



U.S. news media coverage of solutions to the opioid crisis, 2013–2017

Emma E. McGinty^{a,*}, Elizabeth M. Stone^b, Alene Kennedy-Hendricks^a, Kaylynn Sanders^a,
Alexa Beacham^a, Colleen L. Barry^a

^a Department of Health Policy and Management, Johns Hopkins Bloomberg School of Public Health, 624 N. Broadway, Baltimore, MD 21205, United States of America

^b Division of General Internal Medicine, Johns Hopkins University School of Medicine, 2024 N. Monument St., Baltimore, MD 21205, United States of America

ABSTRACT

News media coverage of the U.S. opioid epidemic influences Americans' knowledge of and preferences for solutions to address the crisis. From 1998 to 2012, news media coverage of the opioid epidemic focused on criminal justice-oriented solutions. We examine whether and how news coverage of solutions has shifted in the recent years of the crisis. We analyzed a random sample of 600 U.S. news stories published/aired by high circulation/viewership national and local print and television news outlets from 2013 to 2017. We examined the proportion of news stories mentioning treatment, harm reduction, prevention, criminal justice, opioid prescribing, pharmaceutical manufacturer, insurer, and other solutions. News stories were coded using a structured coding instrument, and 200 news stories were double-coded to ensure interrater reliability. Data were collected and analyzed in 2018. Treatment (mentioned in 33% of news stories), harm reduction (30%), and prevention (24%) solutions were the most frequently mentioned types of solutions. Several evidence-based public health solutions received little news coverage: medication treatment for opioid use disorder was mentioned in 9% of news stories and the harm reduction solutions syringe services programs and safe consumption sites were mentioned in 5% and 2% of news stories. While news coverage showed a promising emphasis on public health-oriented solutions, efforts to increase news coverage of examples of effective opioid use disorder treatment and harm reduction solutions are needed.

1. Introduction

News media coverage of the U.S. opioid epidemic plays an important role in Americans' knowledge of and support for solutions to address the crisis, which resulted in 47,600 overdose deaths in 2017 (National Institute on Drug Abuse, 2019). A large body of communication research has demonstrated that news media coverage influences audiences' perceptions of which issues are most important; attitudes about the population affected by a given issue; perceptions of the causes and consequences of the issue; and preferred solutions to the problem (McCombs, 1977; Scheufele and Tewksbury, 2007; Iyengar, 1996; Gross, 2008; Chong and Druckman, 2007; Chong and Druckman, 2013; Graber and Dunaway, 2014). A small but growing body of research on “solutions journalism” suggests that relative to news stories focused purely on societal problems, news stories incorporating discussion of solutions are more effective at engaging audiences (McIntyre, 2017; Curry et al., 2016; McIntyre and Sobel, 2017; Lough and McIntyre, 2018; Thier, 2016). In addition, evidence suggests that news stories describing a specific solution to a problem can generate audience support for that solution (McIntyre, 2017). Thus, the volume of news media coverage devoted to specific solutions has important implications for Americans' awareness of options to address, and preferred responses to, the opioid crisis.

No studies have examined U.S. news media coverage of the array of possible solutions to the opioid epidemic in recent years. A study of news media coverage of the prescription opioid epidemic from 1998 to 2012 by McGinty and colleagues found that only 51% of news stories mentioned any solution, and those that did focused predominantly on criminal justice solutions – namely arresting and prosecuting clinicians and patients who illegally buy or sell prescription opioids (McGinty et al., 2015). In contrast, evidence-based public health solutions were rarely mentioned: only 3% of news stories mentioned expanding substance use disorder treatment and only one news story in the study sample of 673 news stories mentioned a harm reduction solution (McGinty et al., 2015). The harm reduction solution mentioned was a Good Samaritan law, which is a state law that protects people from criminal charges for drug crimes if they seek medical help for someone experiencing an opioid overdose (Network for Public Health Law, 2017). No news stories mentioned naloxone access laws, syringe services programs, or safe consumption sites, three additional evidence-based harm reduction solutions. Recent research suggests that naloxone access laws, which are state laws that expand layperson access to the opioid overdose rescue medication naloxone, may reduce opioid overdose deaths (Rees et al., 2017). Syringe services programs are places where people who use injection drugs like heroin can obtain sterile syringes and safely dispose of used syringes; such programs reduce the

* Corresponding author at: Department of Health Policy and Management, Johns Hopkins Bloomberg School of Public Health, 624 N. Broadway, Room 359, Baltimore, MD 21205, United States of America.

E-mail address: bmcginty@jhu.edu (E.E. McGinty).

<https://doi.org/10.1016/j.ypmed.2019.105771>

Received 3 February 2019; Received in revised form 22 May 2019; Accepted 14 July 2019

Available online 17 July 2019

0091-7435/ © 2019 Elsevier Inc. All rights reserved.

spread of infections like HIV (Abdul-Quader et al., 2013). Safe consumption sites, or places where people can use pre-obtained drugs under medical supervision, have been shown in multiple studies to reduce overdose deaths (Kennedy et al., 2017; Sherman et al., 2017).

While criminal justice solutions dominated other types of solutions mentioned in news stories about the prescription opioid epidemic published/aired from 1998 to 2012, the study by McGinty et al. documented a downward trend in mentions of criminal justice solutions and an upward trend in mentions of prevention-oriented solutions, for example educating individuals about the dangers, proper use, and safe storage of prescription opioids, over the 15-year study period (McGinty et al., 2015). It is unknown whether this trend has continued in more recent years. U.S. opioid overdose deaths have more than doubled since 2012, pointing to the continued need for effective solutions, and the contours of the epidemic have changed: overdose deaths from heroin and synthetic opioids like fentanyl surpassed deaths from prescription opioids in 2014 (Centers for Disease Control and Prevention, 2018a). It is unknown whether and how news media coverage of solutions to the opioid epidemic has evolved in response to these shifts.

