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Research Paper

A policy mapping analysis of goals, target populations, and punitive notions in the U.S. congressional response to the opioid epidemic

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ABSTRACT

Background: The U.S. Congress has proposed numerous bills and resolutions in response to the opioid epidemic unfolding over the past decade. Although this legislative response has been the subject of considerable media attention and commentary, very little research has systematically analyzed congressional opioid-related legislation in terms of primary goals, focal populations, and the extent to which it includes punitive mechanisms.

Methods: To address this gap in research, we conducted a policy mapping content analysis of all opioid-related bills and resolutions ($N = 188$) proposed in Congress between 2009–2017 (111th - 115th Congresses). Two researchers independently coded basic characteristics (e.g. type, status, sponsorship, funding); goals, using a taxonomy developed by the researchers; focal populations; and punitive intent. Researchers compared codes and addressed discrepancies through consensus.

Results: Legislation addressed a wide range of goals, but frequently did not advance beyond the introduction stage (80.3%). Goals most often centered on treatment (43.1% of legislation), research (36.7%), and supply reduction of licit (34.0%) and illicit opioids (21.3%). Relatively little legislation addressed long-term recovery, avenues of safer drug consumption, or stigma reduction. Youth (21.3%) and veterans (17.0%) were the most common population categories toward which legislation was directed. Explicit attention toward racial/ethnic minorities, low-income populations, and sexual minorities was rare to nonexistent. Legislation was largely coded as not directly punitive (91.0%).

Conclusion: This study represents the first systematic analysis of key features of the U.S. congressional response to the opioid epidemic. Results indicate that the legislative response has largely focused on acute intervention, with limited attention to upstream social determinants and goal areas such as long-term recovery support. While the legislative response is primarily non-punitive, most opioid-specific policy does not explicitly address the intersection of opioid misuse and addiction with salient social factors such as economic disinvestment and social isolation.

Introduction

In October 2018, the U. S. Department of Health and Human Services (HHS) renewed the status of the opioid crisis as a public health emergency, which had been declared a year prior (HHS, 2018). The opioid epidemic in the United States and elsewhere emerged following a precipitous rise in the rate of opioid prescription, beginning in the 1990s (Kolodny et al., 2015). An estimated 350,000 opioid-related overdose deaths occurred in the United States between 1999 and 2016, contributing to a decline in overall national life expectancy (Centers for Disease Control and Prevention, 2018; Seth, Scholl, Rudd & Bacon, 2018). The fiscal cost of the epidemic was estimated by CDC researchers at $78.5 billion in 2013 (Florence, Luo, Xu & Zhou, 2016), a figure which the U.S. President's Council of Economic Advisers (2017) suggested was underestimated, providing a 2015 estimate of $504 billion.

Recognizing a high level of constituent concern, policymakers from all levels of government and political persuasions have expressed a need to address the opioid epidemic through public policy. Beginning in the fall of 2017, the U.S. Congress held a series of hearings on the epidemic, covering topics including the distribution practices of pharmaceutical companies; treatment and prevention methods; and the use of law enforcement (C-SPAN, 2017; Zezima & Higham, 2018). Both prior to and following these hearings, legislators in the U.S. House and Senate have introduced a variety of bills and resolutions to address the epidemic.

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Research and academic context of opioid-related legislation

Occurring simultaneously with the focus on opioids in the legislative arena has been an outgrowth of related research activity and academic commentary. Researchers and addiction experts from various disciplines have argued for a range of public policy responses to confront the epidemic. Broadly, these recommendations include policy provisions to: prevent overdose (Barry, 2018; Penm et al., 2017; Wilkerson, Kim, Windsor & Mareiniss, 2016); reduce the supply of prescription opioids (Barnett, Gray, Zink & Jena, 2017; Franklin et al., 2015; Patrick, Fry, Jones & Buntin, 2016; Roberts et al., 2016); reduce the supply of heroin and other illicit opioids (Kolodny & Frieden, 2017); reduce demand (Franklin et al., 2015; Kolodny & Frieden, 2017; Meldrum, 2016); increase access to various forms of treatment and supportive services (Barry, 2018; Barry et al., 2016; Friedmann, Andrews & Humphreys, 2017; Krans & Patrick, 2016; Saloner & Barry, 2018); promote safer drug consumption (Barnett et al., 2017; Barry, 2018; Kolodny & Frieden, 2017; Peiper et al., 2019); challenge addiction stigma (Barry, 2018; Kennedy-Hendricks et al., 2017; Pearlman, 2016); and advance addiction science through research (St. Marie, Arnstein & Zimmer, 2018).

