U.S. Department of Justice
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OPTIONS FOR CONDUCTING RANDOMIZED CONTROLLED TRIALS WITH INMATES IN LOCAL JAILS

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November 2019

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Office of Justice Programs
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Washington, DC 20531

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Introduction

Jails have operated as a fundamental component of the local criminal justice system in this country since its establishment; yet, little is known and understood about how they operate and what works in these settings. The good news is that this shortfall serves as an excellent opportunity for researchers to fill the void and provide useful information and insight to jail practitioners. Researchers who desire access to local jails in order to successfully conduct studies need to know how to conduct research in these unique and challenging environments.

Although excellent guidelines for conducting research in prisons exist,[1] the topic of research in jails has not received similar attention. The purpose of this document is to provide guidelines for researchers who seek to conduct studies in local jails. The goal is to assist successful study design and implementation, which inform research that will strengthen the discipline and practice of jail-based corrections. It provides basic information about jail operation and legal constraints that can affect study designs. This document provides aspiring researchers some basic guidelines for proposing the use of randomized controlled trials with inmates in local jails that could lead to viable and useful research.

In a Nutshell

Jails are a major portal of community reentry for criminal justice-involved populations. The sparse extant literature on jails discusses mostly sentenced misdemeanants with longer stays. Jail populations are predominantly pretrial detainees, released unconditionally to the community within a month. Brief, indeterminate stays and unconditional releases have contributed to a paucity of representative, rigorous, and meaningful jail-based studies.

It is possible, necessary, and imperative to conduct meaningful jail-based studies using rigorous research methods such as randomized controlled trials. Successful execution demands significant preparation, planning, care, and thoughtfulness. Researchers must develop and nurture partnerships with jail administrators and practitioners; establish memorandums of understanding with data sources; seek guidance from the jail's legal counsel; observe, understand, and experience operations first-hand; use informed-consent forms for potential participants; and collaborate with researchers across disciplines. They can thus anticipate and minimize challenges to recruitment, retention, and information gathering and minimize potential bias through careful study design and execution.

Significant opportunities exist to improve understanding of jails for researchers from several disciplines, including social sciences, hard sciences, technology, engineering, medical sciences, and management. Rigorous research is timely, welcome, and necessary to inform policy and practice, improve criminal justice system effectiveness, and achieve desired outcomes.

Researchers who have attempted to conduct studies or evaluations in local jails are often unprepared for the constraints under which they must conduct their activities. They may submit proposals based on a poor understanding of the role of jail operations and dynamics, and the rights of local jail officials and inmates, even when the researchers work with jail-based research and program staff to prepare these proposals. If they receive an award, they are often faced with unnecessary delays because they may propose to conduct randomized controlled trials in a manner intended to ensure academic rigor that would, however, place the jail at considerable risk of litigation. Often, proposed methods do not respect the individual privacy rights of persons in custody. Sometimes, methods proposed do not consider operational consequences to safety and order. In many situations, this can result in loss of funding and/or loss of support from the jail staff. The net result is that the proposed research is not accomplished. This document discusses how to prevent and avoid such situations.

The role of jail officials, inmates' rights, and operational safety and security constraints are discussed along with their impact on recruiting, eligibility determination, and proposed methods. Common concerns related to research designs and options for addressing them are also discussed, which include:

- Selection bias
- Potential bias resulting from noncontemporaneous test and comparison groups
- Contamination bias
- Differential attrition between test and control groups
- Individual variability
- Statistical power to detect effects with a specified level of confidence

Suggestions for how to conduct meaningful studies despite these concerns are presented.

Basic Definitions

Jails are detention facilities primarily funded and operated by cities or counties that house individuals who have been charged with criminal offenses, determined (by a court or other legal authority) to be at risk of flight or a threat to their own or another person's safety, awaiting adjudication of legal matters, or serving sentences of short duration (typically less than 12 months). The Bureau of Justice Statistics (BJS) defines jail inmates as "[o]ffenders confined in short-term facilities that are usually administered by a local law enforcement agency and that are intended for adults but sometimes hold juveniles before or after adjudication. Jail inmates usually have a sentence of less than 1 year or are being held pending a trial, awaiting sentencing, or awaiting transfer to other facilities after a conviction."[2] Jail inmates are usually adult men and women. Juveniles charged (or sentenced) as adults (sometimes referred to as Title XVI youth), when housed, are maintained under sight and sound separation from the adult inmate population.

Individuals in Jail and Jail Populations

Individuals in jail custody are called inmates. Inmates may have various legal statuses depending upon the severity of the offenses they are charged with, termed "charges," and whether the charges have been adjudicated. Inmates with at least one charge that has not yet been adjudicated are pretrial detainees. Pretrial detainees who have been charged with only misdemeanor offenses are called pretrial misdemeanants, and those who have been charged with at least one felony offense that is not yet adjudicated are called pretrial felons. Inmates sentenced to felony offenses are termed felons or sentenced felons, and those who have been sentenced to misdemeanor offenses are termed sentenced misdemeanants.

Jail populations may also include probation, supervised release, and parole violators who are civil commitments. Other inmates are fugitives who have waived the right to an extradition hearing and are awaiting extradition to another jurisdiction;[1] inmates serving time in other jurisdictions who are in custody awaiting prosecution or to testify (writs), or are witnesses; inmates held for other jurisdictions or authorities such as the U.S. Marshals Service, the Federal Bureau of Prisons, or Immigration and Customs Enforcement; and others such as administrative removals from halfway houses, program failures, those sentenced to jail-based drug treatment programs, and those sanctioned for contempt of court.

[1] The Bureau of Justice Statistics defines a jurisdiction as "a unit of government or the legal authority to exercise governmental power. In corrections, it refers to the government that has legal authority over an inmate (state or federal)."

