraging bystanders witnessing overdoses to report these emergencies to first responders, even if they fear arrest or other criminal consequences for illicit substance use. Some evidence suggests that these laws reduce opioid overdose rates in states adopting them, but this reduction may depend on the particular provisions in the law.⁶ The GSL Inventory (GSLI) comprehensively catalogs all GSL features across the United States and categorizes them as breadths, burdens, strengths, and exclusions.

Figure 10. Overdose mortality by substance and cause, 1999 – 2020.



Note. Multiple cause of death data from Centers for Disease Control and Prevention. 1 Cause represents underlying cause of death codes per International Classification of Diseases, 10th Edition (ICD-10) codes X40 – X44 (accidental), X60 – X64 (self-harm), X85 (assault), and Y10 – Y14 (undetermined intent). Any substance includes all causes, while Opioids indicates mortality with opioids listed as a contributing factor, T40.0 – T40.4 and T40.6.

However, its granularity limits how it may be integrated into inferential models. The present study uses dimension reduction methods to illustrate salient associations among both GSL provisions and the states ratifying these laws, followed by a cluster analysis to determine which states hold common philosophies when constructing their harm reduction policy. A supervised learning algorithm identifies principle provisions that strongly characterize groups. Together, these methods reveal patterns in the drafting and implementation of these laws, which are associated with state-level sociopolitical, socioeconomic, and epidemiologic factors.

Isolation and social-distancing measures during the COVID-19 pandemic separated people who use drugs (PWUDs) from their social and clinical support systems, exacerbating overdose mortality.⁷² In 2020, 68,000 Americans died of opioid-related causes, more than an eight-fold increase compared to the year 2000. Provisional data for 2021 suggest mortality has only increased, with an estimated 80,000 deaths and a crude mortality rate of 24.4 for every 100,000 persons.²⁷

GSLs represent a common harm reduction policy which extend limited legal immunity to bystanders reporting drug overdoses who may themselves be using or in possession of controlled substances. In the United States, calling 911 simultaneously alerts both emergency medical services (EMS) and law enforcement officers (LEOs), meaning that a person who reports a medical emergency also exposes themselves to criminal scrutiny. Fear of arrest or other consequences explain why, despite the fact that up to 85% of overdoses occur in the presence of a bystander, PWUDs may report the overdose less than half the time.^{10,12,44} GSLs alleviate these concerns by awarding reporters limited amnesty, thus increasing the frequency with which overdoses are reported to 911.

To date, 48 states and the District of Columbia have adopted GSLs, extending protection to 99% of the United States population.^{73,74} Limited, although not unanimous, evidence suggests GSLs reduce the rate of opioid overdose mortality in subsequent years.⁶⁻⁹ This discrepancy may be attributable to differences among laws, as Hamilton and colleagues found that states offering stronger protections in combination with NALs see larger reductions.⁶ They divide states into those offering protection from arrest or any weaker protections, including protection from charge, defense to prosecution, and procedural protections.

While this and other unidimensional classification methods may facilitate modeling, they overlook the immense heterogeneity of GSLs. For instance, in Alabama “an individual may not be prosecuted for a misdemeanor-controlled substance offense if . . . the individual was seeking medical assistance for another individual.”⁷⁵ However, upon closer inspection, “Unlawful possession of a controlled substance is a Class D felony,”⁷⁶ excluding prospective Good Samaritans in possession of opioids. This distinguishes Alabama from other states offering comparable strength of immunity,⁷⁷⁻⁷⁹ but is largely overlooked in policy surveillance.

The 911 Good Samaritan Law Inventory (GSLI) is a comprehensive review of GSL implementation features.⁸⁰ It organizes these provisions into four categories based on an evaluation framework that aligns with the sequence of events when reporting an emergency overdose. *Breadth* includes features that expand the range of protected offenses or protected persons. *Burdens* are provisions that require the Good Samaritan to comply with certain conditions during and after the emergency to maintain immunity. *Strengths* are the particular immunities provided for covered offenses. *Exemptions* refer to exclusions in the law based on immutable qualities of the Good Samaritan or circumstances of the emergency. (See Table 5.) This framework not only describes individual GSL features, we believe it may also be

extrapolated to describe the laws themselves. Laws with more strength features intervening sooner in the criminal justice process may be said to be stronger than others, while more burdens may warrant calling the law itself burdensome. While the framework scaffolds the structure of the dataset and the narrative of the associated review, the internal validity of these categories has not been substantiated. Whether the organization of these features truly distinguishes burdensome from strong laws, or whether these features are distributed stochastically throughout the laws, remains to be evaluated.

Regardless of greater patterns, the GSLI underscores the complexity of these harm reduction laws. Their widespread adoption and the burgeoning opioid epidemic compel policy scientists to rigorously evaluate GSLs and their effects on downstream drug overdose fatalities. Rather than quantify their effects as a function of a single dimension, such as protection from arrest, while discarding illustrative features like the omissions described in Alabama, future studies should incorporate the multidimensionality of these laws into analyses.

Table 5. Evaluative Framework for 911 Good Samaritan Law Provisions.

Feature	Description	Example
Breadth	Range of immunized activity. Includes the limit to immunity for simple possession of controlled substances, suite of additional offenses beyond simple possession, agents at the emergency receiving immunity, and actions besides reporting the overdose that invoke immunity	“The limited immunity shall only apply to a person possessing . . . less than 3 grams of a substance containing heroin” (720 Ill. Comp. Stat. §§ 570/414; 646/115, 2022). “The immunity granted shall apply to all offenses in this chapter [Uniform Controlled Substances Act] that are not class A, B, or C felonies, including . . . possession of drug paraphernalia” (Del. Code Ann. tit. 16, § 4769, 2022).
Burden	Requirements with which the Good Samaritan must comply to receive or maintain immunity, including interactions with first responders and investigators, behavior at the scene of the emergency, and obligations following the emergency	“A law enforcement officer may not take an individual into custody based solely on the commission of [a controlled substance offense] if the law enforcement officer . . . reasonably believes that the individual administered an overdose intervention drug to an individual who appeared to be experiencing an opioid-related overdose” (Ind. Code § 16-42-27-2, 2022). “The immunity provisions in §16-47-4(a) of this code extend to the person for whom emergency medical assistance was sought if, after receiving emergency medical assistance, the person participates in, complies with, and completes a substance abuse treatment or recovery program approved by the court” (W. Va. Code §16-47, 2020).
Strength	Nature of the immunity granted to Good Samaritans at different points in the criminal justice process. Includes immunity for protected offenses, mitigation for offenses outside the breadth of the law, and protection during additional interactions with law enforcement.	“Notwithstanding any other law, it shall not be a crime for a person . . . to possess for personal use, a controlled substance . . . if that person, in good faith, seeks medical assistance for another person experiencing a drug-related overdose” (Cal. Health & Safety Code § 11376.5, 2022). “An individual is immune from criminal prosecution . . . if in good faith that individual seeks medical assistance for another individual in need of emergency medical assistance due to a drug overdose” (N.D. Cent. Code § 19-03.1-23.4, 2022). “A person who seeks medical assistance for a drug overdose or is the subject of a good faith request for medical assistance . . . shall not be subject to any sanction for a violation of a condition of pretrial release, probation, furlough, or parole” (Vt. Stat. Ann. tit. 18, § 4254, 2020).
Exemption	Caveats in the law refusing immunity for Good Samaritans based on factors that precede the emergency or on circumstances concurrent with the emergency. A Good Samaritan may comply with a burden, but exemptions are immutable.	“The defense to prosecution provided by [this law] is not available if . . . at any time during the 18-month period preceding the date of the commission of the instant offense, the actor requested emergency medical assistance in response to the possible overdose of the actor or another person” (Tex. Health & Safety Code Ann. § 481.115, 2020). “No person shall be granted an immunity under [this law] more than two times” (Ohio Rev. Code § 2925.11, 2022).

Note. Adapted from Reader et al.⁸⁰

Importantly, these diverse features are not adopted arbitrarily, but rather result from the policymaking process within each state and reflect its unique constituency, policy priorities, and values. Policymakers adopting GSLs are constrained by the political fundamentals in their state that may limit available political capital or the range of acceptable harm reduction policies. Illuminating the relationship between state-level policy antecedents and the subsequent shape of GSLs not only enhances our understanding of these laws, but it may facilitate the use of these factors in developing advocacy strategies.

This study bridges the gap between qualitative review and quantitative evaluation by applying dimension reduction methods to observations in the GSLI. These methods aim to preserve the variance of the higher-dimensional dataset in a format more compatible with traditional modeling methods. We employ multidimensional scaling to create a visual map of the frequency of co-occurring GSL features and a map of the relative proximity of state laws, then use a cluster analysis to group laws based on these similarities. These groups constitute a taxonomy of GSLs and illuminate patterns in their implementation that may serve as a springboard for future evaluations. A decision tree allows other researchers to easily reconstruct these groups.

Method

The GSLI data is largely dichotomous, indicating which state GSLs exhibit which features. To make the fewest assumptions about the structure of the data, we constrain our analyses to nonmetric methods. Specifically, we use nonmetric multidimensional scaling (MDS) to illustrate the relative proximity of GSL features in a *feature plot*, and similarly map proximity among state laws in a corresponding MDS *state plot*. We identify zones in the state plot indicating regions in which all states share common features. Additionally, a cluster analysis

using the rank order proximity among GSLs forms groups of comparable state laws, our taxonomy, also associated with regions in the state plot. We evaluate these groups descriptively by summing the number of features categorized as breadths, burdens, strengths, and exemptions, per the GSLI.⁸⁰ Additionally, we develop a decision tree using supervised learning procedures to identify the most distinguishing features across laws. Last, we determine which state-level sociopolitical, socioeconomic, and epidemiologic factors are associated with membership in each group by comparing median values. All analyses were conducted in R, an open source statistical computing environment.⁸¹

Data

The GSLI is a comprehensive database of GSLs pertaining to opioid possession in the United States.⁸² It is distinguished from other policy surveillance datasets by its inductive construction, based on abstracting every feature of a GSL, rather than evaluating laws based on *a priori* criteria. Each unique feature is coded as a separate dimension in the data and categorized per the evaluation framework as a breadth, burden, strength, or exemption. This database forms the basis of the present analysis. First we filtered the dataset to include only the original GSL in each state and the District of Columbia, excluding amendments. All variables are dichotomous except five: quantity of oxycodone, heroin, and fentanyl of which a person may be in possession while retaining protection, if not unlimited or personal use; number of times a reporter may claim immunity under the GSL, if not unlimited; and number of times a person experiencing an overdose may claim immunity, if not unlimited. We scaled these variables to range from zero to one in order to prevent them from outweighing dichotomous variables in the MDS analyses. The decision tree is constructed with the filtered data and then evaluated with the longitudinal data of all laws.

State policy antecedents reflect common covariates in GSL evaluation literature as well as variables historically associated with political attitudes, and range from 2007 to 2020.^{6,7,9,83,84} Socioeconomic variables include median income in 2021 dollars,⁷⁴ unemployment,⁸⁵ educational attainment (persons age 25 and over with a bachelor's degree or higher),⁷⁴ rural population,⁷⁴ and the non-Hispanic (NH) white population.²⁷ Opioid overdose rates per 100,000 persons reflect the local epidemiology of substance use.²⁷ Sociopolitical factors measuring the policymaking process consisted of bicameral percentage of Democrats in the state legislature.⁸⁶ All variables reflect the year the GSL was ratified. Unemployment, education, rurality, and the NH white population were transformed to percentages while state population was log-transformed. (See Supplement.)

Multidimensional Scaling

The structure of the GSLI, which is primarily composed of dichotomous measures, invites nonmetric evaluation. MDS is appealing as it accepts a dissimilarity matrix of the Euclidean distances of all observations in a dataset and reconstructs it in a lower-dimensional space, such that similar observations appear close in the scaled plot.⁸⁷ We employ nonmetric MDS as this preserves the rank order of all distances, rather than metric values.^{88,89} Like the distance matrices from which they derive, these configurations lack a fixed origin and can be rotated freely, much like a paper map may be rotated in one's hands. The appropriate number of dimensions is evaluated using stress, a badness-of-fit measure summing the squared error between original distances and scales distances in the lower-dimensional configuration.^{87,90}

First, we create the feature plot, in which GSL provisions that commonly co-occur are placed in closer proximity. To produce this plot, our matrix is arranged such that each column represents a state law, and every row is a feature, with values indicating whether that feature is

expressed in that state's law. We preserve the framework categories to summarize the nature of the scaled features.⁸⁰ Some features which co-occurred perfectly, resulting in a distance of zero, were collapsed into one observation. For instance, Texas' GSL exhibits a unique burden that the overdose emergency be "ongoing," as well as singular exemptions for bystanders reporting previous overdoses, with prior criminal histories, or engaging in concurrent illicit activity.⁷⁹ If the majority of such features belonged to the same framework category, it serves as the label for the resulting variable. Texas' unique features, for example, mostly reflect exemptions. Otherwise, we categorized colocated features as *other*.

Next, by transposing the matrix, we create the state plot in which each observation is a state law, every dimension is a feature, and values indicate whether that feature is present in that state's GSL. The resulting ranked proximities among states indicates the number of provisions they share. As the configuration lacks intrinsically meaningful axes, we build the state plot with two theoretical observations. The first represents states with no GSL, such as Kansas and Wyoming. This observation lacks every identified strength and breadth of the GSLI and, as burdens and exemptions are both circumstances in which immunity is not extended, they contain every identified burden and exemption. The second is a hypothetical state which possesses every possible breadth and strength with no burden or exemption.

Cluster Analysis

To suit the nonmetric nature of both the GSLI and the resulting lower-dimensional state configuration, we utilize nonmetric clustering algorithm. Specifically, we employ partition-around-medoids clustering (PAM), an algorithm in which laws are nominated to serve as medoids (the median observation in their group) and other states are swapped in and out of group membership until each group has minimal dissimilarity.⁹¹ Similar to the construction of the state

plot, groups derive from rank order distances among laws. We determine the optimal number of clusters using average silhouette width.⁹²⁻⁹⁴

Framework Scores

We calculate a breadth, burden, strength, and exemption score for each state by summing the total number of features in each category present in the GSL. As each feature is weighted equally within its category, regardless of its relative importance to PWUD decision-making, we treat these scores as nonmetric. Scores illustrate the relative composition of each law across these four categories.

Decision Trees

We develop two decision trees predicting GSL group membership, one trained on state policy antecedents at the year of ratification and the other on GSLI provisions. The latter model then categorizes all GSLs over time to determine which states may amend their laws sufficiently to change its membership.

Evaluation

To evaluate the feature plot, we use each feature's framework category to discern how it influences the placement in the lower dimensional space. We evaluate the state plot similarly, by identifying which individual GSL features are strongly associated with certain regions in the space.

We describe our GSL groups by synthesizing information from their placement on the state plot, the framework scores of their constituent states, the decision tree results, and their association with relevant state policy antecedents. Heteroskedasticity among state factors limits us to an evaluation of scaled median values.

Results

After filtering to original laws, our dataset consisted of 83 features reflecting 49 real states, including the District of Columbia, as well as our two theoretical states with no GSL and a complete GSL. Table 6 lists the features and their associated categories in the framework. When constructing the feature configuration, 12 features co-occurred with perfect frequency and were combined.

Multidimensional Scaling

The feature plot and the state plot are both best represented in two dimensions. (See supplement for goodness-of-fit.) In the state plot, as the null GSL and the complete GSL are the two furthest observations, their inclusion or exclusion does not change the configuration of state laws. Considering that the null GSL indicates the complete absence of protection while the complete law represents every extant protection, we rotate the state plot so that the line between these observations aligns with the Y axis in visualizations and call this dimension *completeness*. We remove these from figures for clarity. (See supplement for unabridged plot.) Figure 11 depicts the feature plot and Figure 12 depicts the state plot.

Table 6. 911 Good Samaritan Law features and associated categories¹

Label	Feature	Category
1	Law protects a Good Samaritan regardless of quantity of oxycodone in possession	Breadth
2	Quantity of oxycodone protected, if not unlimited or personal use	Breadth
3	Law protects a Good Samaritan regardless of quantity of heroin in possession	Breadth
4	Quantity of heroin protected, if not unlimited or personal use	Breadth
5	Law protects a Good Samaritan regardless of quantity of fentanyl in possession	Breadth
6	Quantity of fentanyl protected, if not personal use	Breadth
7*	Quantity of oxycodone protected is personal use	Breadth
7*	Quantity of heroin protected is personal use	Breadth
7*	Quantity of fentanyl protected is personal use	Breadth
8	Law protects possession of drug paraphernalia	Breadth
9	Person experiencing the overdose is protected by the law, in addition to the reporter	Breadth
10	Person is protected by the law if they report their own overdose emergency	Breadth
11	Law protects frequenting a premises or property where controlled substances are used	Breadth
12	Law protects persons owning or operating a premises where controlled substances are used	Breadth
13	Law protects a person acquiring controlled substances through fraud or misrepresentation	Breadth
14*	Law protects a person acquiring controlled substances through theft	Breadth
14*	Law protects a person in possession of controlled substance masking agents	Breadth
15	Law protects a person manufacturing controlled substances	Breadth
16	Law protects a person delivering controlled substances	Breadth
17	Law protects a person in possession of controlled substances in a school zone	Breadth
18	Law extends 911 Good Samaritan protections to a person administering naloxone, without reporting the emergency	Other
19	Law protects a person selling drug paraphernalia	Breadth
20	Law protects a person manufacturing drug paraphernalia	Breadth
21	Law protects a person from offenses pertaining to public intoxication	Breadth
22	Law protects a person from local ordinances pertaining to controlled substance possession	Breadth
23	A person must be the first to call 911 to receive Good Samaritan protection	Burden
24	A person must call 911 as soon as the overdose emergency is apparent to receive Good Samaritan protection	Burden
25*	The emergency must be ongoing in order for a Good Samaritan to receive protection	Burden
25*	A person with a previous controlled substance conviction is exempt from protection	Exemption
25*	A person who called 911 in the previous 18 months to report a separate drug overdose is exempt from protection	Exemption
25*	A person committing another offense concurrently is exempt from protection	Exemption
26	A person must remain at the scene of the overdose emergency to receive protection	Burden
27	A person must cooperate with law enforcement officers to receive protection	Burden
28	A person must cooperate with emergency medical services personnel to receive protection	Burden
29	A person must not obstruct law enforcement officers or emergency medical services personnel to receive protection	Burden
30	A person must provide all relevant medical information to first responders to receive protection	Burden
31	A person must provide identification to receive protection	Burden
32	A person must provide first responders with all relevant information on substances ingested to receive protection	Burden
33	A person age 21 or over is exempt from protection	Exemption
34*	The person experiencing the overdose must be in need of emergency medical services	Burden
34*	The maximum number of persons protected by the law during a single emergency overdose event is three	Exemption
35*	A person must receive a referral for substance use treatment to receive protection	Burden
35*	A person currently on parole is exempt from protection	Exemption

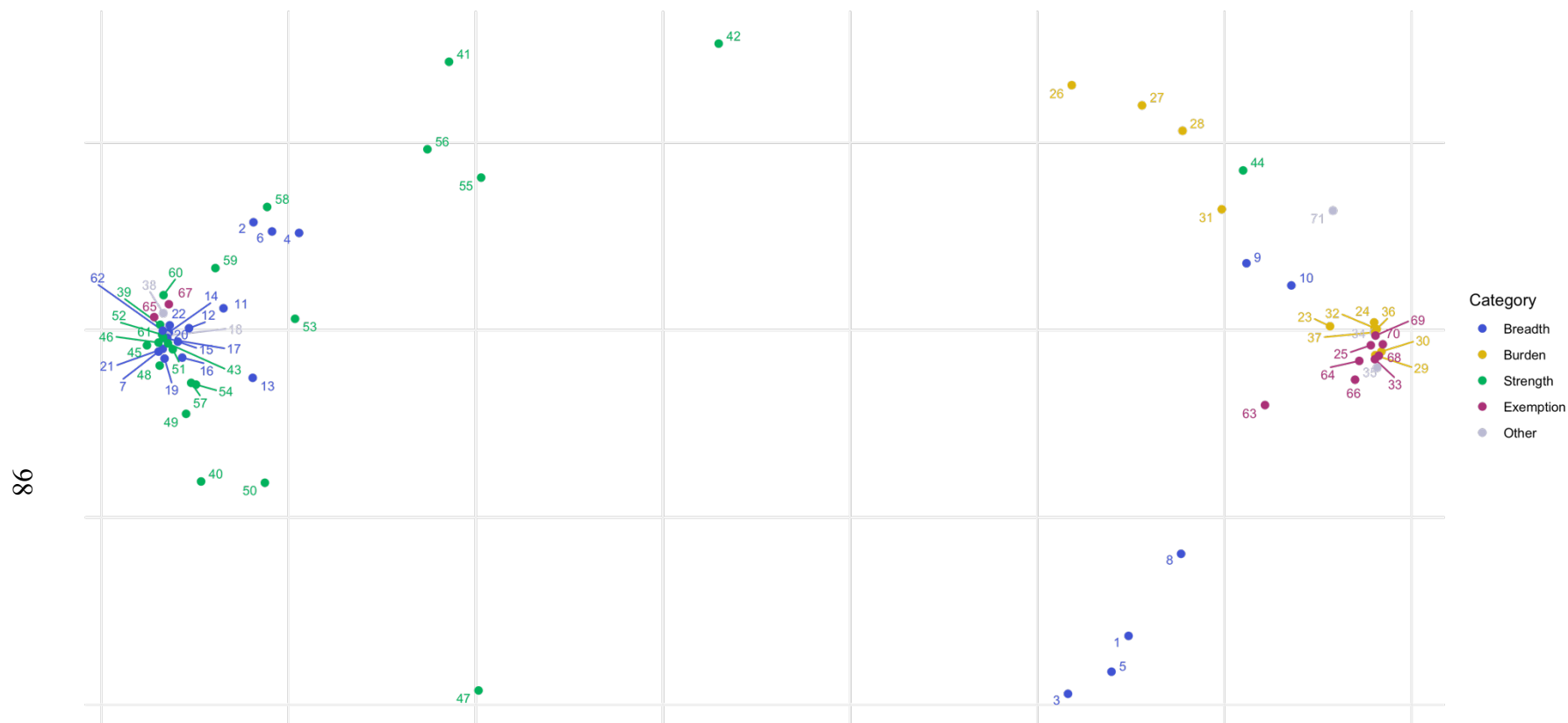
35*	A person currently on probation is exempt from protection	Exemption
36*	A person must complete substance use treatment to receive protection	Burden
36*	The law does not protect a person from civil claims pertaining to the overdose emergency event	Exemption
37	A person must cooperate with any law enforcement investigation resulting from the overdose event to receive protection	Burden
38	Persons reporting emergency overdoses receive voluntary referrals for substance use treatment	Other
39*	Reporting an overdose is considered a mitigating factor for violations of pretrial release, probation, and parole violations	Strength
39*	911 operators are trained to inform callers of 911 Good Samaritan protections, if applicable	Other
40	Persons reporting overdoses are not in violation of indicated offenses, may not be held liable, or otherwise not committing an offense	Strength
41	Good Samaritans are protected from arrest for protected offenses	Strength
42	Good Samaritans are protected from charges for protected offenses	Strength
43	Good Samaritans are protected from citations for protected offenses	Strength
44	Good Samaritans are protected from prosecution for protected offenses	Strength
45	Good Samaritans may claim an affirmative defense to prosecution for protected offenses	Strength
46*	Evidence collected as the result of reporting an overdose may not be presented at trial for protected offenses	Strength
46*	Evidence collected as the result of reporting an overdose does not provide probable cause	Strength
47	Bystanders reporting overdoses may receive mitigated sentences for protected offenses	Strength
48	A person whose overdose is reported by a bystander may receive a mitigated sentence for controlled substance offenses	Strength
49	A person reporting their own overdose may receive a mitigated sentence for controlled substance offenses	Strength
50	A bystander reporting an overdose may receive a mitigated sentence for any offense	Strength
51	A person reporting their own overdose may receive a mitigated sentence for any offense	Strength
52	The law suggests a person reporting an overdose should receive a mitigated sentence for a federal controlled substance offense	Strength
53	A person reporting an overdose is protected from resulting violations of the conditions of their pretrial release	Strength
54	A person reporting an overdose is protected from resulting violations of the conditions of their supervised release or conditional discharge	Strength
55	A person reporting an overdose is protected from resulting violations of the conditions of their probation	Strength
56	A person reporting an overdose is protected from resulting violations of the conditions of their parole	Strength
57	A person reporting an overdose is protected from resulting violations of the conditions of their furlough	Strength
58	A person reporting an overdose is protected from resulting violations of the conditions of their protection or restraining order	Strength
59	A person reporting an overdose is protected from civil asset forfeiture	Strength
60	A person reporting an overdose is protected from being otherwise penalized	Strength
61	A person reporting an overdose is protected from the serving of an outstanding arrest warrant for protected controlled substance offenses if their location is only determined through the report of the overdose	Strength
62	Reporting an overdose is considered an affirmative defense for offenses pertaining to the sale of controlled substances if the reporter does not have a previous B Felony or more severe conviction	Breadth
63	The law explicitly exempts persons from protection if they are reporting an overdose during the serving of an arrest or search warrant	Exemption

64	A person is exempt from Good Samaritan protection if they previously used the Good Samaritan protection	Exemption
65	The maximum number of times a bystander reporting an overdose may use Good Samaritan protection, if not unlimited	Exemption
66	A person whose overdose is reported is exempt from Good Samaritan protection if the patient has used the Good Samaritan protection previously	Exemption
67	The maximum number of times a person experiencing an overdose may use Good Samaritan protection, if not unlimited	Exemption
68	A person is exempt from Good Samaritan protection if they illegally provided the controlled substance to the person experiencing an overdose	Exemption
69	The trial court may consider whether the person has previously used Good Samaritan protection in determining whether to grant Good Samaritan immunity in the present case	Exemption
70	The circumstances of a Good Samaritan's parole or probation may be reconsidered following the use of Good Samaritan protection	Exemption
71	Law enforcement officers cannot be held responsible for violations of the stated Good Samaritan protections	Other

*Indicates features which perfectly co-occur across states and are collapsed into one observation for the feature map.