Table 1 summarizes these policy goals (Column 1), as well as examples of different mechanisms through which policy could achieve them (Column 2). Some mechanisms, such as prescription drug monitoring programs to identify high-risk prescribing practices, have already been widely implemented at state and/or federal levels (Moyo et al., 2017; Patrick et al., 2016). Other mechanisms, such as supervised drug injection facilities, are suggested in the academic literature but have been limited or nonexistent in their implementation in the United States to date (Barry, 2018).

Researchers also recognize that certain populations have unique needs in terms of prevention, treatment, recovery support, and overdose mitigation. One example is the distinctive social context of opioid use for youth and young adults (Frank et al., 2015; Yedinak et al., 2016). Other groups recognized as having population-specific needs include older adults (Cochran, Rosen, McCarthy & Engel, 2017); pregnant women (Krans & Patrick, 2016); veterans and military personnel (Barry et al., 2018; Minegishi & Frakt, 2018); people with co-occurring chronic health and mental health conditions (Barry et al., 2016; Novak, Feder, Ali & Chen, 2019); and individuals who are incarcerated or returning to the community post-incarceration (Fox et al., 2015; Lincoln, Johnson, McCarthy & Alexander, 2018). In addition, marginalization related to identity characteristics such as race, ethnicity, gender, socioeconomic status, and sexual orientation functions as a social determinant that influences addiction risk, overdose prevalence, and treatment and recovery outcomes in myriad ways (Dasgupta, Beletsky & Ciccarone, 2018; Hemsing, Greaves, Poole & Schmidt, 2016).

Notably, researchers and public media outlets have described the policy response to the opioid epidemic as largely non-punitive. This stands in stark contrast to previous drug use epidemics in the United States, such as the rise in crack cocaine use in the 1980s, whereby Congress passed the Anti-Drug Abuse Act of 1986 (Public Law 99–570) establishing harsh mandatory minimum sentences for drug-related offenses. Unlike the crack cocaine epidemic before it, which disproportionately affected Black communities, opioids have been

Table 1
Taxonomy of goals and illustrative mechanisms of opioid-related policy.

Goal	Illustrative mechanisms
1. Overdose Prevention and Mitigation	1a. Promote naloxone access
	1b. Implement Good Samaritan provisions to protect individuals contacting emergency responders during overdose
2. Supply Reduction of Prescription Opioids	2a. Create prescription drug monitoring programs
	2b. Create lock-in programs
	2c. Develop prescription guidelines to encourage or force providers to prescribe fewer opioids (e.g. lower doses or fewer days per prescription)
	2d Implement safe drug disposal and take-back programs
	2e. Limit marketing of opioids to prescribers
	2f. Restrict the Food and Drug Administration's approval of new prescription opioids
	2 g. Allow pharmacies to partially fill prescriptions under certain circumstances
3. Supply Reduction of Heroin and Other Illicit Opioids	3a. Increase law enforcement resources for illicit opioid sales and trafficking
	3b. Raise legal penalties for possession, sale, manufacture, distribution, and/or trafficking of illicit opioids
	3c. Create mechanisms to promote international coordination in addressing illicit drug trafficking
4. Prevention and Demand Reduction	4a. Limit marketing of prescription opioids to consumers
	4b. Increase access to non-opioid treatments for pain
	4c. Educate the public on opioid addiction and addictive potential of certain drugs
	4d Promote drug-free lifestyles
5. Identification, Diagnosis, and Treatment of Opioid Addiction	5a. Increase efforts to identify, screen, and diagnose individuals at risk of opioid addiction
	5b. Refer individuals with opioid addiction to treatment
	5c. Promote evidence-based practices in treatment, including medication-assisted treatment
	5d Build the addictions treatment workforce
	5e. Promote use of treatment courts in the criminal justice system
6. Long-Term Addiction Recovery Support	6a. Develop programs or resources to support long-term recovery
7. Supplemental Services for People with Addiction	7a. Facilitate access to supplemental supports such as housing, employment, and case management
	7b. Provide childcare and parenting support for parents with addiction
8. Safer Drug Consumption	8a. Create supervised injection facilities
	8b. Promote syringe exchange programs
	8c. Create testing materials to enable consumers to identify substances such as fentanyl in street drugs
	8d Develop tamper-resistant versions of prescription opioids
	8e. Prevent drug-impaired driving
9. Addiction Stigma Reduction	9a. Develop messaging campaigns to reduce stigma
	9b. Develop community-led approaches to reduce stigma
10. Research and Data Collection	10a. Research addiction prevention, treatment, and recovery
	10b. Evaluate the effectiveness and outcomes associated with opioid-related policies
	10c. Research non-opioid alternatives to pain management
	10d Enhance infrastructure for surveillance and data monitoring
11. Other	11a. Implement drug testing for the primary purpose of removing benefit eligibility (e.g. Supplemental Nutrition Assistance Program benefits; unemployment compensation), rather than diagnosis or referral to treatment
	11b. Allocate funding or resources to address the opioid epidemic without specifying a particular purpose