Overview of Jail Operations

Jails, particularly medium-sized and large jails, are severely resource-constrained and external-movement-limited cities within cities. All of the basic functions that cities have to provide also have to be provided within jails. Basic functions and services include:

- Controlled entry (intake) and exit (release) from the facility
- Clothing, linens, food, hygiene supplies, writing supplies, and security supplies, along with materials procurement and delivery
- Case management services, and inmate communication (telephone) and visitation (in-person and/or video visitation) services
- Educational programs and services
- Recreation and leisure programs
- Life-skills programs
- Reentry programs
- Domestic violence prevention and awareness programming and services
- Sexual assault, sexual abuse, and sexual misconduct prevention and response programs and services
- Substance abuse treatment programs and education
- Health, behavioral health, and pharmacy services
- Internal grievance resolution process for inmates
- Inmate disciplinary process
- Transportation services
- Emergency services
- Facilities maintenance and inspection
- Human resources management
- Training
- Agency strategic communications
- Various other functions that any city has to provide

Opportunities for Jail-Based Research Exist

Jails research is an emerging discipline and area of scholarly inquiry. Consequently, tremendous opportunities exist to conduct interdisciplinary and multidisciplinary research that affects all aspects of jail operations and dynamics, drawing upon knowledge and techniques from a wide variety of disciplines. Contributions from the social sciences, management and organizational sciences, education and cognitive sciences, law, public policy, and criminology are already well established. Opportunities exist to conduct both qualitative and quantitative research and analysis. However, there are also challenges when conducting jail-based research. Some of these challenges are discussed below.

Opportunities for Interdisciplinary Research

Disciplines not commonly involved in jail research include science, technology, engineering, and mathematics (STEM) fields, such as architecture and material sciences, industrial and business process engineering, supply chain management, data science, health sciences, behavioral sciences, communications, and systems theory and analysis. Analytical tools and methods from these disciplines could be productively applied to develop an understanding of jails. Research topics of common interest — such as materials and correctional technologies, business process analysis, and supply chain management — are an opportunity that could enrich understanding in multiple fields of study.

Basic Facts About Jail Populations

The vast majority of individuals in custody are pretrial detainees charged with felony offenses, i.e., pretrial felons. In 2016, BJS reported that 70 percent of inmates were held in jail for felony charges.[3] In some jurisdictions, such as the District of Columbia, the vast majority of pretrial felons (more than 60 percent) return to the community, and charges are dismissed within 30 days of commitment.[4] For example, in 2016, the overall weekly inmate turnover rate for all jails was 55 percent, and the expected length of stay in jail was 25 days.[5] Further,

> Smaller jails had a higher weekly inmate turnover rate and shorter expected length of stay than larger jails. Jails with an average daily population (ADP) of 49 or fewer had a weekly inmate turnover rate of 123 percent, compared to inmate turnover rates from 40 to 77 percent for larger jails. The expected length of stay in 2016 ranged from 11 days for jails with an ADP of 49 or fewer to 34 days for jails with an ADP of 2,500 or more.[6]

Some jails primarily serve a sentenced misdemeanant population, but most jails serve primarily a pretrial detainee population that is typically more than 60 percent of the inmate population. BJS also reported that, in 2016, an estimated 65 percent of all jail inmates were awaiting court action on a current charge.[7]

Jail-Based Pretrial Detainee Population: Research Needs Exist

The pretrial detainee population needs the most empirical attention and, yet, there is very little research pertaining to it. Little has been published in peer-reviewed literature about this population and their behavior, needs, and the best ways to supervise, provide programming and services for, and manage them. The pretrial population represents the majority of inmates and is most often the population that is offered few opportunities to participate in programs or research studies. Consequently, the pretrial detainee population in jails is poorly researched and understood.

Most jail-based research is not representative of jail inmate populations because many researchers target studies of only the sentenced misdemeanant population, which often comprises only 10 to 20 percent of the overall inmate population in custody.[8] Both researchers and jail administrators have contributed to this because each believes that they may gain by focusing on this population. Researchers may prefer to work with the sentenced misdemeanant population because their release date is known, which is conducive to study design, and they will return to the community where the research is being conducted, which is conducive for post-release follow-up. Jail administrators may prefer to study sentenced misdemeanants because their custody level is low; consequently, assuring the safety of researchers and project staff is considered to be less risk prone.

Sentenced misdemeanants are often heavily programmed and have multiple opportunities to voluntarily participate in programs. As a result, researchers — who may have limited the possible participant pool to only a sentenced misdemeanant sample — might not have been able to recruit sufficient inmates to conduct their research. When results are produced, they may not apply to the overall jail population. The behavior and characteristics of sentenced misdemeanants may not be representative of the behavior and characteristics of the overall inmate population, which is mainly composed of pretrial inmates charged with felony offenses. Consequently, developing policy and practice based on the current literature may not be effective. This has important public safety implications.

Jail staff and administration currently lack access to a reliable body of knowledge outside their experience that establishes, in a scientific way, effective practices based on a sound understanding of this population. Without such knowledge, inconsistent practices and unintended consequences can result. Studies focused on the pretrial detainee population are necessary to further the knowledge of jail-based corrections.

There is much to be gained by conducting robust evaluations of programs and services in local jails using randomized controlled trials. Potential researchers and evaluators might be better able to propose viable research protocols if they have some guidelines regarding jail operating constraints. This would enable them to structure studies that are academically rigorous, produce meaningful results that further the discipline and knowledge of jail-based corrections, and inform practice and policy to generate the desired outcomes.

The remainder of this document is focused on suggestions for ensuring study success. Some suggestions are provided on how to ensure that proposed study protocols address the major safety, security, order, and compliance concerns of jail administrators and legal counsel. This is followed by suggestions on how to design around inherent limitations of working with jail-based populations that affect the statistical validity of the study.

