

The 2020 Coronavirus Pandemic and Its Corresponding Data Boon: Issues With Pandemic-Related Data From Criminal Justice Organizations

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Abstract

Public organizations, including institutions in the U.S. criminal justice (CJ) system, have been rapidly releasing information pertaining to COVID-19. Even CJ institutions typically reticent to share information, like private prisons, have released vital COVID-19 information. The boon of available pandemic-related data, however, is not without problems. Unclear conceptualizations, stakeholders' influence on data collection and release, and a lack of experience creating public dashboards on health data are just a few of the issues plaguing CJ institutions surrounding releasing COVID-19 data. In this article, we detail issues that institutions in each arm of the CJ system face when releasing pandemic-related data. We conclude with a set of recommendations for researchers seeking to use the abundance of publicly available data on the effects of the pandemic.

Keywords

criminal justice systems, data, COVID-19, pandemic, pandemic-related data

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Introduction

The COVID-19 pandemic has been an extraordinary moment for the public availability of data on population health and infectious disease. Health departments across the world released copious amounts of data on the state of the pandemic, including COVID-19 infection, testing, deaths, and hospitalization rates, as well as the availability of intensive care unit beds. This massive release of data has not been limited to data published by health organizations; organizations in the U.S. criminal justice system have also released substantial amounts of data related to how the pandemic is affecting their agencies, staff, and the populations they serve.

This avalanche of data does not arrive without difficulties, such as the standardization of data reporting and collection methods. Many of these problems are common when using administrative data, such as the involvement of stakeholders in shaping *how* the data are collected and released. In fact, the data might have been compiled for purposes that are not necessarily compatible with research efforts. During the month of July 2020, for example, in the United States, President Trump mandated that hospitals send COVID-19 data directly to the Department of Health and Human Services (DHHS). Prior to this, that information was being sent to the Centers for Disease Control and Prevention (CDC; Stolberg, 2020). Health experts decried the move, concerned that shifts in warehousing practices for these data would change how they would be released (Stolberg, 2020). Nearly a month later, in August, the Trump Administration reversed its decision (Whelan, 2020b) and again allowed the CDC to be the organization charged with collating hospital data after many reported delays and data inconsistencies (Jercich, 2020; Whelan, 2020a), as well as increasing concern by state and local officials over needing timely data to fight the pandemic. The intention of shifting data warehousing from the CDC to the DHHS was twofold: the DHHS was concerned the CDC was not flexible enough to collect new data, and to collect richer, more inclusive data coming from hospitals. Yet, the switch, mid-pandemic, simply created confusion and delays in hospitals' reporting ultimately hindering the release of valuable and timely pandemic-related data (Whelan, 2020a). This example of stakeholder intrusion in data collection and reporting plays out at the state, county, and local levels in the United States and internationally. Given the speed at which it was generated and released as well as the politicization of the pandemic internationally, salient public data on COVID-19, while incredibly valuable to researchers in all fields, come with caveats. This includes the need to assess the quality, content, validity, and reliability of these data. In the U.S. criminal justice system, for example, the pandemic may have permanently changed how organizations function on a day-to-day basis. In turn, this affects the data these organizations generate—whether the data are explicitly related to the pandemic.

As scholars begin to think about researching how the pandemic has shaped the U.S. criminal justice system, it is critical to understand the data that are available and what are potential data limitations. Moreover, the pandemic has reshaped daily life so drastically, that the quality of the data emanating from criminal justice agencies all over the world needs to be thoughtfully considered. Agencies have face rapid and drastic

shifts in what information they collect and track, recording and reporting behaviors, and dramatic shifts in crimes by type, just to name a few examples of conditions affecting data and data quality. The purpose of this article is to provide an overview of how the pandemic has affected each branch of the criminal justice system in the United States and how those impacts may affect the data these institutions produce—both generally and data specifically related to the pandemic. During the pandemic, agencies have continued to release information they typically report (e.g., from police departments, calls for service (CFS) and arrests; from the courts, case decisions and sentencing outcomes; from corrections, new prison admissions and releases), as well as reporting on new data, such as COVID-19 infections among police officers, incarcerated individuals, and correctional staff or the numbers of incarcerated individuals released to home confinement, for example. Our contribution to the fields of criminology and criminal justice is to forecast (though new issues will likely emerge over time) pandemic-related data issues for researchers, scholars, and practitioners alike as they approach conducting research about the pandemic.

Drawing on the field of emergency management, we begin with detailing stereotypical circumstances that complicate data systems, as well as the gathering, managing, and release of data during a burgeoning pandemic. Then, we turn to detailing how the pandemic changed these organizations in the sectors of the *police*, *courts and sentencing*, and *corrections*. It is important to note that we do not present an exhaustive set of circumstances affecting data; the pandemic affected all three branches of the criminal justice in ways that are both expected and unexpected, known and unknown. It is with this caveat, we move forward. Our goal is to facilitate deeper thinking by those analyzing data produced during the pandemic about the dynamics of the pandemic and how they potentially shape the data produced by institutions. We conclude with a set of recommendations for researchers seeking to use the abundance of publicly available data on the effects of the pandemic.

Before moving on, it is important to situate the U.S. context. Unlike other countries, the U.S. federal government cedes a great deal of power to states to legislate on criminal justice matters and enforce the law (Marcus, 1996). State and federal governments have separate courts and corrections systems, and law enforcement departments are situated at the city, county, state, and federal level. Decentralization results in thousands of separate criminal justice agencies in courts, corrections, and policing, located throughout the United States (Hyland & Davis, 2019), each with their own organizational procedures and practices, including data collection and management practices. While the structure of the U.S. criminal justice system differs from that of other countries, conditions created by the pandemic are not unique to the United States, and international criminal justice systems face similar challenges (Frenkel et al., 2021; Muntingh, 2020). In addition, the lack of universal policies regarding data collection practices in the U.S. criminal justice system exemplifies the challenges researchers must handle with comparative research, where researchers will be forced to grapple with data sets that come from various sources and are collected utilizing different procedures and practices.