disproportionately prescribed and marketed to Whites—prompting a more compassionate policy response rooted in racial bias (Bailey et al., 2017; Hansen & Netherland, 2016; Netherland & Hansen, 2017).

Current study

Despite widespread policy attention on the opioid epidemic at local and national levels, very little research has systematically analyzed these responses. The extent to which opioid-related legislation has adopted the range of goals and mechanisms described in the academic literature is not clear, nor is it established if and how policy addresses key populations differentially affected by the epidemic. Further, the extent to which legislation is punitive has not been systematically assessed or quantified.

In this study, we aimed to address these gaps by categorizing and describing the U.S. congressional response to the opioid epidemic, using policy mapping methods. Policy mapping is a systematic content analysis technique whereby researchers track and analyze policy content in a topical area (Burris et al., 2010; Groseclose & Buckeridge, 2017). Best practice standards for policy mapping include ensuring the reproducibility and transparency of the investigatory protocol; explicating the search process for relevant policies; and developing categorical codes to identify features of interest (Burris, Hitchcock, Ibrahim, Penn & Ramanathan, 2016).

Specifically, our analysis sought to answer the following research questions: (1) What are the goals of proposed U.S. federal legislation responding to the opioid epidemic?; (2) What specific populations are targeted in the legislative response?; and (3) To what extent can the U.S. federal legislative response be characterized as punitive? Although we gathered additional data on legislation including information on funding, sponsorship, and status, given the lack of prior research, we did not formulate hypotheses based on this information.

These research questions are grounded in the political science and public health literature, as well as prior policy mapping studies. Policy development research suggests that policy goals can vary for a number of reasons, including different causal attributions and policy interest alignment (Stone, 2002). In identifying legislative goals, we acknowledged the tendency of health-related policy to focus on proximal factors such as access to care, rather than "upstream" social determinants, such as systemic economic disadvantage (Mechanic, 2005; Woolf & Braveman, 2011). Further, political science theories argue that the use of punishment in policy is a function of several factors, including negative public opinion of an issue or group (e.g. drug users) and public distrust (Schneider & Ingram, 1993; Zimring & Johnson, 2006).

Regarding focal populations, political science literature has noted that social policy tends to be broad-based, in order to maximize the effects of measures taken as well as for reasons of partisan protection, expansion, and maintenance (Balla, Lawrence, Maltzman & Sigelman, 2002; Holyoke, 2009). However, political science research has also illuminated the strategic significance of the specification of target populations in policymaking (Schneider & Ingram, 1993). One reason for population differentiation is group-specific needs, including health needs, for which more selective and tailored policy is appropriate (Choi, 2012; Nsubuga et al., 2006). Thus, while we did not presume that all opioid legislation would specify target populations, this field of coding enabled us to examine frequencies with which specific groups were addressed, as prior policy mapping studies have done (Burris et al., 2010; Purtle & Lewis, 2017).

Methods

Data collection and parameters

This study focused on bills and resolutions at the U.S. congressional level. While policies at any level (e.g. local, state) have bearing on the opioid epidemic, Purtle and Lewis (2017) note that federal policies are useful targets for policy mapping, as they often serve as models for legislation at subordinate levels. To build our dataset of opioid-related legislation, we used Congress.gov, a publicly available database that catalogs all bills, amendments, and resolutions introduced in the U.S. House and Senate. We set our search parameters to begin with increases in heroin use in 2009 and extend through 2017, encompassing the 111th through the first half of the 115th Congress. We used a keyword approach to define our dataset, searching for any bill or resolution that contained the word "opioid," "opiate," or "heroin" anywhere in the title or full text.