Volunteer at the Facility Before Developing a Proposal

Many jails operate programs primarily with volunteers. They offer orientation and basic training to volunteers on working safely within jails. Project staff who go through this training and spend time within housing units, offering programming to inmates (for example, educational programming) before proposing their research, can do so with better knowledge of the on-the-ground operating realities and design a more effective study. Unlike prisons, jails typically have short median lengths of stay (expected stays are 25 days for large jails).[9] Concerns that researchers might get too close to inmates are not likely to influence future studies. Evaluators are encouraged to receive training as volunteers, but also to provide services to a different population than study participants to prevent potential bias. Those trained as volunteers need not necessarily serve as volunteers, particularly in the case of evaluators. The volunteer training process simply expedites the process of initiating and completing the project tasks once the project commences.

Establish Researcher and Practitioner Partnerships

It is important to establish good working relationships with jail staff before research commences — for example, during the phase when the proposal is being developed. This can prevent unanticipated barriers to research. Jail officials are partners in, facilitators for, and customers of research. These partnerships can also ensure that baseline data for the study population and the jail population as a whole are defined, collected, and available to researchers when the study commences.

Practitioners invite researchers to conduct studies and evaluations because it helps them promote the understanding of jails-based corrections and improve jails' performance. They are also invested in the successful completion of the research. In larger jails, there may be internal liaisons who have a research background and can work with researchers to facilitate resolution of any methodology concerns that may arise. Such resources may not exist in smaller jails; therefore, providing adequate time for jail staff to collect and collate baseline data is critical to study success. Although practitioners may be able to gather these data in advance, they will most likely not be able to share the data with researchers until the project commences, unless the data are publicly available.

Consult Jail Administrators and the Legal Department Before Proposing a Logic Model

It is always best to consult the general counsel's office and/or the sheriff's office when developing a proposal to conduct research to ensure that the proposed methods meet jurisdiction-specific legal requirements, satisfy constraints related to inmates' rights, are operationally feasible, do not put undue burden on jail staff and resources or pose risks to safety or security, and do not put the jail at risk for litigation. Taking these precautions can ensure that approved projects proceed smoothly without undue delay.

Proceeding in such a manner has additional advantages. Once an award is made, project staff will not lose time in the process of becoming trained because they will already have some experience working within the jail. They will also have experience communicating with inmates, which can facilitate effective communication and anticipate questions and concerns that inmates and jail staff may have when implementing the project. In addition, the project will not be delayed due to lack of knowledge of legal, policy, or operational constraints.

This strategy also establishes and sustains a working relationship with jail officials and may lead to opportunities that researchers had not previously considered. When researchers begin working in jails, they engage in conversations with staff and become aware of problems or areas of inquiry that they previously did not know about. This can lead to fertile research prospects.

Some jails have positive experiences collaborating with researchers, find their insights to be of value, and subsequently find the resources to continue a sustained relationship. They may opt to continue the research partnership, develop a consulting relationship with researchers, or hire research staff to establish or support an in-house research and analysis unit. Sometimes, jurisdictions find ways to fund projects within their local operating budgets that they believe to be of value, even when they are not funded by grants. When researchers and jail staff work together to identify and answer the "right" research questions, it can lead to meaningful insights that advance the understanding of the field, improve jail operating effectiveness and efficiency, and improve community public safety outcomes.

Establish Memorandums of Understanding With Data Sources Well in Advance

If the intent is to strengthen the research by including participant information from various official sources or agencies (e.g., the courts, health records, mental health records, employment or education-related records), researchers must establish a memorandum of understanding related to data extraction with each agency, well in advance of initiating research projects. These documents require legal review and may be subject to many legal and regulatory barriers. The recommendation is to allow for at least a full year to establish an agreement with each organization or agency from which data are sought, and to work on multiple agreements simultaneously so they will be officially established before the study commences.

The process by which data will be accurately abstracted and matched to participant records (for all study groups) should be clearly specified in such agreements. Often, agencies do not share reliable common identifiers. To overcome these obstacles to data accuracy, it may be helpful to receive information directly from the participants. The participants could request their individual information from the data source on secure media or use secure information exchange protocols. The extracting agency or organization should identify their records only by project number and research identification number (to be provided by the researchers). In the event that the media are misplaced or lost, such protocols would ensure maximum privacy for the individual. These methods also ensure that records received from each individual actually belong to that participant and have not been incorrectly matched because of difficulties with common identifiers across databases.

Address Potential Impacts on Safety, Security, and Order Before Finalizing the Logic Model

There are often legal, operational, and policy constraints that must be considered and addressed when designing studies involving jail populations. Understanding and accommodating them in the study design and logistics will facilitate implementation. Some of the major jails-based concerns are outlined below.

Design Study Protocols To Ensure Compliance With HIPAA, Title IX, and Title VI

Successful studies are designed with the assumption that jail inmates, who are primarily pretrial detainees, are accorded most of their rights by the presumption of innocence until proven guilty. The operating paradigm for jail administrators is that jail inmates in custody have only lost their liberty and not all of their rights. Jails that place sentenced and pretrial inmates together in the same housing units treat all inmates as if they were pretrial detainees in terms of their rights in an effort to treat all of them in the same manner.

Perceptions of violations of inmates' rights — or noncompliance with federal, state, and local statutes — may lead to lengthy and costly litigation for jails. For this reason, jails may prefer to decline the option to participate in research when faced with the possibility of litigation. Program staff who help facilitate proposal development are frequently unaware of the full scope of legal risk factors that must be satisfied for the approving authorities to authorize research. Legal constraints may vary from jurisdiction to jurisdiction.

