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## Costs Attributable to Criminal Justice Involvement in Injuries: A Systematic Review

Gabrielle F. Miller<sup>1</sup>, Sarah Beth Barnett<sup>1</sup>, Avital Wulz<sup>1</sup>, Feijun Luo<sup>1</sup>, Curtis Florence<sup>1</sup>

<sup>1</sup>Division of Injury Prevention, National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, Atlanta, GA, USA

### Abstract

**Context:** Costs related to criminal justice are an important component of the economic burden of injuries; such costs could include police involvement, judicial, and corrections costs, among others. If the literature has sufficient information on the criminal justice costs related to injury, it could be added to existing estimates of the economic burden of injury.

**Objective:** To examine research on injury-related criminal justice costs, and what extent cost information is available by type of injury

**Data sources:** Medline, PsycInfo, Sociological Abstracts ProQuest, EconLit, and National Criminal Justice Reference Service (NCJRS) were searched from 1998 to 2021.

**Data extraction:** Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) were followed for data reporting.

**Results:** Overall, 29 studies reported criminal justice costs and the costs of crime vary considerably.

**Conclusions:** This study illustrates possible touchpoints for cost inputs and outputs in the criminal justice pathway, providing a useful conceptualization for better estimating criminal justice costs of injury in the future. However, better understanding of all criminal justice costs for injury-related crimes may provide justification for prevention efforts and potentially for groups who are disproportionately affected. Future research may focus on criminal justice cost estimates from injuries by demographics to better understand the impact these costs have on particular populations.

### Keywords

Criminal Justice; Costs; Economic Burden

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**Corresponding Author:** Gabrielle F. Miller, PhD; 4770 Buford Highway NE, Atlanta, GA, 30341; ygm3@cdc.gov; 770-488-5328. Contributorship Statement: GM and CF conceptualized the study, reviewed literature, drafted the manuscript, and reviewed the final manuscript. SBB, AW, and FL reviewed literature, drafted the manuscript, and reviewed the final manuscript.

Disclaimer: The findings and conclusions in this manuscript are those of the author(s) and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

The authors aim to use person-first language throughout this systematic review, however when reporting on previously published works the language reflects what was reported in the original study.

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## INTRODUCTION

Injuries are the leading cause of death for children and adults ages 1 to 45.<sup>1</sup> Unintentional injuries and suicide consistently rank among the top ten causes of death in the United States (U.S.) for all ages. There is a large body of literature on the costs of illness, including the costs of injuries, which takes the perspective of the person injured, and may not include costs related to the person responsible for the injury. Injuries are costly for individuals, their families and society at large.

The total cost of an injury would theoretically include costs incurred to the individual injured, their family or caregiver, and society. Costs incurred to the individual include medical, work loss, and quality of life and/or intangible costs. Costs incurred to family or caregiver include work loss, costs of time, and quality of life and/or intangible costs. Costs also include the payer, such as medical insurers. Societal costs, which is the public sector perspective, include those incurred by local, state, and federal government to include medical costs incurred by the public, police, emergency medical services, and criminal justice costs. Certain types of injuries include costs from two perspectives, the person responsible for the injury and the injured party. In the case of violence, the two perspectives are apparent and easier to conceptualize as the perpetrator and victim. This two-sided perspective can also be extended to other causes of unintentional or undetermined injuries, such as motor vehicle crashes where one party is deemed at-fault or a person who overdoses incurs injuries and they could be prosecuted for illegal drug use or possession, meaning the two-sided perspective occurs in one person.

In 2015, the average attributable 1-year medical cost of all non-fatal injuries per person initially treated in the Emergency Department was \$6,620<sup>2</sup> and the average injury was associated with approximately 11 days of work loss, costing an average of \$1,590 in the year following the injury.<sup>3</sup> The medical cost and work loss costs associated with injuries do not represent all the costs injuries have to public sector, funded by taxpayers, such as police and criminal justice costs. Previous literature that identified cost of non-fatal and fatal injury including Florence et al. (2015a, 2015b) and Finkelstein et al. (2004) did not specifically include criminal justice related-costs.<sup>4-6</sup> Since some of the most common causes of fatal and non-fatal injuries (i.e., motor vehicle crashes, suicide, drug overdose and violence)<sup>7-9</sup> intersect the criminal justice system, it is important to better understand the criminal justice costs to help inform policy makers, public health professionals, and the public about potential prevention strategies that could reduce injuries, save lives, and save taxpayer dollars.

The criminal justice costs of injuries may represent a substantial proportion of the cost of injuries to the public sector. Documenting the cost of injuries, including a comprehensive assessment of the criminal justice costs, is important to realize the true benefits of preventing injuries, especially for groups who are disproportionately affected by the criminal justice system, including people of color and people experiencing poverty.<sup>10-13</sup> Assessing the cost of injuries for disproportionately affected groups is a critical step because Black men and people experiencing poverty are overrepresented in the criminal justice system, thus

their costs are essential to better understanding the disparities within the economic cost of injury.<sup>10-13</sup> Equipped with an accurate estimate of the injury-related criminal justice costs, communities and policy makers can then assess the cost of injury prevention strategies compared to the benefits associated with injuries prevented. We take the perspective of the public sector, which is funded by taxpayers, because the strategies employed to prevent injuries and the agencies tasked with preserving public health and safety are also funded by taxpayers at the local, state, and federal level.

The criminal justice system consists of various components. Figure 1 presents simplified steps in the criminal justice pathway that can represent minor offenses to serious felonies, including violent or other potentially injury-related offenses. The pathway usually begins with law enforcement response or emergency medical services following a crime or incident, then progresses to ticketing and/or arrest. This event may precede detainment or jailing and could initiate legal or judicial involvement. From there, the person who committed the crime may be directed to appear in a legal court or an alternative court (e.g., drug court, mental health court). For those who encounter the legal court system, they could be sentenced to jail, prison, or a detention center. Within these facilities, costs may include security costs, daily living costs (i.e., food, medical supplies, and clothing, etc.), administrative and staffing costs, and programmatic costs (i.e., rehabilitation programs). Recidivism can occur at multiple places along the pathway and thus is not connected to one particular step in the pathway. At some point, the individual completes their contact with the criminal justice system by re-integrating into society. However, the re-integration process (see Figure 1. post-release interventions) may be lengthy. All of these steps in the criminal justice pathway, including re-integration support, represent types of costs that could have been avoided had the injury been prevented. To obtain a comprehensive accounting of the total criminal justice costs related to injuries, estimates of each step or possible trajectory along the entire criminal justice pathway for each major area of injury would be required.