In the present study, we examined news media coverage of solutions to the opioid epidemic in a large sample of U.S. news stories published/aired between 2013 and 2017. As news producers focus on topics with high salience to their audience (Chong and Druckman, 2007; Graber and Dunaway, 2014; De Vreese, 2004), news media coverage of solutions might differ in states hardest-hit versus least-hard-hit by the opioid epidemic. A recent study examining news media coverage of treatment for opioid use disorder with the medications methadone, buprenorphine, and naltrexone found that treatment with these medications – the gold standard for opioid use disorder treatment – was portrayed more negatively in news stories produced by local outlets in states with high opioid overdose rates relative to national news coverage (Kennedy-Hendricks et al., 2019). We therefore examined whether there were differences in how local news media coverage depicted solutions to the opioid epidemic in states with among the highest and the lowest drug overdose rates in the U.S. Liberals and conservatives have well-documented differing views on illicit drug issues, with liberals more likely to support public health-oriented solutions and conservatives preferring criminal justice approaches (Lakoff, 2010). We examined whether news coverage of solutions to the opioid crisis differed in stories produced by liberal- versus conservative-leaning news outlets.

2. Study data and methods

We conducted a quantitative content analysis of a random sample of 600 U.S. news stories about solutions to the opioid epidemic published or aired by high circulation/viewership national and local newspapers and television news programs from 2013 to 2017.

2.1. Study sample

Print news sources included four of the highest-circulation national newspapers in the U.S. (*USA Today*, *New York Times*, *Wall Street Journal*, and *Washington Post*) and 20 local newspapers. The 20 local newspapers included one conservative- and one liberal-leaning newspaper, determined by 2012 presidential endorsements, from each of 10 states: five “hardest-hit” states with among the highest drug overdose rates in the U.S. and five “least-hard-hit” states with among the lowest state drug overdose rates in the U.S. during the study period. Specifically, we selected states that: a) were among the ten states with highest or lowest drug overdose death rates in 2016 and b) had a conservative and liberal-leaning newspaper available in either the LexisNexis, Proquest, or Newsbank databases for the entire 2013–2017 study period. We used overall drug overdose death rates, as opposed to opioid overdose death rates, because many U.S. states significantly under-report the specific drugs involved in fatal overdoses and evidence shows that recent trends

in drug overdose deaths have been driven by trends in opioid overdose deaths (Rudd et al., 2016). Five hardest-hit (Kentucky, New Hampshire, Ohio, Pennsylvania, West Virginia) and five least-hard-hit (California, Iowa, Nebraska, Oregon, Texas) states met these criteria. If selected states had multiple right- or left-leaning newspapers available, we selected the newspaper with highest circulation. See Appendix 1 for a complete list of the 24 newspapers included in the study sample.

Television news sources included national ABC, CBS, NBC, PBS, CNN, and Fox news programs as well as local television news programs from ABC, CBS, and NBC affiliates from three hardest-hit states (Maryland, Pennsylvania, and Ohio) and three least-hard-hit states (California, Oregon, and Texas). As with local newspapers, hardest-hit and least-hard-hit states were defined as falling into the ten states with the highest- or lowest- drug overdose death rates in 2016. The six states identified met this criterion and had local television transcripts available in the ShadowTV database. See Appendix 1 for a complete list of the 12 television news sources included in the study sample.

2.2. News coverage selection

To identify news stories mentioning one or more solutions to the opioid epidemic, we first searched the LexisNexis, ProQuest, Newsbank, and ShadowTV online archives using the following terms: (“opioid” OR “opiate” OR “heroin” OR “fentanyl” OR “prescription painkiller” OR “prescription pain medication”) AND (“policy” OR “solution” OR “law” OR “regulation” OR “legislation” OR “lawsuit” OR “guideline” OR “intervention” OR “program”). We then reviewed each news story and excluded those that did not mention a solution to the opioid epidemic, defined as a specific approach (e.g., expanding treatment), policy (e.g., legalizing safe consumption sites), or program (e.g., naloxone distribution program) to addressing the opioid crisis. A total of 6422 news stories met this criterion; from these, we selected a simple random sample of 600 news stories for analysis, including 77 national newspaper stories, 311 local newspaper stories, 16 national television news transcripts, and 196 local television news transcripts. Within the $N = 600$ random sample, no duplicate stories were identified.

2.3. Measures

We used a 43-item coding instrument (Appendix 2) to measure news media mentions of solutions to the opioid epidemic in eight domains: opioid use disorder (OUD) treatment solutions; harm reduction solutions; prevention solutions; criminal justice solutions; opioid prescribing-oriented solutions; solutions targeting pharmaceutical industry practices; health insurance industry-focused solutions; and other solutions. Within each domain, we measured specific types of solutions, for example the opioid use disorder treatment domain included a measure of news media mentions of the need to expand medication treatment. We organized individual solutions into mutually exclusive categories, shown in Exhibit 2. In cases where a solution could be conceptualized as fitting into more than one category – for example, medication treatment for opioid use disorder has been conceptualized as both treatment (National Academies of Sciences EaM, 2019) and harm reduction (Inciardi, 1999) – we chose the category we felt was best aligned with the current public health conceptualization of the solution. Medication treatment for opioid use disorder was categorized as treatment in accordance with the 2019 National Academies of Science, Engineering and Medicine report on the topic (National Academies of Sciences EaM, 2019).

