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Research Paper

Developing interagency collaboration to address the opioid epidemic: A scoping review of joint criminal justice and healthcare initiatives

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ABSTRACT

Background: With the current opioid epidemic impacting well over half of all counties across the United States, initiatives that encourage interagency collaboration between first responder organizations appear necessary to comprehensively address this crisis. Police, fire, and emergency medical services (EMS) are in a unique position to identify substance users and provide necessary resources to initiate treatment, yet there is not sufficient evidence of joint collaborative programs between law enforcement/first responders and healthcare providers.
Methods: In this scoping review we examine the current state of joint criminal justice and healthcare interventions, specifically, opioid and substance use pre-arrest initiatives via emergency first responders and police officers. We relied on data from the last 10 years across three major databases to assess the extent of criminal justice (CJ) and healthcare collaborations as a response to individuals with opioid use disorder (OUD). We specifically focused on interventional programs between criminal justice first responders (pre-arrest) and healthcare providers where specific outcomes were documented.
Results: We identified only a small number (6) of studies involving interventions that met this criteria, suggesting very limited study of joint interagency collaboration between law enforcement first responders and healthcare providers. Most had small samples, none were in the southern states, and all but one were initiated within the last 5 years.
Conclusions: Although studies describing joint efforts of early intercept criminal justice responses and healthcare interventions were few, existing studies suggest that such programs were effective at improving treatment referral and retention outcomes. Greater resources are needed to encourage criminal justice and healthcare collaboration and policies, making it easier to share data, refer patients, and coordinate care for individuals with OUD.

Background

Illicit substance use is on the rise with over 20 million Americans with alcohol and drug use disorders (SAMHSA, 2020), and over 275 million worldwide (World Health Organization, 2018). Opioid use disorder (OUD) has increasingly become a widespread public health concern, and has been declared a public health emergency (HHS.gov/opioids). This trend continues to impact every segment of society, and opioid-related deaths are often under-represented in official statistics (Gomes, Tadrous, Mamdani, Paterson & Juurlink, 2018). Despite the large amount of people with substance use disorder (SUD), only a small percentage of individuals dealing with SUDs receive treatment (Schiff et al., 2017), and far more patients need treatment than can currently access it (Jones, Campoplano, Baldwin & McCance-Katz, 2015; J. Langabeer, Chambers, Persse, Yatsco & Champagne-Langabeer, 2019). A side effect of the complex health systems in the United States, the primary reasons for not seeking treatment include the inability to pay for services and a lack of insurance (Bureau of Primary Health Care, 2017; Park-Lee, Lipari & Hedden, 2017). A primary goal, however, continues to be locating individuals who are actively using opioids, have overdosed, and are not engaged in treatment (Koyawala, Landis, Barry, Stein & Saloner, 2019; Langabeer et al., 2020; Scott, Grella, Nicholson & Dennis, 2018).

With mortality from opioids increasing dramatically in the United

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States over the last decade (NIDA, 2020), novel mechanisms to identify and provide outreach services to at-risk individuals following overdose (OD) are essential for harm reduction (Hawk, Vaca & D'Onofrio, 2015). Current treatment is often fragmented and reactive, waiting for patients to seek and navigate treatment on their own (Saitz, Larson, LaBelle, Richardson & Samet, 2008; U.S. Department of Health & Human Services, 2016, Chapter 6). First responders, including both law enforcement and emergency medical services, are in a distinctive position to identify substance users, offer direct assistance, and utilize treatment referrals to help mitigate further harm. Despite this advantage, first responders have not historically been involved in comprehensive treatment initiatives; and there is less evidence of collaboration between criminal justice and healthcare organizations prior to incarceration (Barberi & Taxman, 2019).

While there are many intercepts that lead substance users to treatment, the avenue of pairing early first responder and criminal justice intercepts with healthcare providers for a joint response is promising, although its rate of utilization is unknown. First responders are one of the earliest intercept points for those with opioid use disorders as they encounter individuals who are overdosing, actively using, or in withdrawal, as well as buying, selling, and possessing opioids (Brinkley-Rubenstein et al., 2018). Furthermore, interactions with law enforcement or emergency medical services are often unintended and identify a segment of active users of opioids that may not have been contacted otherwise. First responders have increasingly been trained in overdose education and naloxone use to decrease fatal overdoses (Brinkley-Rubenstein et al., 2018). Additionally, first responders can take a proactive role in providing information, resources, and assistance in seeking treatment. Therefore, while first responders may not be trained clinicians, they are often equipped with enough knowledge to assess a problem and make recommendations for treatment (Brinkley-Rubenstein et al., 2018). These efforts matter when it comes to identifying the need and linking to treatment to prevent continued use and future risk of harm and overdose. Collaborative efforts could offer various types of harm reduction and evidence-based practices, depending on community capacity; however, measurable and sustainable gains are more likely to occur with evidence-based treatment modalities.