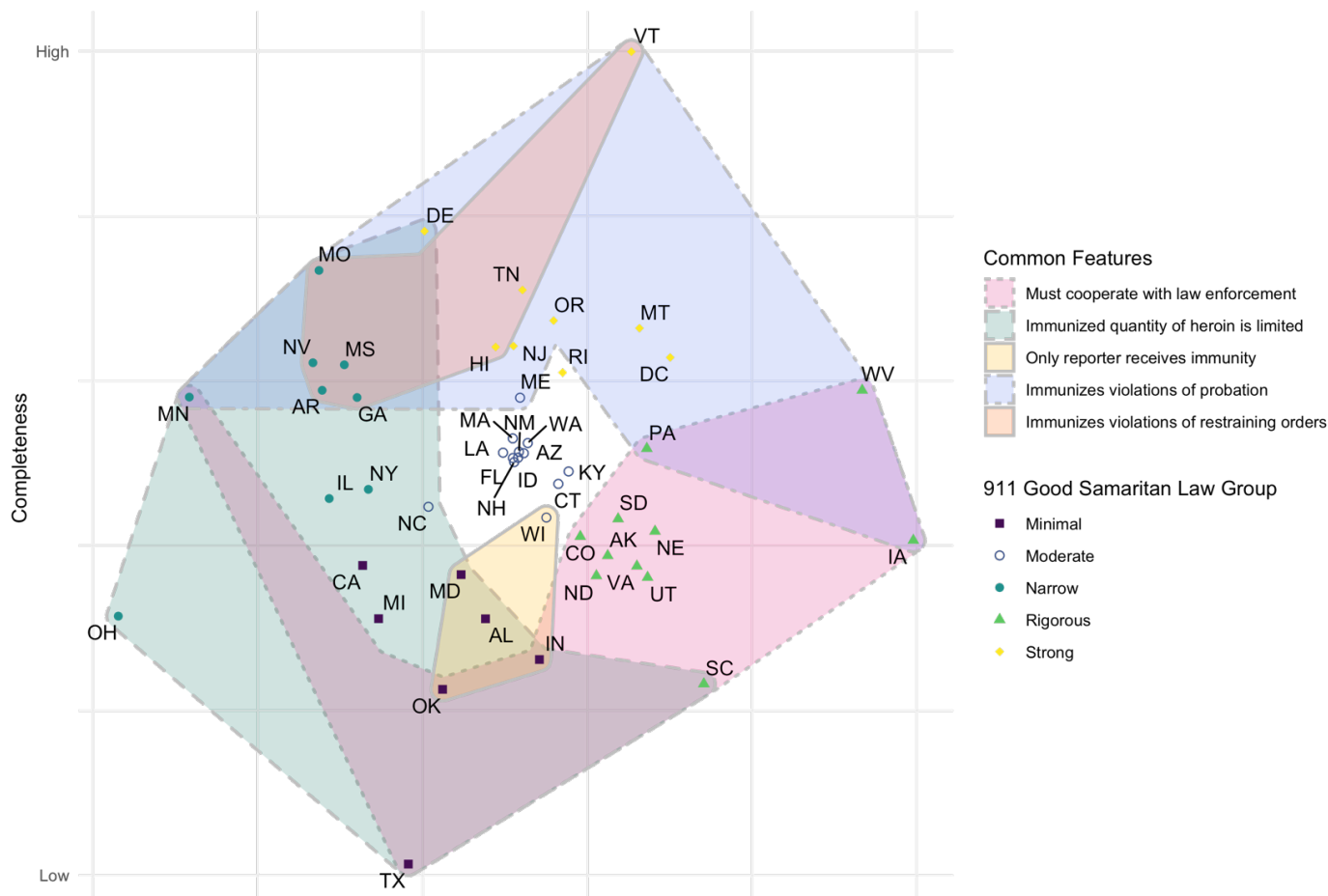
Note. Labels correspond to observations in Figure 2.

Figure 11. Multidimensional scaling plot of 911 Good Samaritan Law features.



Note. Plot is constructed from ranked Euclidean distances of features of the first 911 Good Samaritan Laws (GSLs) ratified in each state, per the GSL Inventory (GSLI).⁸² Features appearing closer on the plot more commonly co-occur within laws. Categories are derived from the GSLI, and labels correspond to Table 2. As the plot is derived from unidimensional proximities, it lacks intrinsic axes.

Figure 12. Multidimensional scaling plot of state 911 Good Samaritan Laws.



Note. Plot is constructed from ranked Euclidean distances of first 911 Good Samaritan Laws (GSLs) ratified in each state, per the GSL Inventory.⁸² States appearing closer on the plot share more features in common. Polygons represent features shared by all state GSLs within that zone, and shapes indicate groups of laws derived from a cluster analysis. The plot is derived from unidimensional proximities and lacks intrinsic axes. Instead, two theoretical observations representing a complete GSL with all protections and a null GSL with no protections were included with the data, and the plot was rotated so the distance between them aligns with the Y axis, called *Completeness*.

Cluster Analysis

We proceed with these six groups based on an analysis of silhouette width. While the theoretical complete GSL is the sole member of its own cluster, states with no GSL are grouped with several other states offering weak protections. (See Figure 12.) In addition to their position on the state plot, we evaluate groups by their median breadth, burden, strength, and exemption scores. (See Table 7.) Additionally, state policy antecedents varied notably by group, particularly the composition of state legislators, population, education, and NH white population. Figure 13 depicts several variables of interest by GSL group. (See supplement for summary tables and distributions.)

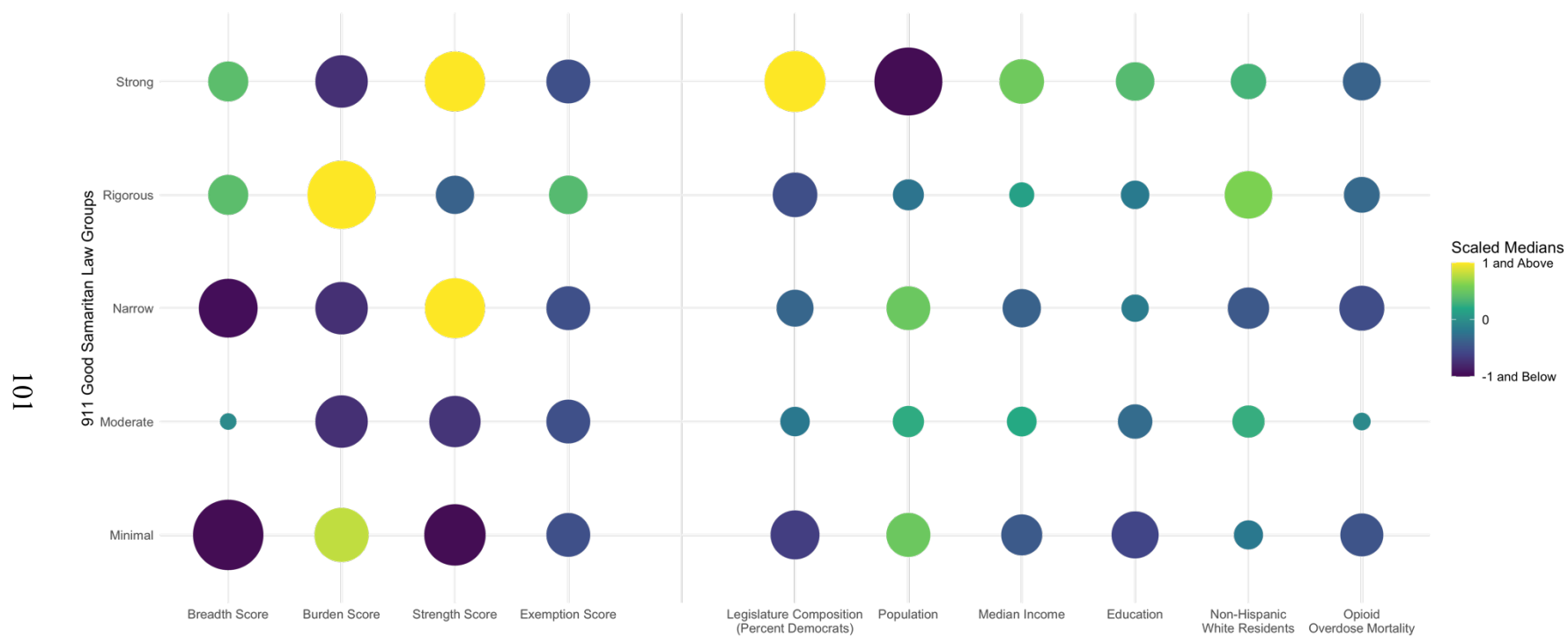
Table 7. Median (range) of breadth, burden, strength, and exemption scores for each group at ratification, and member states.

Group	Breadth	Burden	Strength	Exemption
Minimal	2 (0 - 6)	3 (0 - 5)	1 (1 - 3)	0 (0 - 6)
Strong	6 (5 - 11)	0 (0 - 1)	7 (2 - 13)	0 (0 - 1)
Rigorous	6 (4 - 7)	4 (3 - 5)	3 (1 - 7)	1 (0 - 3)
Narrow	3 (2 - 6)	0 (0 - 4)	7 (3 - 9)	0 (0 - 4)
Moderate	5 (3 - 7)	0 (0 - 1)	2 (1 - 4)	0 (0 - 1)

Group	Member States
Minimal	Alabama, California, Indiana, Maryland, Michigan, Oklahoma, Texas, States without 911 Good Samaritan Laws*
Strong	District of Columbia, Delaware, Hawaii, Montana, New Jersey, Oregon, Rhode Island, Tennessee, Vermont
Rigorous	Alaska, Colorado, Iowa, Nebraska, North Dakota, Pennsylvania, South Carolina, South Dakota, Utah, Virginia, West Virginia
Narrow	Arkansas, Georgia, Illinois, Minnesota, Missouri, Mississippi, Nevada, New York, Ohio
Moderate	Arizona, Connecticut, Florida, Idaho, Kentucky, Louisiana, Massachusetts, Maine, New Hampshire, New Mexico, North Carolina, Washington, Wisconsin

* States without 911 Good Samaritan Laws are not included in breadth, burden, strength, and exemption scores

Figure 13. Breadth, burden, strength, and exemption scores (Left), and state policy antecedents (Right), by 911 Good Samaritan Law group.



Note. Median differences among 911 Good Samaritan Law (GSL) groups. Values are scaled for comparison and represent the year in which the GSL was adopted.

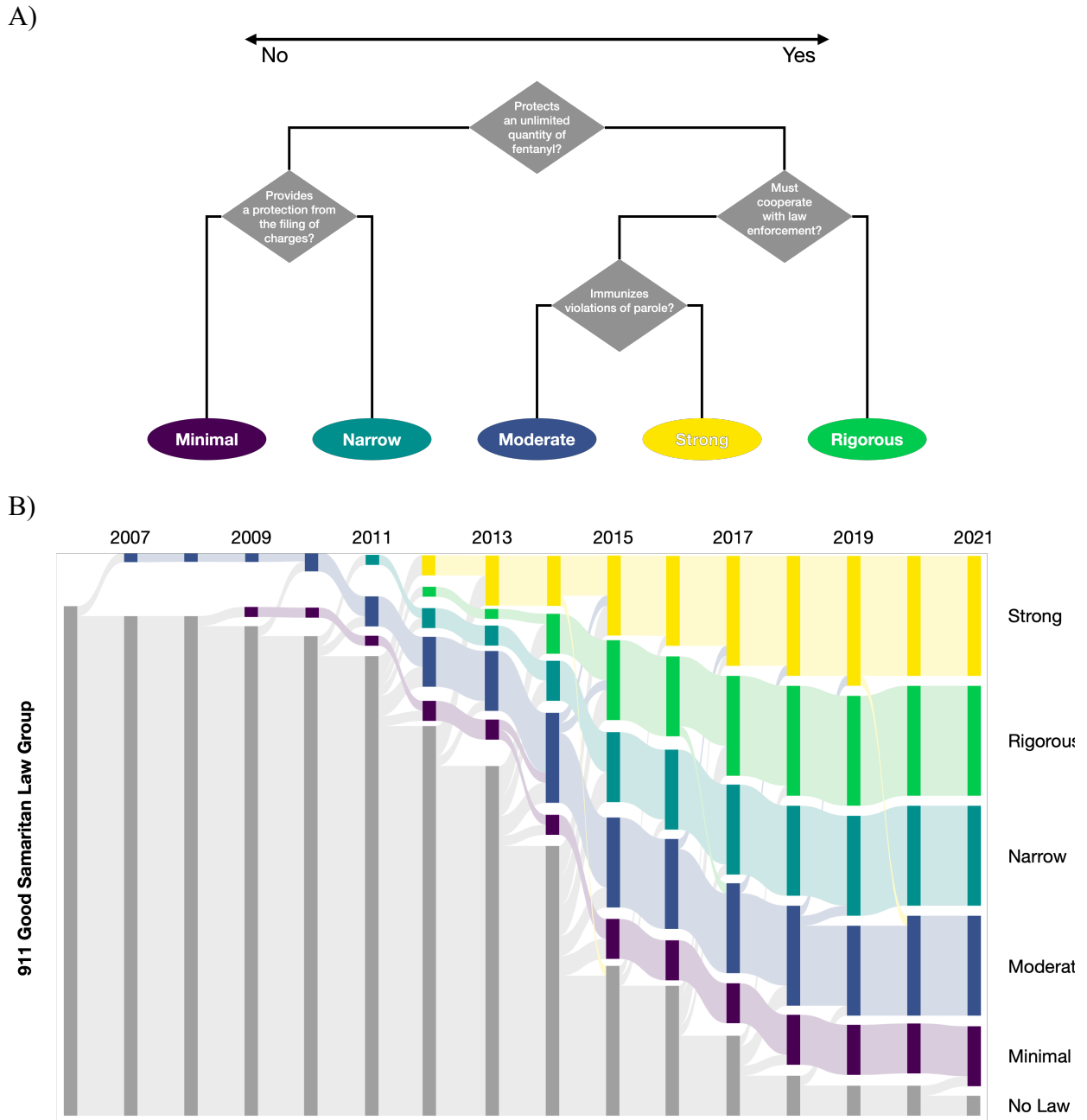
Framework Scores

Excluding states with no GSL and our theoretical complete GSL, states demonstrate the greatest range in strength (*Median* = 3, *Range* = 0 – 13), followed by breadth (*Median* = 5, *Range* = 0 – 11). Burden scores ranged from zero to five, with a median of zero, indicating most states place no obligations on Good Samaritans. Exemption scores exhibited a similar pattern (*Median* = 0, *Range* = 0 – 6). (See Table 7.)

Decision Trees

The decision tree predicting group membership from state policy antecedents proved unreliable (accuracy < 40%), as did subsequent random forest algorithms. As such, we discard this analysis and interpret the relationship between state factors and GSL group with caution. The tree categorizing groups from law features proved very accurate (94.2%) with a pruned maximum node depth of three. (See Supplement for pruning and confusion matrix.) The most determinative features for group membership proved to be immunity for unlimited quantity of fentanyl, protection from the filing of charges, requiring cooperation with LEOs, and immunity for violations of parole. This decision tree indicated that seven states changed GSL group over time: Florida, Maryland, Massachusetts, New Mexico, North Dakota, Rhode Island, and Wisconsin. (See Figure 14.)

Figure 14. Decision tree (A) categorizing 911 Good Samaritan Law group membership over time (B).



Note. Decision tree is trained to predict 911 Good Samaritan Law (GSL) group from GSL provisions for each initially-rated law, and achieved 94.2% accuracy. The Sankey chart plots group membership over time based on the decision tree.

Evaluation

Feature Plot

Graphing the feature plot reveals two poles around which they organize: strength and breadth features on one side, burden and exemption on the other. Figure 11 depicts the configuration with provisions labeled in Table 6. These two poles suggest that framework categories have strong internal validity when describing GSL provisions and underscore the use of these categories in the subsequent analysis. Some features in the plot defy this pattern. For instance, feature 44, immunity from prosecution, is closely associated with burdens and exemptions. While this feature is a strength of immunity, states offering this immunity offer less reliable coverage. Additionally, some features arrive at the opposite pole as their absence is more strongly associated with these other features than their presence. For instance, features 65 and 67, the number of times a reporter and a person experiencing an overdose may receive immunity, are exemptions never included in the strongest GSLs.

The close association of features along these poles suggests they may reflect two divisible dimensions. *Extensions* reflect the breadth and strength of the law, which extend immunity to a broader range of immunized offenses and to additional points of contact with the criminal justice system. *Limitations* are burdens and exemptions that foreclose the possibility of immunity to Good Samaritans who do not, or cannot, comply. The following analyses reveal combinations of features that would be disguised by combining these scores, but this method of reducing complexity may offer utility for future evaluations.

State Plot

To evaluate the state plot, we first identified polygons of states circumscribing regions in which all contained laws share common features. (See Figure 12.) The configuration is cleft into

two hemispheres perfectly dividing states offering protection for unlimited quantities of heroin and those only immunizing possession of enumerated amounts or unspecified “personal use.” Protection for heroin, fentanyl, and oxycodone strongly correlate, such that a law immunizing an unlimited quantity of one also commonly immunizes an unlimited quantity of the others. The alignment of these features may give them substantial influence over the state plot. While the decision tree uses fentanyl immunity as the first distinguishing feature among groups, substituting fentanyl or oxycodone provides similar results.

Additional features strongly associated with particular regions of the configuration include the obligation to cooperate with LEOs, immunity for violation of probation and immunity for violation of restraining orders. While immunity for parole violations is a node in the decision tree, it does not perfectly describe a region in the state map as probation does. Laws excluding the person experiencing the overdose or self-reporting their own emergency from immunity also occupy one region. Similarly, states with provisions limiting the number of times a person may receive immunity (Iowa, Ohio, Texas, South Carolina) are positioned on the outside of the configuration. At the center of the plot, several states lie in tight proximity. These state laws share no feature completely, but commonly align by providing Good Samaritans immunity from prosecution for a modest breadth of offenses with no burden.

Evaluating the plot in terms of breadth and strength reveals that these scores have complementary but divisible influence on the placement of states. High scores on either move states higher on the completeness axis, expectedly, but high-strength states (Minnesota, Missouri, Tennessee) move almost orthogonally from high-breadth states (Oregon, Pennsylvania, Rhode Island). States high in both are centered (Vermont). Similarly, high-burden states (Iowa, South Carolina, Utah) are lower on the completeness axis but divisible from weak states with

minimal burden (Maryland, Michigan) and states with both few strengths and substantial burden (Texas). (See supplement.)

Groups

Groups differed noticeably on framework scores and location in the state plot, and marginally across state policy antecedents. First, the zone of the state plot characterized by the requirement to cooperate with LEOS entirely circumscribes the group centered on Nebraska. Further, the decision tree sorts laws into this group based on this burden. Indeed, laws in this zone are distinguished by their burden scores. They often include obligations to cooperate with EMS, to remain at the scene, and to provide identification. However, they offer not insubstantial breadth of protection, almost always immunizing any quantity of opioids. We call these laws *Rigorous* as they expect compliance from Good Samaritans and often limit the frequency of immunity but provide meaningful protection. States with Republican legislatures largely adopted Rigorous GSLs. Additionally, this group is associated with less ethnic diversity.

Another group contained entirely within one zone on the state plot is the group we term *Minimal*, which consists entirely of laws offering protection for only enumerated quantities of controlled substances and centers on Oklahoma. This group also includes states with no GSL and Alabama, whose immunity excludes opioids. These states protect the smallest breadth of offenses with minimal strength. They often exclude others at the scene of emergency from immunity. Additionally, while other groups have more exemptions, this group includes Texas, which reserves GSL protection for people with no substance-related criminal history, who are not committing concurrent offenses, who have not previously used the immunity and have not reported a separate overdose in the preceding 18 months. States adopting Minimal laws have large populations, lower educational attainment, and low opioid overdose mortality.