Considerations Related to Data Surrounding Emergency or Disaster Circumstances

The COVID-19 pandemic continues to highlight ill-preparedness in government institutions across the world, including the lack of stockpiled personal protective equipment and laboratory supplies, as well as the lack of rigorous, coordinated infection surveillance plans (Hummer, 2020; Villa et al., 2020). Timely and accurate surveillance data, in particular, are key to a rapid response to outbreaks (Ibrahim, 2020). Even public health departments, normally well-versed in the design of effective surveillance systems, experienced difficulties in designing effective real-time surveillance systems for COVID-19 that allowed for robust relative comparisons of the spread of the disease across time and space (Elliot et al., 2020).

In short, pandemics and other natural disasters and emergencies are hardly ideal circumstances for excellent data production. Organizations, including those in the criminal justice system, which we discuss in this article, rushed to document infections while scientific information about the coronavirus was still being developed. As an example, in the United States, the Bureau of Prisons (BOP) designed a surveillance plan for COVID-19 in inmate and staff populations, adding to the burden of an already overtaxed system (Lugo & Wooldredge, 2017), forcing experts in corrections to suddenly become experts in epidemiological surveillance. While correctional facilities have ample experience dealing with infectious diseases among prisoners (Bick, 2007; Dumont et al., 2012; Hammett et al., 2001; Weinbaum et al., 2005), they have little to no experience creating and maintaining health surveillance systems or the data required to fuel them.

For disease-related information during the pandemic, most data are being reported daily; however, spatial granularity in public data is lacking. Spatial data can not only add important context to standard databases (e.g., demographic, economic, and social) but also provide an ability to explore uniquely spatial questions. For example, one might need to consider the effect that proximal administrative units (e.g., census block groups, tracts, and counties) have on one another—especially when the attribute of interest (e.g., COVID-19 cases) associated with these units is clustered in space. It has been over 1 year since the first confirmed COVID-19 case in the United States. The most precise and accessible data, at least from a public-use point of view, remain at the state and county level. While more fine-grained data are not as generally accessible, there are several exceptions. For instance, both Arizona and North Carolina are reporting case information at the ZIP code level, while Wisconsin and Louisiana make information available at the census tract. These data at a more granular level are essential to understanding the spread of COVID-19 throughout a community and indeed, is why individual-level case data are especially important for contact tracing. Understandably, privacy concerns and issues of confidentiality restrict the wide use of individual data and aggregation is clearly required. Yet, aggregation of data to the county level, instead of smaller administrative units like census tracts which would still preserve confidentiality, extremely limits the ability to identify the location of emerging hotspots of COVID-19. Perhaps most problematic is that questions surrounding the local

	Data Condition	Example
Accuracy	Data collected and reported in ways inhibiting external assessment	COVID testing data that may include duplicate tests
Precision	Unit of Analysis data is collected at	Collecting COVID infection rates at only the county level
Reliability	Data collection and processing does not uniformly produce similar results/data	False positives/negatives in testing
Validity	Data collection and processing does not adequately capture its intended measure	Documenting police officers exposures to COVID-19 (difficult to do with asymptomatic people)
Vagueness	How dimensions of the data was created (i.e., collection, measurement, reporting) is vague or inadequately described	Data on how COVID-19 infections determined in federal private prisons not reported
Ambiguity	Measures reported in the data are not clearly defined	Reporting on rates of "people positive" without noting whether the measure is new or cumulative positives
Incompleteness	Not all dates/data units reported on regularly	Days of missing updates from the BOP on staff & inmate COVID rates
Inconsistency	Data collection which changes in how its collected	Federal government changing the reporting agency for hospital data

Figure 1. Problems facing data collection, management, and release during emergencies.

antecedents of spread, including proximity to a correctional facility, remain veiled in a cloud of uncertainty. Researchers are therefore left to draw inferences about community spread with data that do not match the underlying spatial scale of the questions. This limits the usefulness of the findings and the ability to take steps toward mitigation at the community level.

The BOP example above is similar to what many criminal justice organizations have faced during the pandemic: either create and/or shift organizational data systems into epidemiological data systems without the experience and knowledge to do so, and moreover, do it quickly. Figure 1 displays potential problems criminal justice agencies face in the collection, management, and release of data during the pandemic and other emergency situations. The result is data that potentially lack accuracy, reliability, and validity, as well as possibly being vague, incomplete, and inconsistent (see Figure 1 for definitions of these terms and examples). Data collected under these circumstances

can also lack precision and granularity, hindering the ability of researchers to drill down to important contextual research questions surrounding time and space.

How the Pandemic Shifted the Functions of Criminal Justice Organizations and Their Data

In this section, we discuss how the pandemic has altered the functions of many criminal justice agencies and systems, and how this, in turn, has affected both the types of data and the life cycle of data associated with those organizations. Before discussing each system, we start with some context around data within U.S. criminal justice systems and their agencies.