The overlap of criminal justice and addiction is clear. A large number of individuals with SUDs are involved in the criminal justice system (Belenko, Hiller & Hamilton, 2013). There is no denying that justice-involved individuals with SUDs cycle through the criminal justice system frequently, in a phenomenon often referred to as a "revolving door" (Warner & Kramer, 2009). The criminal justice system is the second largest source of referrals for substance use treatment nationally, behind self-referral (Substance Abuse and Mental Health Services Administration, 2015a). Criminal justice referrals can occur throughout the entire system process, including diversion, drug courts, community-based treatment, and integrated case management, all of which are intercept points that provide several opportunities to divert substance users from the traditional criminal justice experience, linking them with treatment (Brinkley-Rubenstein et al., 2018). There is a call for police to continue to think beyond the role of enforcement and play a more multifaceted role in promoting a treatment focused approach.

Building relationships among multiple community partners and creating a continuum of services is a newly innovative practice that may prove to have a positive influence on the opioid crisis (SAMHSA, 2018). A review of the landscape from vested stakeholders has led to recommendations that encourage those in first responder roles, such as law enforcement, to partner with healthcare providers and agencies to create joint responses to an epidemic that is being called "unprecedented" (Police Executive Research Forum, 2017). Some of these recommendations include data surveillance and data sharing, early warning identification systems, strategic enforcement and prosecution, community-wide collaboration with partners, and assertive post-overdose outreach to enroll patients into treatment. While multiple stakeholders are in agreement about collaboration and have offered anecdotal summaries of initiatives, there has not been a comprehensive and methodical review of published results to gage proliferation of data-driven practices and collaborative responses. The research questions this review seeks to answer are 1)How much published research exists on joint criminal justice and healthcare approaches in response to the opioid crisis? And 2)Are there any patterns to the types of programs strategies, measured outcomes, and recommendations? This scoping review aims to address the knowledge gap and synthesize existing evidence in order to summarize measurable efforts and outcomes of these novel partnerships seeking to reduce OUD and fatal overdoses.

Methods

Review strategy

Scoping reviews have emerged as a new way to synthesize evidence in the literature (Munn et al., 2018; Sucharew & Macaluso, 2019), with the purpose of identifying knowledge gaps, scope a body of literature, clarify concepts, or investigate research conduct. At study inception, a brief preliminary search of collaborations between first responders (police/fire/EMS) and healthcare uncovered limited results, which inspired the need for a methodical scoping review to identify the breadth of published literature. A scoping review follows the same rigorous and structured process of a systematic review, however, does not formally evaluate the quality of evidence through meta-analytic methods, and may include a range of different study designs (Munn et al., 2018; Sucharew & Macaluso, 2019). Scoping reviews intend to provide an overview of published research evidence, summarize the number of sources reporting a certain issue or recommendation, and can serve as a precursor for future systematic reviews. The PRISMA extension for scoping reviews (PRSIMA-ScR) checklist was reviewed for guidance on reporting (Tricco et al., 2018).

Search strategy

In May 2019, we performed a literature search in the PubMed, Embase, and Cochrane Library databases for articles related to criminal justice, healthcare and opioids. Search terms included a variety of law enforcement roles such as "police" and "sheriff", healthcare roles including "physician" and "nurse", and settings including "emergency department", "ambulance" and varieties of opioids such as "oxycodone" and "fentanyl".

A librarian trained in search techniques but not invested in the findings constructed and carried out the search, providing an additional layer of objectivity. To eliminate researcher bias, preliminary articles were translated into a blinded outcome assessment and two independent reviewers reviewed inclusion and exclusion criteria.

Search terms

Search terms were constructed to capture three primary areas of interest, (1) a first responder/law enforcement component; (2) a healthcare component; and (3) persons using opioids. Any research articles that did not include all three components were not considered for further review. Appendix A contains the full search terms utilized.

Study selection

While illicit opioid use is a global concern, the study selection focused on U.S. based studies. A primary reason is the opioid epidemic has been more extensively documented in North America, compared to the rest of the world (Volkow et al., 2019). Furthermore, the organisation for Economic Cooperation and Development (OECD) reports opioids as an emerging health threat and during the years 2015–2017, due in part from opioid related deaths, the life expectancy in the United

States actually decreased for the first time (OECD, 2019). Given that the U.S. has an opioid crisis that surpasses other countries, the purpose of this scoping review is to determine emerging methods to treat opioid use disorder, however, comparison to global strategies may be premature when there is still so much unknown about the United States. Global leaders have recommended researching strategies that control the opioid crisis in America, and using these lessons to prevent similar crises in other countries (Volkow et al., 2019). We believe it is beneficial to utilize this scoping review to capture and summarize new and effective strategies in the U.S. in advance of future research efforts that compare and contrast these methods to universal strategies. For this reason, studies based outside of the United States were excluded in this review.