Inmate rights include rights to privacy and protection of their health, behavioral health, and other personally protected information. Without an inmate's prior written informed consent, jail staff cannot screen inmates for eligibility on criteria that include personally identifiable, protected, or Health Insurance Portability and Accountability Act (HIPAA)[10] protected indicators. However, before obtaining informed consent, jail staff can screen potential participants based on publicly available data — for example, age, number of past incarcerations, security level, type of offense, severity of offense, days in custody, number of offenses, and most serious offense type (e.g., a felony, a misdemeanor, or a charge). These variables determine inmate custody classification, which may be used as a prescreening indicator. Inmate risk level is not publicly available and should not be used as a prescreening indicator; however, it can be used after obtaining written informed consent. Jail staff must abide by HIPAA and information privacy protocols. Researchers can avoid unnecessary delays and roadblocks by excluding personally protected information from screening criteria and collecting data on these variables after they have obtained informed consent from potential study participants.

Sometimes, practitioners encounter study designs that call for jail officials to actively recruit inmates for research. This may be unacceptable to many jail administrators and legal staff because it may put their jail at risk of litigation from inmates claiming partiality in access to programs and services, and participation in research. Inmates can choose to participate in studies or decline. Where possible, studies should include both men and women in custody to ensure compliance with Title IX and include recruiting in other prevalent languages (typically Spanish) to ensure compliance with Title VI. Such designs result in richer, more informative results that better represent the inmate population in its entirety. Successful studies work with jail officials; in this way, their project staff are the ones who actively recruit and select inmates for participation in studies.

Obtain Informed Consent From Potential Participants Before Determining Eligibility

To protect jail inmates, jail officials, and research teams, it is critical that informed consent forms are robust. The informed consent form should emphasize that inmates will neither be rewarded for participation nor punished if they choose not to participate, that they may opt

out at any time and receive instructions on how they can do so, and that random assignment to various study groups will be accomplished by a computer program and not decided by humans.[11]

Provide Study Materials in Multiple Formats and Accessible, Easily Understood Language

Many inmates are functionally illiterate; to help them receive the intended information, the language used in the consent form should be at a sixth-grade reading level. Offering an explanatory presentation in video, narrated presentation, or read-aloud format may be helpful. Forms should be available in the prevalent languages and should be read to individuals who have limited reading abilities. If individuals experience difficulty with comprehension, ask them to have an advocate or lawyer review and discuss the forms with them before they sign to indicate interest in participation. The study could offer a staffed phone line to answer any questions from third parties; the consent form should clearly state when the phone line is available.

Use a Prescreening Process To Facilitate Recruiting and Minimize Operational Disruptions

Jail inmates have diverse characteristics. Particularly in large jails or jail systems that may operate over 50 housing units, a prescreening process can be beneficial to both researchers and staff. Prescreening uses only publicly available indicators to identify inmates who might be interested in participation. It filters out a small, more manageable pool of potential participants from a large jail population. It can help researchers speak about their project to targeted population groups gathered in a space such as a gym, chapel, or large area that jail staff can equip with necessary equipment and access to information or applications. This can be accomplished in a previously agreed to, scheduled manner that improves recruiting effectiveness and reduces the need to move through multiple housing units. Jail administrators find this helpful because they can facilitate informational meetings with potential participants in a controlled manner that minimizes security risks and disruptions to operations.

Publicly available indicators include age (not date of birth), sex, race, charges at commitment, ZIP Code, ward or neighborhood of residence (not address), length of stay in custody, number of charges, severity of charges, whether the charges are misdemeanors or felony charges, and assigned housing facility. Facilities will often also include type or custody level of the housing unit as an allowable indicator (e.g., general population housing, program housing, specialized housing, or medium-custody inmates). If the facility is known to serve special populations, such as those at risk for substance use and those living with mental illness (both are public information), these indicators can also be used as eligibility criteria (although specific information about the illness or substance use cannot be used).

Consider Simplifying Eligibility Criteria To Enhance Recruitment and Improve Retention

Personally identifiable and protected information (e.g., risk scores, assessment scores, educational attainment, and mental illness indicators) can be used after informed consent has been obtained. If used as eligibility criteria, researchers should be aware that not all information is available as searchable electronic records within the jail. The information may reside in multiple information systems — some of it may be in electronic images that

are not searchable, and some of it may be housed in other agencies. Consequently, it may not be possible to determine eligibility immediately upon receipt of the signed informed consent forms. This may result in delays in selecting participants and randomizing them into test and control groups and can lead to attrition of eligible participants prior to their assignment to study groups. With simple eligibility criteria, these sources of delays can be avoided. The end result is enhanced recruitment because of less restrictive criteria, and improved retention because of reduced attrition due to releases from jail while awaiting eligibility screening results.

Maximize the Value of Inmate Contact Time

Jail stays are often very short; expected lengths of stay vary between 11 and 34 days,[12] so it is important to maximize the use of available contact time with inmates. Researchers who design study protocols so that informed consent, enrollment, and randomized assignment can be completed during a single visit with inmates are more likely to meet their recruiting targets. Avoiding delays at this stage allows time to conduct project activities while inmates are still in custody. Researchers who maximize their contact time with inmates can successfully enroll both pretrial and sentenced inmates. Such procedures will ensure a representative sample and result in more meaningful and informative research insights.

Short median lengths of stay also impact program designs. Interventions that are designed to work with a small cohort of inmates charged with less serious offenses for many weeks at a time (i.e., several times the median length of stay to release) are not likely to produce representative or meaningful insight about jail inmates because only few inmates stay long enough to participate, and even fewer may meet additional eligibility criteria. To work within short median length-of-stay constraints, consider study designs where interventions can be offered to study participants (in test and comparison groups), both while incarcerated and in the community, regardless of where individuals are located.