First, criminal justice agencies are responsible for the regular collection and tracking of data deemed important to their agency. For the police, these data often include officer behavior (i.e., traffic stops, arrests, and searches) and CFS (i.e., 911 calls), for example. In the courts, regularly collected data likely include case proceedings and outcomes in civil and criminal cases, as well as sentence lengths. In corrections, agencies typically collect and release data on prison entries and exits as well as the population who is currently in community corrections. While these could be considered some of the most commonly collected and tracked data in criminal justice agencies, they are by no means an exhaustive list by system.

Second, by life cycle of data, we mean the collection, management, reporting/analysis, and ultimate release of data that criminal justice organizations commonly produce. Criminal justice agencies may or may not engage in all part of the life cycle of data. For example, many agencies may track information, but not report it. Similarly, agencies may not publicly release the data they collect. Thus, just like what information a criminal justice agency chooses to collect is agency-specific, so is their approach to the data life cycle.

Given this backdrop, below we discuss how the pandemic affected each criminal justice system, its functions, and the data associated with that system—both general and pandemic-related data.

Police

Police departments prepare for a host of different emergencies; however, responding to public health emergencies are a specialized mix of human and emergency response resources, as well as data use and creation. Laufs and Waseem (2020) suggest that the pandemic shaped the supply, demand, and practice of policing. The authors specifically focus on the availability of and demand for policing resources, as well as how the practice of policing was altered during the pandemic (Laufs & Waseem, 2020). To this backdrop, we add a discussion of how these changes to policing subsequently affected policing data. To be clear, issues concerning the intersection of policing and the pandemic are covered very thoroughly elsewhere (Jennings & Perez, 2020; Laufs & Waseem, 2020). Thus, we do not delineate all the ways in which the pandemic is shaping policing, but rather focus on issues most likely to shape policing data.

In the early days of the pandemic, it was clear that there were drastic shifts to the demands placed on the police, particularly through changes in crime and CFS. The pandemic quickly reshaped people's routine activities (Stickle & Felson, 2020). Globally, this meant that billions of people were asked to restrict their movement in the public sphere, drastically constraining their daily activities to primarily their homes (Stickle & Felson, 2020). This dramatic shift, which has not fully reverted to prepandemic patterns, shapes current crime dynamics. For example, at the start of the pandemic, cities like San Francisco and Oakland, CA, experienced substantial (~50%) drops in crime (Shayegh & Malpede, 2020). Rates of homicide and traffic accidents also dropped (Shayegh & Malpede, 2020), while domestic violence rates remained level (Shayegh & Malpede, 2020) or temporarily spiked (Piquero et al., 2020). Many police departments experienced a decline in the overall number of CFS in the very early days of the pandemic in the United States (Ashby, 2020a; Lum et al., 2020); however, there was significant variation in which types of calls declined and the cities that experienced those declines (Ashby, 2020a; Mohler et al., 2020). This is not to say that crime is not happening, but rather, the shape of crime, including the types of crime committed, as well as who commits crime and how crime is being committed, is changing rapidly along with the pandemic.

For the police, shifts in crime, CFS, and routine activities shape the demand for police services during the pandemic and how those demands take form in the department, including subsequent changes to officers' assignments within police departments such as patrol allocations. For example, Stoker et al. (2020) show that there were fewer car accidents during the pandemic by looking at orthopedic trauma indicators (i.e., trauma to bones, joints, and soft tissue). Other work pointed to increased opportunities for speeding, road racing, and stunt driving due to a significant reduction in traffic (Vingilis et al., 2020). Either way, patrol assignments needed to shift to meet the varying needs of communities. Next, while CFS may have declined (Ashby, 2020a; Lum et al., 2020), a new type of CFS emerged: emergency medical assistance requests related to COVID-19 infections and related mental health distress (Jaffe et al., 2021). While police officers may not uniformly be responding to these calls (unless police response is also necessary; Jaffe et al., 2021), dispatchers were forced to expend significant resources and time on these calls.

The pandemic also changed the supply of police services. Most importantly, through the nature of their work, police officers run the risk of being exposed to and infected with COVID-19. The public is not universally compliant with government restrictions and guidelines surrounding mitigating the spread of COVID-19 (Imhoff & Lamberty, 2020; van Rooij et al., 2020), and in some types of emergencies or in contact with people who have medical mask exceptions (i.e., individuals who communicate through lip reading), mitigation strategies may be counterintuitive to addressing the emergency situation. Consequently, officers are potentially exposed to COVID-19 throughout the course of their work. When this happens, it is critical that officers isolate themselves to contain the spread of the virus throughout the department—especially considering that infections within a department can devastate its ability to function (Ashby, 2020b). In New York City, for example, by early April, nearly one in

six officers were sick or in isolation (Southall, 2020). In short, the pandemic can quickly devastate a police department's ability to respond to emergencies and ultimately, the ability of a department to adequately function.

Relatedly, the pandemic likely affected reporting behaviors of citizens which, in turn, affected crime data. For instance, scholars have suggested that extended periods of home confinement is a driving force behind rising numbers of domestic violence incidents (Hansen & Lory, 2020). Correspondingly, there may be less opportunity for victims to contact the police, resulting in an underreporting of domestic violence. While this is but one example, future research on pandemic-related changes in crime reporting behavior—be it due to an inability to report, unwillingness to report, or simply reduced observation of criminal acts—is critically needed to understand the multiplex ways in which crime figures have changed.