The group surrounding Arkansas is similarly located in the zone for enumerated quantities of controlled substances. These states, indeed, have low overall breadth. However, they offer notably more substantial protections for Good Samaritans, always providing protection from the filing of charges, if not arrest, and extending to the person experiencing the overdose. Many also extend to supervisory conditions such as parole and probation. Hence, we call these *Narrow* laws. Narrow states are comparable to Minimal states in their large populations and low opioid overdose mortality, however their resulting GSL policies are quite distinguishable.

In the middle of the state plot, in the vicinity of Idaho, are the *Moderate* laws. These laws offer middling protections to most people at the scene of an emergency for a modest breadth of offenses. The immunity usually only applies after a Good Samaritan is arrested and often excludes violations of supervisory conditions. Many of these laws are parsimonious in their implementation, lacking many features to evaluate, either extensions or limitations. While they may lack strengths such as immunity violations of parole or probation, they also lack burdens such as cooperation with LEOs. States with Moderate laws exhibit similarly average policy antecedents, with roughly-evenly divided legislatures. However, these states have the highest burden of overdose mortality.

Last, *Strong* laws center on Oregon and are highest along the completion axis. These states protect any quantity of heroin, provide an immunity that either protects against arrest or preempts criminality of the offense, and feature minimal burden or exemption. The exception is Rhode Island, where immunity for oxycodone and fentanyl is unlimited (but not heroin) and the greatest immunity is protection from charges. The breadth of immunized offenses is greatest in these states: both states that protect controlled substance manufacturing are in this group. States

with Strong GSLs are immediately recognizable by their overwhelmingly Democratic legislatures, educated residents, high median income, and extremely small populations.

Discussion

The present study illustrates the immense heterogeneity of these essential harm reduction policies in a two-dimensional feature map. This map separates states immunizing limited quantities of controlled substances from those protecting any mass, arranging those that cover violations of probation from weaker protections, and dividing states with minimal burdens from those that place substantial obligations on Good Samaritans. The overlap among these zones in the configuration underscores the challenge of neatly dividing states by a single feature for evaluation purposes. Instead, we use the proximities among states, in both the GSLI and the state plot, to reduce these laws into five meaningful groups that may be replicated with a simple decision tree: Minimal, Moderate, Narrow, Rigorous, and Strong GSLs.

States with Minimal GSLs warn evaluators to consider the possibility that some laws may be so restrained that they offer effectively no protection at all. While they may offer some immunity in certain circumstances, the laws in states such as Alabama, Oklahoma, and Texas may be so burdensome or so porous that they fail to assuage PWUDs' distrust of first responders.¹⁰ Conversely, Strong laws such as those in Vermont, Delaware, and Hawaii often extend to whole statutory chapters of controlled substance offenses and extensive lists of interactions between offenders and LEOs. These laws consistently prioritize rescuing people experiencing overdoses over criminal penalties. Similarly, Rigorous laws, including those in Iowa, South Carolina, and Utah, ensure that Good Samaritans act in good faith by exhaustively listing requirements when reporting overdoses. These laws emphasize compliance and, by limiting the lifetime use of GSL immunity, treat controlled substance use as aberrant behavior

rather than a chronic illness. Narrow laws in Georgia, Mississippi, and New York, among other states, confer strong protections closely ascribed to controlled substance possession and little else. Last, Moderate laws such as those in New Hampshire, New Mexico, and Washington extend limited protection albeit with few caveats.

The GSL groups are modestly associated with antecedent factors within states, although this relationship is insufficient to reliably predict group membership with supervised learning methods. The most reliable relationship between antecedents and policy is among states adopting Strong laws, which were overwhelmingly passed by Democratic legislatures in small states. This is consistent with traditional political attitudes toward harm reduction, such as those described by Nadelmann and LaSalle.⁹⁵ Small states with more intimate legislatures may have greater opportunity to reach a consensus on transgressive harm reductional policies when combating the opioid epidemic, just as smaller countries have historically demonstrated greater capacity to adapt to other challenges.^{96,97}

Associations between legislative composition and GSL group may guide advocates seeking to amend their own state's law. While Strong laws are passed largely by Democratic legislatures, many of their most expansive features are shared among laws associated with Republican legislatures, namely Rigorous or Narrow laws. For instance, Republican-held West Virginia ratified a Rigorous GSL providing immunity for violations of probation and parole, albeit for Good Samaritans completing SUD treatment. Republican legislators in New Hampshire may have little interest in adopting all of a Strong law's protections, but may consider the compromise illustrated by West Virginia.

Analysts evaluating these laws going forward may find value in using the present taxonomy. These groups demonstrate face validity on the state plot, derive from the full range of

GSLI features, and are reproducible from a small number of policy surveillance features. Employing these groups in statistical models evaluating GSL outcomes, namely opioid overdose mortality, may offer an advantage over previous studies by conserving patterns of implementation features unavailable to prior analyses. While it would be impractical to individually quantify the influence of uncommon provisions, such as Iowa and Texas' lifetime limit on GSL immunity, it may also be a substantial omission to overlook them. Instead, this taxonomy preserves this variance for future modeling by grouping Texas and Iowa among like states based on the proximity of such features.

Additionally, the state and feature plots on which GSL groups are arranged are strongly organized by the breadth, burden, strength, and exemption framework adopted in the construction of the GSLI. This demonstrates the internal validity of these constructs and highlights their utility going forward. In addition to or instead of the present groups, modelers may consider the value of using scores or bins based on these categories while being mindful of their ordinal nature. The close association among breadth and strength provisions as well as burden and exemption provisions in the feature plot suggests they may be consolidated in the future into two metrics, *extension* and *limitation*, that may also have utility.

Limitations and Future Directions

The stated purpose of the present study is to facilitate future evaluations of GSLs by decomposing the diverse array of features into simple groups based on their proximity of features. Indeed, in discussing how these findings may guide advocates, we presuppose that future studies will identify best practices in GSL provisions for which stakeholders may advocate. However, this state plot and the decision tree is derived from the original ratified GSL in each state, many of which have been subsequently amended. The plot and associated groups

reflect proximities among laws that may not have existed simultaneously. We chose to construct the present materials with original laws rather than present laws as many modeling methods, such as difference-in-difference models, focus on symmetrical pre- and post-implementation periods. However, as states amend these laws over time and attitudes regarding harm reduction evolve, patterns in these laws may change. Dimension reduction methods with present laws or with provisions policymakers may consider in the near future may produce different results.

Additionally, the distance matrix gives each variable equal weight. Requiring Good Samaritans to provide identification is treated equivocally with requirements that they complete SUD treatment in determining the law's location on the plot. While future evaluations may benefit from these groups, further research with PWUDs or community stakeholders is necessary to determine which individual provisions are the most salient among affected communities.

Conclusion

911 Good Samaritan Laws have earned increasing scrutiny in the literature as the opioid epidemic compels states to explore novel harm reduction strategies. While preliminary evidence suggests they reduce overdose mortality, the 911 Good Samaritan Law Inventory allows investigators to make more refined evaluations and to identify best practices in implementation that may save more lives. In reducing the complexity of these laws to a small number of groups and scores, this study seeks to scaffold future evaluations and guide further harm reduction advocacy efforts.

Preface to Chapter IV

The preceding chapter teases apart common threads in the ratification of 911 Good Samaritan Laws (GSLs) and arranges them into a taxonomy for further evaluation. The study reveals a modest association between laws in the Strong group and certain sociopolitical factors which distinguish states adopting them: namely, states with Strong laws have a very high percentage of Democratic legislators and are exceptionally small in terms of population. They also tend to be home to wealthier, more educated residents, although the relationship between these variables is not as pronounced.

These factors predict the group of the ratified GSL, but they also raise an unanswered question: regardless of the ultimate group, why do states adopt GSLs at all? After fifteen years, Kansas and Wyoming still refuse to pass such a policy. Why should a GSL be appropriate for New Mexico in 2007, but not an acceptable solution for Texas until 2021?

The following brief analysis evaluates state policy antecedents as predictors of GSL ratification in a survival analysis. These analyses, common in medical and epidemiologic research, model the relationship between predictors and the probability of an entity surviving at each period in time. In the present analysis, a state that “survives” is one that persists without adopting a GSL. Features that contribute substantially to the model are those that predict whether a state will adopt a GSL, indicating why this harm reduction policy may be more suitable for certain states.

Method

A Cox proportional hazards model predicts the likelihood that a state will pass a year without ratifying a GSL (“surviving” without a law) from each state’s income, unemployment, educational attainment, rurality, ethnic diversity, geographic region, logarithm of opioid

overdose mortality, legislative composition and governor's affiliation. These variables are collected per Chapter III (See Appendix), with the addition of governor's affiliation from the National Conference of State Legislatures,⁸⁶ and U.S. Census Bureau region. Percentage variables are multiplied by 100 to enhance interpretability. We test for nonproportional hazards across time and, if necessary, correct for this using time-covariate interactions per instructions by Fox and Weisberg.⁹⁸ Rhode Island was temporarily "resurrected" following the sunset of its GSL in 2015, but this period is excluded from the model. Hazard ratios less than one indicate a decreased risk of "mortality" (passing a GSL), while ratios higher than one reflect factors that increase the likelihood of ratifying a law.

Results

The appendix presents descriptive statistics for the state policy antecedents that contribute to the survival analysis. An initial proportional hazards model exhibited substantial nonproportionality across time, $\chi^2(11, n = 593) = 58, p < .001$. We truncated the data to the years 2011 to 2018, in which 42 of 49 GSLs were adopted, to reduce the confounding influence of time. Additionally, we introduced dummy variables accommodating the interaction between time and the most time-sensitive variables in the model ($\chi^2 > 7$): ethnic diversity, rurality, education, income, and legislative composition.⁹⁸ This ensured proportionality across the whole model, $\chi^2(15, n = 395) = 12.9, p = .61$, and within all predictors (all χ^2 values < 4). Residuals indicated appropriate fit.

Each log increase in opioid mortality increased the hazard of adopting a GSL by 49%, $HR = 1.49, p = .01, 95\% CI [1.08, 2.06]$. Educational attainment, as a percentage, also predicted GSL ratification, $HR = 1.36, p < .001, 95\% CI [1.14, 1.60]$. Notably, Republican governorship decreased the hazard ratio of adoption by 33% compared to Democratic governors, $HR = 0.67, p$

< .05, 95% CI [0.47, 0.94]. Unemployment marginally predicted ratification, $HR = 1.41, p = .06$, 95% CI [0.98, 2.02]. (See Table 8 & Figure 14.)

Table 8. Cox proportional hazard model predicting 911 Good Samaritan Law ratification, 2011 – 2018.

Variable	Hazard Ratio	Estimate	SE	Z (χ^2)	p	95% CI	
Population	1.08	0.08	0.09	0.83	.41	0.90	1.30
NH White	0.95	-0.05	0.03	-1.61	.11	0.90	1.01
NH White/Time Interaction†	1.00	0.00	0.00	1.24	.21	1.00	1.01
Region‡				(1.51)	.68		
Midwest Region	<i>Reference</i>						
Northeast Region	0.75	-0.29	0.27	-1.08	.28	0.44	1.27
Southern Region	0.99	-0.00	0.25	0.00	.99	0.61	1.64
Western Region	0.90	-0.10	0.25	-0.41	.67	0.56	1.47
Rurality	0.98	-0.02	0.04	-0.55	.58	0.91	1.05
Rurality/Time Interaction†	1.00	0.00	0.00	0.59	.55	0.99	1.01
Unemployment	1.41	0.34	0.18	1.86	.06	0.98	2.02
Education*	1.36	0.30	0.09	3.51	<.001	1.14	1.61
Education/Time Interaction†	0.97	-0.03	0.01	-3.08	<.01	0.95	0.99
Democrats in Legislature	1.02	0.01	0.03	0.59	.55	0.97	1.07
Legislature/Time Interaction†	1.00	-0.00	0.00	-0.41	.68	0.99	1.00
Republican Governors*	0.67	-0.41	0.18	-2.31	<.05	0.47	0.94
Opioid Mortality (Logarithm)*	1.49	0.40	0.16	2.44	<.05	1.08	2.06

*Indicates a statistically reliable result.

†Indicates a dummy variable to correct non-proportional hazards over time. These variables are not interpreted.

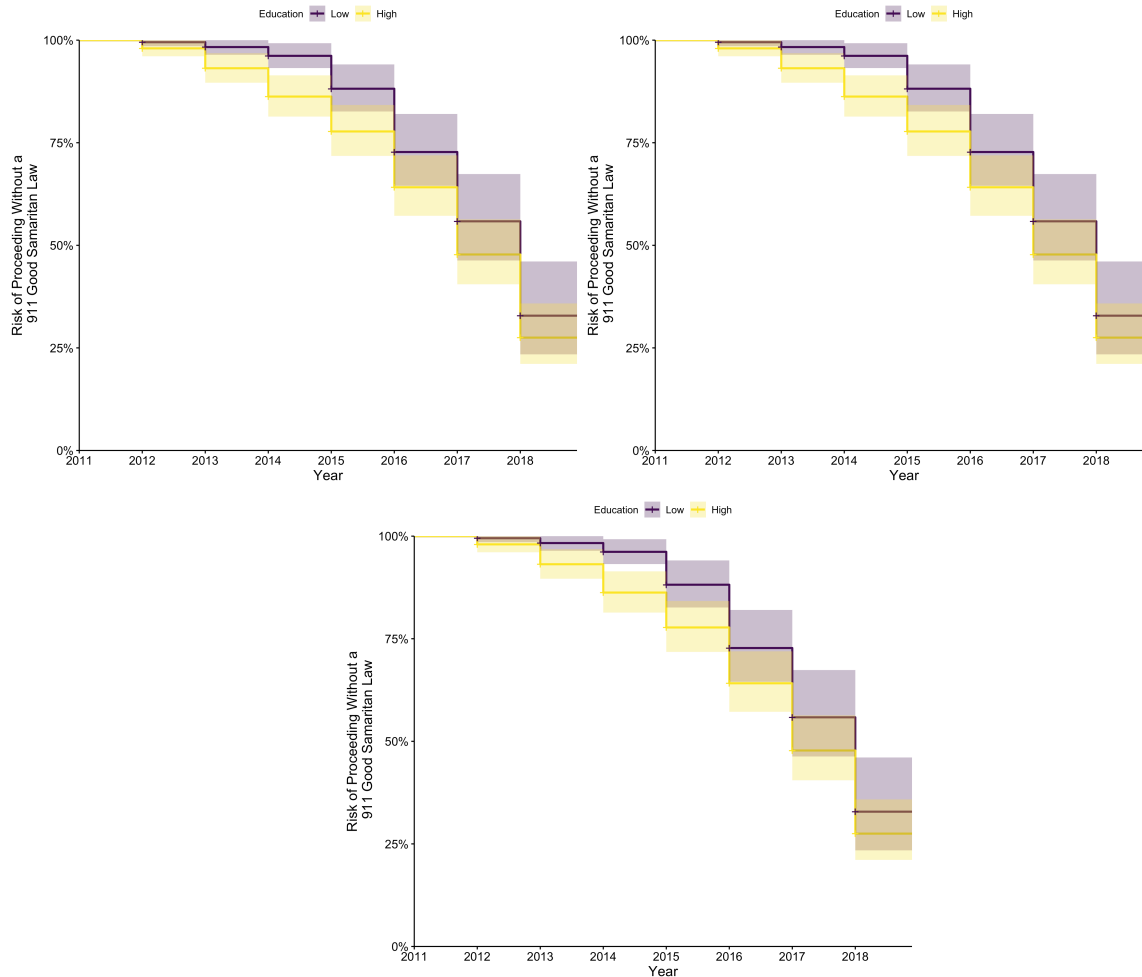
‡ Wald test of significance of categorical variable, evaluated with χ^2 .

Note. Hazard ratios indicate the risk of adopting a 911 Good Samaritan Law (GSL) following an increment of one in the variable. Hazard ratios above one indicate an increase is associated with higher risk of adopting the policy. Analysis reflects years 2011 to 2018, in which 42 states adopted GSLs. Coefficients for non-Hispanic (NH) White population, rurality, unemployment, education, and Democrats in the legislature are modeled as percentages for interpretability.

Discussion

The most influential factors predicting GSL ratification proved to be education, opioid mortality, and governorship. Governorship exhibits the strongest relationship. Republican governors appear to oppose GSLs and likely resist other harm reduction policies. Indeed, in 2015 Republican Governor Greg Abbott vetoed the first GSL to pass the Texas Legislature.⁹⁹ Kansas elected a Democratic governor in 2018, suggesting the state may be overdue for its GSL. Even

Figure 15. State policy antecedents associated with the adoption of 911 Good Samaritan Laws, 2011 – 2018.



Note. Chart indicates the risk of proceeding without adopting a 911 Good Samaritan Law (“surviving”), per Cox proportional hazard models. Overdose mortality and education are divided by median splits for illustrative purposes.

without a Democratic governor, these probabilities are compounding over time and most states with Republican governors do ultimately adopt GSLs.

States with higher average educational attainment are more likely to ratify a GSL, and based on the previous chapter that law is more likely to be a Strong one. Residents with more education may be more receptive to the nuanced message at the heart of harm reduction policy, namely that not all people may be amenable to substance use treatment but they should still be protected from further harm.

Appropriately, opioid overdose mortality reliably predicts the likelihood that a state will adopt a GSL. Even states with Republican governors who treat harm reduction policies with suspicion may be compelled adopt one when overdose mortality poses a sufficient public problem. Interestingly, this factor demonstrated little association with the ultimate shape of that law in the previous chapter.

This brief analysis better illustrates the relationship between state policy antecedents and harm reduction policy. However, the previous chapter is constrained by space and the nonmetric motif. (Proportional hazards models are semiparametric.) Together, these studies illustrate the relationship between the state environments (including the socioeconomic factors), the state policymaking process (legislators and the governor), and the resulting policy as described by the Legal Epidemiologic Framework. (See Figure 3.) Future analyses may apply this model to other harm reduction policies such as naloxone access laws or prescription drug monitoring programs to determine if all harm reduction policy is driven by similar antecedents, or if certain policies are more strongly associated with different factors.

The preceding analyses not only reduced the GSL Inventory's heterogenous data into a small number of GSL groups for evaluation purposes, but in doing so revealed commonalities

and distinctions that illuminate the underlying philosophy of harm reduction that characterize each state. The next chapter contains the culminating evaluation of GSLs, associating these laws with downstream overdose mortality.

IV. EVALUATION OF 911 GOOD SAMARITAN LAWS

The Best Samaritan: Ratifying Strong 911 Good Samaritan Laws Temporarily Reduces

Overdose Mortality

Prepared for the International Journal of Drug Policy

Abstract

Background: 911 Good Samaritan Laws (GSLs) extend limited criminal immunity for people reporting overdose emergencies. Previous research divided these laws into five groups based on their common provisions. We use these holistic groups to identify best practices in GSL implementation associated with reductions in overdose mortality.

Methods: We conducted a segmented panel Poisson regression to evaluate changes in both all overdose mortality and opioid mortality in the years following ratification of GSLs of any group. This segmented model accounts for changes in average mortality and changes in trend over time, allowing for a longitudinal evaluation.

Results: GSLs in the Strong group reliably reduced opioid mortality, $\beta = -0.22$, $p < .05$, 95% CI [-0.39, -0.04]. However, mortality subsequently increased every year until the effect dissipates, $\beta = 0.06$, $p < .05$, 95% CI [0.1., 0.10]. Additionally, ratifying Rigorous GSLs predicted an increase in average all-cause overdose mortality, $\beta = 0.09$, $p < .05$, 95% CI [0.02, 0.17].

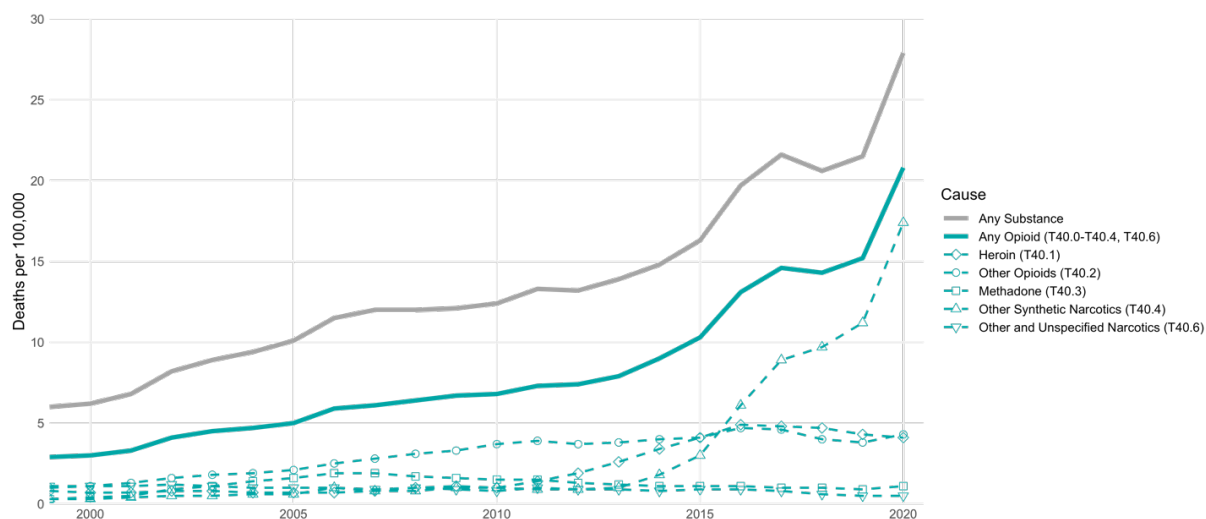
Conclusion: States seeking to reduce overdose mortality should amend their GSLs to include provisions characteristic of Strong laws, by ensuring protection from arrest, extending immunity to violations of supervisory conditions, and removing exceptions for immunity. However, continued outreach efforts are necessary to sustain the lifesaving effects of GSLs. Further, laws stigmatizing substance use may in fact inflate overdose mortality.

Keywords: Legal epidemiology; Harm reduction; Policy evaluation; Good Samaritan

The Best Samaritan: Ratifying Strong 911 Good Samaritan Laws Temporarily Reduces Overdose Mortality

The COVID-19 pandemic precipitated the largest ever year-over-year increase in overdose mortality in the United States, which had already reached crisis levels. (See Figure 16.) The federalist structure of U.S. government places the onus of harm reduction policy on individual states, each of which must craft political solutions within the constraints of their constituents' values that address their jurisdiction's unique needs. 911 Good Samaritan Laws (GSLs) are one such policy, granting criminal immunity to people reporting drug overdoses. These laws take a variety of forms across states, differing in magnitude and nature of protection, but evaluators frequently treat them as equivocal^{8,9} or only model effects of single provisions.^{6,7} Rising overdose rates compel researchers to identify best practices within these laws that most effectively staunch downstream mortality.

Figure 16. Overdose mortality by substance, 1999 – 2020.



Note. Deaths attributed to overdoses, listing underlying cause as International Classification of Diseases, 10th Edition (ICD-10) codes: X40 – X44, accidental poisonings; X60 – X64, intentional self-harm; X85, assault by drugs; and Y10-Y14, events of undetermined intent. ICD-10 codes T40.0 to T40.4 and T40.6 reflect deaths in which opioids are listed as contributing causes. T40.2, Other Opioids, includes natural opioid analgesics such as morphine and codeine. T40.4, Other Synthetic Narcotics, includes synthetic analgesics such as fentanyl and tramadol.¹

to attend to the needs of their neighbors without regard to law or custom. GSLs, deriving their name from this example, extend limited legal immunity to people reporting emergency overdoses in order to overcome their concerns about potential criminal liability.

