Managed access technology to combat contraband cell phones in prison: Findings from a process evaluation

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ABSTRACT

Cell phones in correctional facilities have emerged as one of the most pervasive forms of modern contraband. This issue has been identified as a top priority for many correctional administrators in the United States. Managed access, a technology that utilizes cellular signals to capture transmissions from contraband phones, has received notable attention as a promising tool to combat this problem. However, this technology has received little evaluative attention. The present study offers a foundational process evaluation and draws upon output measures and stakeholder interviews to identify salient operational challenges and subsequent lessons learned about implementing and maintaining a managed access system. Findings suggest that while managed access captures large volumes of contraband cellular transmissions, the technology requires significant implementation planning, personnel support, and complex partnerships with commercial cellular carriers. Lessons learned provide guidance for practitioners to navigate these challenges and for scholars to improve future evaluations of managed access.

1. Introduction

Over the past decade contraband cell phones in correctional facilities has proven to be one of the fastest growing problems facing correctional practitioners. The pervasiveness of contraband cell phones in prison is difficult to quantify. The best available estimates using internal confiscation data suggest the number of cell phones confiscated from state correctional systems has increased by 137 percent between 2008 and 2010, while the number of confiscations from federal prisons and camps have increased by 108 percent across the same time period (GAO, 2011). As troubling as they seem, these estimates likely fall short of illustrating the true extent of the problem as confiscation data provide only a partial scope of the issue given many cellular devices are never found. Further exacerbating the contraband cell phone issue is the growing sophistication and capabilities of smartphones that enable internet access, videos, pictures, and content storage (Burke & Owen, 2010) as well as the use of technology-assisted means of contraband delivery (e.g., via small drones; Newcome & Mullen, 2014). In 2013, the Association of State Correctional Administrators (ASCA, 2013) surveyed state agencies to assess perceptions related to contraband cell phones. Nearly half of the respondents reported contraband cell phones as their most serious problem and top priority to resolve. An additional 20 percent of respondents indicated that contraband cell phones are a very serious problem for their agency.

With increased recognition from correctional administrators that

available methods of deterring or detecting contraband through traditional search, screen, and sanction means may not be able to stem the flow of cell phones, there is a growing demand for industry solutions to mitigate the smuggling and use of contraband cell phones. States and local jurisdictions have begun to invest in an innovative technology known as managed access. These systems capture cellular transmissions from unapproved (i.e., contraband) cell phones within a built environment.

Managed access technology is a significant financial investment. Up-front system costs range from $200,000 to over $1 million (U.S. Department of Commerce, 2010). There is little independent evidence available to answer questions about the effectiveness of managed access to combat contraband cell phones or the implementation nuances that correctional facilities are likely to confront in their procurement of this innovative technology. Vendors of managed access systems suggest that the technology is user-friendly and requires minimal maintenance. While these kind of claims may be offered with the best intentions in mind, they may understate the partnerships that need to be formalized as well as the challenges that will need to be managed in order to maximize the full potential of the technology. These disconnects between anticipated performance and practical operations bound by technical, procedural, and legal elements have consistently plagued the implementation of new technologies in criminal justice settings (Lum, Koper, & Willis, 2016; Nunn, 2017). The objective of the present study is to report findings from a process evaluation of a managed access

system deployed at a large rural penitentiary located in the southern region of the United States. Findings suggest managed access does in fact capture large volumes of transmissions from contraband cell phones, however the technology presents a number of complex implementation challenges. This study identifies and contextualizes these operational challenges and provides lessons learned for correctional facilities to navigate these challenges and for scholars to conduct refined evaluations of managed access.

2. Mechanisms to combat contraband cell phones in correctional environments

Contraband and its broader marketplace are entrenched elements of secure correctional facilities (Guenther, 1975; Kalinich & Stojkovic, 1985). Demand for contraband tends to be framed as being a function of responding to the deprivations of imprisonment, where the pains of being dispossessed of autonomy, goods, services, relationships, and social status lead to the creation or importation of contraband items (Irwin, 1970; Jacobs, 1977; Sykes, 2007). Strategies to combat contraband attempt to prevent entry into facilities and confiscate contraband that is present inside facilities. Techniques include standardized entry search and screen practices, random searches and shakedowns, walk-through metal detectors and hand-held metal detection wands, and canine units. In parallel with techniques that intend to increase the likelihood of detection, state criminal statutes seek to deter demand for contraband by specifying legal consequences for the distribution or possession of contraband. Despite having such mechanisms in place, there is little evidence to suggest that such approaches reduce the presence of contraband in general or cell phones in particular.