Taken together, the pandemic likely has affected both the reporting and recording of various crime types differentially. For instance, drastic changes in routine activities may affect rates for certain crimes more than others. Burglary rates, for instance, have significantly decreased, given that homes remain occupied, providing fewer opportunities for offenders (Shen et al., 2021). The pandemic may have also changed the behavior of the police. Police officers may be less inclined to conduct stop-and-frisks, given that they carry a new type of risk for officers: COVID-19 infection (Laufs & Waseem, 2020). This in turn affects the detailing of stop-and-frisk events, such as contraband confiscation. Finally, the shift in societal norms which happened during the pandemic may have led to the emergence of new crimes, such as increases in anti-social behaviors relating to noncompliance with health protocols, such as masking and home confinement (Langton et al., 2021; Som et al., 2020). Overall, researchers, scholars, and practitioners should be thoughtful about how crimes have changed, not just in frequency, but also in how frequently the crime is either recorded or reported. In short, the pandemic has exacerbated the “dark figure” of crime in yet to be determined ways.

Finally, the pandemic has changed the practice of policing. Various correctional departments and court jurisdictions have requested that the police reduce arrests for low-level crimes to limit the number of people coming into local jails (Jennings & Perez, 2020). In addition, local and state governments issue mask mandates and stay-at-home orders, which the police are tasked with enforcing (Jones, 2020). The police have been presented with new responsibilities and have been asked to restrict their operations to more serious crimes (Jennings & Perez, 2020), effecting how the police direct services, respond to certain crimes, and with whom the police have contact. Researchers will undoubtedly be interested in the impact of the pandemic on policing, both short- and long-term changes. However, future research efforts will be reliant upon the current data collection procedures.

How Might the Pandemic Affect Police Data?

Shifts to the practice of policing during the pandemic may lead to changes in policing data. An important part of the police data collection and reporting process is the work

done by crime analysts and researchers employed by departments (Taylor et al., 2007). During the pandemic, the responsibilities of analysts and other police employees are likely being expanded to ensure continued operations. For instance, the threat of COVID-19 outbreaks among officers likely leads to sudden changes to police scheduling and patrol patterns (Stogner et al., 2020), placing a heavier burden on analysts and planners to ensure that police resources are used in an efficient manner. In addition, police departments are susceptible to COVID-19 outbreaks that could hamper police operations. Outbreaks among patrol officers could create understaffed shifts, placing a heavier burden on working officers to cover the responsibilities of absent personal. This may, at times, cause officers to be overworked and not be able to devote adequate time to report writing and other paperwork, which will affect the quality of police data. Thus, data collections efforts may suffer due to the extra responsibilities that police employees have likely assumed over the course of the pandemic.

Still, police departments nationally have been building their capacity for data. The adoption of body-worn cameras in recent years, their video, footage, and the metadata they generate have pushed many police departments to increase their data management capacity (Lum et al., 2019; Malm, 2019). Some police departments, such as Baltimore Police Department, have established comprehensive data management systems that make police adaptations to the pandemic more manageable, such as the ability to quickly set up to data reporting protocols for COVID-19 among staff (Vaught & Iwashita, 2020). However, the ability to produce and collect adequate police data is dependent upon the resources of the department. Some departments will be better able to adapt to the challenges of the pandemic and institute quality data collection procedures, whereas others will be less capable. In addition, the May 2020 death of George Floyd, who was murdered by Minneapolis police officer Derek Chauvin, led to large-scale protests condemning police brutality and the unequal treatment of African Americans by the police (Weine et al., 2020). Millions of people participated in the protests, many in conjunction with Black Lives Matter organizations that occurred across the United States and internationally. Looting and rioting occurred in many cities, and clashes between protesters and police took place on numerous occasions (Dave et al., 2020). In addition, instances of violence where pro-police supporters and militia groups participated in counter protests, often requiring police to direct resources and manpower to oversee the protests. The pandemic has already strained many police departments through changes to their role and service provision; the protests surrounding George Floyd's death likely placed additional strain on many departments. Researchers need to be aware that the quality of police data is likely dependent on the external pressures faced by the police, as well as the internal capabilities of departments to meet the demands of the pandemic.

Courts and Sentencing

Since the onset of the COVID-19 pandemic, the U.S. court system implemented a flurry of protocols to combat the spread of the virus coming into the court system. Examples of changes include the suspension of jury trials, adopting video technology

to conduct court proceedings, and extensions to case deadlines (Baldwin et al., 2020). However, evaluating the effectiveness of these changes on infections or allied court impacts will be difficult without a comprehensive COVID-19 tracking system in the courts and among of courtroom actors. In addition, courts have not updated their annual data reporting procedures to include COVID-19-related information alongside their traditional reporting methods—presenting methodological problems for researchers concerned with evaluating the context of COVID-19 and sentencing outcomes. In this subsection, we discuss how the courts responded to the pandemic and the potential impact these responses had on court operations. In addition, we discuss data issues that may present challenges to scholars interested in COVID-19 and the courts.

The courts, particularly criminal courts, remain in a precarious position since the beginning of the COVID-19 pandemic. The continuation of the administration of justice was required, ensuring that defendants received their day in court and that cases were adjudicated in the appropriate amount of time (Engstrom, 2020). That said, the courts needed to implement protocols that reduced the spread of infections and protected the health of all people involved in court cases—from defendants to courtroom actors. In March 2020, numerous states postponed jury trials to mitigate the spread of COVID-19 infections. Months later, many states resumed jury trials, both in a limited capacity and with substantial changes to how those trials were conducted (Draper, 2020; McMillion, 2020). For example, in the Ohio judiciary system, Hrdinova and colleagues (2020) identified 64 orders for various local courts to postpone pretrial hearings and 65 orders limiting access to physical courts based on individuals' health symptoms. The concern here is that postponing proceedings increased already high court backlogs, interrupting individuals' rights to a speedy trial (Baldwin et al., 2020). While restrictions to court operations may be problematic, other strategies such as virtual teleconferences were adopted by many jurisdictions and may not have slowed down court proceedings in ways that other COVID-19 restrictions might have (Baldwin et al., 2020; McMillion, 2020; Rattey, 2020). Research conducted before the pandemic suggested that virtual technologies in the courts can be efficient and help to reduce backlogs, especially in underfunded jurisdictions (Babcock & Johansen, 2011). Nevertheless, evaluating changes to court operations has been and will continue to be difficult due to a lack of data on COVID-19 information among courtroom actors.