Currently, residents of 48 states and the District of Columbia are protected by GSLs, covering 99% of the U.S. population.^{74,82} A plurality of studies evaluating GSLs associate them with a modest reduction in overdoses in the following years. McClellan and colleagues conducted the first such analysis for the years 2000 to 2014, associating GSL ratification with a 15% decrease in opioid overdose mortality in the following year.⁷ They found no reliable change when modeling the subset of GSLs that offer protection from arrest or those providing immunity from violations of probation or parole.

Rees and colleagues conducted a similar analysis, although they entered both GSLs and naloxone access laws (NALs) simultaneously into a Poisson model.⁸ GSLs resulted in a statistically unreliable decrease of -0.13 in the logarithm of opioid overdose mortality between 1999 and 2014. Atkins and coauthors also could not substantiate GSL effectiveness.⁹ After controlling for prescription drug monitoring programs, pain management policies, medical marijuana laws, as well as sociodemographic covariates, the ratification of GSLs predicted a statistically unreliable decrease of -0.09 in the logarithm of opioid overdose mortality.

Most recently, Hamilton and colleagues compared the effects of GSLs offering protection from arrest to those offering subsequent protections (such as from charge or prosecution) in a Bayesian spatiotemporal Poisson regression.⁶ The hierarchical model predicted county overdoses while controlling for state and county sociodemographic covariates and state harm reduction policies. This model estimated a 10% reduction in the risk ratio of overdose mortality two years following enactment of a GSL providing protection from arrest in combination with a NAL.

These analyses offer preliminary, although not unanimous, evidence that states adopting GSLs reduce overdose mortality. However, important questions remain. First, these analyses employ difference-in-difference (DID) models, in which the effect of ratifying a GSL is reduced to a single, instantaneous change in downstream mortality. This assumes the effect of the policy change is uniform and consistent across the modeled timespan, with no acceleration as the intervention is disseminated. However, studies to date suggest few PWUDs recognize their potential criminal immunities. Estimates of baseline knowledge range from 20 to 45%.^{12,14,45} Fortunately, following instruction, this rate rises to approximately 75%.^{12,46} GSL knowledge likely takes time to communicate through PWUD communities. As such, modeling policy interventions as single changes in overall mortality, as is the case in traditional DID models, may obscure important longitudinal trends.

Additionally, recent studies largely treat GSLs as interchangeable, averaging across salient distinctions in their implementation. While Hamilton and colleagues compare GSLs as a function of protection for arrest, this analysis divides laws coarsely. In Illinois, a Good Samaritan is immune not only from arrest for possession of controlled substances, but also for drug-induced homicide or even drug manufacturing within certain limits. In neighboring Indiana, the GSL only protects possession of controlled substances, and only for a Good Samaritan who administers naloxone to the person experiencing the overdose.⁸² However, in dividing laws by protection from arrest, analyses model the effect of these laws equivocally. Previous research is limited by the available policy surveillance databases for GSLs, namely the Prescription Drug Abuse Policy System (PDAPS).⁷³ PDAPS has inspired most legal epidemiologic evaluation of GSLs to date, but it simplifies these laws into a small number of variables (including protection from arrest). While this reduction method has promoted a wealth of research, it irons over important variation.

Rather than evaluate GSLs across *a priori* criteria, the 911 Good Samaritan Law Inventory (GSLI) inductively catalogs all GSL provisions pertaining to controlled substances.⁸² The GSLI reflects the immense heterogeneity in design and implementation exhibited by these laws. This policy surveillance dataset categorizes provisions into four categories based on an evaluative framework: *breadth* of immunized offenses; *burden* placed on Good Samaritans to receive or retain immunity; the *strength* of the immunity in the criminal justice system; and any *exemption* that may deny a Good Samaritan immunity based on their past behavior or present circumstances. Additionally, the provisions collated by the GSLI may be used as dimensions to sort these laws into clusters based on their relative proximity. In doing so, Reader et al. propose a taxonomy of GSLs composed of five groups.¹⁰⁵ *Minimal* laws, which may be difficult to distinguish from having no law at all, only immunize persons in possession of a limited quantity of opioids, provide weak protections, and frequently exempt people with chronic substance use disorder (SUD). *Moderate* laws extend only limited protections but frequently lack exemptions or substantial burdens that may impede Good Samaritans from reporting overdoses. *Narrow* laws offer substantial and accessible immunity for possession of controlled substances, but few other offenses. Laws in the *Rigorous* group also provide extensive protection, but only in combination with notable burdens on the part of the reporter and limitations on the frequency that immunity may be received. Last, *Strong* laws are characterized by immense strength of immunity for a breadth of offenses with minimal burdens and few exemptions. (See Table 9.)

Table 9. Description of 911 Good Samaritan Law groups and group membership for each state’s initial ratified law.

Law Group	Description	Members at Ratification
Minimal	Protection limited to people in possession of measured quantities of opioids or excludes opioids. Immunity often applies only to prosecution and omits the person experiencing the overdose. Frequently require substantial compliance with LEOs. Limits on lifetime use of immunity or exclusions for prior criminal history exempt people with chronic SUD.	Alabama, California, Indiana, Maryland, Michigan, Oklahoma, Texas
Moderate	Most immunize unlimited quantities of opioids, but only provide protection from prosecution. Very few obligations on reporter (e.g., no requirement that Good Samaritans cooperate with law enforcement). Simple in implementation, with few features to evaluate.	Arizona, Connecticut, Florida, Idaho, Kentucky, Louisiana, Massachusetts, Maine, New Hampshire, New Mexico, North Carolina, Washington, Wisconsin
Narrow	Protect measured quantities of opioids and usually limited to simple possession offenses, but offer substantial immunity (protection from charge, arrest, or greater) and extend to violations of supervisory conditions such as probation, parole, and even restraining orders.	Arkansas, Georgia, Illinois, Minnesota, Missouri, Mississippi, Nevada, New York, Ohio
Rigorous	Require compliance, including cooperation with law enforcement and emergency medicine, providing identification, and remaining at the scene of the emergency. Immunize against simple possession offenses for unlimited quantities of opioids.	Alaska, Colorado, Iowa, Nebraska, North Dakota, Pennsylvania, South Carolina, South Dakota, Utah, Virginia, West Virginia
Strong	Laws offering the most substantial protections, extending to possession of unlimited quantities of opioids and to related offenses such as delivery. Protect Good Samaritans during a variety of interactions in the criminal justice system, including violations of probation, parole, and civil asset forfeiture.	District of Columbia, Delaware, Hawaii, Montana, New Jersey, Oregon, Rhode Island, Tennessee, Vermont

Note. Adapted from a previous dimension-reduction analysis. Membership reflects the first 911 Good Samaritan Law (GSL) adopted by each state. Some GSL amendments are sufficient to result in a change of group membership.

Importantly, these groups are based on the proximity among laws across all features, rather than dividing laws coarsely by single provisions. For instance, while an analysis dividing states based on protection from arrest would group California, Connecticut, Georgia, Nebraska, and Vermont together based on this provision alone, the taxonomic approach suggests that each of these state laws in fact belongs to a separate group based on a comprehensive consideration of their features, such as the quantity of opioids a person may possess while retaining protection, proscriptions based on their previous history or behavior during the emergency, or immunity for supervisory conditions such as parole or probation. (These groups are Minimal, Moderate, Narrow, Rigorous, and Strong, respectively.) This information was simply not available to researchers prior to the introduction of the GSLI.

The present legal epidemiologic evaluation builds upon existing studies by considering the differential effects of these holistic GSL groups, rather than dividing laws by single features. Additionally, we expand upon DID analyses by modeling longitudinal changes in overdose mortality. The analysis consists of a segmented panel regression evaluating both initial changes in the overall level of overdose mortality as well as potential changes in trend, while controlling for important sociodemographic and policy covariates. If particular GSL groups are reliably associated with reductions in overdose mortality, the provisions that characterize these groups may serve as best practices for other states amending their laws or adopting GSLs *de novo*.

Method

We employ a segmented panel Poisson regression predicting overdose mortality following ratification of GSLs. The segmented panel model partitions the effects of GSL adoption into two components: one coefficient representing a single change in intercept following ratification of the law, and one accounting for a gradual change in the rate of mortality

over time. Further, we model the effect of adopting GSLs differentially by group, attributing a separate intercept and slope to each.

In traditional DID studies, entities are measured over time and those adopting a policy are indicated by a dummy variable. Entities that do not adopt the policy serve as controls. Incorporating fixed effects for entities and time, thus accommodating unmeasured variables, allows us to even compare entities that adopt policies at different points in time.^{106,107} So long as the entities demonstrate parallel trends in the outcome prior to the intervention, post-intervention differences in the outcome for intervening entities may be attributable to the policy change. However, as these differences are represented by a dichotomous dummy variable indicating the average effect for the entire post-intervention timespan, this method does not reveal potential time-sensitive changes in the outcome.

Interrupted time-series (ITS) analyses, alternatively, decompose post-intervention effects into two separate dummy variables.¹⁰⁸ The first, often called the intercept, represents a single change in the average value of the outcome following the intervention and may be compared to the DID estimate. This variable is dichotomous. The second, the slope, increments by one unit every period, starting in the period of the intervention. This variable detects any change in the rate of the outcome, such as an acceleration or deceleration following the intervention, that may not be detected by traditional DID analyses.

The present analysis employs a segmented panel regression incorporating the intercept and slope model of ITSs. The intercept variable captures effects reflected by previous DID models, while the slope variable will detect longitudinal changes in the rate of overdose mortality following GSL adoption. Additionally, rather than divide laws by single features, we model the data with group-specific intercepts and slopes. (See Table 10.)

Table 10. Example of data structure for segmented panel Poisson regression evaluating overdose mortality following 911 Good Samaritan Law (GSL) ratification.

Panel Variables		Outcome		Dummy variables for segmentation					
Year	State	Opioid Overdose Mortality	Covariates	GSL Group (Intercept)	Minimal (Slope)	Moderate (Slope)	Narrow (Slope)	Rigorous (Slope)	Strong (Slope)
2013	Alabama	3.44	51.4%	0	0	0	0	0	0
2014	Alabama	5.57	74.9%	0	0	0	0	0	0
2015	Alabama	5.81	76.5%	Minimal	1	0	0	0	0
2016	Alabama	7.05	28.8%	Minimal	2	0	0	0	0
2017	Alabama	8.65	5.7%	Minimal	3	0	0	0	0
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2013	Alaska	9.35	38.5%	0	0	0	0	0	0
2014	Alaska	10.31	35.9%	Rigorous	0	0	0	1	0
2015	Alaska	11.65	50.0%	Rigorous	0	0	0	2	0
2016	Alaska	12.66	53.9%	Rigorous	0	0	0	3	0
. .									
2015	Massachusetts	22.80	34.9%	Moderate	0	4	0	0	0
2016	Massachusetts	29.15	61.4%	Moderate	0	5	0	0	0
2017	Massachusetts	27.87	18.0%	Moderate	0	6	0	0	0
2018	Massachusetts	28.91	32.3%	Strong	0	0	0	0	1
2019	Massachusetts	28.56	31.7%	Strong	0	0	0	0	2
2020	Massachusetts	29.96	0.0%	Strong	0	0	0	0	3
. .									

Note. Among the dummy variables, GSL Group is entered as a categorical variable and accommodates separate intercepts in the outcome variable for each group. Each slope variable detects changes in the rate of change of overdose mortality following ratification of that law. If a state law is amended sufficiently to change groups over time, the intercept for that state changes and the slope is reset, per the example of Massachusetts. Covariates include logged population; percentage of male, white, rural, and unemployed residents; educational attainment; median income in 2021 dollars; and a state naloxone access law (but are simulated for this example).

Data

Prior GSL evaluations provide models for the selection of covariates. The analysis includes population; males and non-Hispanic white residents as percentages;¹ residents with a bachelor's degree or higher educational attainment age 26 and over, as well as those living in rural areas;⁷⁴ median income in 2021 dollars;⁷⁴ and unemployment as a percentage of total residents.⁸⁵

Recent studies have included a variety of drug policy covariates, including prescription drug monitoring programs and medical marijuana laws. However, considering the lack of consistent evidence for a relationship between these policies and downstream opioid overdose mortality,^{109–113} the present analysis only includes naloxone access laws (NALs) as a dichotomous indicator.¹¹⁴

Overdose mortality per 100,000 persons serves as the primary outcome measure.¹ We generate separate models for all overdoses and for opioid overdoses. We use deaths listing International Classification of Diseases, 10th edition (ICD-10), codes X40 – X44 (accidental overdose), X60 – X64 (self-harm), X85 (assault), and Y10 – Y14 (undetermined intent) as the underlying cause. Opioid overdoses specifically list ICD-10 codes T40.0 – T40.4 and T40.6, narcotics excluding cocaine, as contributing causes. We collected all data from years 1999 to 2020 where possible. However, to avoid over-specifying the model to years without GSLs, we constrain the analysis to the years 2013 to 2020.

911 Good Samaritan Law Groups

GSL groups derive from a partition-around-medoids analysis of rank-order distances among originally-ratified GSLs across all states in the GSLI.¹⁰⁵ As such, the clustering is based on the overall similarity of all GSL provisions rather than any single dimension or feature,

creating more holistic groups. Further, a decision tree categorizing states into groups based on their most salient provisions identifies states amending their laws sufficiently to change groups over time.

Model Specification

As the dependent variable is a rate, we construct a Poisson regression. Multicollinearity among variables is assessed using the variance inflation factor. To determine whether to model entities with fixed or random effects, we consider the results of a Hausman test comparing both models. The Levin-Lin-Chu unit root test evaluates the stationarity of the variables. Robust standard errors clustered by state determine the significance of any coefficient.

We construct each model twice, first predicting all overdoses and then opioid overdoses. In Model 1 we conduct a traditional DID, associating the ratification of any GSL with mortality. Model 2 evaluates the adoption of laws of different GSL groups with mortality. Last, Model 3 employs the segmented regression method to evaluate GSL groups longitudinally. As a measure of sensitivity, we use a simple leave-one-out procedure, determining whether any individual states may be exerting undue influence over the model.

Results

By the year 2020, all states except Kansas, Texas, and Wyoming had adopted a GSL. Table 11 features descriptive information for continuous variables in the following models.

911 Good Samaritan Law Groups

The original cluster analysis of ratified GSLs sorted these laws into five groups: Minimal laws ($n = 6$), Moderate ($n = 13$), Narrow ($n = 9$), Rigorous ($n = 11$), and Strong ($n = 9$, including the District of Columbia). By 2020, Minimal laws ($n = 5$) and Moderate laws ($n = 10$) decreased in membership, while Narrow ($n = 10$) and Strong laws ($n = 12$) increased and the number of

Table 11. Sociodemographic variables and overdose mortality for all states and the District of Columbia, 2013 – 2020.

Variable	Mean			Standard Deviation		
	Overall	2013	2020	Overall	Between States	Within States
Population (Millions)	6.3	6.2	6.5	7.17	7.23	0.20
Male Residents	49.4%	49.4%	49.4%	0.8%	0.8%	0.05%
Non-Hispanic White Residents	69.6%	70.8%	68.6%	15.9%	16.0%	0.8%
Rural Residents	25.3%	25.5%	25.2%	14.6%	14.7%	0.2%
Educational Attainment	31.2%	29.4%	32.5%	6.4%	6.3%	1.2%
Median Income (2021 Dollars)	\$67,724	\$63,276	\$71,866	\$11,615	\$10,667	\$4,805
Drug Overdoses Per 100,000	20.50	14.7	28.7	9.8	8.0	5.6
Opioids Overdoses Per 100,000	14.2	8.9	21.5	9.4	7.8	5.2

Rigorous states did not change. Texas adopted a Minimal law in 2021, outside the range of this analysis.

Modeling

Among states with a ratified GSL, the average age of the law by 2020 was 6.7 years. The variance inflation factor indicated no significant collinearity among predictors (all values < 3.1). The Hausman test supported the use of fixed-effects for entities ($p < .001$). Time-invariant variables in fixed effects models are indistinguishable from an entity’s fixed effects, so in the present analysis states which did not ratify GSLs do not contribute to the discrimination of policy-associated effects. However, as they contribute to the estimation of covariates, we retain them in the models.

As Poisson models predict the logarithm of dependent variables, we log-transformed overdoses and opioid overdoses to test for stationarity. All variables demonstrated stationarity in the Levin-Lin-Chu test ($p < .001$) except age, unemployment, and general overdose mortality. We include overdose mortality in the model as the results is marginal ($p = .06$) and stationarity tests are commonly underpowered in short panels;¹¹⁵ and it demonstrated stationarity after including a linear trend for time, which would be accommodated in the model. When charted

across time, age and unemployment exhibited notable non-stationarity that could not be corrected by detrending or taking first-order differences. As such, these variables are removed.

Tables 12 and 13 summarize the models predicting all overdose mortality and opioid overdose mortality, respectively. Model 1 evaluated the ratification of GSLs dichotomously using the traditional DID method. Neither general nor opioid overdose mortality differed as a function of GSL policy.

Model 2 evaluated GSLs by group, associating each group with its own average change in mortality. Unexpectedly, ratifying a Minimal GSL predicted a decrease of -0.17 in all overdose mortality, $p < .05$, 95% CI [-0.33, -0.01]. However, when considering opioid mortality, Strong laws demonstrated a comparable albeit statistically marginal decrease, $\beta = -0.14$, $p = .09$, 95% CI [-0.30, 0.01]. Additionally, NAL ratification corresponded to -0.10 decrease in log overdose mortality, $p = .05$, 95% CI [-0.19, 0], an effect which was not conserved when considering only opioid overdoses. While research associates NALs with decreases in opioid mortality more strongly than general overdose mortality,¹¹⁶ the present analysis is not designed to estimate the effect of NALs and we hesitate to draw conclusions from these results.

Table 12. Poisson regressions with fixed effects for state and year predicting any-cause overdose mortality, 2013 – 2020.

Model & Variable	Estimate	SE[†]	Z (χ^2)	p	95% CI
Model 1 – All overdoses					
Population (Logarithm)	-1.39	1.10	-1.27	0.205	[-3.54, 0.76]
Male Residents	-32.94	27.43	-1.20	0.230	[-86.70, 20.83]
NH White Residents	4.57	3.75	1.22	0.224	[-2.79, 11.92]
Rurality	8.77	11.83	0.74	0.458	[-14.41, 31.95]
Education*	5.84	2.51	2.33	0.020	[0.92, 10.77]
Median Income (Thousands)	0.005	0.003	1.74	0.081	[-0.00005, 0.01]
NALs	-0.08	0.05	-1.53	0.127	[-0.19, 0.02]
Any GSL	-0.02	0.05	-0.35	0.723	[-0.11, 0.07]
Model 2 – All overdoses					
Population (Logarithm)	-1.48	1.08	-1.36	0.17	[-3.60, 0.64]
Male Residents	-34.50	25.74	-1.34	0.18	[-84.94, 15.95]
NH White Residents	4.57	3.79	1.21	0.23	[-2.85, 11.99]
Rurality	10.30	12.46	0.83	0.41	[-14.12, 34.73]
Education*	5.77	2.39	2.42	0.02	[1.09, 10.44]
Median Income (Thousands)	0.005	0.003	1.66	0.10	[-0.0008, 0.01]
NALs*	-0.10	0.05	-1.96	0.05	[-0.19, 0.00]
<i>GSL Group[‡]</i>			(9.51)	0.09	
Minimal*	-0.17	0.08	-2.14	0.03	[-0.33, -0.01]
Moderate	-0.01	0.05	-0.17	0.86	[-0.11, 0.09]
Narrow	0.03	0.05	0.52	0.61	[-0.08, 0.14]
Rigorous	0.06	0.05	1.19	0.24	[-0.04, 0.17]
Strong	-0.05	0.06	-0.75	0.46	[-0.17, 0.08]
Model 3 – All overdoses					
Population (Logarithm)	-1.57	0.96	-1.64	0.10	[-3.45, 0.31]
Male Residents	-28.98	24.21	-1.20	0.23	[-76.43, 18.47]
NH White Residents	3.01	3.16	0.95	0.34	[-3.18, 9.21]
Rurality	-1.07	9.64	-0.11	0.91	[-19.96, 17.82]
Education	4.48	2.39	1.88	0.06	[-0.20, 9.16]
Median Income (Thousands)	0.002	0.003	0.92	0.36	[-0.003, 0.008]
NALs	-0.08	0.04	-1.83	0.07	[-0.17, 0.01]
<i>GSL Intercept[‡]</i>			(21.56)	<0.01	
Minimal	-0.16	0.10	-1.70	0.09	[-0.35, 0.03]
Moderate	-0.01	0.07	-0.10	0.92	[-0.15, 0.14]
Narrow	0.07	0.06	1.14	0.25	[-0.05, 0.18]
Rigorous*	0.09	0.04	2.40	0.02	[0.02, 0.17]
Strong*	-0.14	0.07	-2.05	0.04	[-0.27, -0.01]
<i>GSL Slope[‡]</i>			(12.55)	0.03	
Minimal	-0.00	0.02	-0.09	0.93	[-0.03, 0.03]
Moderate	-0.00	0.01	-0.07	0.95	[-0.03, 0.02]
Narrow	-0.01	0.01	-0.74	0.46	[-0.04, 0.02]
Rigorous	-0.01	0.02	-0.53	0.60	[-0.04, 0.03]
Strong*	0.04	0.02	2.49	0.01	[0.01, 0.07]

Note. 911 Good Samaritan Law (GSL); Non-Hispanic White (NH White).

* Indicates statistically reliable results ($p < .05$).

† Robust standard errors clustered at the state level.

‡ Wald tests of the significance of categorical variables, evaluated with χ^2

Table 13. Poisson regressions with fixed effects for state and year predicting opioid overdose mortality, 2013 – 2020.