Two different examples may help illustrate the complex and divergent nature of the criminal justice pathway following an injury related crime. One example involves a driver who causes a motor vehicle crash, though is not intoxicated, that results in an unintentional injury to a person in another vehicle. At the scene, there may be emergency and police response, ticketing, and possibly, resolution through traffic court. Another example involves a person who assaults their spouse and children with a weapon while intoxicated. In this second scenario, a different criminal justice pathway may occur compared to the first example. The person who committed the assault may face an initial arrest and release, may encounter court with mandated treatment for alcohol and domestic abuse, and/or potentially get sentenced to state or federal prison. Upon release from the facility, this individual may also participate in services for re-entry into society, such as transitional centers or rehabilitation programs. With these two examples, the contact with the criminal justice system is highly divergent, nevertheless both incur injury-related criminal justice costs.

This systematic review summarizes the criminal justice cost estimates related to injury published over the past twenty-five years. The aim of this review is to determine whether the research to date provides us with a comprehensive estimate of the total and incremental costs of injury-related criminal justice resources employed, and to what extent this estimate

is available by type of injury. By reviewing and assessing the estimates that have been conducted, we will also be able to discuss what research is still needed to gain an accurate estimate of the costs of criminal justice resources incurred due to injuries. These costs represent a meaningful category of the total costs of injuries that are often hidden from public view and often not considered from the public health perspective. Including estimates of criminal justice costs due to injuries gives the public and policy makers much needed information on the scale of costs related to injuries. A previous systematic review estimated the cost of crime imposed by adult offenders using studies from several countries and found that U.S. estimates for cost of crime consistently reported higher costs than other countries.<sup>14</sup> However, there is a dearth of literature on the cost of crime in the U.S. as it specifically relates to injury. This systematic review is unique because it focuses on injury-related criminal justice costs in the U.S., including studies with criminal justice costs incurred to the public sector.

## METHODS

### Search Strategy and article selection

The review was conducted in accordance with the PRISMA statement for systematic reviews. We conducted a systematic search of five electronic databases (Medline, PsycInfo, Sociological Abstracts ProQuest, EconLit, and National Criminal Justice Reference Service (NCJRS)) for relevant studies published in English from 1998 to 2021. The year 1998 was chosen to accommodate for federal government sentencing reforms that were enacted by 1996.<sup>15</sup> A broad search strategy was used for keywords related to violence, criminal justice, or costs (see Table 1 for the full list of search terms). Multiple search engines were used to ensure that any articles referencing the search terms independent of the field were located. This review was limited to peer-reviewed publications and excluded books, non-peer reviewed publications, white papers, and dissertations.

Initial search and review activities took place in September 2016, April 2020, and September 2021 and 4,323 articles were found. A librarian adapted the search terms to best fit the search engines. After removing duplicates, 4,258 articles of interest were identified. We then completed a screening of abstracts with independent reviews conducted by two co-authors and discordant cases adjudicated by a third reviewer. Abstracts were excluded: 1) based on title (n=3,215); 2) based on a variety of reasons (n=832). These reasons included: a) data external to the U.S. (n=157); b) no mention of economic costs as inputs or outputs (n=297); c) no mention of the criminal justice system (n=88); d) studies that did not present formal abstracts (e.g., dissertations) (n=182); or e) studies that did not contain original research, such as editorials or systematic reviews (n=108).

We then completed a screening of the full texts of 211 manuscripts with independent reviews conducted by two co-authors and discordant cases adjudicated by a third reviewer. In two cases the full manuscript was not able to be located. Inclusion and exclusion criteria for reviewing abstracts was applied to full text review. Additionally, manuscripts were excluded if most of the data collection occurred before 1997 (n=46). Manuscripts were excluded: 1) based on not having economic costs as inputs or outputs (n=122); 2) no criminal justice application (n=8), or; 3) data external to the U.S. (n=6) (Figure 2). The remaining 29

manuscripts were then reviewed independently by all three coders for a second time to both ensure that inclusion and exclusion criteria were accurately applied, and for data extraction.

### Data Extraction

Each manuscript was divided into one of four categories: 1) General Criminal Costs 2) Recidivism/Probation/Parole/Civil Commitment 3) Mental Health/Mental Illness and 4) Substance Use and Treatment. The four categories were based on a thematic analysis of the 29 included manuscripts. Studies that focused on overall criminal costs which may have spanned the conceptual model of entry into the criminal justice system were grouped in General Criminal Costs. Studies that primarily focused on costs after release, mental health, or substance use/treatment were grouped in their respective category. Key data for the results table were extracted from the final sample of manuscripts (Table 2). These data included study design, analysis, crime type, study duration, time period, sample, location, costs, and year of cost data. Due to the nature of this systematic review, it was not appropriate or possible to involve the public or patients in the design, conduct, reporting or dissemination plans.

## RESULTS

Table 2 reports the studies that were included.

### General Criminal Costs

Nine studies were identified as general criminal costs. Of the nine included five were based on general criminal costs and the costs ranged per offender from \$895 for robbery<sup>16</sup> to \$307,519 for murder/manslaughter.<sup>17</sup> The general criminal justice studies covered multiple areas of cost including, but not limited to, investigation, defense, and incarceration, which spanned most of the criminal justice pathway. Additionally, the population or crime included was varied across the studies, including career criminals, murder/manslaughter, violent crime, and homeless. The remaining 4 articles covered sexual assault and rape. All three of the articles estimating the cost of sexual assault included cost of testing which ranged from \$912<sup>18</sup> to \$1000.<sup>19</sup> In the remaining article on rape, Peterson et al. (2017) estimated total criminal justice costs at \$234 billion for the lifetime cost in 2014. These 9 general multiple crime studies likely span several types of injuries; however, because criminal justice studies use crimes for categorization, it is not clear the number or proportion of crime by injury type.