How Might the Pandemic Affect Court Data?

For some time, there have been concerns among scholars on the availability of courtroom data (Ulmer, 2012). Large-scale administrative data sets are traditionally used by researchers to examine sentencing outcomes in the federal and state court systems (Schneider & Alkon, 2019; Ulmer, 2012). The United States Sentencing Commission (USSC) produces quarterly and annual data sets that include information on offense severity, criminal histories, mitigating circumstances, and defendants' demographic information (USSC, 2018). However, publicly available administrative data sets do not provide comprehensive information for all facets of criminal procedures, including information on prosecutors, judges, and public defenders in large-scale administrative

data sets, leading to knowledge gaps in the decision-making processes of courtroom actors (Ulmer, 2012).

The pandemic does little to mitigate these issues. Scholars have noted that the court system is overburdened by high caseloads, where prosecutors, public defenders, and judges have limited time to devote to each case (Gershowitz & Killinger, 2011; Israel, 1996). Any restrictions put in place to curtail the effects of the pandemic on the courts would likely exacerbate these problems by delaying proceedings and suspending jury trials (Engstrom, 2020). Poor data collection on court processes before the pandemic are only made worse by the chaos created through the quick procedural changes put in place to facilitate case processing.

Sentencing trends are also likely influenced by the pandemic. Numerous government agencies issued directives to reduce correctional populations, suspend sentences, and reduce or eliminate court fees (Akiyama et al., 2020). Factors likely to influence these decisions include the health and well-being of defendants and the individual circumstances for each correctional institution. Court data rarely include defendants' health information, certainly not COVID-19 information, and scholars have noted that traditional data sets are inadequate to test theories relating to legal actors' decision-making (Hartley et al., 2007). Not all jurisdictions, however, are negligent in producing data relevant to court proceedings during the pandemic. The State of New York has updated online services to better meet the pandemic demands, including collecting information on how COVID-19 interferes with courtroom operations (Online Courts Working Group, 2020). Unfortunately, it is unclear how many other jurisdictions have updated their procedures to produce improved pandemic-related data.

Next, court proceedings are reliant upon the availability of judges, prosecutors, defense lawyers, and defendants, where like the police, outbreaks of COVID-19 in these groups threaten the ability to conduct proceedings in meaningful ways (Draper, 2020). Unfortunately, there are no publicly available data sets regarding testing and positivity rates of COVID-19 among courtroom actors. This lack of data inhibits understanding whether protocols used to curtail the spread of COVID-19 in the courts are useful or if courtroom actors are putting themselves at a greater risk for infection due to ineffective action by the courts. The court system is not a health surveillance system; while this information would be highly valuable, collecting and distributing it is likely difficult for court systems across the United States.

Corrections

Unlike other criminal justice system branches, correctional institutions have experience dealing with infectious disease outbreaks in their population. As an example, researchers estimate that from 2002 to 2013, the incidence of tuberculosis in correctional settings ranged from three to 37 cases per 100,000, whereas the incident rate for the general population fell to between three and five cases per 100,000 (Lambert et al., 2016). Furthermore, in a 2015 survey of state correctional departments, scholars estimated that 38% of inmates in state correctional facilities had hepatitis C (Beckman et al., 2016; Spaulding et al., 2018). Finally, scholars have shown that approximately

30% of individuals with a hepatitis B infection were previously incarcerated (Bick, 2007).¹ These easily spread infections are common in prisons. However, the COVID-19 pandemic is far larger, deadlier, and more complex than hepatitis variants, due to the velocity in which it spreads in the population and a general lack of knowledge about the virus itself.

Preexisting issues with correctional systems often exacerbate the challenges associated with combating the pandemic. For example, correctional institutions are routinely short-staffed, including medical personnel (Fifield, 2016). During a pandemic, staff shortages quickly become emergencies, crippling the ability of correctional facilities to engage in the work required to slow the pandemic from gaining a foothold in the prison. As an example, a recent report showed that the preexisting shortage of medical staff at Lompoc Federal Correctional Institution was among the biggest challenges in mitigating COVID-19 transmission. This included the twin burdens of screening inmates and staff members for COVID-19 symptoms while still providing routine medical care to the institution's approximately 2,700 inmates. (Department of Justice, Office of the Inspector General, 2020, p. 2)

Just like understaffing, overcrowding in prisons is common and severely inhibits infection control and spread. Without adequate space, it is difficult to engage in social distancing, cohorting prisoners,² or creating additional facilities for handwashing or sanitization. Overcrowding may be particularly damaging in low-security prisons where common rooms and shared living spaces are the norm. Overcrowding and space limitations also affect the ability of jails and prisons to isolate inmates who were exposed to COVID-19 or are currently infectious. Solitary confinement rooms are being used in some facilities as medical isolation rooms (Cloud et al., 2020). While necessary under the circumstances, solitary confinement is damaging to inmate mental health, even when used for short periods of time (Haney, 2003; Reiter et al., 2020), such as the number of days needed for COVID-19 quarantine.

How Might the Pandemic Affect Correctional Data?