Opportunities exist to establish standards for appropriate research methods to conduct randomized controlled trials targeted to the short-term pretrial detainee population with indeterminate lengths of stay. This requires creativity and foresight from researchers. Thoughtful study designs targeted to this population, or that will include this population, can ensure that there are adequate participants during the recruiting period to generate meaningful insights from the research. Generating meaningful insights requires a sufficiently large, representative sample of inmates. This, in turn, requires researchers to maximize the research value of inmate contact time and use methods that sustain a sufficient number of participants throughout all of the project's activities. Although challenges exist, it is possible to ameliorate some of the effects by using generally accepted design practices. Some options include oversampling, recruiting at levels high enough to produce meaningful results even with high attrition rates, designing the study so individuals can continue to participate after release if they choose, reducing the number of variables and criteria for eligibility, and reducing the eligibility determination time.

Ensure That Study Protocols Comply With Safety, Security, and Order Requirements

When considering whether to conduct research in a jail, it is important to realize that — for jail administrators and staff — safety, security, and order are the first priority. This is important when developing protocols that involve moving inmates from housing units

to areas where they will interact with project staff, planning the number and timing of visits required to conduct project activities, and developing protocols to capture study-related information.

Minimizing operational disruptions, minimizing supervision demands on correctional officers, and being sensitive to jail security concerns and constraints will help facilitate a successful project. Researchers should consider using a limited number of in-person visits, maximizing the research value of those visits, conducting the study over narrow durations (e.g., a few three-day holiday weekends), and scheduling the visits in a way that reduces the burden on jail staff.

Jails typically limit inmates' access to internet-connected devices. Consider using stand-alone devices or working with the jail to use approved, networked devices for study needs (e.g., data collection). Jail officials must give inmates equal access to programs and services. Researchers should consider designing a type of system to collect information that is not connected to the internet, with options for inmates to respond by either reading or having the questions read to them in their language of choice. This allows participants to respond even if they are located in their jail cells.

Avoid Denial-of-Services Control Groups in Study Designs for Jail-Based Research

Jail administrations are concerned about inmates' perceptions of fairness and equal access to programs and services. Furthermore, they must comply with 45 CFR 46.306(a) subpart C, which mandates "supplementary safeguards for prisoners who participate in research. For example, placebos and control groups with limited benefit are not allowed. In addition, coercion must be minimized. Therefore, little or no financial compensation can be offered to inmates who participate in research studies."[13] In addition, compliance with the same regulation requires inmates to be clearly informed that their choice either to participate or decline will have no effect on their legal outcomes or institutional experience. Thus, while certificates of completion can be issued, they are unlikely to encourage participation, especially if there is a possibility of being assigned to a denial-of-services group.[14]

For these reasons, comparison groups designed with services as usual, or alternative service offerings that may be perceived as having equal value by participants, are considered favorably when compared against a treatment group that receives enhanced services. Denial-of-services comparison groups, while academically rigorous, may lead to inmate perceptions of unfairly denied services or unequal or inconsistent treatment by jail staff. Denial-of-services situations may place the jail at risk for litigation for failure to respect inmates' rights and may result in adverse, unintended security impacts if inmates were to engage in disruptive behavior because they feel excluded from participation. Most jail administrations would, therefore, be very concerned about such a proposed methodology, and many may reject the proposal as a result.

Successful researchers avoid such rejection by proposing a study methodology that ensures participants are not denied services and that the study simply supplements available services. This allows evaluation of the differential impact of services provided by the study. For example, a randomized controlled trial that proposed to offer some services to a treatment group (delivered through tablets to inmates of a specified custody level or housing unit type) — and offered the same services (through instructor-led courses) to a control group in another housing unit of the same specified custody level or housing unit type — would

be approved because there is no denial of services and the net benefits of the services would be perceived to be equivalent. Similarly, if tablets were used to deliver one type of programming to inmates in one study group and delivered another type of programming to similar inmates in a different study group, jail authorities might be more receptive to the study design. The recommendation is to avoid denial-of-services control groups when conducting research in a jail; instead, incorporate control groups that provide access to services as usual, or offer differing levels of service.

Consider Denial-of-Services Comparison Groups in Studies of Former Inmates Returning to the Community

It is possible to use a denial-of-services group if the study commences after participants are released from custody. After release, the denial-of-services group could be offered a small incentive to participate in follow-up meetings for information collection. These inmates would need to have access to services as usual while in jail custody, and they may receive services from nonstudy sources while in the community, unbeknownst to researchers. Study designs that include denial-of-services comparison groups are mainly helpful when studying the reentry experience of jail inmates but not for research topics such as jail operations, programming, or inmate incarceration experiences.

Consider Noncontemporaneous Treatment and Comparison Groups

Jail populations turn over about three to four times a year, or more frequently in smaller jails. Usually, inmate population characteristics do not change measurably over such short durations. For this reason, noncontemporaneous comparison group options could be considered; in these groups, participants would be selected during a time period that precedes or follows the period when services are provided to the treatment group. For example, a comparison group could be selected during January to March, a treatment group could occur from June to August, and another comparison group could be selected from October to December in the year the study is conducted at the jail. The time gaps provide adequate time for the jail to lose its "memory" of the last phase of the study and reduce the extent of associated bias. It is also possible to create reasonably matched test and comparison groups from recent noncontemporaneous samples by selecting records of individuals who have been released. These would be made available in a de-identified manner, and HIPAA protections would still apply unless only criminal history information and demographics were requested.

The impact of tablet-delivered education on reentry outcomes could be compared to the reentry outcomes of a similar, matched sample population of inmates who were in custody recently and before the study began, as well as a population of inmates who are a matched sample and are in custody after the duration of the study (who receive services as usual but not the tablet-based education). Jail inmate population characteristics do not change frequently over a one- to two-year period unless there is an unplanned event or policy change that impacts the characteristics of the population. By choosing noncontemporaneous comparison groups that serve as bounds on the treatment group, and selecting publicly reported variables and recidivism (recommitment) as indicators of comparison, it is possible to account for any significant temporal changes in inmate population characteristics and control for them in reasonable ways.