This initial search yielded 357 bills and resolutions. We manually identified and removed legislation that was introduced in more than one Congress without substantive change ($n = 57$), retaining only the most recent version for coding in the final dataset. Similarly, we removed items ($n = 55$) that were introduced in identical or near-identical versions in both the House and Senate in the same Congress, keeping only the House version. During our coding process, we identified bills and resolutions ($n = 28$) that contained one of our keywords but did not address opioid use in a substantive way, or represented an unrelated search result (e.g. inclusion of the word "heroine" instead of "heroin"). Lastly, through the coding process we removed an additional 29 items that were subsumed into larger parent bills. In total, the final dataset for analysis contained 188 unique legislative items.

Coding categories

We established our categories and codebook prior to beginning coding (Purtle & Lewis, 2017). Our codebook included several basic information categories as well as three categories pertaining to our research questions: legislative goal, focal population, and punitive intent. *Basic information* captured characteristics including type (bill/law or resolution); origin (House; Senate; co-introduced); Congress in which the legislation was first introduced; status (introduced; passed one Chamber; became law; failed); and funding (coded positively if a bill contained any allocations or other provisions for funding). We coded the political party of the item's sponsor (Democrat or Republican) as well as if it had bipartisan support (indicated by presence of at least one cosponsor with a different political party affiliation than the sponsor).

For *goal*, our coding categories consisted of the goal descriptions delineated in the first column of Table 1. We did not code at the level of policy mechanism (Column 2), but used these examples as categorical reference points for determining goals. To improve clarity during the coding process, we added mechanisms to Column 2 that we encountered while coding that were not part of the prior coding scheme. Thus, we offer the final version in Table 1 as a thoroughly illustrative, rather than exhaustive, list of policy mechanisms. Goals were not mutually exclusive and our coding scheme did not specify a maximum for the number of goal codes that could apply to a single bill or resolution. Goals that did not fit our a priori categories were coded using an "other" category, which included allocation of funding or other resources to address the opioid epidemic, but without specified aims.

Focal population denoted the population group(s) to which legislation was targeted. Based on the literature, we established the following coding categories a priori: pregnant/postpartum women; women (not limited to pregnant/postpartum); youth; older adults; parent(s) or family member(s) of people with addiction; racial, ethnic, or linguistic minority groups; people with co-occurring disorders; veterans or military personnel; criminal justice system-involved persons, including incarcerated and formerly incarcerated individuals; low-income individuals; sexual and gender minorities (e.g. individuals identifying as gay, lesbian, bisexual, queer, transgender, and/or non-binary). We allowed each category to be broadly defined; for example, we coded legislation affirmatively for the youth category if it referred to children, adolescents, teenagers, young adults, or used terms such as "youth" or "young people". Legislation was coded as addressing a target population if any part of it referred to that group. Categories were not

mutually exclusive and there was no limit on how many focal populations could be coded per legislative item.

Punitive intent was a dichotomous coding category, defined as legislation including any type of punitive measure, such as mechanisms to promote arrests, incarceration, fines, other legal penalties, or loss of benefits or privileges for any target group.

Coding process

To increase the rigor of the coding process, two researchers (the first and second author) independently coded all legislative items (Drisko & Maschi, 2015). To code an item, we located basic information using the summary provided by Congress.gov, consulting the full text as needed. We then closely reviewed the full text to assess goals, focal populations, and punitive intent. The most recent version of each item as amended by the House and/or Senate was used for coding. When coding bills that contained many components, such as budget bills, we coded only those sections relevant to opioids. Throughout the coding process, we met regularly to compare codes. When a coding discrepancy occurred, we collaboratively reviewed the legislative text to reach a consensus decision (Krippendorff, 2013; Padgett, 2017). Most discrepancies arose from one coder misreading or misinterpreting sections of the text, and were resolved expediently through collaborative review and discussion. Although we independently coded all categories, inter-coder agreement (Cohen's kappa) was calculated only for the categories corresponding to our three research questions, as the basic information categories required minimal interpretation.