As noted above, correctional facilities and departments are widely affected by the pandemic, shaping not just day-to-day activities in the facilities and among parole and probation officers, but also through the data local, state, and federal correctional departments collect and release. At the start of the pandemic, the federal government began providing numbers from all their facilities on COVID-19 infections. This included daily reports on the number of inmates who were positive, who have recovered, and who have died; the same totals are reported for staff.³ However, there are different reporting standards for private prisons within the federal system (Neff, 2020), which only report COVID-19 cases, recoveries, and deaths on inmates—critically ignoring a potential vector for transmission between the prison and the community—the staff (Kinner et al., 2020). COVID-19 testing is also reported daily, by facility, on the number of inmates with completed, pending, and positive COVID-19 tests; staff, once again, are absent from these data. This is not to say the data do not exist, it may; however, it is not part of the BOP's data reporting on the pandemic. It is also important

to note that during 2020, there were long stretches of days where the data were not updated. This undermined understanding of daily trends and changes to infections, deaths, and recoveries. To combat this, several senators proposed the *Federal Correctional Facilities COVID-19 Response Act*, which aimed at addressing the shortcomings of the BOP's response to the pandemic, many of which are data related. If passed, the act would require correctional facilities to conduct free, weekly COVID-19 testing for prisoners and staff that would then be reported to the Department of Justice, CDC, and state public health officials.⁴

Variability in reporting is not unique to the federal level; local and state correctional department data and reports differ widely depending on what information is being collected. For example, the Oregon Department of Corrections COVID-19 dashboard reports on “currently active COVID-19” cases in addition to simply reporting the number of cases that are positive and recovered by facility (see Oregon Department of Corrections, 2021). The Department of Corrections in California reports on COVID-19 cases that were active when the person in custody was released from prison; this is due to the recent court order mandating that California reduce San Quentin's inmate population by 50% (Griesbach & Williams, 2020; also see California Department of Corrections and Rehabilitation, 2021). On the contrary, the state of Washington is publicly reporting less information than the BOP, limiting its COVID-19 reporting on the correctional population to positive cases and deaths only among the incarcerated population and staff by facility (Washington State Department of Corrections, 2021). Without federal guidelines on required reporting, local and state correctional departments can choose what they report. This makes comparative analysis almost impossible, forcing researchers rely upon common information rather than using the best information for analysis.

Next, COVID-19 testing data within correctional facilities are problematic. Testing among incarcerated populations is not as ubiquitous as expected and testing procedures often change over time, such as using different COVID-19 tests over the course of the pandemic. For example, the BOP data come from a variety of sources and not all tests are conducted by (or reported to) the BOP. Furthermore, the many duplicate tests are reported (i.e., testing data are not the total people tested, but rather all tests given). Thus, while testing data are available, their validity and usability is highly suspect as one cannot determine the true number of tests and positive tests—both of which are needed for basic epidemiological constructs such as the R_0 or the contagiousness of a disease for a specific location and/or population (Delamater et al., 2019). These data problems are particularly acute at correctional facilities because of potential nonreporting by the contractors conducting tests, facility transfers, and multiple tests per prisoner. We encourage researchers to exercise caution when considering the use of correctional testing data and be very deliberate about determining precisely how the testing data are acquired and reported.

As noted earlier, the pandemic brought about significant changes to the daily functions of correctional institutions. These shifts affect data coming from departments of corrections—at all levels—that may or may not be tracked. For example, as mentioned above, there are facility transfers within the BOP systems that are not reported

alongside the COVID-19, introducing error into all pandemic-related data being reported at the facility level. The California Department of Corrections and Rehabilitation relied upon several weeks old negative COVID-19 tests to determine transferability of prisoners, eventually moving 122 prisoners into San Quentin; 25 prisoners later came back with positive tests (Pohl, 2020). Arizona Department of Corrections began testing whole prison populations for COVID-19 infections prior to testing incoming prisoners (see Arizona Department of Corrections, Rehabilitation & Reentry, 2021 timeline of procedural updates), muddying their ability to truly contain and isolate infections in prisons. Furthermore, home confinement, early and compassionate release, and sentence reductions are occurring in many correctional systems. Consequently, parole and probation officers nationally may be finding themselves with steeply increasing caseloads and the need to track individuals on home confinement.

Beyond correctional systems needing to track infectious disease information, there is another major shift in correctional data that is worth noting: increases in early release and home confinement. Prisons and prison systems internationally have approached controlling the spread of COVID-19 through reductions to the incarcerated population (Brennan, 2020; Novisky et al., 2020; Rapisarda & Byrne, 2020). In general, prisons have done this in two ways, through early release, where the individual is permanently released from prison before the end of their sentence, and home confinement, where individuals who are high risk of death or severe consequences from COVID-19 and were also low risk in terms of criminal activity were released to their home for a portion of their sentence (note though that each prison system had their own rules and guidance for who is eligible for early release or home confinement; Rapisarda & Byrne, 2020 provide an excellent summary on release policies across European nations). Early release and home confinement drastically changed staffing needs and the population of individuals in a prison rapidly over time. This is consequential for researchers seeking to make rates and percentages, given that the denominator of such calculations—the populations in prison or staff population—may be briskly changing.

In short, there were a host of policy and procedural changes happening in prisons that were not being tracked, nor are all departments of corrections as forthcoming about their daily changes to policy as the Arizona Department of Corrections (an example noted above). Researchers should not assume that publicly available data represent the totality of information. Researchers and public health officials need qualitative descriptions associated with what is happening inside prisons to fully understand how the prison system and its corresponding pandemic-related data are affected. Also, from a data management perspective, the likelihood of errors increases as the number of items that need documentation increases. Thus, global increases in data collection and surveillance may be troubling for all data emanating from correctional departments.