It Is Possible To Reduce the Effects of Selection Bias Between Treatment and Comparison Groups

Bias is defined as any tendency that prevents unprejudiced consideration of a question. In research, bias occurs when "systematic error [is] introduced into sampling or testing by selecting or encouraging one outcome or answer over others." Bias can occur at any phase of research, including study design or data collection as well as in the process of data analysis and publication. Bias is not a dichotomous variable.[15] The methods discussed can introduce selection bias, defined as "[a]n error in choosing the individuals or groups to take part in a study. Ideally, the subjects in a study should be very similar to one another and to the larger population from which they are drawn (for example, all individuals with the same disease or condition). If there are important differences, the results of the study may not be valid."[16] In addition, "selection bias may occur during identification of the study population. The ideal study population is clearly defined, accessible, reliable, and at increased risk to develop the outcome of interest. When a study population is identified, selection bias occurs when the criteria used to recruit and enroll" [participants] "into separate study cohorts are inherently different. This can be a particular problem with case-control and retrospective cohort studies where exposure and outcome have already occurred at the time individuals are selected for study inclusion. Prospective studies (particularly randomized controlled trials) where the outcome is unknown at time of enrollment are less prone to selection bias."[17]

Specifically, the concern in conducting randomized controlled trials where participants volunteer to participate is that their characteristics and outcomes may differ significantly from others who appear to be similar in other respects but choose not to participate. Researchers are concerned that the effect size of self-selecting to participate in a study exceeds the effect size of the variable being measured in the study. Consequently, this may impact the validity of the results of the study and researchers' ability to extend findings to the general population.

Selection bias in the suggested methods, however, affects both test and comparison groups to a similar extent if using contemporaneous samples where eligibility criteria are applied after informed consent is obtained and random assignment to test and control groups occurs subsequently. When using noncontemporaneous samples on heavily programmed inmate populations, some selection bias will exist in the treatment group compared to the pre-study group.

In general, jail populations are receptive to program participation. Indeed, the major complaint practitioners must contend with from inmates and advocates is that the number, frequency, and variety of programs offered are inadequate to serve those who desire to participate. In absolute numbers, there are few who do not want to participate in programs (nonparticipants). For jails where limited programming is offered to most inmates, it is reasonable to assume that this small proportion of nonparticipants is relatively unchanged over time (within five to six population turnover cycles). The important measure is receptivity to participation (measured as participation rate, or lack of receptivity measured as nonparticipation rate), and if that measure for the comparison group is similar to that for the treatment group, it can be reasonably assumed that outcomes would be similar (provided other important variables that describe treatment and comparison groups are also similar). Another way to think about this is that jails provide populations saturated with members of similar receptivity to participation, and the overall population receptivity to participation does not vary much over time. It only makes sense to measure the effect

of an intervention on a population that would actually receive the intervention and be receptive to it. In the case of jail populations with very high receptivity to participation, that is often the entire population. Thus, there is likely to be minimal selection bias even when working with noncontemporaneous comparison groups (particularly post-study groups that provide informed consent and have similar receptivity to participation) because there is little rationale on which to presume that noncontemporaneous groups would behave any differently from the current treatment and comparison groups. Because of low nonparticipation rates observed in jail populations over time, it is not likely that selection bias would have significantly impacted outcomes, and it may be possible to reasonably generalize findings to the overall jail population.

Pre-study noncontemporaneous groups may be expected to have a different proportion of those who are not receptive to participation compared to the treatment and comparison groups selected contemporaneously — even if that proportion is small in absolute terms and may not contribute to significant selection bias. If it is possible to construct a proxy measure for overall receptivity to program/study participation, researchers may be able to adjust for this effect. It may be possible to evaluate the extent of selection bias by considering the percentage of prescreening eligible inmates who opt to provide informed consent and assuming a similar informed consent rate among the pre-study noncontemporaneous sample. Informed consent can be obtained for post-study noncontemporaneous samples, which will mitigate selection bias. The outcomes will be delayed by the duration of the study. It may be possible to correct for the effect of selection bias by evaluating the extent to which it impacts outcomes of the pre- and post-study samples (one sample with possible, although likely insignificant, selection bias and one sample with selection bias similar to that of the test group).

Contamination Bias Effects Can Be Minimized With a Thoughtful Study Design

There is a concern that the process of informing potential participants that the study is a randomized controlled trial could introduce contamination bias. Contamination bias occurs "when members of the 'control' group inadvertently receive the treatment or are exposed to the intervention, thus potentially minimizing the difference in outcomes between the two groups."[18] Treatment and comparison group service levels designed so they appear similar to participants reduce contamination. The design and language used for informational materials can add to or prevent contamination risk. Finally, contamination risk can be affected by whether the study is conducted on participants in custody or participants after release, and by the duration of the study if it is being conducted in the facility with a static group of participants. Simply stated, studies conducted in a facility have higher contamination risk than studies conducted on individuals after release, and the contamination risk is higher for studies with longer durations.

It is important to keep in mind that, unlike prisons, jails have a limited ability to separate inmates. Jail operations necessitate high levels of movement, which give inmates the opportunity to exchange information with one another. Consequently, when structuring randomized controlled trials, it is important to design informational materials and services in such a way that participants are unable to distinguish the groups to which they are assigned.

Differential Attrition Effects Can Be Minimized Through Study Design

Treatment and comparison group participants could opt out of the study at significantly different rates (i.e., they have differential attrition rates). If the service levels and perceived benefits of participating in the study vary significantly between test and comparison groups, the attrition rates are also likely to be significantly different. This is another reason why researchers should consider designs in which services provided appear to be equivalent or similar to participants. Participants who perceive that services offered to treatment and comparison groups are of equal value, regardless of the group they are assigned to, are likely to opt out or complete the study at similar rates. This can reduce differential attrition impact.