Results

Table 2 describes basic characteristics of legislation in the dataset (N = 188). Bills accounted for 90.4% of legislative items. Democrats represented 53.7% of primary sponsors, and 56.9% of items had bipartisan support, as evidenced through co-sponsorship. The majority of bills and resolutions (78.2%) were introduced in the 114th or 115th Congresses. Most items (80.3%) had not progressed past the introduction stage, and nearly half (53.7%) contained funding provisions.

Table 2
Basic characteristics of opioid-related bills and resolutions in the U.S. Congress, 2009–2017 (N = 188).

Coding Category	N (%)
Type	
Bill	170 (90.4)
Resolution	18 (9.6)
Congress[a]	
111th (2009–2010)	17 (9.0)
112th (2011–2012)	7 (3.7)
113th (2013–2014)	17 (9.0)
114th (2015–2016)	82 (43.6)
115th (only 2017 included)	65 (34.6)
Chamber of Origin	
House	94 (50.0)
Senate	50 (26.6)
Co-introduced	44 (23.4)
Status	
Introduced	151 (80.3)
Passed one chamber	20 (10.6)
Resolving differences	3 (1.6)
Became law/enacted as resolution	14 (7.4)
Party of Sponsor	
Democrat	101 (53.7)
Republican	87 (46.3)
Bipartisan support	107 (56.9)
Includes funding	87 (46.3)

[a] Congress denotes the Session of Congress in which a policy was first introduced. The 111th Session includes policies first introduced in sessions that occurred prior to the study's time frame.

Table 3 summarizes coding of goals, focal populations, and punitive intent. Kappa statistics for goals (0.870), populations (0.841), and punitive intent (0.780) indicated adequate or better inter-coder agreement. Table 3 also provides illustrative examples of legislation and specific mechanisms for each sub-category delineated under goals and populations, as well as an example of a bill coded as punitive.

All legislative goals were represented in the dataset, but to substantially varying degrees. The identification, diagnosis, and treatment of opioid addiction was the most commonly addressed goal (43.1% of legislation), with research and data collection second (36.7%). Efforts to prevent opioid misuse and addiction were also prevalent and were addressed through the avenues of supply reduction of prescription opioids (34.0%) and illicit opioids (21.3%), as well as demand reduction (34.0%). Overdose prevention and mitigation featured in 26.1% of legislation and primarily centered on naloxone access. Other goal areas in the taxonomy were addressed infrequently, including long-term recovery support (15.4%); supplemental services (e.g. housing, transportation, and case management) (12.2%); safer drug consumption (10.1%); and addiction stigma reduction (4.8%).

Youth were the most commonly addressed population category, represented in 21.3% of legislation; in contrast, few bills and resolutions (5.9%) targeted older adults. Other populations that were more frequently referenced in legislation included incarcerated or formerly incarcerated persons (18.6%) and veterans (17.0%). Nearly one-tenth (9.6%) of items contained provisions directed toward pregnant or postpartum women, but very few items (2.1%) addressed women outside of the pregnancy context. Legislative attention was limited for low-income individuals (8.0%) and members of racial, ethnic, or linguistic minorities (6.4%), and no legislation directly referenced sexual or gender minorities.

Relatively few items in the dataset (9%) were coded as punitive, none of which advanced to become law. The 17 bills we identified in this category encompassed different punitive approaches. For example, HR 3722: Putting Drug Free Families First Act (112th Congress) proposed mandatory drug testing for receipt of Temporary Assistance for Needy Families benefits and withholding benefits upon a positive test. Other bills proposed measures such as random drug testing of Indian Health Service employees, increased sanctions for probation violations, mandatory minimum sentencing, and repeals of grant funding for drug treatment alternatives to incarceration.

Discussion

This study reports on the first comprehensive analysis of the basic characteristics, goals, focal populations, and punitive nature of the U.S. congressional response to the opioid epidemic between 2009 and 2017. The 188 bills and resolutions in our dataset indicate legislative attention across the span of the epidemic, particularly in the most recent Congresses, and across party lines. Legislation in the dataset ranged from well-known landmarks (e.g. the Comprehensive Addiction and Recovery Act [CARA], signed into law in 2016) to a host of small-scale, targeted bills and resolutions—the vast majority of which did not advance past introduction.