Additional inclusion criteria required original research published in peer review journals that was recent and relevant (within the last ten years), and outlined an intervention that included a first responder/law enforcement and healthcare outcome. Articles where the criminal justice aspect of the article dealt with courts, policymaking or preventative actions against opioid misuse were not included. Included articles were required to involve collaboration or referral between criminal justice intercept points and healthcare providers. The search terms were intentionally broad to capture variable language used for first responders, law enforcement, and healthcare services, and to capture varying response types as some regions dispatch responders through different practices (different combinations of fire/police/EMS responses). Study programs were primarily focused on opioid users, but included other types of substance use. Anecdotal articles including commentary, editorials and letters without measurable results were excluded. We focused on programs with adult participants (age 18 or older). Research included a measurable outcome such as referral rates, sobriety rates, or recidivism rates. Variable settings were allowed including face-to-face, telemedicine, and phone; and any study design was considered for inclusion as long as measurable outcomes were reported. Publication dates for articles were limited to 10 years, and the language was limited to English.

As the focus of this review was on collaborative healthcare responses from first responders prior to or separate from any formal interaction with the criminal justice system such as pre arrest or booking, the following exclusion criteria were incorporated: various drug court programs (post-arrest and post-booking), substance use treatment options inside correctional settings, and reentry initiatives post-incarceration. While it is apparent that drug court initiatives and incarceration efforts have recently begun to incorporate medication along with other clinical and healthcare components into their models, the focus of this review was to explore programs that were utilizing an earlier intercept point for treatment intervention. Thus, these types of studies fell outside the scope of this review and were excluded. Initiatives led solely by hospital emergency departments that did not include a defined criminal justice/law enforcement component were also excluded. Additionally, research that only reviewed naloxone education, deployment, or administration/reversals without any additional referral or intervention were not included - as naloxone is a useful life saving method but has not been qualified as treatment for or prevention from further substance use (Jordan & Morrisonponce, 2019).

Results

A PRISMA flow diagram for the scoping process is presented in Fig. 1. Initial search results yielded 2112 studies, which was reduced to 1780 after de-duplication efforts. After applying inclusion and exclusion criteria, this yielded 23 abstracts of interest that prompted full-text review. Full-text review reduced the number of included articles to six, answering our first research question about how much published information is in the literature. Summary points of these six articles are presented in Table 1.

Study timelines

All program evaluations gathered data from initial program deployment and most included preliminary outcomes ranging over a few months (3 months to 12 months), with only one study including an extensive evaluation period of 5 years (Collins, Lonczak & Clifasefi, 2017). With the exception of the Seattle LEAD program (Collins et al., 2017), the remaining programs reviewed have been deployed within the past 5 years, illustrating that these types of initiatives are still relatively new.

Characteristics of included participants

The programs were not clustered in one specific part of the country, with programs emerging in Washington (Collins et al., 2017), California (Wagner, Bovet, Haynes, Joshua & Davidson, 2016), Massachusetts (HYPERLINK \l "bib3" Botieri, Cloud & Smulowitz, 2016 ; Schiff et al., 2017), Michigan (Dahlem et al., 2017) and North Carolina (Paul, 2018). The number of participants introduced to these collaborative programs ranged from sample sizes of 11 participants (Wagner et al., 2016) to 376 participants (Schiff et al., 2017), showing extreme variation in program capacity and responsiveness. Recruitment of participants for the programs varied as two programs recruited through formal interactions with law enforcement due to involvement in criminal offending behaviors influenced by substance use (Collins et al., 2017; Paul, 2018), two programs recruited participants after first responder naloxone overdose reversals (Dahlem et al., 2017; Wagner et al., 2016), one program recruited from a hospital emergency department post overdose (Botieri et al., 2016) and one program allowed any person with opioid use disorder to reach out to law enforcement for enrollment (Schiff et al., 2017). Eligibility criteria was also variable, with two programs requiring eligibility through involvement in certain drug crimes or low level criminal offenses (Collins et al., 2017; Paul, 2018). Only half of the studies included demographic data on the participants that received an intervention (Collins et al., 2017; Dahlem et al., 2017; Schiff et al., 2017).