All measures were dichotomous yes/no items, indicating that a news story either did or did not mention a given solution. The coding instrument was developed by the study team and refined through pilot coding, conducted by authors AB and KS, of a random sample of 80 news stories not included in the final analytic sample. Once the instrument was finalized, a random sample of 33% ($n = 200$) of news stories from the analytic sample of 600 news stories was double-coded

by the same two study authors to assess interrater reliability for each item. All items met conventional standards for reliability, with kappa statistics of 0.65 or higher (Appendix 2).

2.4. Analysis

We first examined the volume of news stories mentioning any solution to the opioid epidemic published in/aired by the news outlets sampled over the 2013–2017 study period. We then calculated the proportion of news stories mentioning each solution of interest over the five-year study period. We used logistic regression models, controlling for news story word count and adjusting standard errors for lack of independence within news sources, to examine differences in the solutions mentioned in local news coverage in states hardest-hit versus least-hardest-hit by drug overdose deaths and in conservative- versus liberal-leaning local newspapers. Statistical significance was set at alpha $p < 0.05$. Data were collected and analyzed in 2018. Analyses were conducted in Stata Version 14.0 (StataCorp®).

3. Results

Volume of news media coverage of solutions to the opioid epidemic increased over the study period, from 272 news stories mentioning solutions to the opioid epidemic in 2013 to 2816 news stories in 2017. This increase paralleled the upward trend in drug overdose deaths in the U.S. (Exhibit 1).

Over the entire five-year study period, the three most frequently mentioned types of solutions to the opioid epidemic were treatment (mentioned in 33% of news stories), harm reduction (30%), and prevention (24%) solutions (Exhibit 2). In the treatment solutions category, 25% of news stories in the study sample mentioned expanding substance use treatment generally and 9% mentioned expanding medication treatment for opioid use disorder. News media coverage of harm reduction solutions was dominated by coverage of initiatives to expand access to naloxone, the rescue medication that reverses the course of opioid overdose (25%). Syringe services programs and safe

consumption sites were mentioned in 5% and 2% of news stories respectively. The majority of solutions within the prevention category were calls for opioid education programs targeting the general public (16%). Six percent of news stories mentioned interventions to increase safe opioid storage and disposal practices.

Other types of solutions were mentioned in fewer than 20% of news stories, including criminal justice (17%); opioid prescribing (15%); pharmaceutical industry-oriented (9%); and health insurance industry-oriented (8%) solutions. The most frequently mentioned criminal justice solution was heightened prosecution of drug dealers (9%), followed by drug courts (7%). In the opioid prescribing solutions category, prescription drug monitoring programs were mentioned in 9% of news stories. The most frequently mentioned solution involving the pharmaceutical industry was lawsuits against the pharmaceutical industry for deceptive marketing practices (8%). Other solutions not falling into these domains included federal and state emergency declarations (8%), increasing border security (2%), and legalizing cannabis as an alternative to opioids for pain management (2%).

The types of solutions to the opioid epidemic emphasized by the news media shifted over the study period (Exhibit 3). In 2013, the most frequently mentioned types of solutions were prevention (28%); opioid prescribing (21%); and criminal justice and treatment solutions, each of which were mentioned in 15% of news stories. By 2017, the three most frequently mentioned types of solutions had shifted to treatment (22%); prevention (18%); and harm reduction (17%).

News stories published by newspapers in states hardest-hit by the opioid epidemic were more likely to mention treatment and criminal justice solutions and less likely to mention pharmaceutical manufacturer solutions to the opioid epidemic than newspaper stories published by outlets in least-hard-hit states (Appendix 3). There were few differences in the types of solutions mentioned in liberal- versus conservative-leaning local newspapers (Appendix 4). Insurer solutions, such as expanding Medicaid through the Affordable Care Act as a means to increase access to opioid treatment, were mentioned in 15% of liberal-leaning newspapers versus 8% of conservative-leaning newspapers ($p < 0.05$). Liberal-leaning newspapers were also more likely to