Discussion

As the pandemic progresses, the totality of how it will affect the U.S. criminal justice system will slowly be revealed. In the meantime, these systems will continue to produce both their standard data as well as pandemic-related data. The research coming from these data is vitally important for the future functioning of the criminal justice system as it will help shape emergency preparedness for years to come. That said, there are a host of potential data limitations that researchers need to be aware of prior to engaging with data coming from the criminal justice system during this time. We close this article with a discussion of four recommendations for researchers to consider before using data created during the pandemic, regardless of what branch of the criminal justice system they are studying.

Recommendation 1: Know How the Pandemic Has Shaped the Day-to-Day Collection and Release of Data

Health information is difficult to collect for criminal justice agencies. Defendants are often considered vulnerable populations, and practitioners frequently exert control on what information to include in publicly available data sets (Binswanger et al., 2012). Before the pandemic, scholars noted a lack of uniformity in the criminal justice system regarding the gathering and disseminating health data for defendants and practitioners (Binswanger et al., 2012). During the pandemic, the decentralized nature of criminal justice agencies in the US means that establishing protocols to track and collect COVID-19 information effectively could be problematic (Laufs & Waseem, 2020). Moreover, some agencies may be better equipped to disseminate COVID-19 data faster than others (e.g., corrections), and some agencies may have fewer restrictions in terms of the information they can provide publicly. Researchers need to be cognizant that data released by criminal justice agencies will vary, substantially, in terms of the information included and the quality. Due to the criminal justice systems' lack of established protocols for reporting on pandemics, researchers must understand *who* collected the data, *when* and *why* it was collected, and what relevant information is *not* included in available data sets.

Moreover, the day-to-day data typically collected by agencies, like CFS data, court cases, and incoming prisoners are also shaped by the pandemic, not simply who is infected with the coronavirus, recovered, or who passed away. Keep in mind that changes in crime and routine activities do not just affect policing supply and demand of policing activities and associated data; these changes trickle down to the courts and corrections system. Standard data from all these systems are likely affected by the dynamics of the pandemic.

Recommendation 2: Work to Understand If and How Stakeholders Have Affected Data Collection and Release Processes

Stakeholders have long been known to influence processes surrounding the definition, collection, content, and release of data and information (Pesce et al., 2019). A primary

goal of organizations—including those in the criminal justice system—is simply to survive (Oliver, 1990); data, information, and news articles that are damaging to organizational reputation run the risk of being manipulated, truncated, or hidden from public consumption. This was and continues to happen during the current pandemic. For example, in Florida, the Department of Corrections failed to release information about the deaths of four inmates at the Blackwater River Correctional Facility; reporters discovered the deaths through local medical examiner records (Gross & Conrark, 2020). When confronted, the Florida Department of Corrections suggested they were in the process of deciding how best to release data surrounding the pandemic (Gross & Conrark, 2020). Throughout the pandemic, the culture in government organizations, especially within the state of Florida, suggests a statewide reticence to be open about the reach and consequences of the pandemic (Calvan, 2020; Wamsley, 2020). With limited funding, it is not surprising that prisons and prison systems more generally want to limit and minimize any reputational damage from how the pandemic progressed in prisons. Moreover, local, state, and federal governments are also stakeholders—shaping the life cycle of data. For example, in July 2020, the federal government shifted which agency hospitals report COVID-19 data to/from the CDC to the DHHS. When reporting was delayed and increasingly confused, the CDC resumed operations as the agency for reporting (Whelan, 2020b). In short, it is vital for researchers to understand how stakeholders—including all levels of government—played a role in shaping the multitude of dynamics involved in data collection, management, and release.

Recommendation 3. Keep in Mind There Is Likely Vast Heterogeneity in Criminal Justice Agencies' Approach to the Data Life Cycle in General and During the Pandemic

When not under pandemic circumstances, the decentralized nature of the criminal justice system and the resulting variation in life cycle of data (i.e., collection, management, reporting, and release) across agencies presents difficulties when conducting comparative studies or studies that integrate data across criminal justice systems. However, throughout this article, we have shown that the pandemic has created unique circumstances for criminal justice agencies which have in turn affected their data practices.

Naturally, this hampers all research, but especially comparative work or cross-systems research. Data standardization in collection, management, and reporting practices is essential for comparative and cross-systems research. However, the decentralized nature of government in the United States (Hyland & Davis, 2019) facilitates criminal justice agencies having highly different policies and practices surrounding data collection, management, release, and reporting. In U.S. policing, for example, recent legislation in several states targeted a lack of data on police behavior. Between 2015 and 2016, 11 states passed legislation that drastically changed reporting practices surrounding policing issues such as officer-involved shootings, mandatory reporting

of the race and ethnicity of individuals that the police contact, and use of force (Subramanian & Skrypiec, 2017). That said, much of this legislation focused on what information to collect and report, not the homogenization of collection and reporting practices between agencies and across states; it is unclear whether cross-state comparisons are possible. Ideally, future legislation would regulate what data are collected and reported by criminal justice systems and agencies within the United States, perhaps borrowing from the established data standardization practices of other fields, such as health and education data collection and reporting.

However, this does little to help researchers in the now. To that end, we make a few recommendations for things researchers should keep in mind when engaging with data produced during the pandemic. This is by no means an all-inclusive list, but a good starting point for identifying any critical problems with the data.