Intervention descriptions

All of the collaborations included law enforcement partnerships with community substance treatment providers. Two programs also included partnerships between law enforcement and local hospital emergency departments (HYPERLINK \l "bib3" Botieri et al., 2016 ; Schiff et al., 2017), although one of these programs observed and learned the emergency department screening process and absorbed that component within the law enforcement role (Schiff et al., 2017). A common component across all of the studies included multiple providers sharing data to assist in response and referral.

Two programs were structured around naloxone reversals that extended the intervention with a referral to a treatment case manager (Dahlem et al., 2017; Wagner et al., 2016); two programs were categorized as Law Enforcement Assisted Diversion (LEAD) models that diverted certain offenders out of the system without formal arrest and booking and provided linkage to voluntary treatment (Collins et al., 2017; Paul, 2018); one program was structured as a police-referral program that could be initiated by law enforcement or as voluntary enrollment from the community (Schiff et al., 2017); and one program included a comprehensive law enforcement and behavioral outreach team visit post overdose and discharge from the Emergency Department (HYPERLINK \l "bib3" Botieri et al., 2016).

Intervention outcomes

Five of the studies had an assertive outreach component that capitalized on unintended interactions with patients in need (through law enforcement first responder interactions), with one study relying

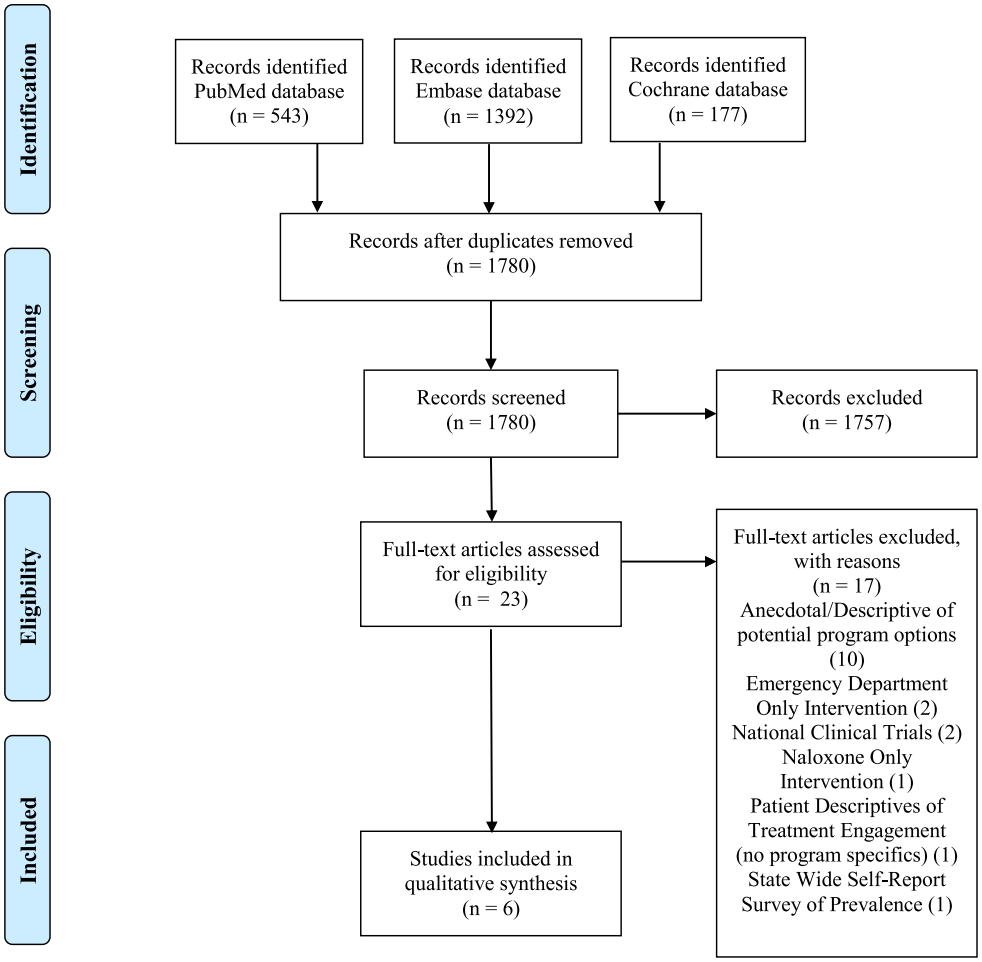

Fig. 1. PRISMA flow diagram showing study inclusion/exclusion process.

primarily on voluntary self-admittance into treatment (Schiff et al., 2017). With the exception of one program (Collins et al., 2017) who utilized an arrest recidivism rate as the outcome measure, the remaining programs measured effectiveness based on enrollment or some level of follow-through/participation in subsequent substance treatment. Only one study (Schiff et al., 2017) included a specific variable to measure the number of participants who reported taking medications used in treatment (buprenorphine, naloxone, methadone), with the remaining studies measuring engagement with treatment services on a broader scale. The LEAD program evaluation from Seattle (Collins et al., 2017) was the only program that included a control group that did not receive the intervention for statistical comparison.