The length of the study can also affect differential attrition risk. Many involved in the criminal justice system, especially at the local jail level, cycle in and out of the jail being studied as well as jails in neighboring jurisdictions. Sometimes, participants in post-release studies experience attrition because they are in custody again and fail to connect with researchers. Short-duration studies and designs that build in ways to keep connected to individuals in the event they are re-incarcerated in a local jail can reduce differential attrition impact on study results. Minimizing the impact of differential attrition adds to the strength of the study design and the value of the results.

Finally, it may be helpful to incorporate the assumption of high differential attrition levels into the study's recruiting strategy. Ensuring that adequate numbers are recruited into treatment and comparison groups will accommodate differential attrition, as well as generally high attrition rates among this study population, without compromising the informative value of study results.

Statistical Power Can Be Achieved By Ensuring Sufficient Sample Size

Statistical power can also be an issue of concern. "Statistical power is the likelihood that a study will detect an effect when there is an effect there to be detected. If statistical power is high, the probability of making a Type II error, or concluding there is no effect when, in fact, there is one, goes down. Statistical power is affected chiefly by the size of the effect and the size of the sample used to detect it. Bigger effects are easier to detect than smaller effects, while large samples offer greater test sensitivity than small samples."[19]

Statistical power is of concern when conducting studies with jail populations because most of the nation's nearly 3,300 jails are small or medium-sized jails.[20] Sample sizes will vary over time, may be very limited to begin with, and may only shrink further once eligibility criteria are applied. Thoughtful and effective research designs take these factors into consideration when developing proposals to conduct research so they are able to detect an effect where there is one to be observed with required statistical confidence.

Some approaches that can ameliorate difficulties related to sample size include expanding the study to include similar populations in regional facilities with similar missions (primarily serving pretrial detainees or primarily serving sentenced misdemeanants), reducing the number of eligibility criteria, and extending the recruiting period. Given the inherent limitations in sample size, researchers can encourage higher levels of participation by approaching the design with a good understanding of their participants' abilities, interests, and needs. Many participants in the jail population have a low level of functional

literacy; therefore, it would be beneficial to use language that is easy to understand. Researchers who provide informational and study materials in a variety of formats and avoid content that is purely written literature can help ensure that the maximum number of inmates are recruited.

Consider Simple Study Designs

Jail populations have a lot of individual variability. Many implicit factors affect any variable being measured or outcome of interest. Most are not measured explicitly, and many are not measurable. It is difficult, if not impossible, to control for these effects. For this reason, study designs that measure the effect of a single variable are likely to be more informative and meaningful than complex study designs that attempt to gauge the effect of multiple unrelated variables.

To be effective, studies must be designed within the known constraints of the population size and characteristics, and must develop a knowledge base systematically by conducting successively more rigorous studies. Consider simple study designs first — those that evaluate the differential impact of one or two factors on a variable of interest. There may be a concern that such methods could introduce co-intervention bias, or "bias [that] occurs when some subjects receive other (unaccounted for) interventions at the same time as that of the study treatment."[21] It is possible to minimize the effects of possible co-intervention by designing the study so that participants in different study groups do not receive programming, services, or treatment that impact the variable of study interest. In pretrial populations that include inmates charged with felony offenses, co-intervention bias may not be as much of a concern because these populations often have access to limited programs and services and are thus less likely to be affected by it. As research begins to shed light on the bounds of the population characteristics, subsequent studies can use increasingly rigorous methods tailored to the population to study it in greater depth. It is important to design collection periods, consider the number of facilities sampled, and over-sample to ensure that the proposed power and confidence levels can be supported by the data.

De-identify or Aggregate Data Before Publication

When researchers ensure that they will comply with privacy protection laws and regulations by providing assurances that they will maintain data securely for a finite period (typically 12 months after publication of results), destroy project data in accordance with agreements, and publish only in aggregate format devoid of personal identifiers, they create trust and earn invitations to conduct further research. Providing such assurances during the project planning phase, and carrying them out faithfully once the project is completed, strengthens the trust that researchers work hard to establish.

Focus on Opportunities To Expand Knowledge of Jail-Based Corrections

Jail-based corrections is a rarely studied field, requires a set of complex and specialized systems and process analysis skills, and poses many challenges to researchers. Many opportunities exist to expand knowledge of the discipline of corrections by proposing creative and effective research plans that study the population of pretrial detainees charged with felony offenses.

Consider Working for a Jail To Gain a First-Hand Understanding

Because jails are locally funded and operated, there are many variations among them, even those that are regional. One of the best ways to promote an understanding of the field is for emerging researchers to serve on the staff of local jails in their communities to learn and develop a first-hand understanding of jail operations, processes, and inmate populations and how the local criminal justice system operates. Researchers can often support their local jails in planning and analysis to help make the business cases that ensure that jail operations and programs are adequately funded and resourced to meet the community's needs, and they can work to educate stakeholders about the role each one plays in ensuring that jails are used in a manner that best serves the public safety and justice needs of their communities. In doing so, they can develop the understanding and skills needed to further the discipline of jail-based corrections with academic rigor. For those jails that have staff with academic training and skills, a practitioner forum and a jail-based journal (hosted online for maximum effectiveness) would be excellent ways to facilitate sharing of meaningful information that can help establish the discipline of jail-based corrections.

Conclusion

Jail-based corrections is a field that presents rich possibilities: to reveal new insights, establish new methodologies, and support the research and the researchers. They can now begin to systematically study and understand jail processes and systems. This undertaking requires researchers who are committed to finding ways to study jail populations that are based on rigorous study methods and measures so that the results are relevant to the jail-based corrections community (researchers, practitioners, and policymakers). This work requires not only training and skills, but also a commitment to working in facilities to gather first-hand observations and understanding of jail operations and processes. Researchers in jail settings must be able to work effectively with jail administrators, staff, and the jailed population — all of whom have valuable insights into how jails can be more effective in providing services and developing policies and practices that protect and support jail personnel and inmates as well as those returning to their communities. In time, these efforts can help break the cycle of poverty, crime, and incarceration and make a real difference.