Model & Variable	Estimate	SE[†]	Z (χ^2)	p	95% CI
Model 1 – Opioid Overdoses					
Population (Logarithm)	-1.20	1.63	-0.74	0.46	[-4.40, 1.99]
Male Residents	-59.30	45.34	-1.31	0.19	[-148.17, 29.57]
NH White Residents	5.50	3.76	1.46	0.14	[-1.88, 12.88]
Rurality	12.04	18.64	0.65	0.52	[-24.50, 48.58]
Educational Attainment	7.18	4.00	1.79	0.07	[-0.66, 15.02]
Median Income (Thousands)	0.005	0.003	1.71	0.09	[-0.0008, 0.01]
NALs	-0.03	0.07	-0.49	0.63	[-0.18, 0.11]
Any GSL	-0.06	0.06	-0.99	0.32	[-0.17, 0.06]
Model 2 – Opioid Overdoses					
Population (Logarithm)	-1.33	1.62	-0.82	0.41	[-4.50, 1.85]
Male Residents	-59.22	45.97	-1.29	0.20	[-149.31, 30.88]
NH White Residents	5.18	3.91	1.33	0.19	[-2.47, 12.84]
Rurality	13.05	19.03	0.69	0.49	[-24.25, 50.35]
Education	7.28	3.85	1.89	0.06	[-0.28, 14.83]
Median Income (Thousands)	0.006	0.003	1.82	0.07	[-0.0004, 0.01]
NALs	-0.05	0.07	-0.74	0.46	[-0.18, 0.08]
<i>GSL Group</i> [‡]			(4.44)	0.49	
Minimal	-0.18	0.18	-1.01	0.31	[-0.53, 0.17]
Moderate	-0.04	0.07	-0.63	0.53	[-0.18, 0.09]
Narrow	0.00	0.08	0.05	0.96	[-0.14, 0.15]
Rigorous	-0.03	0.07	-0.35	0.73	[-0.17, 0.12]
Strong	-0.14	0.08	-1.68	0.09	[-0.30, 0.02]
Model 3 – Opioid Overdoses					
Population (Logarithm)	-1.48	1.49	-0.99	0.32	[-4.40, 1.44]
Male Residents	-61.05	43.05	-1.42	0.16	[-145.43, 23.32]
NH White Residents	2.79	3.94	0.71	0.48	[-4.94, 10.51]
Rurality	-1.50	15.53	-0.10	0.92	[-31.95, 28.94]
Education	5.83	3.57	1.63	0.10	[-1.18, 12.83]
Median Income	0.004	0.003	1.10	0.27	[-0.003, 0.01]
NALs	-0.04	0.06	-0.71	0.48	[-0.15, 0.07]
<i>GSL Intercept</i> [‡]			(10.42)	0.06	
Minimal	-0.37	0.23	-1.59	0.11	[-0.83, 0.09]
Moderate	-0.01	0.10	-0.11	0.91	[-0.20, 0.18]
Narrow	0.08	0.08	1.06	0.29	[-0.07, 0.23]
Rigorous	0.00	0.07	0.01	0.99	[-0.13, 0.13]
Strong*	-0.21	0.09	-2.33	0.02	[-0.39, -0.03]
<i>GSL Slope</i> [‡]			(9.88)	0.08	
Minimal	0.06	0.04	1.62	0.11	[-0.01, 0.13]
Moderate	-0.00	0.02	-0.21	0.83	[-0.04, 0.03]
Narrow	-0.01	0.02	-0.64	0.52	[-0.05, 0.03]
Rigorous	0.00	0.03	0.01	0.99	[-0.06, 0.06]
Strong*	0.05	0.02	2.14	0.03	[0.00, 0.10]

Note. 911 Good Samaritan Law (GSL); Non-Hispanic White (NH White).

* Indicates statistically reliable results ($p < .05$).

† Robust standard errors clustered at the state level.

‡ Wald tests of the significance of categorical variables, evaluated with χ^2

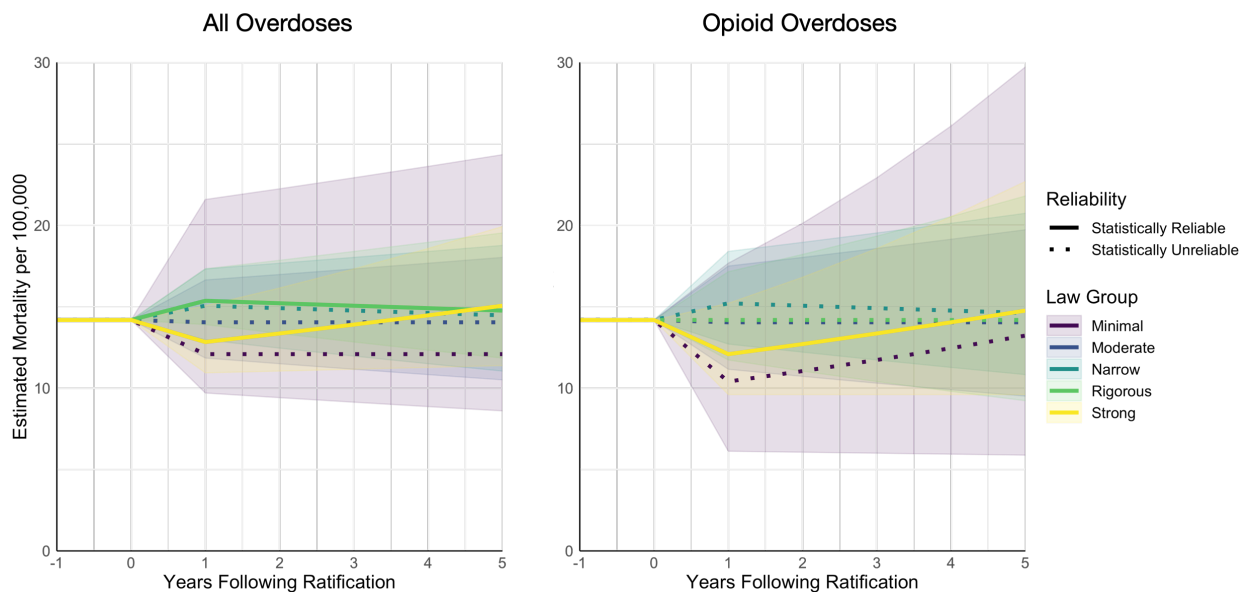
Model 3 includes coefficients for changes in both intercept and slope in mortality, for each group, following GSL ratification. States ratifying Strong GSLs experienced decrease of -0.14 in general overdose mortality, $p < .05$, 95% CI [-0.27, -0.01], and a separate slope increase of 0.04, $p < .05$, 95% CI [0.01, 0.07]. Conversely, Rigorous GSLs demonstrated an increase in intercept, $\beta = 0.09$, $p = .02$, 95% CI [0.02, 0.17], and no change in slope. Opioid overdoses exhibited the same pattern. Among states with Strong laws, opioid mortality decreased by -0.21, $p < .05$, 95% CI [-0.39, -0.03], but subsequently rose by 0.05 per year, $p < .05$, 95% CI [0, 0.10]. Further, Minimal laws demonstrated a comparable trend, with a marginal decrease following ratification, $\beta = -0.37$, $p = .11$, 95% CI [-0.83, 0.09], followed by a recursion to the mean in subsequent years, $\beta = 0.06$, $p = .11$, 95% CI [-0.001, 0.13]. Rigorous laws did not exhibit a relationship with opioid overdose mortality. (See Figure 17.)

Sensitivity

While we anticipated Strong laws to predict a decrease in overdose mortality, the unexpected effect of Minimal laws increases the importance of sensitivity testing. We conducted the leave-one-out analysis and examined estimates for Model 3 predicting, first, general overdose mortality, and next opioid overdose mortality. (See Figure 18.) While 11 states, when removed, attenuated the reduction in overdose mortality among Strong laws to statistical unreliability, the estimate remained consistent ($\beta \leq -.09$). The increase observed following Rigorous laws also remained consistent except when Alabama or Utah were removed, with minimal impact on the estimate. The reduction associated with Minimal laws, on the other hand, ranged from -0.05 to -0.25 depending on which states were excluded (Oklahoma and Michigan, respectively, for these values).

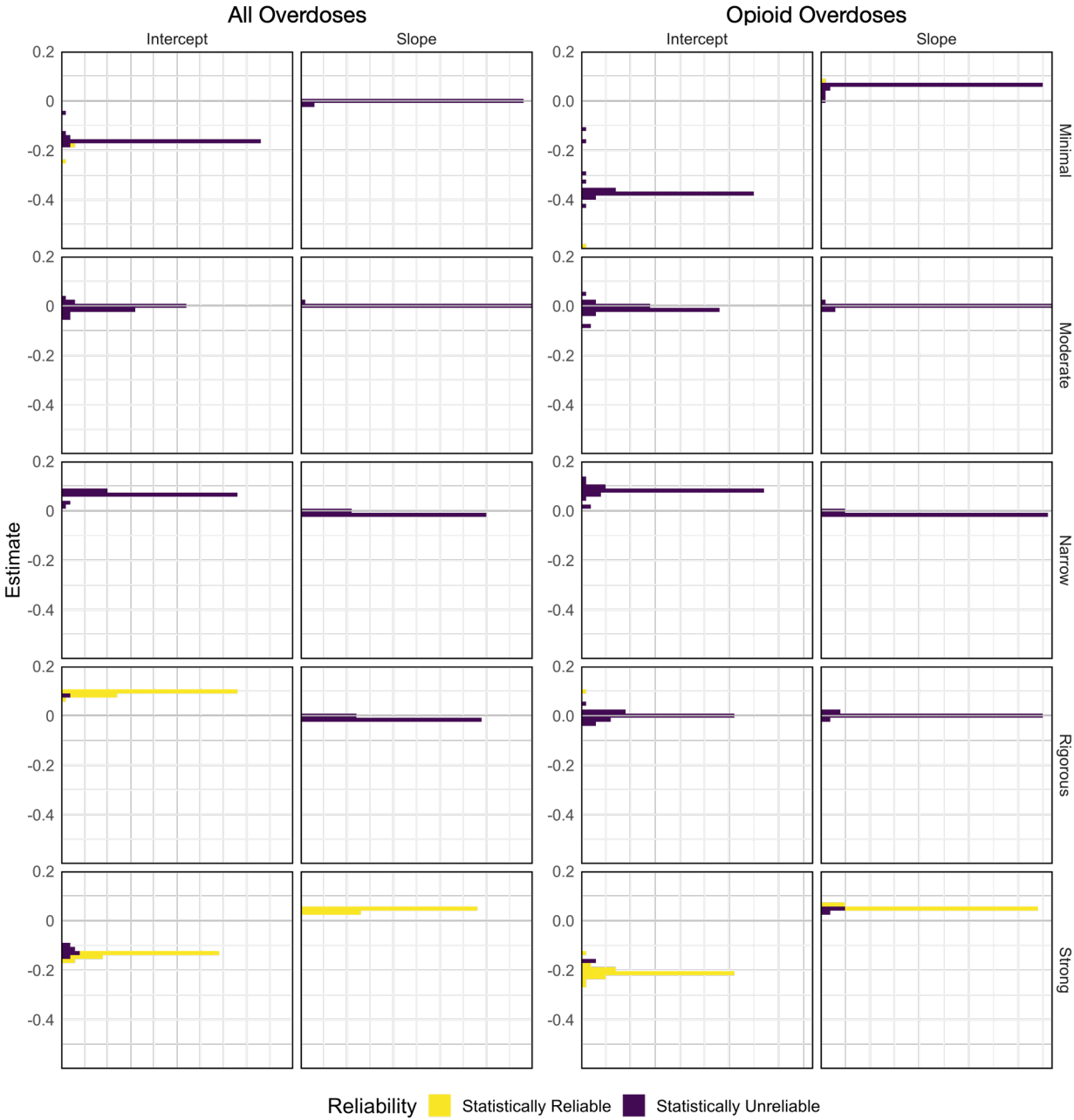
In examining the sensitivity of estimates regarding opioid overdose mortality, Strong laws again remained reliable. Removing Arizona, Florida, or New Jersey diminished the statistical reliability but had little impact on the estimate of the intercept change. Removing Missouri increased the intercept associated with Rigorous laws to 0.09, although this notably exceeded most estimates. Minimal laws stretched from -0.11 to -0.59 after removing Oklahoma or Michigan, respectively (both states with Minimal laws).

Figure 17. Estimated changes in mortality following ratification of 911 Good Samaritan Laws.



Note. Chart depicts estimated changes in mortality for a hypothetical state with constant covariates and a pre-ratification overdose mortality rate of 14.17 per 100,00. (Compare to Alabama, 2018.) Lines indicate estimates while shaded regions represent the sum of upper and lower 95% confidence intervals for the intercept (estimated average change in mortality following ratification) and slope (estimated change in rate of increase in mortality). Ratifying laws in the Strong group predicted a decrease in average mortality followed by an increase in the rate of change, returning to expected levels without intervention. Laws in the Rigorous group are associated with a single increase in average all-cause overdose mortality.

Figure 18. Results of leave-one-out sensitivity analysis for Model 3 results.



Note. Sensitivity testing was conducted with a leave-one-out-procedure, in which Model 3 was conducted 51 times, each time omitting one state (inclusive of the District of Columbia) from the observations. Estimate reflects logarithm of overdose mortality.

Discussion

After controlling for socioeconomic covariates, state-specific effects, and the influence of time, states adopting GSLs characterized by robust immunity for a breadth of offenses decreased overdose mortality in subsequent years. Specifically, laws in the Strong group decreased the logarithm of both all overdose mortality and opioid mortality. This study contributes to the body of literature affirming that GSLs save lives. However, over time mortality rates regress to the value expected in the absence of intervention, suggesting that knowledge or confidence in the policy among PWUDs decreases as its novelty wears off. These results not only serve as evidence that the remaining states, Kansas and Wyoming, should adopt Strong GSL policies to save lives, but also that states with less pronounced immunity must enhance their laws and maintain attention on them in order to sustain results. In fact, states with notable restrictions and burdens associated in their GSL may discourage PWUDs from reporting overdoses or engaging in harm reduction, increasing general overdose mortality.

GSLs derive their name from the biblical Good Samaritan who transgressed existing cultural norms to extend compassion to a man in mortal danger. In adopting policies with this name, states endorse the belief that public interest in saving lives may outweigh state interest in policing traditional boundaries on behavior, such as controlled substance use. This analysis provides evidence that states fully embracing this philosophy best achieve the aim of saving lives. The policies characterizing Strong laws, associated in the present study with reduced mortality, immunize PWUDs regardless of the quantity of opioids in their possession; extend to a variety of ancillary offenses such as drug manufacturing; provide immunity at the scene of the emergency; extend this immunity to supervisory conditions such as probation; and require little or nothing of the Good Samaritan except that they act in good faith. Conversely, some states

adopt policies prioritizing criminal justice by reserving immunity for Good Samaritans who comply with burdensome obligations, such as undergoing SUD treatment, administering naloxone, or cooperating with LEOs investigations.⁸² Not only do these states fail to reduce opioid overdose mortality, but general overdose mortality subsequently proliferates.

Notably, the reduction in overdose mortality persists for several years following ratification of effective GSLs. The conservation of the effect to only laws in the Strong group may reflect a combination of several factors. Few PWUDs recognize or can articulate the nature of their state's GSL without specific instruction.^{12,13,45,46} This is likely exacerbated among states passing complicated laws with many burdens and exemptions. However, after receiving training on their immunity from health departments or community-based organizations, they retain knowledge of GSL immunity and are three times as likely to report emergency overdoses.^{12,46} Post-ratification decreases in mortality may be driven in large part by outreach campaigns among health departments, local organizations, and SUD service providers working directly with PWUD communities. Additionally, Strong laws may, by virtue of their robustness, prove more persuasive to PWUDs.⁸² While other states may pass well-intended GSLs, they may task these organizations with advocating for a complicated, weak, or burdensome law. Additionally, effects may be more pronounced in states with Strong laws as the same political forces that give rise to these laws also persuade policymakers to fund community-based SUD resources, launch health communication campaigns, and otherwise support a message of compassion.

The temporary nature of the mortality reduction among states with Strong laws likely results from a lack of sustained attention toward the GSL. These community organizations, in combatting the fast-moving opioid epidemic, must turn their attention to new tasks such as naloxone training, syringe exchanges, and other harm reduction strategies. Without the benefit of

novelty or enduring messaging campaigns, people newly experiencing SUD may be less likely to recognize their immunity. Additionally, knowledgeable PWUDs may either pass from SUD or enter treatment or recovery, removing themselves from communities or circumstances in which they may have otherwise served as Good Samaritans.

Rigorous laws contradict the nominal Good Samaritan from which their name derives. In states with these laws, compassion is contingent on either compliance with authorities such as law enforcement; on restoring harm, such as through the administration of naloxone to bystanders; or on rehabilitation, by participating in SUD treatment or cooperating with law enforcement investigations. These states see a marked increase in general overdose mortality even after controlling for time, socioeconomic and demographic variables, and staggered implementation. Some PWUDs may be discouraged, rather than encouraged, from engaging with law enforcement due to the burdens of the law. More likely, however, states with these laws may perpetuate stigmatizing attitudes toward PWUDs in the media and messaging surrounding their harm reduction policies: obligations regarding interactions with LEOs further criminalizes SUD. Stigmatization impedes policy responses to the overdose epidemic, is associated with population health inequities broadly, and predicts overdose rates specifically.^{117–119} Additionally, the scaffolding factors that likely surrounding Strong laws may not be present in states with Rigorous laws.

The adoption of Minimal laws resulted in statistically unreliable reductions in overdose mortality that proved extremely sensitive to the model's assumptions. Minimal laws overwhelmingly provide delayed immunity following a Good Samaritan's arrest or even the filing of charges, often exclude the person experiencing the overdose from immunity, may exempt people with prior criminal histories, and even fail to immunize the offense of possessing

opioids. The labile effects attributable to Minimal laws may indicate that this group is weakly defined compared to other groups such as Strong or Moderate laws. Additionally, this is the most sparsely-populated group, with seven member states at ratification and, of these, Maryland graduating to a Moderate and then to a Strong law over time. Overall, these results do not constitute evidence of the lifesaving benefits of Minimal GSLs. In fact, states adopting these laws are more likely to experience an increase in mortality in subsequent years, per the sensitivity analysis, than a reliable decrease in average mortality.

In this segmented regression we associate robust GSLs with a marked decrease in mortality that fades over the following years. These results are consistent with the current literature. In their preceding study, Hamilton and colleagues associate GSLs, specifically laws providing protection from arrest in combination with NALs, with a reduction of -0.10 in opioid overdose mortality two years later.⁶ This value approximates the result in the present analysis (-0.11 two years after ratification, accommodating both intercept and slope changes), and Strong laws indeed provide protection from arrest. The inclusion of separate variables for changes in both the average and rate of change of mortality decomposes these previous findings into separate effects.

Implications

Robust GSLs are essential harm reduction policies which save lives in the years following ratification. However, laws with limited scope, tepid immunity, or porous exceptions do not exhibit statistically-reliable benefits at the population level. In fact, these laws may exacerbate stigma, encouraging high-risk behavior and dissuading bystanders from reporting emergencies. Policymakers, and advocates persuading these policymakers, may contrast the provisions common to effective GSLs in the present study with the features of the current law in

their own states.⁸² Effective GSLs extend immunity to all persons involved in the overdose emergency; inoculate against a breadth of ancillary offenses beyond simple possession, such as delivery of controlled substances; provide immunity from arrest, or stronger immunities, such that the Good Samaritan is not removed from the scene of the emergency; protect the Good Samaritan from extrajudicial consequences such as violations of probation or parole; and do not discriminate on the basis of prior criminal history or substance-related activity. Importantly, while these features describe effective GSLs in the present study, none is exclusive to such laws. Rather, effective laws combine all these features in a single statute intended to encourage as many bystanders as possible to report deadly emergencies.

Further, even states with such laws already on the books must sustain messaging and instruction for PWUDs in order to retain their benefits. Fortunately, laws with expansive protections and no exemptions likely lend themselves more conveniently to health communication campaigns.⁸² Local public health authorities may share instructional materials regarding GSL immunity at public health safety net hospitals, community outreach events, or relevant community task forces. However, states may support dissemination by appropriating funding for state agencies to engage in more sophisticated information campaigns. This may include media advertisements, cooperation with SUD treatment centers and service providers, or trainings with local law enforcement.

The present study suggests that only laws with substantial immunity and minimal caveats are associated with statistically detectable changes in downstream population health. Importantly, this does not indicate that more modest laws cannot save lives. Whether policymakers should, given the opportunity, adopt limited immunity in Kansas or Wyoming, or refuse to compromise in the hope of adopting a more potent law in the future, is an ethical

question outside the scope of the present study. However, this analysis warns policymakers that implementing laws with burdensome requirements or authoritative attitudes regarding SUD may in fact have deleterious consequences on state population health.

Limitations and Future Directions

The present study employs holistic GSL groups derived from the overall similarities among laws. The reduction in general and opioid overdose mortality associated with Strong laws in this analysis proved statistically insensitive, as was the increase in general mortality among Rigorous laws. Minimal laws, however, were associated with a range of estimates depending on which states were excluded from the model. Indeed, Minimal laws feature a heterogenous array of burdens and exemptions, compared to the relatively homogenous immunity granted by Strong laws. Future researchers may find additional methods of modeling the differences among laws, such as more refined clustering or perhaps interaction terms among GSL provisions, that may resolve some of this sensitivity.

Further, this analysis does not consider the effect of geography. As we employed fixed effects models, any covariate for geography would be time-invariant and indistinguishable from the fixed effect for each state. While this accommodates some geographic variance, other modeling techniques (such as Hamilton et al.'s hierarchical spatiotemporal model)⁶ may more richly account for the exchanges among proximal jurisdictions.

While the present analysis may benefit from further consideration for space, we aim for this study to support investigators evaluating the effects of time. Consistent with prior research, Model 2 employed a traditional DID method to associate Strong GSLs with a single, uniform decrease in opioid overdose mortality. However, as demonstrated by the subsequent segmented panel regression, the DID model averages over significant time-related changes. In the context of

the opioid epidemic, which has progressed through qualitatively-distinct waves in the past two decades,¹²⁰ researchers must carefully consider the appropriate method to accommodate the obfuscating effects of time in their analyses.

Conclusion

The intensifying opioid epidemic compels investigators to carefully evaluate harm reduction efforts such as GSLs in order to identify lifesaving best practices. GSLs with robust immunity, including protection from arrest and for violations of pretrial conditions, are associated with a strong and statistically reliable decrease in opioid overdose mortality in the following years. However, this effect dissipates over time. States seeking to control rising overdose deaths should revise their GSL to emulate these effective laws. Further, all states must continue to train attention on their harm reduction policies in order to sustain their population health effects.

V. DISCUSSION

When considering the magnitude of the opioid epidemic, policymakers have a modestly-equipped toolbox of effective instruments with which to fight rising mortality rates. The preceding studies clear a place for 911 Good Samaritan Laws (GSLs) among these instruments.

The mechanisms through which these laws reduce mortality may be traced along the pathways of the Legal Epidemiologic Framework for the Evaluation of GSLs. (See Figure 3.) Rising opioid mortality motivates constituents and the representatives they elect to promote compassionate harm reduction policy. The policymaking process mediates public appetite for these policies and their ultimate shape: advocates push for their preferred bills, legislators barter and compromise to build consensus, and governors leverage their veto power to serve as ultimate checks on the final policy. The result is a variety of laws that reflect the balance of influence within each state: small, liberal states adopt progressive GSLs that immunize people who perpetuate the epidemic itself by manufacturing heroin, while large, conservative states adopt laws that may not protect even a model Good Samaritan simply because they called 911 once before. When plotted by similarity across features, patterns emerge. The most progressive laws cluster at the top, drawn together by their common breadth and strength of immunity. Laws which demand compliance with authority and evidence of rehabilitation sink to the bottom, while those pockmarked by numerous exemptions and loopholes are repelled to the periphery of the configuration.