### Recidivism/Probation/Parole/Civil Commitment

Seven studies were identified as recidivism/probation/parole/civil commitment studies. Similar to general criminal costs, 5 studies estimated costs for multiple crimes (general), 1 reported on sex offenses, and 1 on drug offenses. Two of the general studies focused on interventions to prevent recidivism ranging from \$79.37 per participant<sup>20</sup> to \$9,140 per probationer.<sup>21</sup> One of the general studies estimated costs for youth at a cost of \$1,881.35 including arrest, court and detention.<sup>22</sup> Another general study estimated criminal justice costs to range from \$1,210 to \$384,007.<sup>23</sup> Kliez et al. (2010), general study, estimated taxpayer expense per arrest ranging between \$12,371 for property and \$403,092 for

manslaughter/murder while Zarkin (2012), general study, estimated a lifetime baseline total cost of \$257.2 billion. Costs focused on sex offenders ranged between \$1,210 to \$384,007 per offender.<sup>23</sup> Costs for drug offenses were estimated at a minimum cost of criminal justice as \$322,951 with a mean cost of \$867,350.<sup>24</sup> The 7 studies identified in this section include interventions that may prevent recidivism and identify a variety of crime types. The studies here showed that there was no homogeneity in the way costs were determined for this category.

### **Mental Health/Mental Illness**

Three articles were identified as mental health/mental illness studies, all three articles addressed general crime types. Each of these articles address different aspects of costs related to mental health among incarcerated individuals. One article found that the total cost of therapy was \$2,054 per person.<sup>25</sup> Another article estimated expenditures on prescription drugs for mental health which ranged from \$581 to \$8,138 per 100 persons who were incarcerated.<sup>26</sup> Lastly, one article found that treatment across multiple agencies for severe mental illness was \$5,630 per person.<sup>27</sup> There were a limited number of studies that focused solely on mental health/mental illness; the included studies illustrate some of the potential components associated with mental health and criminal justice.

### **Substance Use and Substance Use Disorder Treatment**

Ten studies were identified as substance use and substance use disorder treatment among people with substance-related crimes. Of the 10 studies, six were related to opioid-related crime types, two were drug offenses, one was general substance use, and one was driving under the influence. Among the opioid-related studies, two of the studies estimated the total costs of crime<sup>28, 29</sup> with one study explicitly including substance use disorder treatment.<sup>28</sup> One study captures the cost of crime as an input rather than the outcome of the study and is reported per individual.<sup>30</sup> The remaining three studies reported costs related to medications for opioid use disorder treatment interventions<sup>31-33</sup> with one including total costs of crime per treated person over a hypothetical 6 month period.<sup>32</sup> The remaining four spanning other substances include total costs of the crimes related to substance use,<sup>34</sup> general costs of the crime including treatment,<sup>35, 36</sup> and general costs compared to an intervention.<sup>37</sup> These studies on substance use naturally map onto the injury topic of drug overdose, though all crimes may not have had an accompanying drug overdose. With that said, using the counterfactual framework, had a drug overdose been prevented, there would likely be criminal justice costs that could have been avoided.

### **Geographic Variation**

The costs presented by these 29 studies are not representative of the U.S. as only 7 studies use data from the U.S. overall.<sup>16, 28-30, 34, 38, 39</sup> Two studies use data from U.S. regions (Western U.S. and Northeastern states)<sup>25, 40</sup> while 8 studies use data from individual states including Missouri, Oregon, Iowa, Connecticut, California, and Ohio.<sup>17, 22, 26, 27, 32, 35, 36, 41</sup> The remaining 10 studies use data from several localities or from individual cities or counties. These cities and counties are predominately in the Western U.S. and are larger urban centers, and two studies use data from Baltimore City, Maryland.<sup>20, 33</sup> Many states,

particularly those in the Midwest and Southern regions, and suburban and rural counties are not well represented in these studies apart from the studies using data from the U.S. overall.

### Population Groups

The included studies cover a range of population groups, though only one study takes a national perspective on people who commit crimes.<sup>16</sup> Twelve studies focused on people who use substances or have an opioid use disorder.<sup>21, 28-37, 39</sup> Five studies focus on sexual assault and five studies focus on adolescents or justice-involved youth.<sup>17, 22, 24, 41, 42</sup> The remaining studies included three that focus on people with mental health problems,<sup>25-27</sup> one study of people who experience homelessness,<sup>43</sup> one study of people on probation<sup>22</sup> and one study on people who habitually commit crimes.<sup>40</sup> Additional criminal justice costs studies with data from areas and population groups with less representation is needed, as well as studies examining how place and population impact drivers of injury-related criminal justice costs.

## DISCUSSION

This systematic review is the first to our knowledge to compile and assess U.S. injury-related criminal justice costs. Furthermore, this review is unique in that it focuses on criminal justice costs that would not have occurred had the injuries been prevented, and these injuries encompass several pressing public health topics. With this perspective of connecting criminal justice costs to public health issues and the costs reported herein, policy and decision makers can identify additional types of costs, specifically criminal justice costs, that are paid by taxpayers that are related to injuries. This accounting for injury-related criminal justice costs at the intersection of public health and crime is a fundamental first step toward creating a linkage between the two public sectors for prevention.

This review demonstrates that the area of research related to the cost of criminal justice is very diverse. Assessment of cost, given the findings in this paper, will require further research including development of a methodological design for assessing criminal justice across injuries. There is extreme variation across the topic areas and little consensus on the components that make up the criminal justice costs. This review outlines a framework for determining cost in the future and could be used to provide a more consistent estimate.

### General Criminal Costs

In 2020, 2.3 million people in the U.S., or 0.7% of the U.S. population, were in federal or state prisons or jails.<sup>44</sup> According to the Federal Bureau of Prisons, most people who are imprisoned are incarcerated for drug and sexual offenses.<sup>45</sup> Within the 9 studies in general criminal justice costs the types of crime represented include sexual assault,<sup>18, 19, 38, 46</sup> violent crime,<sup>16</sup> and those covering all crime.<sup>17</sup> There are a wide range of the types of costs reported in these papers. Most of general criminal justice studies covered the main components of costs from ticketing and/or arrest through release. A comprehensive accounting of the total criminal justice costs related to injuries from the literature requires estimates of each step or possible trajectory along the entire criminal justice pathway for each major area of injury. However, these general criminal justice cost studies did not include all the iterations of criminal justice pathways. These studies included a range of

injuries, and we do not know the proportion of costs by injury type. With the exception of sexual assault, additional studies categorizing crimes by injury types are needed to further elucidate criminal justice costs related specifically to injuries.