Program effectiveness

Effectiveness of each program was defined differently in each study; however, a shared component of all the articles was that program effectiveness was described favorably, and that all the authors stated there were strengths of the interventions being deployed. Half of the studies also reported there was value in following up after the initial acute interaction episode as some individuals may initially decline additional services, only to accept them upon follow up (HYPERLINK \l "bib3" Botieri et al., 2016 ; HYPERLINK \l "bib22" Paul, 2018 ; Wagner et al., 2016).

Evidence synthesis

In order to summarize answers to our second research question, Table 2 presents an overview of study strategies, outcomes, and recommendations.

While there was some overlap in program approach, six studies were condensed into four distinct strategy styles that were reported as positive interventions. Outcome measures were different for every study listed, illustrating a lack of agreement and uniformity when measuring and reporting outcomes. There were shared themes that emerged from author recommendations, including 1) police/community relations need improvement and law enforcement treatment initiatives have a positive effect in this area; 2) passive sharing of treatment information is ineffective and direct referrals are a necessary component for successful outcomes; and 3) data sharing and multidisciplinary collaboration must be paired with education and training for first responders.

Discussion

The literature continues to call on researchers to understand barriers to treatment access and develop evidence-based practices for drug treatment (HYPERLINK \l "bib2" Belenko et al., 2013), and certain strategies are being recommended. New and voluntary police-led programs have focused on using initial contact with the system as an access point prior to arrest and formal charges (Schiff et al., 2017). This review uncovered a relatively small number of studies that have researched the effectiveness of paired criminal justice/law enforcement and healthcare interventions. However, the programs reviewed promote encouraging results from their intervention strategies, and demonstrate evidence of successful joint criminal justice and health initiatives. There remains a clear lack of published research to support the widespread acceptance and enactment of these intervention strategies. Therefore, this scoping

Table 1
Overview of searched articles meeting inclusion criteria.

Article	Location and Evaluation Period	Program Focus	Intervention	Sample	Outcome Measures	Primary Findings
HYPERLINK \l "bib6" Collins et al., 2017	Seattle, WA Oct. 2009 -July 2014	Law enforcement assisted pre-arrest diversion	Diversion from CJ system, linkage to clinical and social services; harm-reduction case management	318 persons suspected of low level drug and prostitution activity were screened; 203 LEAD/115 control	Criminal offending recidivism	Participants had 60% lower odds of arrest at 6 mo.; 58% lower odds of arrest long term; 39% lower odds of felony charge long term
HYPERLINK \l "bib37" Wagner et al., 2016	San Diego, CA July 2014 -Nov. 2014	Law Enforcement initiated treatment referral post-OD/ Naloxone reversal	Provide treatment resources and connect with local treatment provider case manager	11 naloxone delivery, 9 successful reversals	Persons who made at least one visit to a substance abuse treatment program	3 out of 9 persons followed up with treatment as a result of the LEO referral
HYPERLINK \l "bib27" Schiff et al., 2017	Gloucester, MA June 2015 -May 2016	Police-led addiction treatment referral program; pre-arrest	Voluntary screening, placement identification, and referral	376 individuals who participated 429 times	Phone follow up to confirm individual attended placement	75% (160/214) of encounters entered placement; 37% substance free since entry
HYPERLINK \l "bib7" Dahlem et al., 2017	Washentaw County, MI Aug. 2015 – Aug. 2016	Law Enforcement Officers (LEOs) initiated treatment referral post-OD/Naloxone reversal	LEOs call substance abuse case manager (CM) post-naloxone administration; CM follow up at Emergency Department	32 naloxone delivery; 31 successful reversals	Treatment Record Review of current or completed treatment participation	19.4% (6/31) individuals who received naloxone continue to be in treatment or received treatment services
HYPERLINK \l "bib3" Botieri et al., 2016	Plymouth, MA Oct. 2015 – Oct. 2016	Law Enforcement and behavioral health outreach	Outreach team follow up 24 h post-discharge from Emergency Department	not disclosed	Number of Individuals agreeing to seek treatment following outreach visit	80% of patients reporting substance use problems agreed to seek treatment following outreach visit
Paul, 2018	Fayetteville, NC Late 2016 – Early 2018	Law Enforcement Assisted Diversion; pre-arrest	Diversion from CJ system, harm-reduction case management referral	22 participants	Enrollment Numbers	22 participants enrolled; participants receiving peer support, harm reduction, and treatment services

review encourages others to explore joint criminal justice and healthcare initiatives and to publicly share their results in order for future research to evaluate, critique, and build upon successful models and outcomes. An increase in published studies will help determine what combinations and approaches are most effective to establish best practices.