GSLs and related harm reduction laws are among the many factors that intermingle in the environment in which people who use drugs (PWUDs) must engage with their addiction. These influences include those that drive PWUDs toward health or harm reduction, such as community-based substance use disorder (SUD) treatment programs, naloxone, and supporting services, as

well as those that drive them away, like criminalization, the cost of care, and stigmatization. Of these, stigma is not a policy or program, but rather an intrinsic intonation within policy that induces feelings of unworthiness, defensiveness, and shame among PWUDs. Qualitative research reveals that a policy which, on paper, provides immunity may still reinforce stigmatizing messages toward SUD.¹⁰ Together, these contextual factors precipitate the attitudes, expectations, and capacity that determine whether, when a person's life is at stake, a PWUD is prepared to put their own freedom at risk to call 911.

In these dangerous circumstances, consistently compassionate messages save lives. Effective GSLs promote calls to 911 during emergencies,^{12,46} increase subsequent admissions for overdoses,⁷⁰ and decrease overdose mortality for a time following their ratification. When assured of their immunity, PWUDs feel empowered to report dangerous overdoses so that first responders can quickly resuscitate patients with naloxone. The efficacy of these laws, when implemented with robust immunity and no caveats, is detectable at the population level. Conversely, when GSLs are drafted with restrictive requirements that continue to criminalize the disease of addiction, this in fact further ostracizes PWUDs. These laws predict an increase in overdose mortality despite their immunity. While these results may be difficult to interpret when evaluating GSLs in a vacuum, the Legal Epidemiologic Framework outlines the relationship between the constraints on the policymaking process that give rise to these stigmatizing laws; their dissemination through the environment that surrounds PWUDs; and how they may influence perceived attitudes that determine whether, or not, to take the risk of reporting emergencies.

Principally, these studies encourage policymakers to adopt the most compassionate possible harm reduction policy in order to save lives. Robust GSLs predict a profound, if

temporary, decrease in all overdose mortality and in opioid overdoses in particular. If legislators are motivated to save lives, this is an effective method. However, upon further scrutiny, these results also serve as a warning: when adopted by legislators that may hold stigmatizing attitudes, a preference for law over life, these and other policies may in fact inflict greater harm on vulnerable communities. In some circumstances, having no law may prove more desirable than a bad one. However, the question of whether to abide doing nothing or risk ratifying cruel policy is a moral one, outside the realm of the present research. For such ethical dilemmas, one must instead turn to fables and parables such as that of the Good Samaritan which asks, who among these travelers is neighbor to the man beset by thieves?

The Jessica Sosa Act

Rep. Guillen was first elected to the Texas House of Representatives in 2002 as a Democrat representing House District 31.¹²¹ At the time of his initial election win, Rep. Guillen's district covered more than a hundred miles of South Texas border and his local office was headquartered in Rio Grande City. However, despite his traditionally liberal constituency and Democratic affiliation, Rep. Guillen proved to be one of the most conservative members of the caucus. Analysts and his fellow policymakers long recognized Rep. Guillen's ideological friction with his fellow Democrats. Political scientist Mark P. Jones of Rice University ranked Rep. Guillen as the third-most conservative Democrat in a Texas Tribune column in 2011, although he rose through the ranks to become the single most conservative by 2021.^{122,123} It was perhaps unsurprising when Rep. Guillen officially switched from the Democratic to the Republican party on November 15, 2021, in a press conference attended by both Governor Greg Abbott and Texas House Speaker Dade Phelan.¹²¹ The event was held in Floresville, a small town south of San Antonio and a new addition to Rep. Guillen's district following the 2020

legislative redistricting process. Indeed, the *Texas Tribune* quotes other state representatives suggesting that Rep. Guillen's decision was the result of this redistricting pressure. This belies his extensive conservative bona fides, including support for limiting abortion access, removing restrictions on firearms, and preventing transgender children from participating in school sports. Ignoring this irony, Gov. Abbott is quoted as saying, "Everybody has known that Ryan Guillen is really a Republican who is attached to the wrong label. Ryan, we're glad you finally came out of the closet."^{121(p3)}

In 2015, during the 84th Regular Session of the Texas Legislature, Rep. Guillen introduced HB 225. It consisted of seven pages largely editing repeating language into multiple sections of the Texas Health and Safety Code: "It is a defense to prosecution for an offense punishable under" the relevant subsection "that the actor requested emergency medical assistance in response to the possible overdose of the actor or another person."¹²⁴ In 2014, the year prior to Rep. Guillen's introduction of the bill, 1,151 Texans had died of opioid overdoses. The record was set in 2011, with 1,178 deaths.²⁷ (Every following year would each constitute record overdose mortality except 2018.) In Webb County, the rural regions of which are included in District 31, opioid deaths had slowly increased from lows of 10 or less in the early 2000s to sudden peaks of more than 20 persons in 2009 and 2012.²⁷ In introducing this bill, Rep. Guillen sought to "remove barriers that might deter an individual from taking action that would prevent a drug overdose death."^{125(p1)} The bill provided a defense to prosecution for any person reporting a drug overdose for minimal drug crimes if they were the first person to report the emergency and they stayed at the scene to cooperate with law enforcement. HB 225 was referred to the Criminal Jurisprudence Committee where it was conjoined with another bill that would expand the accessibility of the opioid overdose reversal drug naloxone, eventually passing the House in a

144 to four vote. In the Texas Senate it received amendments introducing explicit exemptions for 911 calls made during the execution of a search warrant and to ensure that evidence for unrelated crimes could still be collected. However, the Senate also extended the bill's protections to the person experiencing the overdose, in addition to the reporter. Rep. Guillen would later indicate that the limitations were directed by the Governor as a prerequisite for his support, but the legislative record cannot corroborate this. The Senate passed the bill 30 to one, and the House consented to the changes.

However, in a move that Rep. Guillen did not appear to anticipate, the Governor vetoed the measure, releasing a statement saying “Although my office suggested amendments to this legislation that would have eliminated the bill's protections for habitual drug abusers and drug dealers – while maintaining protections for minors and first-time offenders – those amendments were not adopted during the legislative process.”^{126(p1)} Despite the bill's overwhelming votes in both houses of the Legislature, the session had already adjourned so there was no capacity to override the veto. Perhaps most remarkably, Rep. Guillen, who had joined Republican colleagues on such contentious issues as trying to exempt Texans from federal firearms regulation¹²⁷ and even requiring unemployment recipients to receive drug testing,¹²⁸ was criticized for perceived generosity toward “drug abusers and drug dealers.”

The event appears to have broken the political will to pursue such legislation for several years. Rep. Guillen reintroduced the bill in 2017, as HB 73 of the 85th Regular Session, where it never left committee. In 2019, Representative John Raney of Texas House District 14, covering College Station, introduced the bill as HB 2432 of the 86th Regular Session. Rep. Raney attended Texas A&M University and even opened an Aggie-themed bookstore in College Station.¹²⁹ While his seat received a primary challenge from a more conservative candidate in 2022, he was

only ranked the tenth most liberal of all Republicans in Mark P. Jones' rankings.¹²³ While Raney's sponsorship may have lent the bill a moderate conservative appeal, it merely died in a different committee this time.

Rep. Raney reintroduced the legislation as the HB 1694, the fourth iteration of the bill, in the 87th Legislative Session. In an interview with *The Eagle* following the session, Rep. Raney credits the bill to Texas A&M University students rather than to Guillen's previous efforts. "I'm real proud of that. It came to me from college students here at A&M last session, and I'm glad we passed it."^{130(p4)} This version eliminated the "protections for habitual drug abusers" that Gov. Abbott had decried. The introduction of the bill specified that its defenses could not be claimed by a person committing a crime beside simple substance possession, could not use the defense more than one time, and it is only available to them if they do not have a previous conviction for a drug-related crime.¹³¹ *The Battalion*, the student newspaper of A&M, criticized these exemptions without acknowledging Rep. Raney's allegation that Aggies themselves were instrumental to filing the bill this year.¹³²

Rep. Kyle Kacal of District 12 renamed the bill the *Jessica Sosa Act* in honor of the passing of teenager in the small town of Rosebud, south of Waco. Sandra Sosa, Jessica's mother, came down from Michigan to testify before the Public Health Committee. After the bill left committee, Rep. Raney amended it to exempt people who have called 911 to report a previous overdose in the past 18 months. The *Jessica Sosa Act* passed the Texas house 145 to two and the Senate unanimously.

The Governor signed it on June 16, 2021, less than three weeks ahead of the two-year anniversary of Sosa's passing.¹³¹ No press release was issued from the Governor's office for this bill. A month later, on July 21, Governor Abbott would travel to Houston to ceremonially sign a

different piece of legislation to combat overdoses. SB 768, which he signed in the headquarters of Crime Stoppers of Houston, increased the criminal penalties for fentanyl manufacture and distribution. The Governor released a statement saying, "We have a duty to fight back against the scourge that is fentanyl in our communities, which is why I proudly signed Senate Bill 768 into law."^{133(p1)}

The *Jessica Sosa Act* instantiates the story illustrated by the preceding research. Constituencies begin to prioritize SUD as a public problem, policymakers negotiate within the boundaries of politically palatable solutions, and the resulting laws are released into an ecosystem with conflicting messages for PWUDs about their culpability and worth. In order to turn the tide of overdose mortality in Texas, then, advocates must change the boundaries constraining solutions in order to adopt transgressively compassionate harm reduction policy.

Future Directions

While these studies tell a complete story regarding the structure and outcomes of GSLs at the population level, these results constitute a starting point for this research, rather than a stopping point. First, the methods outlined here offer several notable additions to GSL literature that may be generalizable to other policy evaluation domains.

First, the use of inferential policy surveillance amplifies differences among laws across states, rather than deductively reducing them to a small number of variables. This method of surveillance is more sensitive to the salient features that distinguish states, shedding light on the underlying attitudes among policymakers that influence the shape and function of the legislation. Dimension reduction methods, of which multidimensional scaling is just one tool, may reveal more salient patterns that discriminate among laws than deductive policy surveillance. This method of analysis may enhance the reliability of further legal epidemiologic investigations.

Second, these analyses harness time as a covariate, rather than attempting average it out, in order to measure the effects of GSLs longitudinally. While this process is statistically demanding, it offers greater external validity when evaluating staggered policy interventions. While the results of previous studies modeling these laws using difference-in-difference methods are statistically reliable, the effect they attribute to GSLs is simply difficult to apply outside of the limited time frame of their models. Future analyses incorporating these segmented panel models may be better able to distinguish between policies with immediate but limited outcomes and those that result in enduring changes.

Third, the legal epidemiologic framework presented here may be generalizable to more harm reduction policy than simply GSLs. Current literature lacks a notable framework or theory describing the lifecycle of harm reduction policy, from inception through implementation to proximal and population health outcomes. This framework effectively scaffolds the range of qualitative and quantitative literature regarding GSLs, accommodates the differences in their implementation, and predicts differential outcomes of these laws. It may prove similarly useful to legal epidemiologists and policy analysts evaluating thematically comparable harm reduction interventions, such as naloxone access laws or red flag firearms laws.

Implications

The *Jessica Sosa Act* passed during the 87th Legislative Session because Texans felt the acute pain of the overdose epidemic and demanded a response from their representatives. It was shaped by the values of Texas legislators to meet the scrutiny of Governor Abbott. If another law with more potent immunities or fewer caveats could have passed both the legislature and the governor's office, it likely would have. In two years' time the fundamentals of the Texas political landscape have changed little. In the 87th Legislative Session, lawmakers would likely

be considering provisional mortality data for 2019, in which 10.8 Texans per 100,000 died of an overdose. Heading into the 88th, they can see that in 2021 provisional estimates place the rate at 17.1.²⁷ All the levers of government are controlled by the same political party, and largely the same politicians, who are unlikely to be persuaded by one big number becoming a bigger one. However, advocates for PWUDs are still mobilizing for an active session. Several factors distinguish the 88th.

During his campaign for reelection, Governor Abbott prioritized substance use as a driving issue in the session. After a meeting in the Woodlands with mothers of children who died of accidental overdoses, the Governor announced support for “new initiatives to combat drug overdoses in Texas, such as expanding access to opioid overdose treatment Narcan so that more Texans have access to the lifesaving drug and exploring a coordinated statewide substance abuse recovery program.” However, the Governor gave more attention to his support “for passing a law that would ensure dealers who provide drugs laced with deadly opioids are charged for murder when their product poisons innocent Texans.”^{134(p1)} It remains unclear how many retail drug dealers know whether their substances contain fentanyl. Similarly, Attorney General Ken Paxton signed onto a letter urging President Joe Biden to declare fentanyl a weapon of mass destruction.¹³⁵ The letter avoids indicating how such a proclamation would reduce fentanyl mortality. While these measures on the part of the Governor and Attorney General largely echo the criminalization associated with poor policy outcomes, they indicate an interest in pursuing substance use policy in the 88th.

Additionally, the Opioid Abatement Council will release requests for proposals to distribute the funds accrued from settlements with leading opioid manufacturers, such as Purdue Pharma.¹³⁶ The \$1.6 billion in proceeds are earmarked for programs that “remediate the opioid

crisis using efficient, cost-effective methods,”^{136(p1)} and will naturally amplify dialogue around SUD.

Advocacy organizations such as the Texas Coalition of Healthy Minds, the National Harm Reduction Coalition, and the Houston Recovery Initiative have identified other drivers than the GSL for this legislative session.¹³⁷ However, interest on the part of legislators may keep the law on the agenda. One Houston-area representative’s office has solicited more information regarding the GSL from the National Harm Reduction Coalition while considering pre-filing an amendment. These studies will be included in that information. Additionally, several pre-filed bills, including HBs 224, 703, and SB 208 aim to expand access to fentanyl testing strips and open the sections on paraphernalia, which include the GSL.

Conclusion

States adopting potent immunities in their 911 Good Samaritan Laws see substantial, if not permanent, reductions in overdose mortality. These results from the “laboratories of democracy” implementing “novel social and economic experiments,”^{138(p311)} like any good research findings, must be disseminated among other states. However, their effects may not arise from a combination of individual provisions but rather an underlying change in the philosophy of harm reduction, a pivot toward compassionate care. Texas has not embraced that philosophy yet, and likely will not for many years, but the *Jessica Sosa Act* represents an inflection point for the Lone Star State.

APPENDIX

Supplement to Chapter III

Method

Data

Sociopolitical variables include the political affiliations of state legislators and governors in the year of GSL ratification, collected from the National Conference of State Legislators. Additional information for New Mexico came from the state legislature.¹³⁹ We treat the District of Columbia (DC) equivocally with states. As the chief executive, we include the mayor's affiliation analogously with governors and associate the DC Council with state legislators. Data was abstracted from the DC Board of Elections website.¹⁴⁰

Non-Hispanic white population and total population were sourced from CDC Wonder's bridged-race population estimates concurrently with opioid overdoses.²⁷ Residents age 25 or older with a bachelor's degree and median income came from the Census Bureau's American Community Survey's (ACS).⁷⁴ Conveniently, ACS's Historic Income Tables reported median income in 2021 dollars, alleviating the need to perform our own inflation adjustment. The Bureau of Labor Statistics provided unemployment estimates.⁸⁵ Rurality is not measured annually by ACS. To calculate number of residents living in rural areas in each year, we multiplied the percentage of residents in each county living in a rural area in the 2010 census⁷⁴ by the population of that county for each year.

Opioid overdose deaths per 100,000 people are reported by CDC Wonder. Specifically, we collected data from multiple cause of death records. A death is determined to be an opioid overdose if the ICD-10 Code (International Classification of Diseases, 10th edition) of the underlying cause of death is X40 to X44, meaning accidental overdoses; X60 to X64, for

intentional overdoses; X85, indicating an assault; or Y10 to Y14, for undetermined intent. Additionally, all overdose deaths must include an opioid as a contributing cause of death, as specified by listing a code form T40.0 to T40.4 or T40.6 on the multiple cause of death record. Overdose rates are not age adjusted.

Results

Multidimensional Scaling

Figure S1 depicts the stress and Shepard plots of the feature and state plots. Conventionally, stress values of less than 20% are considered to indicate adequate dimensionality and investigators may identify noticeable elbows in the plot to identify a point at which additional dimensions do not noticeably enhance goodness of fit.⁸⁷ Additionally, Sturrock and Rocha propose an evaluation table for stress based on the stress values of randomized configurations.⁹⁰ For the feature plot, while one dimension would be appropriate, we elect to present the plot in two dimensions for interpretability. The state plot demonstrates a modest elbow at two dimensions and sufficiently low stress. Additionally, two dimensions achieve significantly lower stress than would be statistically expected for a random configuration per Sturrock and Rocha. The Shepard plots depict the relationship between the original distances in the raw data and the scaled distances in the plots. The nonlinear relationship reflects the nonmetric, rank-based MDS algorithm: scaled distances in the configuration increase monotonically, but not linearly, with Euclidean distances in the distance matrix.

Figure S2 depicts the state plot including null GSLs and a theoretical complete GSL with all breadth and strength features but no burden or porosity. Figure S3 shows the breadth, burden, strength, and porosity scores of each state on the state plot. Values are scaled to facilitate comparison.

Cluster Analysis

Figure S4 depicts the within-cluster sum of squares and the average silhouette width of the rank-order distances in the GSLI data for between two and 10 clusters.

Decision Trees

The decision tree trained to predict these groups from state policy antecedents achieved 94.2% accuracy with a maximum node depth of four. The tree featured two adjacent terminal nodes both sorting laws into the Minimal category, albeit with different degrees of confidence. We pruned this branch as it did not contribute to the purpose of the analysis.

Three states were misclassified in the original data. (See Table S1.) Delaware is a Strong state misclassified as a Moderate state due to its lack of immunity for violations of parole, however it provides a comparable immunity for probation. North Carolina is a Moderate state sorted into Minimal states because it protects a limited quantity of opioids and does not offer an immunity from charges. This state is on the border between Moderate and Minimal states due to its substantial immunity for supervisory conditions, including probation, parole, and pretrial release. Rhode Island is similarly on the border of Strong and Moderate states, grouped among the former but classified by the decision tree in the latter due to its lack of immunity for parole violations. Consistent with Strong laws, this state provides immunity for a breadth of offenses, including possessing or manufacturing paraphernalia, frequenting or keeping a place where substances are used, and acquiring controlled substances through misrepresentation.

Seven states changed protections substantially enough to be recategorized over time. Massachusetts and New Mexico graduated from Moderate to Strong laws, while Maryland progressed from a Minimal, to a Moderate, and finally to a Strong law. North Dakota removed burdensome requirements to transition from a Rigorous to a Moderate law, while Florida

heightened immunity to transition from a Moderate to Narrow law. Rhode Island's law was briefly allowed to sunset, but was reinstated almost unchanged. Last, Wisconsin enhanced protections from Moderate to Strong, but these enhanced provisions were allowed to sunset.⁸²

Evaluation

Figure S5 charts the distribution of state policy antecedents by GSL group. Additionally, Table S2 indicates mean and standard deviation for values by year. Values reflect the year in which the law was ratified.

Table S1. Confusion matrix for decision tree results predicting 911 Good Samaritan Law group membership from provisions

		Decision Tree Results					Accuracy
		Moderate	Minimal	Narrow	Rigorous	Strong	
Group Membership	Moderate	12 (23.5%)	1 (1.9%) North Carolina				92.3%
	Minimal		7 (13.7%)				100%
	Narrow			9 (17.6%)			100%
	Rigorous				11 (20%)		100%
	Strong	2 (3.8%) Delaware, Rhode Island				7 (13.7%)	77.8%
Accuracy		85.7%	87.5%	100%	100%	100%	48 (94.2%)

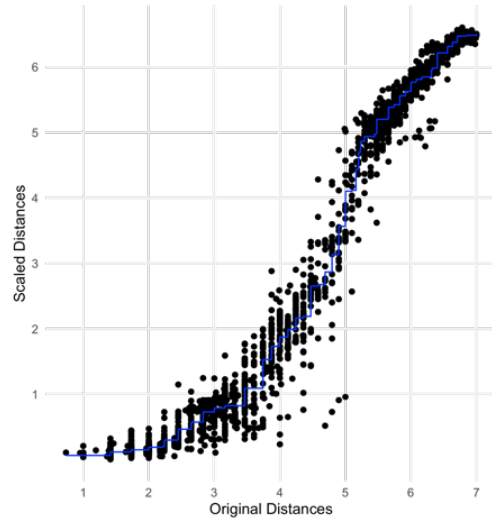
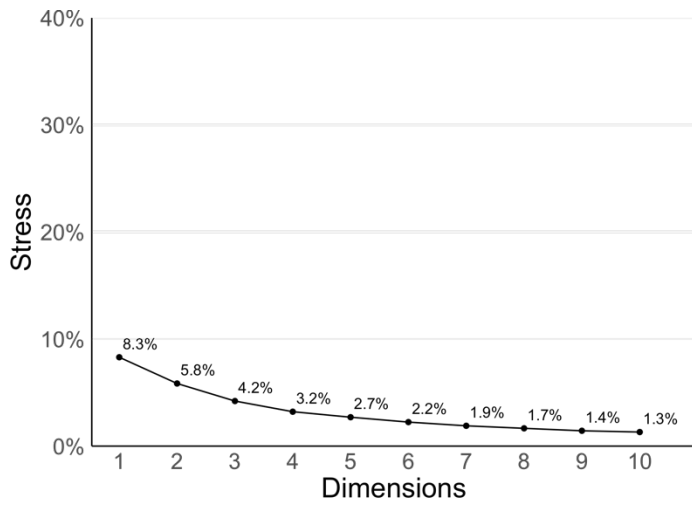
Table S2. Mean (standard deviation) of state policy antecedents by 911 Good Samaritan Law group

Group	Legislative Composition	Population	Median Income	Educational Attainment	Non-Hispanic White Residents	Unemployed Residents	Rural Residents	Opioid Overdose Mortality per 100,000
Minimal	43.1% (21%)	11,500,622 (13,117,638)	\$62,556 (\$10,771)	28.1% (4%)	64.9% (15%)	3.2% (1.3%)	23.7% (13%)	8.1 (3)
Moderate	47.9% (17%)	5,735,579 (4,838,067)	\$64,764 (\$11,730)	29.8% (5%)	72.4% (16%)	2.9% (1.2%)	25.7% (16%)	12.7 (7)
Narrow	42.8% (12%)	8,277,417 (5,696,798)	\$59,304 (\$8,877)	27.9% (5%)	67.2% (12%)	3.0% (0.9%)	24.8% (15%)	11.3 (8)
Rigorous	34.2% (11%)	3,963,214 (3,750,081)	\$66,282 (\$7,762)	29.8% (5%)	77.5% (10%)	2.3% (0.9%)	29.3% (12%)	10.6 (9)
Strong	62.1% (20%)	2,798,875 (3,031,173)	\$68,660 (\$7,623)	34.2% (8%)	66.5% (23%)	3.3% (1.4%)	21.8% (20%)	9.3 (4)

Note. Population is presented nominally but log-transformed when calculating median scaled values. Median income is inflated to 2021 dollars. Unemployment reflects total unemployed citizens per

Figure S1. Stress and Shepard Plots of the Feature Plot (A) and State Plot (B).