### **Recidivism/Probation/Parole/Civil Commitment**

In 2019, more than 4.3 million people were on parole or probation in the U.S.<sup>47</sup> The Bureau of Justice Statistics estimates the three-year recidivism rate, or the rate at which someone released for a federal crime gets rearrested for a crime within three years of release, is 35%.<sup>48</sup> The wide range of costs attributed to recidivism demonstrate the variability in which post-release interventions report for costs. Nevertheless, studies, such as McCollister et al. (2018), illustrate that when interventions were implemented costs were lowered. Gaining a better estimate for recidivism, along with post-release interventions, could improve the overall cost estimate of the criminal justice system related to injuries.

### **Mental Health/Mental Illness**

One in five Americans experience mental illness.<sup>49</sup> The proportion of people in jails with mental illness is 3 to 6 times that of the general population illustrating the major impact mental illness has on individuals involved in the criminal justice system.<sup>50, 51</sup> According to the Urban Institute, an estimated 56% of people in state prisons, 45% of people residing in federal prisons, and 64% of people in jails have a mental health problem.<sup>52</sup> The limited cost data on those with mental illness makes it difficult to determine the true cost of criminal justice associated with mental illness and injuries associated with mental illness. While it is clear there are multiple places in the criminal justice pathway in which mental health costs are incurred, it is unclear the overall cost burden of these interventions. Future research could calculate the true cost of mental illness in the criminal justice system to better estimate the cost and potential savings of prevention interventions.

### **Substance Use and Treatment**

Just over 60% of Americans in 2019 reported experiencing issues with substance use in the past month including tobacco, alcohol, or illegal drugs.<sup>49</sup> While there are more studies around substance use than mental health included in this review, the range of costs were substantial, making it difficult to assess a true cost of criminal justice around substance use and treatment. From 2007 to 2009 it was estimated that 63% of sentenced inmates met the DSM-IV criteria for drug abuse.<sup>53</sup> Of that 63% only 22%-28% of inmates, depending on setting, had access to treatment.<sup>53</sup> Use of substance abuse treatment in facilities has been shown to lead to reductions in recidivism and even cost.<sup>54, 55</sup> Limited data around the impacts of substance use treatment on offenders, makes it difficult to demonstrate the true costs and benefits of providing treatment. The papers included in this review demonstrate that substance use plays a role in each stage of the criminal justice pathway, including recidivism. It is possible that increasing access to treatment could reduce overall criminal justice costs by reducing recidivism, but the data are limited and the samples are small.<sup>54</sup>



## Health Equity Implications

This review illustrates the variability of U.S. injury-related criminal justice costs. People of color and people experiencing poverty are disproportionately incarcerated, and thus these subpopulations may be at higher risk for crime-related injuries.<sup>10, 13</sup> Better identifying injury-related criminal justice estimates may provide an opportunity to highlight the broader impact and potential savings from prevention efforts, potentially for groups who are disproportionately affected by the criminal justice system. Future research may focus on injury-related criminal justice cost estimates by demographics to better understand the impact of costs of injuries within the criminal justice system on particular populations.

## Limitations

This study is subject to several limitations. First, we did not include victim-only costs including pain and suffering and QALY (quality-adjusted life year) estimates. Criminal justice costs related to victim are only included if the victim is also the perpetrator (i.e., self-inflicted harm, drug overdose, motor vehicle crash). Additionally, studies that used willingness-to-pay or jury awards were excluded from the analysis due to the victim viewpoint. The aim of this study was to examine the criminal justice costs, which are centered around the persons who are accused and convicted of crimes but is not reflective of the total costs of injury, which includes the totality of costs from both the person who perpetrated the crime and from the perspective of the victim of the crime. Second, while the review focused on criminal justice costs incurred to the public sector and most studies either did not include victim costs or included separate estimates of victim costs, some papers included in this review included victim-related costs in their societal or total cost estimates.<sup>24, 32, 35, 40, 42</sup> Third, this study only included peer reviewed published literature, and excluded dissertations and other non-peer reviewed literature. Additionally, while we only included studies if the majority of data collection occurred after 1996, there are a few studies that use data from 1996 to support their estimates. Fourth, this review was interested in criminal justice costs that were potentially related to injuries and may have included costs for crimes that did not involve an injury. Finally, given the extreme variation across the topic areas and little consensus on the components that make up the criminal justice costs, comparing across different studies may impact the interpretation of our findings. Nonetheless, this review is the first step in the development of a methodological design for assessing criminal justice across injuries.

## Conclusion

The injury-related criminal justice costs consist of various component costs, including mental health, substance use and treatment, and post-release (e.g., probation, parole, recidivism) costs. Estimates for these costs vary considerably across studies illustrating the wide array of cost inputs and highlighting the complexity of the criminal justice system as it relates to injury. While there were general criminal justice cost estimates and estimates for some specific injury-related crimes, there were multiple gaps in the costs for each type of injury-related crime and for each step along the criminal justice pathway. Therefore, we are not able to compile a total cost of injury-related criminal justice costs from the existing literature. Additional estimates are needed within categories and throughout the steps of

the criminal justice pathway. Additional studies that crosswalk crimes by injuries are also required for the most accurate estimate of injury-related criminal justice costs. Nonetheless, this study illustrates the criminal justice pathway related to injury, providing a useful starting point for better estimating injury-related criminal justice costs in the future.

### Data Availability:

Data is publicly available from the listed electronic databases.

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**What is already known on this topic:**

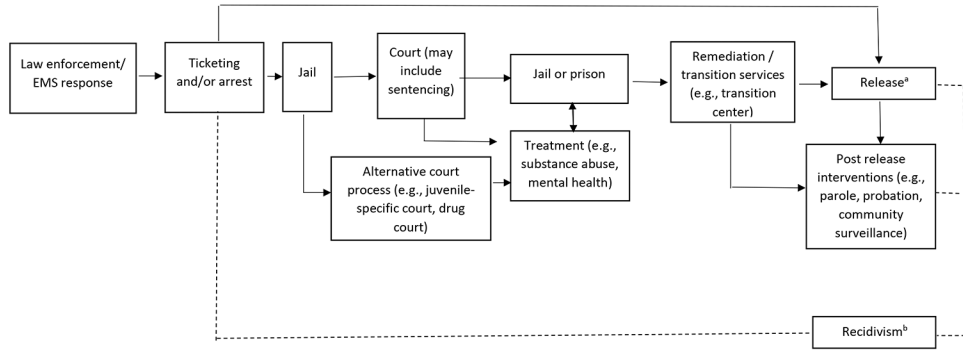
There is a large body of literature on the costs of illness, including the costs of injuries, which takes the perspective of the person injured, and may not include costs related to the person responsible for the injury.