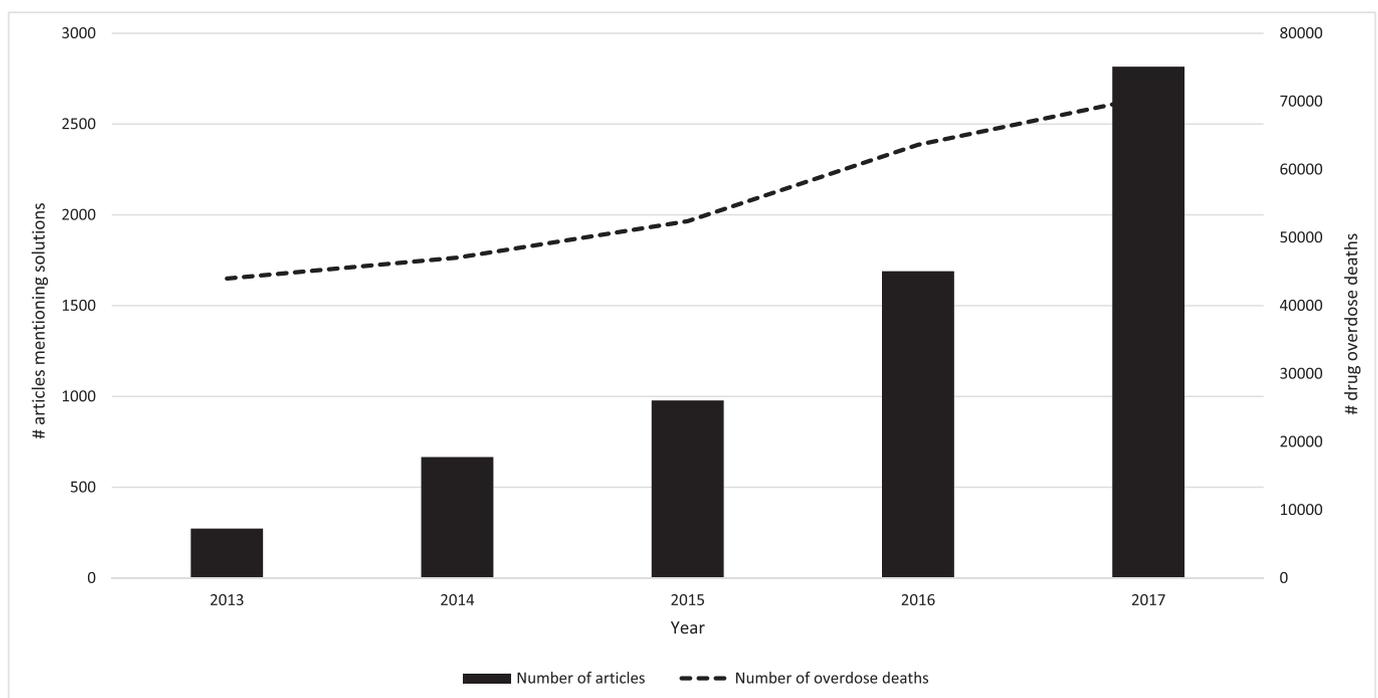


Exhibit 1. Volume of news media coverage of solutions to the opioid epidemic relative to the number of drug overdose deaths¹ in the U.S., 2013–2017

¹Data on opioid overdose death rates from: National Center for Health Statistics, National Vital Statistics System. Drug Overdose Deaths in the United States, 1999–2016. Data Brief 294. Available online at: https://www.cdc.gov/nchs/data/databriefs/db294_table.pdf#4

Exhibit 2

News media mentions of solutions to the opioid epidemic, 2013–2017 (N = 600 news stories).

Any mention of:	N (%)
Treatment solution	196 (33%)
Expanding/allocating additional resources to...	
Substance use disorder treatment generally	150 (25%)
Medication treatment for opioid use disorder	51 (9%)
Buprenorphine treatment	25 (4%)
Methadone treatment	17 (3%)
Naltrexone treatment	8 (1%)
Train more clinicians in addiction treatment	35 (6%)
Treatment in criminal justice settings	9 (2%)
Peer support programs, e.g. narcotics anonymous	8 (1%)
Programs focused on initiating addiction treatment in the emergency department	2 (< 1%)
Harm reduction solutions	178 (30%)
Initiatives expanding access to naloxone	152 (25%)
Initiatives expanding access to naloxone among first responders	78 (13%)
Initiatives expanding access to naloxone among people who use opioids/their family members	32 (5%)
Initiatives expanding access to naloxone among community members at large	14 (2%)
Initiatives expanding access to naloxone in schools	8 (1%)
Syringe services programs (also called “needle exchanges”)	31 (5%)
Good Samaritan laws protecting individuals who call for emergency assistance in the event of a drug overdose from arrest or prosecution for crimes related to drug possession	15 (3%)
Safe consumption sites	7 (2%)
Use of anonymous drug testing for fentanyl	0 (0%)
Prevention solutions	141 (24%)
Any mention of an opioid-related education intervention	96 (16%)
Opioid-related education provided in schools	33 (6%)
Safe opioid storage/disposal interventions	36 (6%)
Stigma reduction campaigns	6 (1%)
Criminal justice solutions	102 (17%)
Heightened prosecution of drug dealers	54 (9%)
Drug courts	39 (7%)
Arresting people for drug crimes	8 (1%)
Prisoner re-entry programs focused on healthcare access	5 (1%)
Pre-booking diversion programs (e.g., law enforcement assisted diversion)	3 (1%)
Changes to opioid prescribing solutions	88 (15%)
Prescription drug monitoring programs	55 (9%)
Opioid prescribing cap law	26 (4%)
Pill mill law (i.e., state law strictly regulating pain management clinics)	19 (3%)
Pharmacy identification law requiring individuals picking up opioid prescriptions to show identification	0 (0%)
Pharmaceutical industry solutions	51 (9%)
Lawsuits against pharmaceutical manufacturers for their deceptive opioid marketing practices	45 (8%)
FDA requirements for reducing risk of opioid prescribing	6 (1%)
Health insurance industry solutions	46 (8%)
Any insurance coverage expansion to better cover opioid use disorder treatment	44 (7%)
Affordable care act Medicaid expansion	29 (5%)
Insurance parity regulations	2 (< 1%)
Other solutions	67 (11%)
State or regional emergency declarations	47 (8%)
Increasing border security	12 (2%)
Legalizing cannabis as an alternative to opioids for pain management	12 (2%)
For medical use	9 (2%)
For recreational use	3 (1%)

mention initiatives to expand access to naloxone among people who use opioids and their family members, syringe services programs, and prisoner re-entry programs focused on healthcare access. Relative to print news, television news stories were less likely to mention treatment (22% television vs. 38% print), opioid prescribing (8% vs. 18%) and insurer (4% vs. 10%) solutions (Appendix 5). Television news stories were more likely than print news stories to mention emergency declarations as a solution to the opioid crisis (16% vs. 9%). These differences were statistically significant at the $p < 0.05$ level.