A)



B)

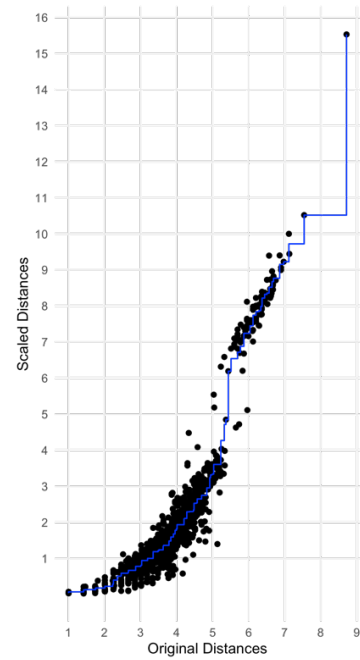
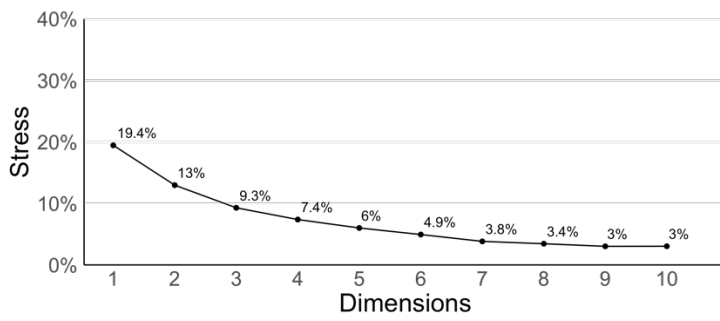
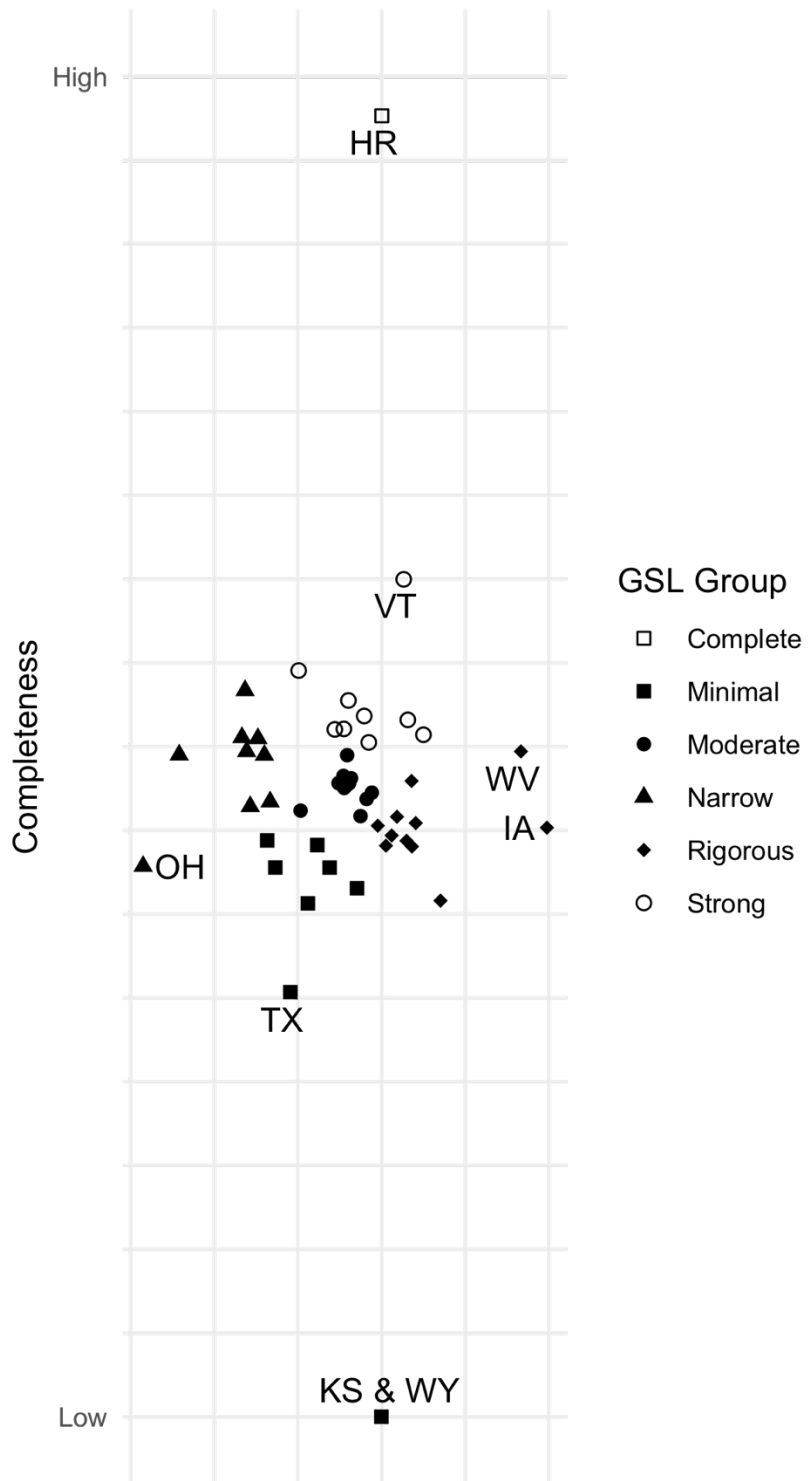


Figure S2. Unabridged state plot of 911 Good Samaritan Laws.



Note. KS & WY (Kansas and Wyoming) indicate states without 911 Good Samaritan Laws (GSLs). A theoretical complete GSL is represented by HR (Harm Reductiontopia).

Figure S3. Breadth, burden, strength, and exemption scores in the State Plot.

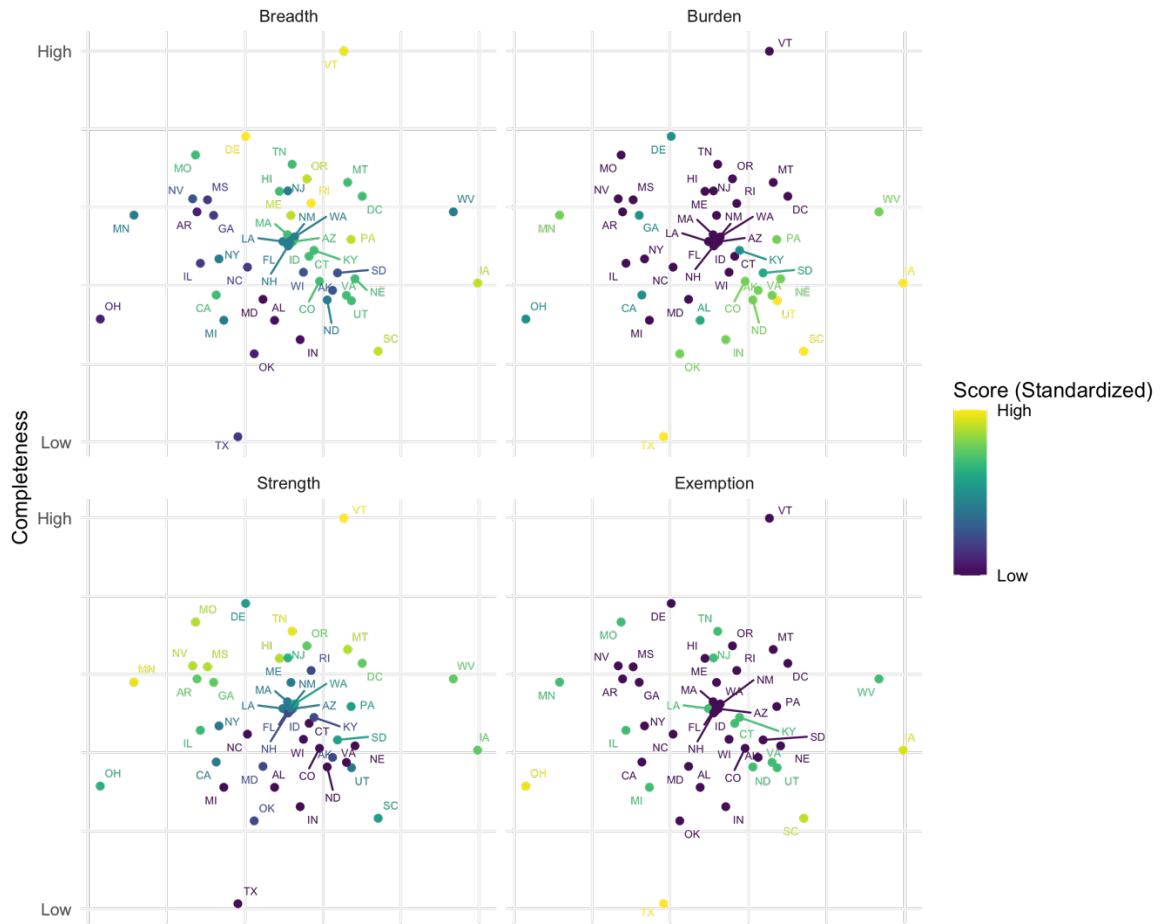
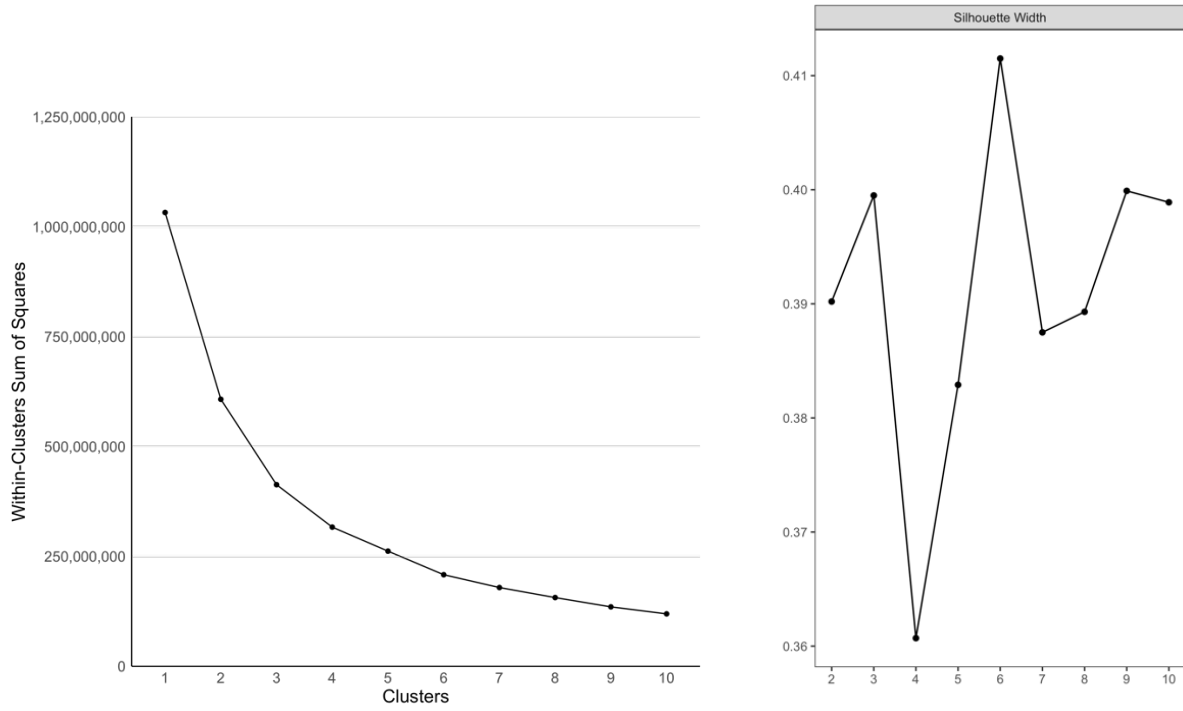
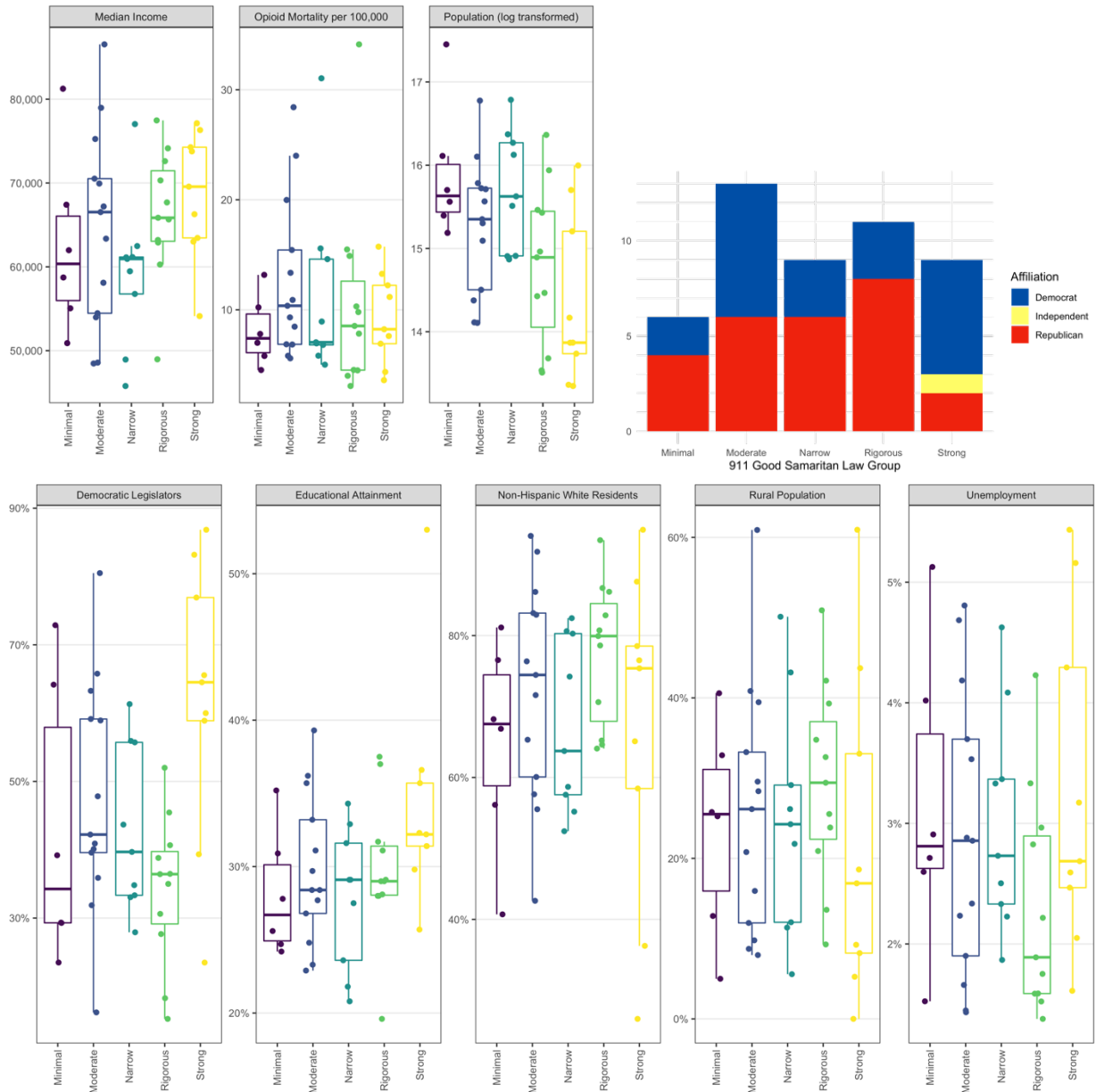


Figure S4. Within-clusters sum of squares and average silhouette width for 911 Good Samaritan Law Groups.



Note. High silhouette width values indicate goodness of fit.

Figure S5. Distribution of Policy Antecedents by 911 Good Samaritan Law Group



REFERENCES

1. National Center for Health Statistics. Multiple Cause of Death, 1999-2020 Results Form. CDC Wonder. Published June 7, 2022. Accessed June 7, 2022. <https://wonder.cdc.gov/controller/datarequest/D77;jsessionid=92C7A2D4E406247694C6A9AE185C>
2. Agency for Healthcare Research and Quality. Trends in the Rate of Opioid-Related Hospitalizations. Opioids and Substance Use Disorders. Published May 2019. Accessed September 2, 2022. <https://www.ahrq.gov/opioids/map/index.html>
3. Bredl Z, Elias C. Opioid Epidemic, Part 1: The Prevalence of Opioid Use Disorder and Impact of Distressed Communities. CareJourney. Published November 26, 2019. Accessed September 2, 2022. <https://carejourney.com/opioid-epidemic-part-1-the-prevalence-of-opioid-use-disorder-and-impact-of-distressed-communities/>
4. Lynch V, Clemans-Cope L, Winiski E. Prevalence of Opioid Use Disorder and Other Substance Use among Adolescents and Young Adults in Medicaid/CHIP, 2015–2019. *Journal of Child & Adolescent Substance Abuse*. 2022;0(0):1-14. doi:10.1080/1067828X.2021.2015733
5. Keyes KM, Rutherford C, Hamilton A, et al. What is the prevalence of and trend in opioid use disorder in the United States from 2010 to 2019? Using multiplier approaches to estimate prevalence for an unknown population size. *Drug and Alcohol Dependence Reports*. 2022;3:100052. doi:10.1016/j.dadr.2022.100052
6. Hamilton L, Davis CS, Kravitz-Wirtz N, Ponicki W, Cerdá M. Good Samaritan laws and overdose mortality in the United States in the fentanyl era. *International Journal of Drug Policy*. 2021;97:103294. doi:10.1016/j.drugpo.2021.103294
7. McClellan C, Lambdin BH, Ali MM, et al. Opioid-overdose laws association with opioid use and overdose mortality. *Addictive Behaviors*. 2018;86:90-95. doi:10.1016/j.addbeh.2018.03.014
8. Rees D, Sabia J, Argys L, Latshaw J, Dave D. *With a Little Help from My Friends: The Effects of Naloxone Access and Good Samaritan Laws on Opioid-Related Deaths*. National Bureau of Economic Research; 2017:w23171. doi:10.3386/w23171
9. Atkins DN, Durrance CP, Kim Y. Good Samaritan harm reduction policy and drug overdose deaths. *Health Services Research*. 2019;54(2):407-416. doi:10.1111/1475-6773.13119
10. Latimore AD, Bergstein RS. “Caught with a body” yet protected by law? Calling 911 for opioid overdose in the context of the Good Samaritan Law. *International Journal of Drug Policy*. 2017;50:82-89. doi:10.1016/j.drugpo.2017.09.010
11. Banta-Green CJ, Beletsky L, Schoeppe JA, Coffin PO, Kuszler PC. Police Officers’ and Paramedics’ Experiences with Overdose and Their Knowledge and Opinions of

- Washington State's Drug Overdose–Naloxone–Good Samaritan Law. *J Urban Health*. 2013;90(6):1102-1111. doi:10.1007/s11524-013-9814-y
12. Jakubowski A, Kunins HV, Huxley-Reicher Z, Siegler A. Knowledge of the 911 Good Samaritan Law and 911-calling behavior of overdose witnesses. *Substance Abuse*. 2018;39(2):233-238. doi:10.1080/08897077.2017.1387213
 13. Evans TI, Hadland SE, Clark MA, Green TC, Marshall BDL. Factors associated with knowledge of a Good Samaritan Law among young adults who use prescription opioids non-medically. *Harm Reduction Journal*. 2016;13(1):24. doi:10.1186/s12954-016-0113-2
 14. Schneider KE, Park JN, Allen ST, Weir BW, Sherman SG. Knowledge of Good Samaritan Laws and Beliefs About Arrests Among Persons Who Inject Drugs a Year After Policy Change in Baltimore, Maryland. *Public Health Rep*. 2020;135(3):393-400. doi:10.1177/0033354920915439
 15. Texas Legislature Online. 87(R) History for SB 672. Texas Legislature Online. Published June 7, 2021. Accessed June 21, 2021. <https://capitol.texas.gov/BillLookup/history.aspx?LegSess=87R&Bill=SB672>
 16. Clark PM. Reversing the Ethical Perspective: What the Allegorical Interpretation of the Good Samaritan Parable Can Still Teach Us. *Theology Today*. 2014;71(3):300-309. doi:10.1177/0040573614542308
 17. Abuse NI on D. Prescription Opioids DrugFacts. National Institute on Drug Abuse. Published June 1, 2021. Accessed May 8, 2022. <https://nida.nih.gov/publications/drugfacts/prescription-opioids>
 18. Courtwright DT. *Dark Paradise: A History of Opiate Addiction in America*. Harvard Press; 1983.
 19. Commonly Used Terms | CDC's Response to the Opioid Overdose Epidemic | CDC. Published October 15, 2021. Accessed May 6, 2022. <https://www.cdc.gov/opioids/basics/terms.html>
 20. Editors H com. Heroin, Morphine and Opiates. HISTORY. Accessed May 6, 2022. <https://www.history.com/topics/crime/history-of-heroin-morphine-and-opiates>
 21. Nixon PI. *The Medical Story of Early Texas*. Mollie Bennett Lupe Memorial Fund; 1946.
 22. Richardson JG, Ford WH, Vanderbeck CC. *Medicology or Home Encyclopedia of Health*. (Wood JP, ed.). University Medical Society; 1906.
 23. Magazine S, Trickey E. Inside the Story of America's 19th-Century Opiate Addiction. *Smithsonian Magazine*. Accessed May 6, 2022. <https://www.smithsonianmag.com/history/inside-story-americas-19th-century-opiate-addiction-180967673/>

24. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*. 5th ed.; 2013.
25. Goldstein RZ, Volkow ND. Dysfunction of the prefrontal cortex in addiction: neuroimaging findings and clinical implications. *Nat Rev Neurosci*. 2011;12(11):652-669. doi:10.1038/nrn3119
26. Naloxone. Accessed May 9, 2022. <https://www.samhsa.gov/medication-assisted-treatment/medications-counseling-related-conditions/naloxone>
27. Centers for Disease Control and Prevention. CDC Wonder. Published online 2022. <https://wonder.cdc.gov>
28. Porter J, Jick H. Addiction Rare in Patients Treated with Narcotics. *N Engl J Med*. 1980;302(2):123-123. doi:10.1056/NEJM198001103020221
29. Portenoy RK, Foley KM. Chronic use of opioid analgesics in non-malignant pain: report of 38 cases. *Pain*. 1986;25(2):171-186. doi:10.1016/0304-3959(86)90091-6
30. Leung PTM, Macdonald EM, Stanbrook MB, Dhalla IA, Juurlink DN. A 1980 Letter on the Risk of Opioid Addiction. *New England Journal of Medicine*. 2017;376(22):2194-2195. doi:10.1056/NEJMc1700150
31. World Health Organization, ed. *Cancer Pain Relief*. World Health Organization ; WHO Publications Center USA [distributor]; 1986.
32. Campbell JN. APS 1995 Presidential address. doi:10.1016/S1082-3174(96)80076-6
33. Baker DW. The Joint Commission's Pain Standards: Origins and Evolution. The Joint Commission. Published May 5, 2017. Accessed May 10, 2022. https://www.jointcommission.org/-/media/tjc/documents/resources/pain-management/pain_std_history_web_version_05122017pdf.pdf?db=web&hash=E7D12A5C3BE9DF031F3D8FE0D8509580&hash=E7D12A5C3BE9DF031F3D8FE0D8509580
34. Booss J, Drake A, Kerns R, Ryan B, Wasse L. Pain as the 5th Vital Sign Toolkit. Veterans Affairs. Published October 2000. Accessed May 10, 2022. <https://www.va.gov/painmanagement/docs/toolkit.pdf>
35. Gourd E. American Pain Society forced to close due to opioid scandal. *The Lancet Oncology*. 2019;20(7):e350. doi:10.1016/S1470-2045(19)30380-8
36. Center for Drug Evaluation and Research. Timeline of Selected FDA Activities and Significant Events Addressing Opioid Misuse and Abuse. *Food and Drug Administration*. Published online March 31, 2022. Accessed May 10, 2022. <https://www.fda.gov/drugs/information-drug-class/timeline-selected-fda-activities-and-significant-events-addressing-opioid-misuse-and-abuse>