**What this study adds:**

This review is unique because it focuses on injury-related criminal justice costs in the U.S., including studies with criminal justice costs incurred to the public sector over the past twenty-five years.

**How this study might affect research, practice, or policy:**

This study illustrates possible touchpoints for cost inputs and outputs in the criminal justice pathway, providing a useful conceptualization for better estimating criminal justice costs of injury in the future.



**Figure 1.**  
A Conceptual Model of the Criminal Justice System

<sup>a</sup>An individual may be released at any point throughout this process. Additionally, an individual may encounter phases at different times or simultaneously (eg, someone may be sentenced to prison and substance abuse treatment while incarcerated).

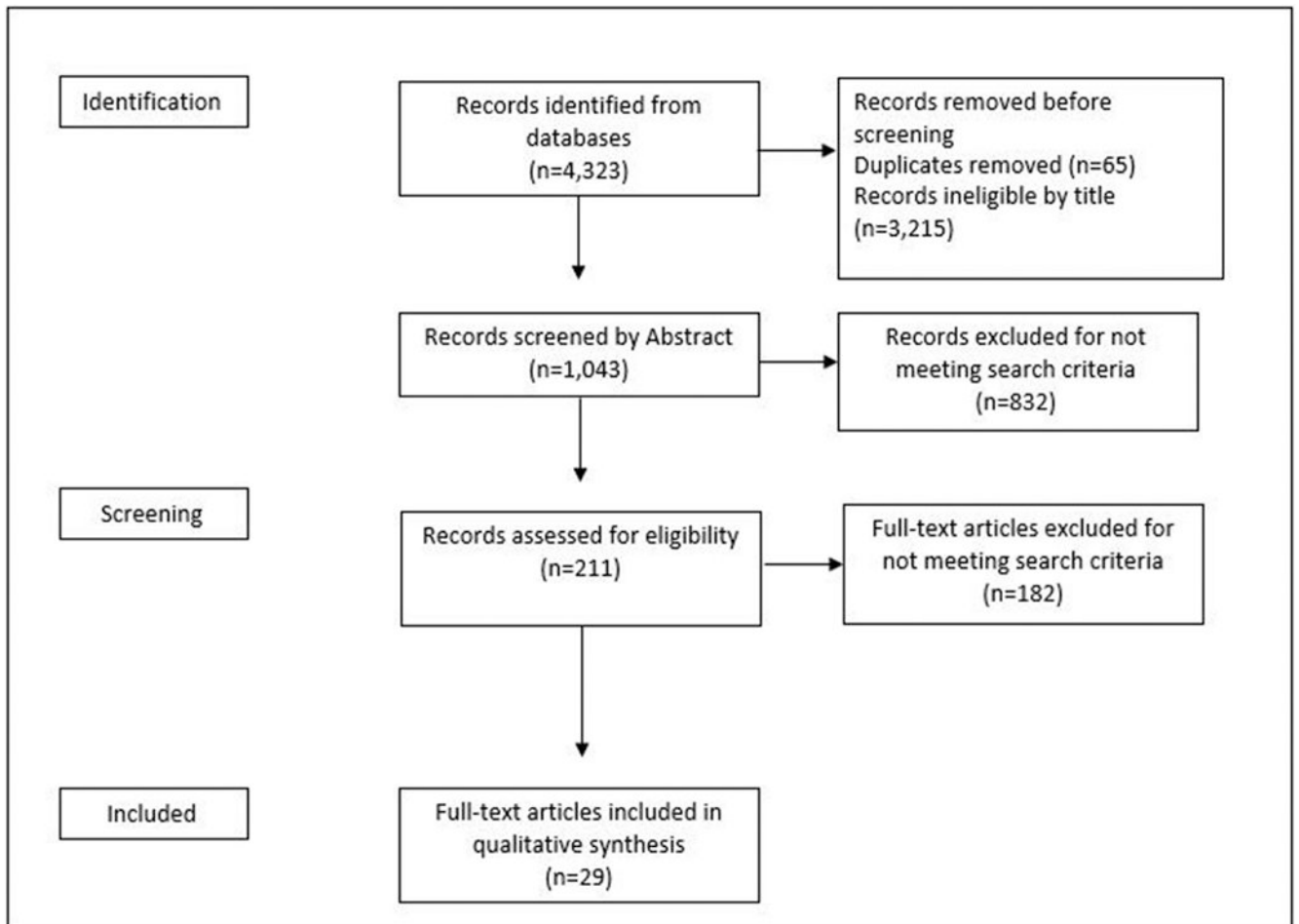
<sup>b</sup>Recidivism refers to going back to jail or prison after being released within a given time (usually 3 to 5 years).

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**Figure 2:**  
PRISMA flow diagram with identification, screening, and exclusions

Table 1:

## Database search terms

Database	Search terms
Medline (OVID) 1946-	<p>((exp Accident/ OR exp Violence/ OR exp "Wounds and Injuries"/ OR exp self-injurious behavior/ OR exp homicide/ or exp sex offenses/ OR exp Juvenile Delinquency/ OR exp Aggression/ OR Seat belts/ OR child restraint systems/ or head protective devices/ OR exp Substance-Related Disorders/ OR exp Consumer Product Safety/ OR exp Brain Injuries/ OR exp dangerous behavior/) and (pc.fs OR ec.fs)) OR (injury OR injuries OR accident* OR violence OR delinquen* OR bully* OR aggressive behavior OR violent behavior OR aggression OR gang OR gangs OR ((child* OR elder*) ADJ2 (abuse OR neglect OR maltreatment OR welfare)) OR ((spous* OR partner) ADJ2 abuse) OR rape OR sexual* abus* OR harassment OR suicide* OR self-injur* OR homicid* OR firearm* OR gun* OR ((motor vehicle* OR automobile* OR car OR cars) ADJ2 (crash* OR accident* OR injur* OR safety)) OR car seat* OR seat belt* OR seatbelt* OR safety belt* OR child seat* OR booster seat* OR child restraint* OR passenger safety OR ((motorcycle* OR bicycle*) ADJ2 (crash* OR accident* OR injur* OR safety)) OR (driver* ADJ2 licens*) OR helmet* OR (pedestrian* ADJ2 (injur* OR safety OR accident*)) OR (driving ADJ2 (drunk OR impaired OR distracted OR drugged)) OR overdose* OR poisoning OR substance abuse OR (drug* ADJ2 (use* OR abuse))).ti,ab,sh.</p> <p>AND</p> <p>(inmate* or incarcerat* or (detention ADJ2 (center* or camp* or facilit*)) or jail* or prison* or (correction* ADJ2 (facilit*or institution*)) or penitentiari* or (penal ADJ2 (institution*or facility)) OR criminal justice OR criminal law OR law enforcement OR prosecution OR court fee* OR court cost* OR prosecution OR rehabilitation OR recidivism OR administrative OR litigation OR adjudication OR jurisprudence OR courtroom* OR law enforcement OR police force OR legislation).mp.</p> <p>AND</p> <p>exp "Costs and Cost Analysis"/ OR (((cost* OR economic) ADJ3 (benefit* OR analysis OR saving* OR burden)) OR (return ADJ2 investment*)).ti,ab. OR ec.fs</p> <p>Limit English ; limit 1998-</p>
PsycInfo (OVID) 1987-	<p>exp Violence/ OR exp Crime/ OR exp Elder Abuse/ or exp Partner Abuse/ or exp Child Abuse/ or exp Physical Abuse/ or exp Alcohol Abuse/ or exp Drug Abuse/ or exp Sexual Abuse/ OR exp self destructive behavior/ OR exp Juvenile Delinquency/ OR exp gangs/ OR exp Aggressive Behavior/ OR Bullying/ OR (injury OR injuries OR accident OR accidents OR violence OR delinquency OR bullying OR aggressive behavior OR violent behavior OR aggression OR gang OR gangs OR ((child* OR elder*) ADJ2 (abuse OR neglect OR maltreatment OR welfare)) OR ((spous* OR partner) ADJ2 abuse) OR rape OR sexual* abus* OR harassment OR suicide* OR self-injur* OR homicid* OR ((firearm* OR gun*) ADJ2 (injur* OR wound*)) OR ((motor vehicle* OR automobile* OR car OR cars) ADJ2 (crash* OR accident* OR injur* OR safety)) OR car seat* OR seat belt* OR seatbelt* OR safety belt* OR child seat* OR booster seat* OR child restraint* OR passenger safety OR ((motorcycle* OR bicycle*) ADJ2 (crash* OR accident* OR injur* OR safety)) OR (driver* ADJ2 licens*) OR helmet* OR (pedestrian* ADJ2 (injur* OR safety OR accident*)) OR (driving ADJ2 (drunk OR impaired OR distracted OR drugged)) OR overdose* OR poisoning OR substance abuse OR (drug* ADJ2 (use* OR abuse))).ti,ab,sh.</p> <p>AND</p> <p>(inmate* or incarcerat* or (detention ADJ2 (center* or camp* or facilit*)) or jail* or prison* or (correction* ADJ2 (facilit*or institution*)) or penitentiari* or (penal ADJ2 (institution*or facility)) OR criminal justice OR criminal law OR law enforcement OR prosecution OR court fee* OR court cost* OR prosecution OR rehabilitation OR recidivism OR administrative OR litigation OR adjudication OR jurisprudence OR courtroom* OR law enforcement OR police force OR legislation).mp.</p> <p>AND</p> <p>exp "Costs and Cost Analysis"/ OR (((cost* OR economic) ADJ3 (benefit* OR analysis OR saving* OR burden)) OR (return ADJ2 investment*)).ti,ab.</p> <p>Limit English; limit 1998-</p>
Sociological Abstracts ProQuest 1952-	<p>SU.EXACT("Accidents") OR SU.EXACT("Safety") OR SU.EXACT("Drunk Driving") OR SU.EXACT("Injuries") OR SU.EXACT("Violence") OR SU.EXACT("Homicide") OR SU.EXACT("Crime") OR SU.EXACT("Abuse" OR "Alcohol Abuse" OR "Child Abuse" OR "Child Sexual Abuse" OR "Drug Abuse" OR "Drug Addiction" OR "Elder Abuse" OR "Emotional Abuse" OR "Partner Abuse" OR "Sexual Abuse" OR "Spouse Abuse" OR "Substance Abuse") OR SU.EXACT("Battered Women") OR SU.EXACT("Family Violence") OR SU.EXACT("Self Destructive Behavior" OR "Suicide") OR SU.EXACT("Assault" OR "Rape" OR "Sexual Assault") OR SU.EXACT("Juvenile Delinquency") OR SU.EXACT("Gangs") OR SU.EXACT("Child Neglect") OR SU.EXACT("Delinquency Prevention") OR SU.EXACT("Aggression") OR SU.EXACT("Drug Addiction") OR TI,AB(injury OR injuries OR accident OR accidents OR violence OR crime OR delinquency OR bullying OR "aggressive behavior" OR aggression OR gang OR gangs OR abuse OR neglect OR maltreatment OR rape OR harassment OR suicid* OR self-injur* OR self-destructive OR homicid* OR crash* OR safety OR "car seat*" OR "child restraint*" OR "booster seat*" OR "passenger safety" OR licens* OR helmet* OR "pedestrian safety" OR "drunk driving" OR "driving while" OR "distracted driving" OR overdos* OR poisoning OR "substance abuse" OR (drug* NEAR/2 use*) OR (drug* NEAR/2 abuse))</p> <p>AND</p>