The studies in this review highlight communities that are sharing data among providers to create continuums of care to allocate resources, streamline referrals, and individualize treatment responses. Perhaps more importantly, determination of what is considered an effective and successful outcome is missing from the current studies available, with each program defining a different outcome measure. Additional research should also explore specific intervention types, particularly approved Medications for Opioid Use Disorder (MOUD) treatment. Currently described as best-practice and one of the most effective tools for opioid use disorder, MOUD has shown to decrease the risk of overdose (Miller, Griffin & Gardner, 2016; World Health Organization, 2014). Despite being considered best practice, only one study listed a MOUD measurement in their outcomes (Schiff et al., 2017). It would be beneficial to explore the integration of MOUD in early intervention opportunities with first responders.

Limitations

One limitation is the decision to search only United States based studies, and this may limit generalizability to areas outside of the US. Another limitation of this study is this review may not capture all of the collaborations being deployed; some programs may not have an evaluation component, while others are in the beginning stages. News, press, and other media reports suggest that there are greater collaborative partnerships than this scoping review uncovered; and therefore, a publication bias likely exists when trying to accurately measure these types of programs. One full-text article that was reviewed but did not meet inclusion criteria surveyed police and fire departments in Massachusetts and found that 21% (23/110) of the surveyed communities reported some type of collaborative intervention program or strategy being utilized (Formica et al., 2018). At least one registered national clinical trial was discovered during the full text review that included a protocol but did not include any measurable outcomes (Scott, 2019); however, this does indicate that other research initiatives may be currently active. Another journal correspondence letter reviewing the police-led referral program in Gloucester, Massachusetts declared that 153 police departments across 28 states are adopting similar programs; although there is no citation regarding how this information was gathered (Schiff, Drainoni, Blair-Merrit, Weinstein & Rosenbloom, 2016). An article published after the search timeframe in this review illustrates how components of first responder outreach and healthcare are coming together for comprehensive care in Houston, Texas (J. Langabeer et al., 2019). This program is reaching people who may have not otherwise sought treatment on their own. People go untreated for many reasons; and future research that has proactive outreach may uncover reasons people have not voluntarily sought treatment and help to eliminate barriers. Evaluation of such programs is essential in order to provide evidence for policy change.

Conclusions

Although studies describing joint efforts of early intercept criminal justice responses and healthcare interventions were few, existing studies suggest that such programs were effective at improving treatment referral and retention outcomes. With a lack of research about these types of interventions, greater resources are needed to encourage community collaborations to share information about outcomes; and new criminal justice and healthcare collaboration should incorporate reporting practices as part of their logistical strategy. The findings from our focused scoping review identified very few evidence-based research

Table 2
Synthesized study strategies, outcomes, and recommendations.

Strategy	Study	Measured Outcome	Recommendations
Law Enforcement Assisted Diversion (LEAD)			
	HYPERLINK \l "bib6" Collins et al., 2017	Criminal offending recidivism	a) Punishment does not work; b) Pre-booking diversion, harm reduction case management, and legal system coordination is key to reducing ongoing criminal behaviors
	Paul, 2018	Enrollment numbers	a) Multidisciplinary partnerships necessary; b) Build trust with community-especially with populations that may have a negative perception of law enforcement
Law enforcement treatment referral post-naloxone administration			
	HYPERLINK \l "bib7" Dahlem et al., 2017	Review of current or completed treatment	a) Training and education for first responders about addiction, naloxone, and referral process; b) Improve law enforcement and community relationships; c) Integrate public health mindset into law enforcement culture
	HYPERLINK \l "bib37" Wagner et al., 2016	At least one visit to substance use treatment	a) Community and law enforcement relationships need improvement; b) Naloxone training and overdose reversals improve community relations; c) More education needed for first responders to address stereotypes and reduce stigma of substance use disorders
Law enforcement treatment referral			
	HYPERLINK \l "bib27" Schiff et al., 2017	Percentage of individuals entering treatment	a) Utilize criminal justice system prior to arrest as access point to addiction treatment; b) 24-hour access to care is necessary; c) Direct referral more successful than handing out treatment information; d) Acute episodes of care need to be replaced with comprehensive longitudinal care models; e) Nonjudgmental attitudes from law enforcement may decline after a relapse, therefore more training and support to staff to eliminate stigma and reduce burnout
Law enforcement paired with behavioral outreach			
	HYPERLINK \l "bib3" Botieri et al., 2016	Number of individuals agreeing to seek treatment	a) Brochures with phone numbers do not work; outreach teams post emergency department discharge are effective; b) collaboration between police, hospital, and treatment providers is important; c) data sharing is critical component to success