37. Background - OxyContin Diversion and Abuse. Accessed May 10, 2022. <https://www.justice.gov/archive/ndic/pubs/651/backgrnd.htm>
38. The history of OxyContin, told through unsealed Purdue documents. STAT. Published December 3, 2019. Accessed May 10, 2022. <https://www.statnews.com/2019/12/03/oxycontin-history-told-through-purdue-pharma-documents/>
39. Faced with prescriber fears of OxyContin misuse, Purdue sales reps misleadingly played up drug's safety, documents show. STAT. Published January 9, 2020. Accessed May 10, 2022. <https://www.statnews.com/2020/01/09/prescriber-fears-oxycontin-misuse-purdue-pharma-sales-reps-misleadingly-played-up-safety/>
40. "A blizzard of prescriptions": Documents reveal new details about Purdue's marketing of OxyContin. STAT. Published January 15, 2019. Accessed May 10, 2022. <https://www.statnews.com/2019/01/15/massachusetts-purdue-lawsuit-new-details/>
41. U.S. Opioid Dispensing Rate Maps | Drug Overdose | CDC Injury Center. Published March 18, 2022. Accessed May 11, 2022. <https://www.cdc.gov/drugoverdose/rxrate-maps/index.html>
42. Mann B, Bebinger M. Purdue Pharma, Sacklers reach \$6 billion deal with state attorneys general. *NPR*. <https://www.npr.org/2022/03/03/1084163626/purdue-sacklers-oxycontin-settlement>. Published March 3, 2022. Accessed May 11, 2022.
43. Blumenthal R. New Mexico Bars Drug Charge When Overdose Is Reported. *New York Times*. Published April 5, 2007. Accessed October 8, 2021. <https://www.nytimes.com/2007/04/05/us/05drugs.html?searchResultPosition=1>
44. Baca CT, Grant KJ. What Heroin Users Tell Us About Overdose. *Journal of Addictive Diseases*. 2007;26(4):63-68. doi:10.1300/J069v26n04_08
45. Banta-Green CJ, Kuszler PC, Coffin PO, Schoeppe JA. Washington's 911 Good Samaritan Drug Overdose Law: Initial Evaluation Results. University of Washington Alcohol & Drug Abuse Institute. Accessed December 3, 2021. <https://adai.uw.edu/pubs/infobriefs/ADAI-IB-2011-05.pdf>
46. Watson DP, Ray B, Robison L, et al. Lay responder naloxone access and Good Samaritan law compliance: postcard survey results from 20 Indiana counties. *Harm Reduct J*. 2018;15(1):18. doi:10.1186/s12954-018-0226-x
47. *Indiana Code § 35-38-1-7.1*; 2022.
48. Zadoretzky C, McKnight C, Bramson H, et al. The New York 911 Good Samaritan Law and Opioid Overdose Prevention Among People Who Inject Drugs: The New York 911 Good Samaritan Law. *World Medical & Health Policy*. 2017;9(3):318-340. doi:10.1002/wmh3.234

49. McLean K. Good Samaritans vs. predatory peddlers: problematizing the war on overdose in the United States. *Journal of Crime and Justice*. 2018;41(1):1-13. doi:10.1080/0735648X.2016.1215932
50. Koester S, Mueller SR, Raville L, Langegger S, Binswanger IA. Why are some people who have received overdose education and naloxone reticent to call Emergency Medical Services in the event of overdose? *International Journal of Drug Policy*. 2017;48:115-124. doi:10.1016/j.drugpo.2017.06.008
51. Wagner KD, Koch B, Bowles JM, Verdugo SR, Harding RW, Davidson PJ. Factors Associated With Calling 911 for an Overdose: An Ethnographic Decision Tree Modeling Approach. *American Journal of Public Health*. 2021;111(7):1281-1283. doi:10.2105/ajph.2021.306261
52. Bay Area Regional Health Inequities Initiative. The BARHII Framework. BARHII. Published 2020. Accessed September 10, 2022. <https://www.barhii.org/barhii-framework>
53. Ajzen I. From Intentions to Actions: A Theory of Planned Behavior. In: Kuhl J, Beckmann J, eds. *Action Control: From Cognition to Behavior*. SSSP Springer Series in Social Psychology. Springer; 1985:11-39. doi:10.1007/978-3-642-69746-3_2
54. The Overton Window. Mackinac Center. Accessed September 10, 2022. <https://www.mackinac.org/OvertonWindow>
55. Martin GJ, McCRAIN J. Local News and National Politics. *American Political Science Review*. 2019;113(2):372-384. doi:10.1017/S0003055418000965
56. Disch L. Democratic Representation and the Constituency Paradox. *Perspectives on Politics*. 2012;10(3):599-616. doi:10.1017/S1537592712001636
57. Rudolph L, Caplan J, Ben-Moshe K, Dillon L. Health in All Policies: A Guide for State and Local Governments. Public Health Institute. Published 2013. Accessed September 10, 2022. <http://www.phi.org/wp-content/uploads/migration/uploads/application/files/udt4vq0y712qpb1o4p62dexjlgxlnogpq15gr8pti3y7ckzysi.pdf>
58. Sawangjit R, Khan TM, Chaiyakunapruk N. Effectiveness of pharmacy-based needle/syringe exchange programme for people who inject drugs: a systematic review and meta-analysis. *Addiction*. 2017;112(2):236-247. doi:10.1111/add.13593
59. Batista P, Deren S, Banfield A, et al. Challenges in Recruiting People Who Use Drugs for HIV-Related Biomedical Research: Perspectives from the Field. *AIDS Patient Care and STDs*. 2016;30(8):379-384. doi:10.1089/apc.2016.0135
60. Dickson-Gomez J, Christenson E, Weeks M, et al. Effects of Implementation and Enforcement Differences in Prescription Drug Monitoring Programs in 3 States: Connecticut, Kentucky, and Wisconsin. *Subst Abuse*. 2021;15:1178221821992349. doi:10.1177/1178221821992349

61. Governor Abbott Announces New Initiatives To Combat Opioid Crisis At Montgomery County 2022 Overdose Awareness Event | Office of the Texas Governor | Greg Abbott. Accessed September 10, 2022. <https://gov.texas.gov/news/post/governor-abbott-announces-new-initiatives-to-combat-opioid-crisis-at-montgomery-county-2022-overdose-awareness-event>
62. Decriminalizing drug addiction: the effects of the label. *Forensic Research & Criminology International Journal*. 2019;Volume 7(Issue 4). doi:10.15406/frcij.2019.07.00280
63. Godin G, Kok G. The Theory of Planned Behavior: A Review of its Applications to Health-Related Behaviors. *Am J Health Promot*. 1996;11(2):87-98. doi:10.4278/0890-1171-11.2.87
64. Cooke R, Dahdah M, Norman P, French DP. How well does the theory of planned behaviour predict alcohol consumption? A systematic review and meta-analysis. *Health Psychology Review*. 2016;10(2):148-167. doi:10.1080/17437199.2014.947547
65. Topa G, Moriano JA. Theory of planned behavior and smoking: meta-analysis and SEM model. *Subst Abuse Rehabil*. 2010;1:23-33. doi:10.2147/SAR.S15168
66. del Pozo B, Sights E, Goulka J, et al. Police discretion in encounters with people who use drugs: operationalizing the theory of planned behavior. *Harm Reduction Journal*. 2021;18(1):132. doi:10.1186/s12954-021-00583-4
67. Conner M, Armitage CJ. Extending the Theory of Planned Behavior: A Review and Avenues for Further Research. *Journal of Applied Social Psychology*. 1998;28(15):1429-1464. doi:10.1111/j.1559-1816.1998.tb01685.x
68. Kadden RM, Litt MD. The role of self-efficacy in the treatment of substance use disorders. *Addictive Behaviors*. 2011;36(12):1120-1126. doi:10.1016/j.addbeh.2011.07.032
69. Xavier J, Greer A, Pauly B, et al. “There are solutions and I think we’re still working in the problem”: The limitations of decriminalization under the good Samaritan drug overdose act and lessons from an evaluation in British Columbia, Canada. *International Journal of Drug Policy*. 2022;105:103714. doi:10.1016/j.drugpo.2022.103714
70. Nguyen H, Parker BR. Assessing the effectiveness of New York’s 911 Good Samaritan Law—Evidence from a natural experiment. *International Journal of Drug Policy*. 2018;58:149-156. doi:10.1016/j.drugpo.2018.05.013
71. Armenian P, Vo KT, Barr-Walker J, Lynch KL. Fentanyl, fentanyl analogs and novel synthetic opioids: A comprehensive review. *Neuropharmacology*. 2018;134:121-132. doi:10.1016/j.neuropharm.2017.10.016
72. Nguyen T, Buxton JA. Pathways between COVID-19 public health responses and increasing overdose risks: A rapid review and conceptual framework. *International Journal of Drug Policy*. 2021;93:103236. doi:10.1016/j.drugpo.2021.103236

73. Temple University Center for Public Health Research. Good Samaritan Overdose Prevention Laws. Prescription Drug Abuse Policy System. Published June 1, 2021. Accessed September 22, 2021. <https://pdaps.org/datasets/good-samaritan-overdose-laws-1501695153>
74. Bureau UC. Census.gov. Census.gov. Accessed December 20, 2021. <https://www.census.gov/en.html>
75. *Alabama Code 1975 § 20–2–281.*; 2022.
76. *Alabama Code 1975 § 13A-12-212.*; 2022.
77. *Alaska Statutes § 11.71.311.*; 2022.
78. *North Dakota Century Code § 19-03.1-23.4.*; 2022.
79. *Texas Health and Safety Code Annotated §§ 481.115-119; 481.121; 481.125; 483.041; 483.031.*; 2022.
80. Reader S. 911 Good Samaritan Law Inventory. Mendeley Data. Published August 23, 2022. doi: 10.17632/r65b6hrdhm.1
81. R Core Team. R: A Language and Environment for Statistical Computing. Published online 2022. <https://www.R-project.org/>
82. Reader SW, Walton GH, Linder SH. Review and Inventory of 911 Good Samaritan Laws in the United States. *International Journal of Drug Policy*.
83. Gramlich J. What the 2020 electorate looks like by party, race and ethnicity, age, education and religion. Pew Research Center. Accessed September 24, 2022. <https://www.pewresearch.org/fact-tank/2020/10/26/what-the-2020-electorate-looks-like-by-party-race-and-ethnicity-age-education-and-religion/>
84. Grossmann M, Jordan MP, McCrain J. The Correlates of State Policy and the Structure of State Panel Data. *State Politics & Policy Quarterly*. 2021;21(4):430-450. doi:10.1017/spq.2021.17
85. U.S. Bureau of Labor Statistics. Accessed December 20, 2021. <https://www.bls.gov/>
86. National Conference of State Legislators. State Partisan Composition. Accessed September 14, 2022. <https://www.ncsl.org/research/about-state-legislatures/partisan-composition.aspx>
87. Schiffman SS, Reynolds ML, Young FW. *Introduction to Multidimensional Scaling: Theory, Methods, and Applications*. 1st ed. Emerald Publishing; 1981.
88. Kruskal JB. Multidimensional scaling by optimizing goodness of fit to a nonmetric hypothesis. *Psychometrika*. 1964;29(1):1-27. doi:10.1007/BF02289565

89. Kruskal JB. Nonmetric multidimensional scaling: A numerical method. *Psychometrika*. 1964;29(2):115-129. doi:10.1007/BF02289694
90. Sturrock K, Rocha J. A Multidimensional Scaling Stress Evaluation Table. *Field Methods*. 2000;12(1):49-60. doi:10.1177/1525822X0001200104
91. Pandya S, Saket S. An overview of partitioning algorithms in clustering techniques. *International Journal of Electrical and Computer Engineering*. 2020;5.
92. Rousseeuw PJ. Silhouettes: A Graphical Aid to the Interpretation and Validation of Cluster Analysis. *Journal of Computational and Applied Mathematics*. 1987;20:53-65. doi:10.1016/0377-0427(87)90125-7
93. Kaufman L, Rousseeuw PJ. *Finding Groups in Data: An Introduction to Cluster Analysis*. John Wiley & Sons; 2009.
94. Brock G, Pihur V, Datta S, Datta S. clValid: An R Package for Cluster Validation. *J Stat Soft*. 2008;25(4). doi:10.18637/jss.v025.i04
95. Nadelmann E, LaSalle L. Two steps forward, one step back: current harm reduction policy and politics in the United States. *Harm Reduction Journal*. 2017;14(1):37. doi:10.1186/s12954-017-0157-y
96. Barry B. Size and Democracy. Dahl RA, Tufte ER, eds. *Government and Opposition*. 1974;9(4):492-503.
97. Ott D. *Small Is Democratic: An Examination of State Size and Democratic Development*. Routledge; 2018. doi:10.4324/9781315804804
98. Fox J, Weisberg S. Cox Proportional-Hazards Regression for Survival Data in R. :19.
99. Svitek P. Abbott Vetoes Overdose Defense, Emergency Detention Bills. The Texas Tribune. Published June 2, 2015. Accessed April 21, 2022. <https://www.texastribune.org/2015/06/02/abbott-vetoes-overdose-defense-bill/>
100. Facts about an Opioid Overdose. Accessed October 21, 2022. https://www.health.ny.gov/diseases/aids/general/opioid_overdose_prevention/overdose_facts.htm
101. Barton ED, Colwell CB, Wolfe T, et al. Efficacy of intranasal naloxone as a needleless alternative for treatment of opioid overdose in the prehospital setting. *The Journal of Emergency Medicine*. 2005;29(3):265-271. doi:10.1016/j.jemermed.2005.03.007
102. Smiley-McDonald HM, Attaway PR, Richardson NJ, Davidson PJ, Kral AH. Perspectives from law enforcement officers who respond to overdose calls for service and administer naloxone. *Health & Justice*. 2022;10(1):9. doi:10.1186/s40352-022-00172-y

103. Wagner KD, Harding RW, Kelley R, et al. Post-overdose interventions triggered by calling 911: Centering the perspectives of people who use drugs (PWUDs). *PLOS ONE*. 2019;14(10):e0223823. doi:10.1371/journal.pone.0223823
104. Stein RH. The Parables of Jesus in Recent Study. :9.
105. Reader SW, Chan W, Walton GH, Breckendrige E, Linder SH. A Taxonomy of 911 Good Samaritan Laws. *Manuscript in Preparation*.
106. Bertrand M, Duflo E, Mullainathan S. How Much Should We Trust Differences-In-Differences Estimates? *The Quarterly Journal of Economics*. 2004;119(1):249-275. doi:10.1162/003355304772839588
107. Athey S, Imbens GW. Design-based Analysis in Difference-In-Differences Settings with Staggered Adoption. :38.
108. Lagarde M. How to do (or not to do) ... Assessing the impact of a policy change with routine longitudinal data. *Health Policy and Planning*. 2012;27(1):76-83. doi:10.1093/heapol/czr004
109. Lin HC, Wang Z, Boyd C, Simoni-Wastila L, Buu A. Associations between statewide prescription drug monitoring program (PDMP) requirement and physician patterns of prescribing opioid analgesics for patients with non-cancer chronic pain. *Addictive Behaviors*. 2018;76:348-354. doi:10.1016/j.addbeh.2017.08.032
110. Paulozzi LJ, Kilbourne EM, Desai HA. Prescription drug monitoring programs and death rates from drug overdose. *Pain Medicine*. 2011;12(5):747-754. doi:10.1111/j.1526-4637.2011.01062.x
111. Strickler GK, Zhang K, Halpin JF, Bohnert ASB, Baldwin GT, Kreiner PW. Effects of mandatory prescription drug monitoring program (PDMP) use laws on prescriber registration and use and on risky prescribing. *Drug and Alcohol Dependence*. 2019;199:1-9. doi:10.1016/j.drugalcdep.2019.02.010
112. Chihuri S, Li G. State marijuana laws and opioid overdose mortality. *Inj Epidemiol*. 2019;6(1):38. doi:10.1186/s40621-019-0213-z
113. Powell D, Pacula RL, Jacobson M. Do medical marijuana laws reduce addictions and deaths related to pain killers? *Journal of Health Economics*. 2018;58:29-42. doi:10.1016/j.jhealeco.2017.12.007
114. Temple University Center for Public Health Research. Naloxone Overdose Prevention Laws. Prescription Drug Abuse Policy System. Published January 1, 2022. Accessed August 12, 2022. <https://pdaps.org/datasets/laws-regulating-administration-of-naloxone-1501695139>
115. Baltagi BH. *Econometric Analysis of Panel Data*. Springer International Publishing; 2021. doi:10.1007/978-3-030-53953-5

116. Chimbar L, Moleta Y. Naloxone Effectiveness: A Systematic Review. *Journal of Addictions Nursing*. 2018;29(3):167-171. doi:10.1097/JAN.0000000000000230
117. Substance Abuse and Mental Health Services Administration (US), Office of the Surgeon General (US). *Facing Addiction in America: The Surgeon General's Spotlight on Opioids*. US Department of Health and Human Services; 2018. Accessed November 15, 2022. <http://www.ncbi.nlm.nih.gov/books/NBK538436/>
118. Hatzenbuehler ML, Phelan JC, Link BG. Stigma as a Fundamental Cause of Population Health Inequalities. *Am J Public Health*. 2013;103(5):813-821. doi:10.2105/AJPH.2012.301069
119. Latkin CA, Gicquelais RE, Clyde C, et al. Stigma and drug use settings as correlates of self-reported, non-fatal overdose among people who use drugs in Baltimore, Maryland. *International Journal of Drug Policy*. 2019;68:86-92. doi:10.1016/j.drugpo.2019.03.012
120. Understanding the Opioid Overdose Epidemic | Opioids | CDC. Published October 7, 2022. Accessed November 9, 2022. <https://www.cdc.gov/opioids/basics/epidemic.html>
121. Svitek P. State Rep. Ryan Guillen switches to GOP in latest blow to South Texas Democrats. The Texas Tribune. Published November 15, 2021. Accessed April 21, 2022. <https://www.texastribune.org/2021/11/15/ryan-guillen-texas-house-switch-party/>
122. Jones MP. Guest Column: How Partisan are Texas House Members? The Texas Tribune. Published July 8, 2011. Accessed April 21, 2022. <https://www.texastribune.org/2011/07/08/guest-column-how-partisan-are-texas-house-members/>
123. Jones MP. Analysis: After months of legislating, ranking the 2021 Texas House and Senate from right to left. The Texas Tribune. Published November 3, 2021. Accessed April 21, 2022. <https://www.texastribune.org/2021/11/03/texas-house-senate-right-left/>
124. Texas Legislature Online - 84(R) History for HB 225. Accessed April 21, 2022. <https://capitol.texas.gov/BillLookup/History.aspx?LegSess=84R&Bill=HB225>
125. Guillen R. Bill Analysis: HB 225. Texas Legislature Online. Published 2015. Accessed April 21, 2022. <https://capitol.texas.gov/tlodocs/84R/analysis/pdf/HB00225H.pdf#navpanes=0>
126. Abbott G. Proclamation of the Governor of the State of Texas. Published online June 1, 2015. Accessed April 21, 2022. <https://lrl.texas.gov/scanned/vetoes/84/hb225.pdf#navpanes=0>
127. 83(R) HB 1076 - Engrossed version - Bill Text. Accessed April 25, 2022. <https://capitol.texas.gov/tlodocs/83R/billtext/html/HB01076E.htm>
128. Texas Legislature Online - 83(R) History for SB 21. Accessed April 25, 2022. <https://capitol.texas.gov/BillLookup/History.aspx?LegSess=83R&Bill=SB21>

129. Svitek P. Texas A&M looms large in primary between GOP incumbent and challenger with strong Aggie ties. The Texas Tribune. Published February 10, 2022. Accessed April 25, 2022. <https://www.texastribune.org/2022/02/08/texas-house-primary-raney-slocum/>
130. kenny.wiley@theeagle.com KW. Brazos Valley lawmakers share insights on 87th Texas Legislative Session. The Eagle. Accessed April 25, 2022. https://theeagle.com/news/local/govt-and-politics/brazos-valley-lawmakers-share-insights-on-87th-texas-legislative-session/article_74f5c020-c5b6-11eb-b8db-6fdd27675857.html
131. Texas State Legislature. History for HB 1694. Published online September 1, 2021. <https://capitol.texas.gov/BillLookup/History.aspx?LegSess=87R&Bill=HB1694>
132. Maclaurin @GrantMaclaurin G. Officials say Texas' Good Samaritan law comes with conditions. The Battalion. Accessed April 25, 2022. https://www.thebatt.com/news/officials-say-texas-good-samaritan-law-comes-with-conditions/article_13932cf2-4b15-11ec-9848-17801b07f54c.html
133. Governor Abbott Ceremonially Signs Anti-Fentanyl Legislation Into Law In Houston. Accessed April 25, 2022. <https://gov.texas.gov/news/post/governor-abbott-ceremonially-signs-anti-fentanyl-legislation-into-law-in-houston>
134. Governor Abbott Announces New Initiatives To Combat Opioid Crisis At Montgomery County 2022 Overdose Awareness Event. Accessed November 20, 2022. <https://gov.texas.gov/news/post/governor-abbott-announces-new-initiatives-to-combat-opioid-crisis-at-montgomery-county-2022-overdose-awareness-event>
135. Paxton Signs Multistate Letter Urging Joe Biden to Declare Fentanyl a Weapon of Mass Destruction. Texas Attorney General. Accessed November 20, 2022. <https://texasattorneygeneral.gov/news/releases/paxton-signs-multistate-letter-urging-joe-biden-declare-fentanyl-weapon-mass-destruction>
136. Texas Opioid Abatement Council. Accessed November 21, 2022. <https://comptroller.texas.gov/programs/opioid-council/council.php>
137. Texas Coalition for Healthy Minds. Houston Regional Meeting. Presented at: Texas Coalition for Healthy Minds; November 18, 2021; Houston Sobering Center.
138. Brandeis L. *New State Ice Co v. Liebmann*.(United States Supreme Court 1932).
139. New Mexico Legislature. Political Composition Since Statehood. Published 2015. Accessed September 18, 2022. https://www.nmlegis.gov/Publications/Political_Composition_Since_Statehood.pdf
140. District of Columbia Board of Elections. Past Elected Officials. Accessed September 18, 2022. <https://www.dcboe.org/Elections/Past-Elected-Officials>