4. Discussion

From 2013 to 2017, there was a > 10-fold increase in the volume of news stories about solutions to the opioid epidemic published/aired by the national and local print and television news outlets studied. Across the five year study period, treatment, harm reduction, and prevention solutions were the three most frequently mentioned types of solutions. This finding demonstrates a shift in news coverage from earlier years of the epidemic, when criminal justice solutions were emphasized (McGinty et al., 2015). There were few differences in the types of solutions mentioned in news coverage by outlets in states hardest-hit and least-hard-hit by the opioid overdose epidemic: while criminal justice solutions were more likely to be mentioned in news stories published/aired by outlets in hardest-hit versus least-hard hit states, treatment, harm reduction, and prevention solutions were the three most frequently mentioned types of solutions in both groups. These were also the three most frequently mentioned types of solutions in both liberal and conservative-leaning local newspapers. Two potential reasons for the shift away from criminal justice solutions include growing bipartisan recognition of the failure of the “war on drugs” policies focused on arresting, prosecuting, and harshly punishing (e.g., mandatory minimum sentencing policies) individuals who use drugs (Schultz and Aspe, 2017; Coyne and Hall, 2017; International Drug Policy Consortium, 2018) and widespread concern about the large criminal justice costs incurred as a result of these policies, which have led to state and federal reforms intended to decrease the incarcerated population, many of whom have drug convictions (Fandos, 2018; L. B. Federal Criminal Justice Reform in 2018, 2018).

Despite news stories' emphasis on public health-oriented solutions, several solutions supported by a strong evidence base were rarely mentioned. While it was the most frequently mentioned type of solution, treatment was only mentioned in one-third of news stories, and only 9% of news stories specifically mentioned expanding medication treatment for opioid use disorder. Treatment with one of three FDA-approved medications – methadone, buprenorphine, or naltrexone – is the gold standard for treatment of opioid use disorder (Volkow et al., 2014; American Society of Addiction Medicine, 2015), but fewer than 35% of people with opioid use disorder in the U.S. receive medication treatment (Jones and McCance-Katz, 2019). Only 5% of news stories mentioned syringe services programs, and 2% mentioned safe consumption sites.

These patterns in news coverage mirror public attitudes. In 2017, only half of Americans believed that an effective treatment for opioid use disorder exists (Blendon and Benson, 2018), 39% supported legalizing syringe services programs (McGinty et al., 2018), and 29% supported legalizing safe consumption sites (McGinty et al., 2018). In the news stories studied, the most commonly mentioned prevention solution was opioid education programs, which are more popular with the U.S. public: in 2017 84% of Americans endorsed public education and awareness programs as somewhat or very effective (Blendon and Benson, 2018). While these types of education solutions are an important component of a comprehensive public approach to addressing the opioid epidemic, evidence suggests that education alone, in the absence of accompanying policy and system-level changes, is not enough to curb rates of opioid use, addiction or overdose (Lynam et al., 1999; Davis et al., 1995).

The types of solutions mentioned in news media coverage of the opioid epidemic evolved over the five-year study period. In 2013, the two most frequently mentioned types of solutions were prevention and opioid prescribing-oriented solutions, followed by an equal proportion of news stories mentioning criminal justice and treatment solutions. In 2017, treatment, harm reduction, and prevention solutions were most frequently mentioned. These shifts likely reflect the changing epidemiology of the epidemic (Rudd et al., 2016; National Center for Health Statistics (NCHS), 2017) as well as policymakers' increased openness, in response to continued increases in opioid overdose deaths (Centers for

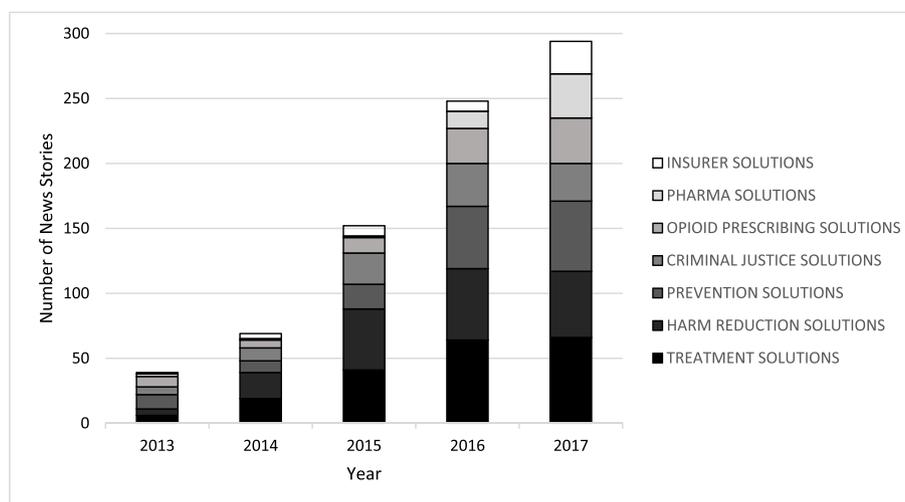


Exhibit 3. Types of solutions to the opioid epidemic covered by the news media, 2013–2017.