outcomes from these initiatives. Additional research should explore initiatives to measure effectiveness of other existing programs outside of peer-reviewed literature to assess the full extent of current criminal justice and healthcare substance use collaborations. Since this scoping review only uncovered a small existing amount of available research, future research agendas that contribute publications on innovative programs addressing the opioid crisis should be encouraged. The opioid crisis is a collective public health concern; and therefore, sharing collaborative efforts is important to identifying and implementing best practices. What emerges from this review is the notion that innovative criminal justice and public health methods are still largely misunderstood. This scoping review hopes to serve as a call for action to further identify best practices.

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Declaration of Competing Interest

We wish to confirm that there are no known conflicts of interest associated with this publication, and there has been no significant financial support for this work that could have influenced its outcome.

References

Barberi, D., & Taxman, F. S. (2019). Diversion and alternatives to arrest: A qualitative understanding of police and substance users' perspectives. *Journal of Drug Issues, 49*(4), 703–717.

Belenko, S., Hiller, M., & Hamilton, L. (2013). Treating substance use disorders in the Criminal Justice system. *Current Psychiatry Reports, 15*, 414–424.

Botieri, M., Cloud, S., & Smulowitz, P. (2016). Guide patients into treatment through outreach visits. *ED Management, 28*(10), 115–117.

Brinkley-Rubinstein, L., Zaller, N., Martino, S., Cloud, D. H., McCauley, E., Heise, A., et al. (2018). Criminal justice continuum for opioid users at risk of overdose. *Addictive Behaviors, 86*, 104–110.

Bureau of Primary Care. (2017). *2016 Uniform Data System.* Health Resources and Services Administration.

Collins, S. E., Lonczak, H. S., & Clifasefi, S. L. (2017). Seattle's Law Enforcement Assisted Diversion (LEAD): Program effects on recidivism outcomes. *Evaluation and Program Planning, 64*, 49–56.

Dahlem, C. H., King, L., Anderson, G., Marr, A., Waddell, J. E., & Scalera, M. (2017). Beyond rescue: Implementation and evaluation of revised naloxone training for law enforcement officers. *Public Health Nursing, 34*, 516–521.

Formica, S. W., Apsler, R., Wilkins, L., Ruiz, S., Reilly, B., & Walley, A. Y. (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.

Gomes, T., Tadrous, M., Mamdani, M. M., Paterson, M., & Juurlink, D. N. (2018). The burden of opioid-related mortality in the United States. *JAMA Open Network, 1*(2), Article e180217. https://doi.org/10.1001/jamanetworkopen.2018.0217.

Hawk, K. F., Vaca, F. E., & D'Onofrio, G. (2015). Reducing Fatal Opioid Overdose: Prevention, Treatment and Harm Reduction Strategies. *The Yale Journal of Biology and Medicine, 88*(3), 235–245.

Jones, C. M., Campoplano, M., Baldwin, G., & McCance-Katz, E. (2015). National and state treatment need and capacity for opioid agonist Medication-Assisted Treatment. *American Journal of Public Health, 105*(8), 55–63.

Jordan, M. R., & Morrisonponce, D. (2019). *Naloxone. ncbi bookshelf. a service of the national library of medicine, national institute of health.* Treasure Island, FL: StatsPearl Publishing.

Koyawala, N., Landis, R., Barry, C. L., Stein, B., & Saloner, B. (2019). Changes in outpatient services and medication use following a non-fatal opioid overdose in the West Virginia Medicaid program. *Journal of General Internal Medicine, 34*, 789–791.

Langabeer, J., Chambers, K., Persse, D. E., Yatsco, A., & Champagne-Langabeer, T. (2019). Houston opioid system integrates assertive outreach with comprehensive care for opioid use disorder. *Journal of Emergency Medical Services*. Retrieved from https://www.jems.com/articles/2019/06/houston-ed-opioid-system-integrates-assertive-outreach-with-comprehensive-care-for-opioid-use-disorder.html date of publication 6/6/19 .

Langabeer, J., Champagne-Langabeer, T., Luber, S. D., Prater, S. J., Stotts, A., Kirages, K., et al. (2020). Outreach to people who survive opioid overdose: Linkage and retention in treatment. *Journal of Substance Abuse Treatment, 111*, 11–15.

Miller, J. M., Griffin, O. H., I.II, & Gardner, C. M. (2016). Opiate treatment in the criminal justice system: A review of crimesolutions.gov evidence rated programs. *American Journal of Criminal Justice, 41*, 70–82.