Although all of the policy goals in our taxonomy were reflected in the dataset, attention was not equally distributed. This is perhaps not surprising, given that some goals appear more readily addressable through public policy than others. The most commonly coded legislative goal – the identification, diagnosis, and treatment of opioid addiction – is one such example. Consistent with prior public health literature (Woolf & Braveman, 2011), legislation primarily focused on proximal access factors, such as grant-funded treatment expansion programs, rather than the root causes of access barriers. For example, a substantial percentage of the population suffering opioid-related health problems remain uninsured or under-insured, particularly in states without Medicaid expansion (Broaddus, Bailey & Aron-Dine, 2018; Dasgupta et al., 2018).

Table 3
Goals, focal populations, and punitive intent of opioid-related bills and resolutions in the U.S. Congress, 2009–2017 (N = 188).

	Cohen's Kappa	N (%)	Policy Example and Session of Congress	Illustrative Mechanism Example
Goals	.870			
Overdose prevention and mitigation		49 (26.1)	S 524: Comprehensive Addiction and Recovery Act of 2016* (114th)	Expand access to naloxone for overdose reversal
Supply reduction of prescription opioids		64 (34.0)	HR 1854: Prescription Drug Monitoring Act of 2017 (115th)	Require state grantees to share prescription drug monitoring program data with other states
Supply reduction of heroin/illicit opioids		40 (21.3)	HR 2469: Drug Trafficking Elimination Act of 2009 (111th)	Increase prison terms or impose mandatory minimums on certain drug offenses
Demand reduction (prevention)		64 (34.0)	S 3031: Drug Free Communities Enhancement Act of 2010 (111th)	Require grant funding to be used to implement comprehensive community-wide prevention strategies
Identification, diagnosis, and treatment		81 (43.1)	HR 5466 - SAMHSA Modernization Act of 2010 (111th)	Provide grant funding to integrate substance use treatment services into primary care
Long-term addiction recovery support		29 (15.4)	HR 5189: Opioid Abuse Crisis Act of 2016 (114th)	Develop an opioid action plan that includes mobilizing community resources for long-term recovery
Supplemental services for people with addiction		23 (12.2)	S 1410: Treatment and Recovery Investment Act (114th)	Provide grants for case management, housing, job training, transportation, and other auxiliary services
Safer drug consumption		19 (10.1)	H Res 161: Expressing the Sense of the House of Representatives that the Food and Drug Administration Should Encourage the Use of Abuse-Deterrent Formulations of Drugs (113th)	Promote abuse-deterrent features in prescription opioids
Addiction stigma reduction		9 (4.8)	HR 4396: Heroin and Prescription Drug Abuse Prevention and Reduction Act (114th)	Provide grant funding for programs aimed at identifying and reducing stigma
Research and data collection		69 (36.7)	HR 4733: Opioids and STOP Pain Initiative Act (115th)	Provide funding to establish a NIH research initiative
Other		31 (16.5)	HR 3495: Opioid and Heroin Abuse Crisis Investment Act of 2017 (115th)	Provide a general state grant fund to address the opioid crisis
Focal Population	.841			
Pregnant/postpartum women		18 (9.6)	S 799: Protecting Our Infants Act of 2015 (114th)*	Develop a strategy to fill gaps in research on appropriate treatment of pregnant women with opioid use disorder
Women (not limited to pregnant/ postpartum)		4 (2.1)	S 2680: Mental Health Reform Act of 2016 (114th)	Provide assistance to parenting women with substance use disorders
Parent/family member of person with addiction		8 (4.3)	HR 3105: Supporting Grandparents Raising Grandchildren Act (115th)	Establish a federal task force to support grandparents raising grandchildren
Youth		40 (21.3)	S 2565: Protecting Families Affected by Substance Abuse Act (114th)	Provide grants to assist children affected by substance abuse
Older adults		11 (5.9)	S 882: STOP Act (112th)	Limit prescription drug access of Medicare enrollees deemed at high-risk for abuse
Racial, ethnic, or linguistic minority groups		12 (6.4)	HR 3096: Drug-Free Indian Health Service Act of 2017 (115th)	Mandate random drug testing for Indian Health Service employees
People with co-occurring disorders		17 (9.0)	S 68: Mental Health Awareness and Improvement Act of 2013 (113th)	Provide education on best practices in treatment of co-occurring disorders
Veterans or military personnel		32 (17.0)	S 425: Veterans Homeless Programs, Caregiver Services, and Other Improvements Act of 2015 (114th)	Require VA and Department of Defense to update best practice guidelines in opioid therapy treatment of chronic pain
Criminal justice system-involved persons		35 (18.6)	HR 759: Corrections and Recidivism Reduction Act of 2016 (114th)	Require Bureau of Prisons report on medication-assisted treatment capacity
Low-income individuals		15 (8.0)	S 3223: Expanded Access to Treatment and Recovery Act (114th)	Expand treatment to make services more affordable
Sexual and gender minorities		0 (0.0)		
Other		10 (5.3)	HR 4388: Forgotten Families Recovery Act of 2017 (115th)	Recognizes unique needs of and prioritizes funding for rural populations
Punitive Intent	.780	17 (9.0)	HR 1136: Accountability in Unemployment Act of 2015 (114th)	Deny unemployment compensation to applicants unless they undergo drug testing and test negative