Disease Control and Prevention, 2018b), to public health solutions. As heroin and synthetic opioids replaced prescription opioids as the cause of the majority of opioid overdose deaths, many policymakers, public health experts and advocates shifted their focus from opioid prescribing solutions, such as prescription drug monitoring programs – databases of controlled substance prescriptions providers can use to check a patient's past and current prescription opioid use, which have now been established in all 50 states (National Institute on Drug Abuse, 2018) – to solutions, like treatment and harm reduction, that address deaths from all types of opioids. The 2013–2017 study period encompassed expansions in opioid use disorder treatment, including Affordable Care Act insurance expansions that improved coverage of addiction treatment for millions of Americans (Buck, 2011; Blumenthal and Collins, 2014), federal and state policies supporting expanded delivery of buprenorphine in primary care settings (Dick et al., 2015; Stein et al., 2015; Stein et al., 2016), and multiple state-level initiatives to improve treatment delivery, such as Vermont's hub-and-spoke model of care for opioid use disorder (Brooklyn and Sigmon, 2017). Consistent with our finding that news media coverage of harm reduction solutions was driven by coverage of initiatives to expand access to naloxone, state adoption of naloxone access laws spread rapidly during the study period: the number of states with naloxone access laws increased from eight in 2013 to 50 in 2017 (National Institute on Drug Abuse, 2018).

Importantly, research suggests that news stories framing a solution as effective can increase support for the solution, while news stories framing a solution as ineffective can have no or detrimental effects on audience endorsement of that solution (McIntyre, 2017). While we found increased news coverage of evidence-based treatment and harm reduction solutions, it was outside the scope of our study to examine whether news stories framed these solutions as effective. Such framing is particularly relevant for treatment: critics of medication treatment for opioid use disorder assert that because they are themselves a form of opioid, methadone and buprenorphine – the two most widely used medication treatments for opioid use disorder – simply replace one addiction with another (Olsen and Sharfstein, 2014). While our study did not examine how medication treatment was framed, another recent study explored this question, finding that although less than a third of articles about this topic noted these medications' effectiveness, an even smaller proportion of articles described these medications as ineffective or as replacing one addiction for another (Kennedy-Hendricks et al., 2019).

Elements of news stories not captured in our study may affect public support for solutions to the opioid crisis. Messages attributing responsibility for an issue to societal factors – as opposed to messages blaming affected individuals – can increase audiences' support for public health

solutions (Iyengar, 1996; Gross, 2008; Iyengar, 1990). In the context of the opioid crisis, long-held views among the American public that addiction is a personal choice and moral failing likely inhibit support for public health solutions (Morone, 1997; Kennedy-Hendricks et al., 2017; Barry et al., 2014; Russell et al., 2019). Positive depictions of the individuals affected by a problem can increase audiences' willingness to invest societal resources in solutions, whereas negative depictions can lead to apathy or endorsement of punitive approaches (Iyengar, 1996; Schneider and Ingram, 1993; Zillman and Brosius, 2000; Fraser et al., 2018). Two recent studies found that relative to news coverage of prior drug epidemics, U.S. news coverage of the current opioid crisis has depicted the individuals affected in a more positive light (McLean, 2017; Netherland and Hansen, 2016). Both studies attributed this finding to the fact that the ongoing opioid crisis has been driven by prescribed opioids, as opposed to purely illicit drug use, and the shifting demographics of affected individuals – the majority of whom are white, suburban, and rural – in the present crisis relative to past epidemics (McLean, 2017; Netherland and Hansen, 2016). These studies' findings suggest that the increases in news media coverage of public health-oriented solutions to the opioid crisis observed in our study may coincide with increasingly positive news media depictions of people who use opioids. Our sample did not include the internet-only news sources through which Americans increasingly access at least some of their news; however, local television news, which the majority of Americans report as their primary news source (Mitchell et al., 2016), was included in our sample. Study of online news sources was not feasible due to their lack of inclusion in online news archives (e.g., LexisNexis, ProQuest, Newsbank). Our study's descriptive methods did not allow us to test the effects of the solutions messages included in news media coverage on public attitudes. Our analysis did not allow us to explain trends in news media coverage of solutions to the opioid epidemic, which might be driven by competing issues in the news cycle over time.

5. Conclusion

Efforts to educate journalists, editors, and producers regarding medication treatment for opioid use disorder and evidence-based harm reduction solutions to the opioid crisis, and to increase news coverage of successful examples of these solutions, are needed. Future research should consider how solution and other types of news media messages co-occur in stories about the opioid crisis and use experimental methods to test the effects of such messages on public attitudes.

Declaration of Competing Interest

The authors have no conflicts of interest to report.

Acknowledgments

The authors have no funding to report.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.ypmed.2019.105771>.