Database	Search terms
	<p>SU.EXACT(Criminal Justice) OR TI,AB(inmate* or incarcerat* or (detention NEAR/2 center*) or (detention NEAR/2 camp*) or (detention NEAR/2 facilit*) or jail* or prison* or (correction* NEAR/2 facilit*) or (correction* NEAR/2 institution*) or penitentiari* or (penal NEAR/2 institution*) or (penal NEAR/2 facility) OR "criminal justice" OR "criminal law" OR "law enforcement" OR prosecution OR "court fee*" OR "court cost*" OR prosecution OR rehabilitation OR recidivism OR administrative OR litigation OR adjudication OR jurisprudence OR courtroom* OR "law enforcement" OR "police force" OR legislation)</p> <p>AND</p> <p>SU.EXACT("Costs") OR SU.EXACT("Cost-Benefit Analysis") OR SU.EXACT("Health Care Costs") OR TI,AB(cost OR costs OR "return on investment" OR ROI)</p> <p>AND</p> <p>limit 1998-; English</p>
EconLit	<p>(injury OR injuries OR accident OR accidents OR violence OR delinquency OR bullying OR "aggressive behavior" OR "violent behavior" OR aggression OR gang OR gangs OR ((child* OR elder*) N2 (abuse OR neglect OR maltreatment OR welfare)) OR ((spous* OR partner) N2 abuse) OR rape OR sexual* abus* OR harassment OR suicide* OR self-injur* OR homicid* OR ((firearm* OR gun*) N2 (injur* OR wound*)) OR (("motor vehicle*" OR automobile* OR car OR cars) N2 (crash* OR accident* OR injur* OR safety)) OR "car seat*" OR "seat belt*" OR seatbelt* OR "safety belt*" OR "child seat*" OR "booster seat*" OR "child restraint*" OR "passenger safety" OR ((motorcycle* OR bicycle*) N2 (crash* OR accident* OR injur* OR safety)) OR (driver* N2 licens*) OR helmet* OR (pedestrian* N2 (injur* OR safety OR accident*)) OR (driving N2 (drunk OR impaired OR distracted OR drugged)) OR overdose* OR poisoning OR "substance abuse" OR (drug* N2 use*) OR (drug* N2 abuse))</p> <p>AND</p> <p>(inmate* or incarcerat* or (detention N2 (center* or camp* or facilit*)) or jail* or prison* or (correction* N2 (facilit* or institution*)) or penitentiari* or (penal N2 (institution* or facility)) OR "criminal justice" OR "criminal law" OR "law enforcement" OR prosecution OR "court fee*" OR "court cost*" OR prosecution OR rehabilitation OR recidivism OR administrative OR litigation OR adjudication OR jurisprudence OR courtroom* OR "law enforcement" OR "police force" OR legislation)</p> <p>AND</p> <p>((cost* OR economic) N2 (benefit* OR analysis OR saving* OR burden)) OR (return N2 investment*)</p> <p>Limit English ; 1998-</p>
National Criminal Justice Reference Service (NCJRS)	<p>Crime costs OR Cost effectiveness analysis OR Prison costs OR Corrections costs OR Economic analysis of crime OR Cost analysis OR Cost/Benefit Analysis OR Costs OR Court Costs OR Economic analysis OR Economic impact of prisons OR Evaluation costs OR Juvenile crime costs OR Law enforcement costs</p>

**Table 2:** Major characteristics of articles reporting costs of criminal justice potentially related to injuries

Authors	Study Design, Analysis	Crime Type	Study Duration, time period	Sample, Location	Costs	Year of Cost Data
<b>General Criminal Costs</b>						
Davis and Wells, 2019	Observational, Logistic regression	Sexual Assault	Unknown, Unknown	97 DNA matched samples, Denver Colorado	\$1,000 per DNA processing; \$15,929 per conviction	Unknown
Delisi and Gattling, 2003	Observational Cohort, Cost Estimation	General	6 years, 1995–2000	500, Western United states	\$274,610 in monetized criminal justice costs (investigation, legal defense, incarceration, parole, and probation) per career criminal for included offenses	2002
Dopp et al., 2014	Randomized Experiment, CBA	General	25 years, July 2007–Dec 2010	176, Missouri	The arrest expense per incident for murder/manslaughter was \$307,519, sexual was \$78,458, robbery was \$80,826, assault was \$49,183, property was \$9,438, drug was \$13,927, theft/larceny was \$1,465, stolen property was \$3,482, fraud was \$3,336, misdemeanor assault was \$2,287, and misdemeanor drug was \$3,759; including taxpayer costs such as police and sheriffs offices, court processing, and community service	2012
Hunt et al., 2017	Simulation, Top down approach with Monte Carlo	General	1 year, Unknown	N/A, United States	Violent Crime per incident ranges from \$895 to \$32364 with an average of \$1781	2010
Lovell et al., 2021	Observational, CEA	Sexual Assault	18 years, 1993-2011	5165, Cuyahog County, OH	\$435 cost for testing supplies per kit; \$989 total cost of the DNA testing per kit	2019
Peterson et al., 2017	Observational Cross-Sectional, Mathematical Model	Rape	20 years, 5 years, and 1 year, 1995-2014 and 2010-2014 and 2011	2,148,000, United States	\$234 billion in total criminal justice activities including police, judicial, and corrections costs.	2014
Saldana et al., 2019	Randomized Control Trial, CBA	General	1638 days, 1997-2006	166, Oregon	Combined Cohorts per participant: TAU - Court and Lawyer \$ 1,025; Incarceration \$24,321; arrest \$644; TFCCO - Court and Lawyer \$ 706; Incarceration \$18,876; arrest \$376	2016
Wang et al., 2020	Observational, CEA	Sexual Assault	2-3 years, September 27, 2016-May 25, 2019	868, San Francisco CA	Mean cost per Sexual Assault Kit \$912	2016
Wilking et al., 2018	Observational, Cost Analysis	General	6 years, January 1, 2010- June 30, 2016	652 infractions, Chico CA	Hourly pay rates ranging from \$21.29 to \$30.32	2015/ 2016
<b>Recidivism/Probation/Parole/Civil Commitment</b>						
Cowell et al., 2010	Observational Cohort, CBA	General	2 years, April 2000-November 2001	306, Oregon	For all youth in the sample on average for the first six months after intake costs per offender were \$59,90 in arrest, and \$172.29 in Court, \$1649.16 in Detention.	2000
Cowell et al., 2018a	Randomized Experiment, Net Benefit Approach	General	6 months to 30 months follow-up, Unknown	625, Saline County, Arkansas, Essex County, Massachusetts, Clackamas County,	\$6775 for PAU and \$9140 for HOPE DFE by probationer.	2015