Technology tools to combat contraband cell phones are influenced by extant regulations. For instance, signal jamming technologies have been advocated as one of the primary solutions to the contraband cell phone problem correctional administrators' face. Signal jamming technology denies service to all users, therefore providing a ubiquitous block on all cellular communications. However, all forms of signal jamming, including cellular communications within non-Federal jails and prisons, are illegal as specified in the Communications Act of 1934 and other Federal Communication Commission (FCC) rules (Federal Communications Commission, 2013, 2014). Since signal jamming technology options are not feasible, technology-based strategies include hand-held radio frequency detectors that identify cell phone signals (U.S. Department of Commerce, 2010) and nonlinear junction detectors that can detect metals found in cell phone hardware (U.S. Department of Commerce, 2010). Advancements have also been made in portable body-scanning, akin to hand-held metal detectors, that are optimized for cell phones (ASCA, 2013). These methods have not been subjected to systematic analysis, leaving much of the knowledge about whether these efforts are more or less effective informed by anecdotal reports (Atherton & Phillips, 2007; Government Accountability Office, 2011).

Managed access technology has emerged as another technology-based strategy to mitigate the contraband cell phone problem. Managed access leverages core functions of cellular technology by "managing" network services granted to a specific cellular user or cellular device. Managed access actively transmits radio signals within the many bands commonly used by commercial wireless providers. Use of these bands is approved and closely regulated by the FCC or National Telecommunications and Information Administration (NTIA). Managed access permits connections to and from approved cellular devices while intercepting and blocking cellular transmissions (i.e., calls, texts, or data) associated with non-approved, and presumably contraband, cell phones (Frantz & Harris, 2016). Put simply, a managed access system creates its own cellular connection (akin to a cell tower) that serves as the strongest connection signal within a geographic area. Cellular devices automatically connect to the strongest available connection. Once a device is connected to the managed access signal, the system then routes approved devices to commercial cellular providers to permit the

completion of a transmission. Transmissions that originate from unapproved (i.e., contraband) devices are captured and not allowed to be completed. Users of unapproved devices who attempt to complete a transmission receive an automated message indicating they are in possession of contraband within a correctional facility, which is a violation of the law.

Independent evaluations of managed access systems are sparse and largely take the form of government reports that describe the potential of the technology. Notably, the California Council on Science and Technology (CCST) (2012) published a comprehensive report in the wake of the state's movement towards potential system wide implementation of managed access systems across their facilities. Though this CCST study did not evaluate managed access, the investigators conducted focus groups with subject matter experts on the technology, reviewed vendor literature, studied engineering designs and system performance, and consulted experts in the field of corrections to estimate the costs and benefits of implementation.

The report noted glaring inconsistencies across physical screening at state prisons and highlighted the need for enhanced countermeasures within prisons. The challenge of maintaining pace with the cellular industry and its rollouts of new generations of wireless signals was acknowledged to be a significant hindrance. Managed access systems would need to be updated and recalibrated to compensate for such signal advancements. Perhaps most relevant to the current study, the report emphasized concerns regarding the efficacy of managed access within correctional facilities. Specifically, "…managed access system technology today is not mature enough for immediate large-scale deployments…[and] specific protocols for success have yet to be defined" (CCST, 2012, p. 6). These concerns were expressed as resulting from a general lack of available evidence and baseline performance benchmarks on how an optimal system should function. The authors were unable to address these concerns as a managed access system operating in a correctional facility was not available for evaluation; thus, many of the concerns noted rest on subject matter expertise or inference as opposed to direct observation or scientific inquiry. The present research provides this much-needed foundational insight, grounded in a process evaluation that identifies both the challenges of implementation and corresponding lessons learned.

3. Methods

Data were collected as part of a broader U.S. Department of Justice sponsored evaluation of a managed access system deployed at a large rural state penitentiary in the southern region of the United States. The study site was purposely selected for its managed access system, which had been in operation for two and a half years at the time of study. The facility is the largest and oldest prison in the study state, housing up to 4650 males across seven units, including the state's death row inmates. The majority of the inmate population at the study site were Black (68%), followed by 31% White, and less than one percent were Hispanic/Latino or Asian. Race and ethnicity distributions at the study site were similar to the statewide inmate population (with 67% Black, 31% White, 1% Hispanic/Latino, and less than one percent Asian). Most inmates at the study site were convicted of a violent offense (40%), while 23% drug, 23% property, and 14% sexual comprise the remaining offense categories. Statewide conviction offense distributions were 34% violent, 26% drug, 28% property, and 13% sexual. Inmate population to security and non-security staff ratio is four to one. This ratio is slightly lower than the remaining state penitentiaries housing all custody levels (ratios range in value of 5:1 or 6:1). Inmates have regulated access to a monitored communal landline telephone system at each facility in the study state.

A process evaluation was employed to capture nuances of system operations and implementation. This process evaluation was conducted as a comprehensive case study as operational managed access systems are quite rare, and little scholarly evidence exists regarding the efficacy