* Became law.

Legislation aimed at preventing opioid addiction was also prevalent. The goal of reducing the supply of prescription opioids was as common as the goal of reducing demand for opioid use; each was reflected in 34% of legislative items. Despite this, measures restricting the prescription opioid supply appeared to outpace dissemination and resourcing for demand reduction efforts, particularly alternative pain management strategies (U.S Interagency Pain Research Coordinating Committee, 2016).

Some goals—such as stigma reduction, safer drug consumption, and long-term recovery support—were scantly represented. Although the pathway to addressing such issues through public policy may appear hazy, we argue that there remains a largely untapped potential for policy development in these areas. For example, Corrigan et al. (2017) propose a three-part agenda for addiction stigma reduction, encompassing the target areas of service engagement, human rights, and self-worth. Legislation to create and fund social marketing campaigns, including public service announcements and education to promote addiction-related health literacy, is necessary to accomplish these aims. The goal of promoting long-term recovery support also appears especially ripe for further policy development. Laudet and Humphreys (2013) outline a number of ways in which public policy can help facilitate recovery from addiction, including the integration of a recovery framework in drug control policies and funding for recovery support services, such as check-ups and peer recovery coaching. Promisingly, the CARA 2.0 Act of 2018 (HR 5311), proposed to expand upon provisions enacted in the original 2016 CARA legislation, contains several components related to long-term recovery.

With regard to focal populations, we noted very limited explicit legislative attention to the intersection of opioid addiction and vulnerabilities related to race and ethnicity, socioeconomic status, and sexual and gender identity. This is consistent with Schneider and Ingram's (1993) theorizing, which suggests that policy rarely directly targets benefits or services to groups that are marginalized or perceived as having little power. However, it is important to recognize that legislation that reduces disparities can effectively do so through addressing social determinants of health for the general population (e.g. through economic development); such bills might not specifically reference marginalized groups (Woolf & Braveman, 2011).

Nonetheless, the persistence of opioid-related health disparities (Dasgupta et al., 2018; Gaither et al., 2018; James & Jordan, 2018) speaks to the need for further policy development addressing the needs of vulnerable groups. Mechanic (2005) states that “when new opportunities for improving health arise…those with better resources, knowledge, influence, and social networks are those who benefit most quickly” (p. 337). This underscores the importance of examining and addressing potential disparities in access to opioid treatment and prevention innovations, including naloxone, medication-assisted treatment, and non-opioid pain treatments. The fact that so few bills and resolutions included any mention of factors such as race, gender (beyond the particular needs of pregnant women), socioeconomic status, or sexual orientation indicates that most legislation is not requiring potential disparities in access to be measured, understood, or addressed.

Lastly, our analysis provides empirical evidence of the largely non-punitive nature of the U.S. congressional response to the opioid epidemic. Other scholars and media observers have noted a more compassionate policy response to individuals who misuse and are addicted to opioids, in sharp contrast to prior drug epidemics (Keller, 2017; Netherland & Hansen, 2016). Our findings quantify these observations at the congressional level, with only 9% of legislation in the dataset coded as punitive. However, the punitive notions encompassed in these 17 bills indicate that the narrative of punishment is not entirely vanquished from the legislative response.