References

- Abdul-Quader, A.S., Feelemyer, J., Modi, S., et al., 2013. Effectiveness of structural-level needle/syringe programs to reduce HCV and HIV infection among people who inject drugs: a systematic review. *AIDS Behav.* 17 (9), 2878–2892.
- American Society of Addiction Medicine, 2015. National Practice Guideline for the use of medications in the treatment of addiction involving opioid use. <http://www.asam.org/quality-practice/guidelines-and-consensus-documents/ngp>, Accessed date: 21 March 2017.
- Barry, C.L., McGinty, E.E., Pescosolido, B.A., Goldman, H.H., 2014. Stigma, discrimination, treatment effectiveness, and policy: public views about drug addiction and mental illness. *Psychiatric services (Washington, D.C.)* 65 (10), 1269–1272.
- Blendon, R.J., Benson, J.M., 2018. The public and the opioid-abuse epidemic. *N. Engl. J. Med.* 378 (5), 407–411.
- Blumenthal, D., Collins, S.R., 2014. Health care coverage under the affordable care act—a progress report. *N. Engl. J. Med.* 371, 275–328.
- Brooklyn, J.R., Sigmon, S.C., 2017. Vermont hub-and-spoke model of care for opioid use disorder: development, implementation, and impact. *J. Addict. Med.* 11 (4), 286.
- Buck, J.A., 2011. The looming expansion and transformation of public substance abuse treatment under the affordable care act. *Health Aff.* 30 (8), 1402–1410.
- Centers for Disease Control and Prevention, 2018a. Multiple Cause of Death Data on CDC WONDER. US Department of Health and Human Services, CDC, Atlanta, GA.
- Centers for Disease Control and Prevention, 2018b. Drug overdose death data. <https://www.cdc.gov/drugoverdose/data/statedeaths.html>, Accessed date: 16 October 2018.
- Chong, D., Druckman, J.N., 2007. Framing theory. *Annu. Rev. Polit. Sci.* 10 (1), 103–126.
- Chong, D., Druckman, J.N., 2013. Counterframing effects. *J. Polit.* 75 (01), 1–16.
- Coyne, J.C., Hall, A.R., 2017. Four Decades and Counting: The Continued Failure of the War on Drugs. <https://www.cato.org/publications/policy-analysis/four-decades-counting-continued-failure-war-drugs>, Accessed date: 14 May 2019.
- Curry, A., Stroud, N.J., McGregor, S., 2016. Solutions Journalism and News Engagement. <https://mediaengagement.org/research/solutions-journalism-news-engagement/>, Accessed date: 16 October 2018.
- Davis, D.A., Thomson, M.A., Oxman, A.D., Haynes, R.B., 1995. Changing physician performance: a systematic review of the effect of continuing medical education strategies. *JAMA: the journal of the American Medical Association* 274 (9), 700–705.
- De Vreese, C.H., 2004. The effects of frames in political television news on issue interpretation and frame salience. *Journalism & Mass Communication Quarterly* 81 (1), 36–52.
- Dick, A.W., Pacula, R.L., Gordon, A.J., et al., 2015. Growth in buprenorphine waivers for physicians increased potential access to opioid agonist treatment, 2002–11. *Health Aff.* 34 (6), 1028–1034.
- Fandos, N., 2018. Senate passes bipartisan criminal justice bill. <https://www.nytimes.com/2018/12/18/us/politics/senate-criminal-justice-bill.html>, Accessed date: 14 May 2019.
- Fraser, S., Farrugia, A., Dwyer, R., 2018. Grievable lives? Death by opioid overdose in Australian newspaper coverage. *Int. J. Drug Policy* 59, 28–35.
- Graber, D.A., Dunaway, J., 2014. Mass Media and American Politics. CQ Press.
- Gross, K., 2008. Framing persuasive appeals: episodic and thematic framing, emotional response, and policy opinion. *Polit. Psychol.* 29 (2).
- Inciardi, J.A., 1999. Harm Reduction: National and International Perspectives. Sage.
- International Drug Policy Consortium, 2018. Taking Stock: A Decade of Drug Policy. http://fileservr.idpc.net/library/Shadow%20Report_FINAL_ENGLISH.pdf, Accessed date: 14 May 2019.
- Iyengar, S., 1990. Framing responsibility for political issues: the case of poverty. *Polit. Behav.* 12 (1), 19–40.
- Iyengar, S., 1996. Framing responsibility for political issues. *Annals of the American Academy of Political and Social Science* 546, 59–70.
- Jones, C.M., McCance-Katz, E.F., 2019. Co-occurring substance use and mental disorders among adults with opioid use disorder. *Drug Alcohol Depend.* 197 (1), 78–82. <https://doi.org/10.1016/j.drugalcdep.2018.12.030>.
- Kennedy, M.C., Karamouzian, M., Kerr, T., 2017. Public health and public order outcomes associated with supervised drug consumption facilities: a systematic review. *Current HIV/AIDS reports* 14 (5), 161–183.
- Kennedy-Hendricks, A., Barry, C.L., Gollust, S.E., Ensminger, M.E., Chisolm, M.S., McGinty, E.E., 2017. Social stigma toward persons with prescription opioid use disorder: associations with public support for punitive and public health-oriented policies. *Psychiatric services (Washington, D.C.)* 68 (5), 462–469.
- Kennedy-Hendricks, A., Levin, J., Stone, E., McGinty, E.E., Gollust, S.E., Barry, C.L., 2019. News media reporting on medication treatment for opioid use disorder amid the opioid epidemic. *Health Aff.* 38 (4), 643–651.
- L. B. Federal Criminal Justice Reform in 2018, 2018. <http://www.ncsl.org/research/civil-and-criminal-justice/federal-criminal-justice-reform-in-2018.aspx>, Accessed date: 14 May 2019.
- Lakoff, G., 2010. Moral Politics: How Liberals and Conservatives Think. University of Chicago Press.