About the Author

Reena Chakraborty, Ph.D., has served as Chief of Strategic Planning and Analysis for the DC Department of Corrections since 2012. She is dedicated to applying systems and process analysis to understand, improve, and transform real-world systems that serve the public. Dr. Chakraborty also serves as a Practitioner in Residence at the National Institute of Justice. She hopes this work will result in renewed interest in jails-based research that will meaningfully impact practice.

Potential Research Topics

Potential topics for both qualitative and quantitative research include:

- Study of individual and cohort group path to incarceration
  - The path and triggers that resulted in the current incarceration event
  - Past history of trauma in the community of residence
  - Policing strategies in the community of residence
- Study of individual and cohort group incarceration experiences
  - Differences in characteristics and experience between first-time incarcerated and previously incarcerated individuals
  - Individual and cohort group incarceration experiences
  - Perceptions of effective and ineffective corrections interventions, policies, and procedures, and perceived barriers to reentry
- Study of individual and cohort group reentry experiences
  - Perceptions of perceived barriers to reentry
  - Programming and support needs
  - Impact of community resources (or lack of resources) on incarceration rates and reentry effectiveness
- Study of correctional facilities and infrastructure on operational effectiveness
  - Impact of jail design, construction, and physical layout on safety, operational effectiveness, and inmate outcomes
  - Impact of supportive infrastructure and processes on operations efficiency and effectiveness[1]
  - Impact of correctional information systems on decision-making and operational effectiveness
- Study of correctional staffing and business processes
  - Impact of organizational design on operational effectiveness[2] and barriers to acceptance of best practices
  - Security risks and concerns of correctional staff who supervise, classify, manage caseloads, and provide programs and services to inmates
  - Correctional staff's perceptions of business processes[3]

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[1] For example, human resources processes, correctional technology and services, information systems and services, supply chain management, facilities maintenance workload and processes, inmate transportation services, food services delivery, health services delivery, behavioral health services delivery, and surveillance and correctional intelligence services processes and effectiveness. Also, the impact of facility design and workloads on health, mental health, and performance of correctional staff.

[2] Guidelines for appropriate and effective staffing for all jail functions based on facility design and physical layout, custody level and behavioral needs of inmates, and best practice service delivery standards for each job category.

[3] For example, perceptions of effective and ineffective interventions; and policies and procedures for supervising, working with, and providing programs and services to individuals in their custody.

Notes

1. S.P.-N. Wakai, "Conducting Research in Corrections: Challenges and Solutions," *Behavioral Sciences and the Law* 27 (2009): 743-752; Z.L. Apa et al., "Challenges and Strategies for Research in Prisons," *Public Health Nursing* 29 no. 5 (2012): 467-472; and J.P. Mandracchia, "Tips and Advice for Conducting Research in Prisons," July 2013, www.apadivisions.org: https://www.apadivisions.org/division-18/publications/newsletters/gavel/2013/07/prison-research.aspx.

2. Bureau of Justice Statistics, *Terms & Definitions: Local Jail Inmates and Jail Facilities,* https://www.bjs.gov/index.cfm?ty=tdtp&tid=12.

3. Z. Zeng, *Jail Inmates in 2016* (Washington, DC: U.S. Department of Justice, Bureau of Justice Statistics, 2018).

4. R. Chakraborty, Chief of Strategic Planning & Analysis, D.C. Department of Corrections, email communication on court-ordered releases from the D.C. Department of Corrections to the community. Washington, DC, 2017.

5. Zeng, 2018.

6. Ibid.

7. Ibid.

8. D.C. Department of Corrections, *D.C. Department of Corrections Facts and Figures June 2018* (Washington, DC: D.C. Department of Corrections, June 2018).

9. Zeng, 2018.

10. HIPAA protects the privacy and information security of personally identifiable health information collected and recorded by providers and insurance agencies, among others.

    Title IX of the Education Amendments Act of 1972 is a federal law that states "No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance." (See www.ncaa.org/about/resources/inclusion/title-ix-frequently-asked-questions.) Title VI of the 1964 Civil Rights Act requires that "No person in the United States shall, on the grounds of race, color or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance." This impacts language access.

11. Several excellent resources available on the internet outline the required elements of an informed-consent form. One resource is offered by the U.S. Department of Health and Human Services (https://www.hhs.gov/ohrp/regulations-and-policy/guidance/informed-consent-tips/index.html); another, more simplified format is provided by the University of Michigan (https://research-compliance.umich.edu/informed-consent-guidelines).

12. Zeng, 2018.

13. Wakai, 2009.

14. Ibid.

15. C.J. Pannucci and E.G. Wilkins, "Identifying and Avoiding Bias in Research," *Plastic and Reconstructive Surgery* 126 no. 2 (2010): 619-625.

16. National Cancer Institute, *NCI Dictionary of Cancer Terms - Selection Bias,* https://www.cancer.gov/publications/dictionaries/cancer-terms/def/selection-bias?redirect=true.

17. Pannucci and Wilkins, 2010.

18. R. Krishna, R. Maithreyir, and K.M. Surapaneni, "Research Bias: A Review For Medical Students," *Journal of Clinical and Diagnostic Research* 4 no. 2 (2010): 2320-2324.

19. D. Ellis, *The Essential Guide to Effect Sizes: Statistical Power, Meta Analysis, and the Interpretation of Research Results* (Cambridge, England: Cambridge University Press, 2010).

20. In 2016, 54.4 percent of the 2,850 U.S. jail jurisdictions had a capacity of less than 100 inmates and another 33.5 percent had a capacity between 100 and 500 inmates (Zeng, 2018). For the purposes of this document, these are considered small jails and medium-sized jails, respectively.

21. Krishna, Maithreyir, and Surapaneni, 2010.

NCJ 252915