Authors	Study Design, Analysis	Crime Type	Study Duration, time period	Sample, Location	Costs	Year of Cost Data
Cowell et al, 2018b	Randomized Experiment, CEA	General	2 and 6 month follow-up, Unknown	Oregon, Tarrant County, Texas 316, Baltimore City, MD and Dallas, TX	MAPTT is \$79.37 and MI is \$134.27 per participant	2016
Duwe, 2018	Randomized Experiment, Regression/CBA	Sex Offenders	12-113 month follow-up, January 2008-June 2016	100, Minnesota-Minneapolis, St. Paul, Rochester	Estimated costs range from \$1210 to \$384,007 per participant.	2017
Klitz et al, 2010	Randomized Experiment, CBA	General	13.7 year follow-up, Unknown	176, Unknown	Expenses included police and sheriffs' offices, court processing, jail and community supervision, juvenile detention, juvenile rehabilitation, and adult detention. Taxpayer arrest expense per participant for murder/manslaughter was \$403,092; sexual was \$102,841; robbery was \$105,238; aggravated assault was \$64,468; property was \$12,371; and drug was \$18,302.	2008
McCollister et al, 2018	Convenience Sample, Benefit Cost Analysis	Drug Offenses	1 year, 2012-2013	5 sites, Two in the west, one in the midwest, one in the south, one in the southeast	Mean Criminal Justice Costs per program were \$867,350, minimum was \$322,951, and maximum was \$1,633,504. The mean criminal justice savings across programs was between \$77,208 and \$122,565.	2012
Zarkin, 2012	Survey Informed-Simulation, CBA	General	Lifetime for 2004 prison cohort, 2004	Population of U.S. state prisoners in 2004 aged 21-60 (1.14 million), National	Arrest, court, and incarceration total costs were at the baseline \$257.2 billion.	2009
<b>Mental Health/Mental Illness</b>						
Johnson et al, 2019	Randomized experiment, Hierarchical linear model	General	10 weeks, 14 weeks including maintenance, 32 week follow up, March 3, 2012 to March 4, 2014	191, 2 Northeastern states	Per person was \$2,054 including costs for interpersonal psychotherapy training and supervision; Total was \$184,869. Ongoing cost per patient would be \$575.	Unknown
Lund et al, 2002	Ecological, Cost Estimation	General	11 years, 1990-2000	Unknown, Iowa	Annual expenditures on psychiatric drugs were \$8,138 per 100 inmates; antipsychotic drugs were \$1,929 per 100 inmates; antidepressant drugs were \$4,986; mood stabilizer drugs were \$581 per 100 inmates; and anxiolytic and hypnotic drugs were \$634 per 100 inmates.	2000
Swanson et al, 2013	Observational Cross-Sectional, Cost Estimation	General	2007, 2006-2007	25133, Connecticut	Judicial and police agency cost per person was \$5,630, including arrest and probation. Department of correction cost per person was \$4,807, including incarceration and parole.	2007
<b>Substance Abuse and Substance Use Disorder Treatment</b>						
Bernard et al, 2020	Simulation, Stochastic Microsimulation	Drug Offense	10 years, Unknown	N/A, King County Washington	Total criminal justice costs \$29.0 billion for status quo; and \$28.8 billion for diversion program	2016
Birnbaum et al, 2011	Observational Cross-Sectional, Cost Estimation	Opioid-related Offense	7 years, Q3: 1997-Q2: 2006	Unknown, National	Total criminal justice costs were \$5.1 billion, which included property lost to crime. This was additionally comprised of \$2.3 billion in correctional facilities,	2009

Authors	Study Design, Analysis	Crime Type	Study Duration, time period	Sample, Location	Costs	Year of Cost Data
Eibner et al, 2006	Randomized Experiment, CEA	Driving Under the Influence of Substances (DUI)	Unknown, March 2000-December 2002	284, California	\$1.5 billion in police protection, and \$726 million in adjudication costs. The criminal justice costs were \$27.25 in court costs per appearance, \$2.88 in probation, \$330 in 3-month treatment program, \$7 in electronic monitoring per day, and \$46.23 in jail per day.	2002
Hansen et al, 2011	Observational Cross-Sectional, Cost Estimation	Nonmedical Use of Prescription Opioids Offense	3 years, 2004-2006	Unknown, National	Total expenditures for criminal justice were \$40.9 billion including direct expenditures (such as salaries, wages, fees, commissions, supplies, materials, contractual services) and capital outlays. The breakdown of costs were as follows: policing \$16.9 billion, legal \$8.4 billion, and incarceration \$12.4 billion.	2006
Horn et al, 2018	Convenience Sample, Cost Analysis	General (Focused on Opioid Use)	Unknown, Unknown	over 600 each year, Bernalillo County, NM	Total annual program cost was \$394,924.	Unknown
Koenig et al, 2005	Observational Cohort, Cost Estimation	General (Focused on Substance Misuse)	6, 12, 24, 30 month follow-up, October 1996-August 1998	595, Ohio	The average baseline crime costs per client were \$4,375. The costs at follow up periods were: 6 months \$1,424, 12 months \$2,291, 24 months \$2,321, and 30 months \$2,268. This included costs for police enforcement, victim and theft losses, adjudication, prosecution, and corrections.	1997
Krebs et al, 2017	Observational Cross-Sectional, Multiple Regression	General (Focused on Opioid Use)	5 years, 2006-2010	31659, California	Total costs of crime per treated person over a hypothetical 6-month period for opioid agonist treatment (OAT) and detoxification were \$9774 and \$27324, respectively	2014
Townsend et al, 2020	Simulation/CEA, Decision analytic model	General (Focused on Opioid Use)	Lifetime time horizon, Unknown	N/A, United States	\$4,000-\$6,000 in criminal justice costs associated with opioid misuse including costs to victims of crimes committed by individuals, policing, legal, and incarceration costs.	2017
Zarkin et al, 2015	Survey Informed-Simulation, CBA	Drug Offenses	Simulation, 2004	1.14 Million, National	Total baseline criminal justice costs, including arrest, court, incarceration, prison treatment, and aftercare, was \$256.2 billion.	Unknown
Zarkin et al, 2020	Randomized Experiment, Micro-costing approach	General (Focused on Opioid Use)	12 months, December 16, 2014-October 12, 2017	225, Baltimore City Detention Center, MD	\$4661 per participant for enhanced treatment as usual; \$3907 per participant for interim methadone; \$3563 per person for interim methadone + patient navigation	2018