- Lough, K., McIntyre, K., 2018. Visualizing the solution: an analysis of the images that accompany solutions-oriented news stories. *Journalism* 1464884918770553.
- Lynam, D.R., Milich, R., Zimmerman, R., et al., 1999. Project DARE: no effects at 10-year follow-up. *J. Consult. Clin. Psychol.* 67 (4), 590.
- McCombs, M., 1977. Agenda setting function of mass media. *Public Relat. Rev.* 3 (4), 89–95.
- McGinty, E.E., Kennedy-Hendricks, A., Baller, J., Niederdeppe, J., Gollust, S., Barry, C.L., 2015. Criminal activity or treatable health condition? News media framing of opioid analgesic abuse in the United States, 1998–2012. *Psychiatr. Serv.* 67 (4), 405–411.
- McGinty, E.E., Barry, C.L., Stone, E.M., et al., 2018. Public support for safe consumption sites and syringe services programs to combat the opioid epidemic. *Prev. Med.* 111, 73–77.
- McIntyre, K., 2017. Solutions Journalism. *Journal. Pract.* 1–19.
- McIntyre, K., Sobel, M., 2017. Motivating news audiences: shock them or provide them with solutions? *Comunicación y Sociedad* 30 (1), 39.
- McLean, K., 2017. From “junkies” to “soccer moms”: newspaper representations of overdose, 1988–2014. *Crit. Criminol.* 25 (3), 411–432.
- Mitchell, A., Gottfried, J., Barthel, M., Shearer, E., 2016. The modern news consumer. *Pew Research Center* <http://www.journalism.org/2016/07/07/pathways-to-news/>, Accessed date: 29 October 2018.
- Morone, J.A., 1997. Enemies of the people: the moral dimension to public health. *J. Health Polit. Policy Law* 22 (4), 993–1020.
- National Academies of Sciences EAM, 2019. Medications for Opioid Use Disorder Save Lives. The National Academies Press, Washington, DC. <https://doi.org/10.17226/25310>.
- National Center for Health Statistics (NCHS), 2017. Provisional counts of drug overdose deaths, as of 8/6/2017. https://www.cdc.gov/nchs/data/health_policy/monthly-drug-overdose-death-estimates.pdf, Accessed date: 8 January 2018.
- National Institute on Drug Abuse, 2018. Prescription drug abuse policy system. <http://www.pdaps.org/>, Accessed date: 16 October 2018.
- National Institute on Drug Abuse, 2019. Overdose Death Rates. <https://www.drugabuse.gov/related-topics/trends-statistics/overdose-death-rates>, Accessed date: 14 May 2019.
- Netherland, J., Hansen, H.B., 2016. The war on drugs that wasn't: wasted whiteness, “dirty doctors,” and race in media coverage of prescription opioid misuse. *Cult. Med. Psychiatry* 40 (4), 664–686.
- Network for Public Health Law, 2017. Legal Interventions to Reduce Overdose Mortality: Naloxone Access and Overdose Good Samaritan Laws. https://www.networkforphl.org/_asset/qz5pvn/legal-interventions-to-reduce-overdose.pdf, Accessed date: 16 October 2018.
- Olsen, Y., Sharfstein, J.M., 2014. Confronting the stigma of opioid use disorder—and its treatment. *JAMA: the journal of the American Medical Association* 311 (14), 1393–1394.
- Rees, D.I., Sabia, J.J., Argys, L.M., Latshaw, J., Dave, D.M., 2017. With a little help from my friends: The effects of naloxone access and good Samaritan Laws on opioid-related deaths. In: National Bureau of Economic Research (NBER) Working Paper No. 23171.
- Rudd, R.A., Seth, P., David, F., Scholl, L., 2016. Increases in drug and opioid-involved overdose deaths — United States, 2010–2015. *MMWR Morb. Mortal. Wkly Rep.* 65.
- Russell, D., Spence, N.J., Thames, K.M., 2019. ‘It’s so scary how common this is now’: frames in media coverage of the opioid epidemic by Ohio newspapers and themes in Facebook user reactions. *Inf. Commun. Soc.* 1–7.
- Scheufele, D.A., Tewksbury, D., 2007. Framing, agenda setting, and priming: the evolution of three media effects models. *J. Commun.* 57 (1), 9–20.
- Schneider, A., Ingram, H., 1993. Social construction of target populations: implications for politics and policy. *American Political Science Review* 87 (2).
- Schultz, G.P., Aspe, P., 31 December 2017. The failed war on drugs. *New York Times* <https://www.nytimes.com/2017/12/31/opinion/failed-war-on-drugs.html>, Accessed date: 14 May 2019 (2017).
- Sherman, S., Hunter, K., Rouhani, S., 2017. Safe Drug Consumption Spaces: A Strategy for Baltimore City. <http://www.abell.org/sites/default/files/files/Safe%20Drug%20Consumption%20Spaces%20final.pdf>, Accessed date: 10 October 2017.
- Stein, B.D., Gordon, A.J., Dick, A.W., et al., 2015. Supply of buprenorphine waived physicians: the influence of state policies. *J. Subst. Abuse Treat.* 48 (1), 104–111.
- Stein, B.D., Sorbero, M., Dick, A.W., Pacula, R.L., Burns, R.M., Gordon, A.J., 2016. Physician capacity to treat opioid use disorder with buprenorphine-assisted treatment. *JAMA: the journal of the American Medical Association* 316 (11), 1211–1212.
- Thier, K., 2016. Opportunities and challenges for initial implementation of solutions journalism coursework. *Journalism & Mass Communication Educator* 71 (3), 329–343.
- Volkow, N.D., Frieden, T.R., Hyde, P.S., Cha, S.S., 2014. Medication-assisted therapies—tackling the opioid-overdose epidemic. *N. Engl. J. Med.* 370 (22), 2063–2066.
- Zillman, D., Brosius, H., 2000. Exemplification in Communication: The Influence of Case Reports on the Perception of Issues. Lawrence Erlbaum Associates, London.