Munn, Z., Peters, M., Stern, C., Tufanaru, C., McArthur, A., & Aromataris, E. (2018). Systematic review or scoping review? Guidance for authors when choosing between a systematic review or scoping review approach. *BMC Medical Research Methodology, 18*(143), 1–7. https://doi.org/10.1186/s12874-018-0611-x.

NIDA. (2020). Overdose death rates. https://www.drugabuse.gov/related-topics/trends-statistics/overdose-death-rates on 2020, March 12.

Park-Lee, E., Lipari, R. N., & Hedden, S. N. (2017). *Receipt of services for substance use and mental health issues among adults: Results from the 2016 National Survey on Drug Use and Health. Substance abuse and mental health services administration*. Rockville, MD: NSDUH Data Review.

Paul, L. (2018). Meeting opioid users where they are: A service referral approach to law enforcement. *North Carolina Medical Journal, 79*(3), 172–173.

Police Executive Research Forum. (2017). *The unprecedented opioid epidemic: As overdoses becomes a leading cause of death, police, sheriffs, and health agencies must step up their response*. Washington, DC: Police Executive Research Forum. https://www.policeforum.org/assets/opioids2017.pdf.

Saitz, R., Larson, M. J., LaBelle, C., Richardson, J., & Samet, J. H. (2008). The case for chronic disease management for addiction. *Journal of Addiction Medicine, 2*(2), 55–65.

Schiff, D. M., Drainoni, M. L., Blair-Merrit, M., Weinstein, Z. M., & Rosenbloom, D. (2016). A police-led addiction treatment referral program in Massachusetts. *New England Journal of Medicine, 375*(25), 2502–2503.

Schiff, D. M., Drainoni, M., Weinstein, Z. M., Chan, L., Bair-Merritt, M., & Rosenbloom, D. (2017). A police-led addiction treatment referral program in Gloucester, MA: Implementation and participants' experiences. *Journal of Substance Abuse Treatment, 82*(1), 41–47.

Scott, C. (2019). Recovery Initiation and Management after Overdose (RIMO) Experiment (RIMO). *Identification No. NCT03895827*. Retrieved from http://clinicaltrials.gov/ct2/show/nct03895827 Accessed on May 5, 2019 .

Scott, C., Grella, C. E., Nicholson, L., & Dennis, M. L. (2018). Opioid recovery initiation: Pilot test of a peer outreach and modified recovery management checkup intervention for out-of-treatment opioid users. *Journal of Substance Abuse Treatment, 86*, 30–35.

Substance Abuse and Mental Health Services Administration. (2020). *2017-2018 national surveys on drug use and health*. Rockville, MD: Model-based estimated totals. https://www.samhsa.gov/data/sites/default/files/reports/rpt23259/NSDUHsaeTotals2018/NSDUHsaeTotals2018.pdf.

Sucharew, H., & Macaluso, M. (2019). Methods for research evidence synthesis: The scoping review approach. *Journal of Hospital Medicine, 14*(7), 416–418.

Tricco, A. C., Lillie, E., Zarin, W., O'Brien, K. K., Colquhoun, H., & Levac, D (2018). PRISMA extension for scoping reviews (PRISMA-ScR): Checklist and explanation. *Annals of Internal Medicine, 169*(7), 467–473.

U.S. Department of Health and Human Services (HHS), Office of the Surgeon General. (2016). *Facing addiction in america: The surgeon general's report on alcohol, drugs, and health*. Washington, DC: U.S. Department of Health and Human Services. https://www.ncbi.nlm.nih.gov/books/NBK424848/.

Volkow, N. D., Icaza, M., Poznyak, V., Saxena, S., & Gerra, G. Informal Scientific Network U.N.O.DC-WHO.. (2019). Addressing the opioid crisis globally. *World Psychiatry: Official Journal of the World Psychiatric Association (WPA), 18*(2), 231–232. https://doi.org/10.1002/wps.20633.

Wagner, K. D., Bovet, L. J., Haynes, B., Joshua, A., & Davidson, P. (2016). Training law enforcement to respond to opioid overdose with naloxone: Impact on knowledge, attitudes, and interactions with community members. *Drug and Alcohol Dependence, 165*, 22–28.

Warner, T., & Kramer, J. (2009). Closing the revolving door? Substance abuse treatment as an alternative to traditional sentencing for drug-dependent offenders. *Criminal Justice and Behavior, 36*, 89–109.

World Health Organization (2018). Management of substance abuse: Information sheet on opioid overdose. https://www.who.int/substance_abuse/information-sheet/en/.