First, it is important to remember the most frequent use case for administrative data: singular case look up. While many agencies have common statistics they track, such as crime rates for police agencies or incoming prisoners for correctional systems, data systems in criminal justice agencies are used most frequently for case look up, such as a record of an arrest or the criminal history of an incarcerated person. Data systems are made to prioritize the ease of data entry, case retrieval, and storage of individual cases. For example, think of the police officer sitting in their patrol vehicle on the side of the road entering details from their last traffic stop, hardly ideal circumstances for perfect or highly detailed data entry. While this may work well for an agency, it is far from what researchers need for data analysis. With that in mind, researchers start by making no assumptions about what the data represent—including the lack of data and what missing means—and should also plan on extensive data cleaning and harmonization.

Second, understanding how data stream into an agency is also important for truly understanding the contexts and the content of the data. It may be that data for an agency is processed by the agency through cloud storage, as is often the case with body-worn camera video and audio files worn by police officers. Data may also be gathered through document scanning in an effort to standardize the uptake of data and information; this is the case for most courts in the United States. It may also be the case that there are individuals responsible for hand-entering data, such as police officers, parole officers, or other criminal justice officials who create data. Regardless of how data entry occurs, understanding what does (and does not) get entered is vital to understanding the universe of activity the data are meant to capture.

Third, understanding the unit of analysis captured in data is critical to using the data. This may seem simple, but remember, the data systems in criminal justice agencies were not made with research in mind, but rather the quick and efficient entry, retrieval, and storage of data. For instance, Gaub et al. (2018) describe a case study of the effect of body-worn cameras on police behavior (for original article, see Wallace et al., 2018), where the data delivered by Spokane Police Department were all incidents during a specific time period for study officers. The authors describe struggling with the data, given that they assumed each row was a unique incident. Spokane Police Department, however, stored the data where each row was an officer-incident

combination, so any incident with more than one officer arriving at the scene would be duplicated in the data, sometimes up to 10 times. Making matters worse, Spokane Police Department also stored the data as segmented rows, where “dispatch to arrival on scene would be one segment, and arrival on scene until leaving the scene would be another segment represented in a separate row” (Gaub et al., 2018). Thus, each row represented an officer-incident-segment combination—allowing for tens of thousands of duplications of incidents. While perhaps a tedious example, both not making assumptions about what constitutes a row of data as well as what constitutes the unit of analysis is vital to research.

As we all know, data collected for administrative purposes may not and often do not align with our research questions and topics. Keeping these three things in mind—how the data are used, how they stream into the agency, and how units of analyses are defined—should help researchers working with administrative data in general, but especially those working with data produced during the pandemic, when data systems were rapidly changing for many, if not most, agencies.

Recommendation 4: Seek Clarity on the Data and Its Content When Needed

As the pandemic progresses, criminal justice agencies continue to update COVID-19 protocols and implement better data collection systems (see Online Courts Working Group, 2020). Researchers will require patience considering that the entire criminal justice system is adjusting to the pandemic demands. The life cycle of data in agencies has been affected by these changes. Furthermore, because of the speed at which data are being created and released, but also changed, (e.g., see Whelan, 2020b), understanding the data, and all the procedural changes associated with its development is vital for developing high-quality research. While already suggested in Recommendation 3, it is worthwhile to repeat: make no assumptions about the data. Researchers should not take variable names and patterns as self-explanatory and ask core questions concerning the data and seek clarity from the reporting organizations. When direct engagement with an organization does not yield answers, in the United States, Freedom of Information Act (FOIA) requests are a useful tool to obtain government information and data (Lageson, 2017), and the types of requests filed by researchers can dictate what information gets released. Know, however, that FOIA requests can take time. The pandemic altered the day-to-day operations of most, if not all, criminal justice departments in the United States. Updating data collection processes to meet the pandemic demands is a challenging endeavor for the criminal justice system institutions, and it is unclear what the totality will be of the data obtained by researchers.

Conclusion

In this article, our goal was to lay out as many of the dynamics as possible that are created by the current global COVID-19 pandemic influencing data collection, release,

and the data itself within and across the branches of the U.S. criminal justice system. The years following the pandemic will be an exciting time for scholars, with a boon of research culminating from the mass of publicly available data that are currently being generated. It is vitally important that we, as scholars, do not undermine the conclusions and validity of this future work by not asking deep questions about data production, maintenance, and release.

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Notes

1. To the authors’ knowledge, there is a general lack of research on the estimates in the last 5 years of tuberculous and human papillomavirus (HPV) rates among incarcerated persons in the United States. The Centers for Disease Control and Prevention (CDC) reported that in 2019, 30 states reported at least one case of tuberculosis in a federal correctional facility, state or local prison, local jail, juvenile facility, or other type of correctional facility (Centers for Disease Control, 2020). Estimates prior to 2010 suggest that 30% of individuals with a hepatitis B infection were previously incarcerated (Bick, 2007), and between 29% and 43% of prisoners show evidence of previous hepatitis C infections (Bick, 2007; Dumont et al., 2012; Hammett et al., 2001; Weinbaum et al., 2005).
2. Cohorting is limiting movement in a prison to smaller groups of prisoners at time; this limits the spread of infections across whole prison populations.
3. For all the data from the Bureau of Prisons (BOP) discussed here, please see the BOP’s coronavirus dashboard at <https://www.bop.gov/coronavirus/>.
4. On February 12, 2021, Senator Elizabeth Warren reintroduced the *Federal Correctional Facilities COVID-19 Act* to the U.S. Senate. As of May 10, 2021, the *Federal Correctional Facilities COVID-19 Act* has not yet passed in the Senate (see <https://www.congress.gov/bill/117th-congress/senate-bill/328>).

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