Limitations and implications

These findings should be considered in light of the study's limitations. First, the dynamic nature of policy-making makes it difficult to maintain the contemporariness of any analysis. We bounded our dataset at the end of 2017 and therefore it does not capture legislative developments that have since occurred. Second, our study attends only to federal policymaking in the U.S. congressional context. Additional research is needed to analyze relevant policy developments through other bodies, including the executive and judicial branches; at state and local levels; and in other countries and international organizations. The taxonomy we propose in Table 1 could be used to analyze these other contexts. Another limitation is that legislative items relevant to the opioid epidemic and its social determinants would not be included in the study's sampling frame if they did not explicitly mention opioids.

It is also important to recognize the limited purpose of our analysis. We sought to capture key developments in legislation with regard to goals, target populations, and punitive intent—recognizing that the majority of ideas proposed in Congress are simply ideas. Only a small minority of legislation in our dataset (7.4%) had passed as laws or been enacted as resolutions. This makes our findings more striking, in that the neglect of certain goals and populations reflects a lack of recognition even in the range of possible responses, beyond the far narrower clasp of enacted legislation. It should also be noted that our analysis attends only to the presence or absence of legislative attention to various goals and populations; the nature of this attention in terms of its direction and magnitude is a different question that future studies should consider. One illustration of this is that while most of the legislation coded as addressing members of racial, ethnic, and linguistic minority groups aimed to address disparities these groups faced, the code also captured legislation such as HR 3096: Drug-Free Indian Health Service Act of 2017 (115th Congress), which proposed random drug testing for Indian Health Services employees—a measure that we do not believe would improve disparities in care, but in fact worsen them. In addition, this analysis did not capture nuances in temporal trends in opioid policy (e.g. tracking the year-by-year evolution of policy ideas), an important area for future research.

Subsequent studies could build from the present work by narrowing the breadth and increasing the depth of analysis. For example, future analyses should robustly assess the adequacy and sustainability of the funding mechanisms of legislation passed in response to the epidemic. Such analyses are urgently needed in the wake of activity such as the passage of HR 6: SUPPORT for Patients and Communities Act (115th Congress) in October 2018. Although policymakers touted the law as a groundbreaking response to the opioid epidemic, researchers and activists were quick to caution that funding fell far short of the level of investment needed to adequately scale the U.S. treatment infrastructure (Lopez, 2018). Similarly, analyzing the degree to which policies are evidence-based, in that they are consistent with the best available research evidence for the goals and target populations that they purport to address, is also a critical task for future research and requires a nuanced lens. For example, while prescription drug monitoring programs are broadly considered to be evidence-based, research indicates that specific program characteristics (e.g. how many drug schedules are monitored and the frequency with which data are updated) are important in determining their effectiveness in preventing overdose deaths (Patrick et al., 2016).

In addition to these implications for ongoing policy research, we believe this study's results suggest several actionable directions for advocates and policymakers. First, advocates should refocus attention on potentially impactful goal areas that are under-addressed in the extant legislative response. These goal areas include stigma reduction, long-term recovery support, and increasing access to non-opioid pain management options (Corrigan et al., 2017; Laudet & Humphreys, 2013; U.S Interagency Pain Research Coordinating Committee, 2016). Second, there is ample opportunity for legislation to

address the prevention and treatment needs of vulnerable groups, including racial and ethnic minorities, low-income individuals, and women. As a starting point, advocates could demand that legislation promoting interventions such as medication-assisted treatment include evaluation plans that track outcomes by categories including race, ethnicity, income, and gender, enabling policymakers and the public to document potential disparities and implement further policies to address such gaps. Third, it should be noted that given the long and prominent role of punishment in U.S. drug policy (Netherland & Hansen, 2016), the largely non-punitive tenor of the current opioid legislative response is not a guarantee of the continuance of compassion. Public opinion can shift quickly, yielding punitive policies "even when it is illogical from the perspective of policy effectiveness" (Schneider & Ingram, 1993, p. 338). Thus, any policymaker or constituent who seeks that opioid policy should be rooted in public health principles and research evidence, and not a narrative of punishment, must remain alert.

In sum, the findings of this study indicate that despite a flurry of opioid-related congressional legislative activity in the past decade, the sufficiency, sustainability, inclusivity, and effectiveness of proposed policy solutions remain largely unproven. Policy research, including mapping studies, fiscal analyses, and implementation research, is essential to informing advocacy efforts at all levels of governance. Both research and advocacy are urgently needed to strengthen the policy response to the ongoing public health emergency of opioid misuse, addiction, and death in the United States and other nations.

Declaration of Competing Interest

The authors have no conflicts of interest to declare.

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