metrasens

CONTRABAND DETECTION: HOW CORRECTIONAL FACILITIES CAN DO MORE WITH LESS

WHITE PAPER

According to the dictionary, a dilemma is "a situation in which a difficult choice has to be made between two or more alternatives, especially equally undesirable ones." Many correctional facilities in this country are now facing a dilemma — between maintaining vigilance against contraband and having the means to do so. Since interdicting contraband is a mission-critical task, the only path forward for these institutions is to do more with less. In other words, they have to unlock new efficiencies to get the job done. Before discussing how they can do that, let's take a look back to find out how this dilemma arose.

WHY CORRECTIONAL FACILITIES **MUST DO MORE WITH LESS**

First of all, incarceration is an expensive endeavor, period. Authorities have to cover basic needs of inmates, such as food, healthcare, clothing, housing, and its associated running costs, like building maintenance, electricity or water. There are also significant financial costs associated with safety and security, including technology, recruitment, training, and salaries for staff. This accounting, while substantial by itself, does not include funding needed to provide rehabilitation to reduce recidivism through specific activities programs, and support.

each year to keep roughly

2.3 MILLION

people behind bars.

The Bureau of Justice Statistics says that the United States spends more than $80 billion each year to keep roughly 2.3 million people behind bars. The country in 2019 spent more on prisons than it did on its public schools[1], and yet most still find themselves in a bind to support many functions.

There are two main reasons correctional institutions have less to work with:

1

INADEQUATE BUDGETS

According to one expert, the budgetary process in the Bureau of Prisons is flawed.[1] He notes that it has long been driven by a hard number associated with the size of the inmate population. Even though the agency has experienced a slight decline in inmate population, the hard reality is the explosion of mandatory double shifts of overtime, reassignments, increases in prison violence and illicit contraband, and years of a dysfunctional staffing crisis, all point to inadequate funding in a budgetary process.

While the overall inmate population has declined, high security institutions — the most dangerous type of facilities — are 20% over capacity.[2] The situation could become even more dire as federal prisons brace for an influx of inmates. Right now, there are 152,376 prisoners in 122 facilities.[3]

Authorities have taken notice of the problem, and the federal prisons agency would receive a slight funding increase under President Biden's fiscal 2022 proposal (when factoring out the Coronavirus supplement for fiscal 2021). But many doubt that will be enough to compensate for years of neglect.

2

STAFF SHORTAGES

While one may argue whether correctional facilities receive enough funding, what is inarguable is that they are severely understaffed. A 4:1 ratio between inmates and officers is now common throughout the country. In 2021, the Associated Press published an article on the staffing crisis, reporting that nearly one-third of federal correctional officer jobs nationwide are vacant.[4] The Justice Department budgeted for 20,446 full-time, correctional officer positions in 2020, but the agency that runs federal prisons says it currently employs 13,762 officers.[5]

4:1 ratio

between inmates and officers is now common throughout the country.

Why the shortage of staff?

SEVERAL REASONS:

- ✓ **The staffing process was already reaching a breaking point before the pandemic happened, but it has worsened as a result of it. Nearly 7,000 employees were sickened with COVID-19.[6] The virus has shown that people are at higher risk inside prison facilities, placing prison staff at risk and causing many to leave their jobs out of fear.**
- ✓ **Some shortages are due to local labor conditions. In Oklahoma, for example, correctional facilities often compete with the oil industry and other public safety jobs to recruit and retain workers.[7] State prisons are often located in rural areas and as more people move to metropolitan areas, the number of people living near them is steadily declining.**
- ✓ **Recent nationwide calls for general accountability and reform have left law enforcement authorities struggling to keep the staff they have and attract new recruits to the force. In many places, morale has plunged and retirements and resignations have soared.**
- ✓ **Understaffing has resulted in correctional officers working vast amounts of overtime. This has resulted in a 40% annual turnover rate in some states, as excessive overtime hours takes a toll on their mental health and relationships with family members.[8] Even if staff can be replaced, it is more expensive to train corrections officers than retain personnel who already understand the rules and procedures.**

[1] Genna Ash, More money goes into the US prison system than it does on education, Study International, 2019
[2] Courtney Bublé, Budget Request for Federal Prisons Agency Isn't Enough, Union Says, Government Executive, 2021
[3] The Associated Press, Federal prisons forced to use cooks, nurses to guard inmates due to staff shortages, 2021
[4] Corrections 1, The Connected Jail: How to increase efficiency and safety from intake to release, 2019
[5] AFGE, News Reports Highlight Severe Staffing Shortage at Federal Prisons, 2021
[6] The Associated Press, Federal prisons forced to use cooks, nurses to guard inmates due to staff shortages, 2021
[7] Keaton Ross, As State Prison Staffing Shortage Persists, Advocates Fear Violence, Oklahoma Watch, 2021
[8] Ibid

RESOURCES LESSEN, **CONTRABAND DOES NOT**

Unbeknownst to the public, the greatest difficulty for correctional facilities is not keeping inmates in, but keeping contraband out. Weapons, cellphones, drugs, alcohol, and currency make their way into inmates' hands through smuggling by employees, visitors, and drones, as well as internal manufacturing. For example, the California Department of Corrections and Rehabilitation reported confiscating over 12,000 cellphones alone. Inmates have used cellphones to coordinate escapes, intimidate individuals outside the facility, manage gang activity, compromise prison officials, and create security breaches.[9]

Regardless of how inmates come into possession of contraband, the presence of such items presents a concern of the highest order for correctional officers, facility staff and other inmates. With tight budgets, staff shortages, and the pandemic, the problem only becomes amplified.

> **Nearly one-third of federal correctional officer jobs in the United States are vacant,** *forcing prisons to use cooks, teachers, nurses and other workers to guard inmates."*[9]
>
> **— The Associated Press** | May 21,2021

TECHNOLOGY **TO THE RESCUE**

Technology can offer several solutions and approaches to contraband detection. To improve efficiency, however, such technology needs to be affordable, effective, accessible and easy to use. There is a wide array of contraband detection technologies available but they vary in cost, what they are effective at detecting (e.g., metallics vs. non-metallics) and in the time and training required for staff members to become proficient and operate these products.

For example, many hand-held detectors can be relatively low cost (e.g., $100-$500), portable and convenient.[10] Yet, they can take more time to scan an individual, head-to-toe, especially in high-traffic areas, and require officers to be in close proximity to the inmate (not ideal during normal times but especially dangerous during the pandemic). Sophisticated systems (e.g., millimeter wave, backscatter or transmission X-ray technology) can eliminate these drawbacks, but they may cost on the order of $250,000 or more.[11] Additionally, these types of systems are not portable.

Another concern — since 1993, when the use of X-ray technology was allowed in non-medical uses, there have been concerns over its safety, including from prison authorities. Some body scanners expose users to ionizing radiation that can increase the risk of cancer. A Board of Corrections report released in January 2020 called for "urgent" corrective action to address the failures in implementation of body scanners and eliminate the health risks implanted by those failures at Rikers Island prison in New York.[12]

[9] Criminal Justice Testing and Evaluation Consortium, Contraband Detection Technology in Correctional Facilities, 2021
[10] Ibid
[11] Ibid
[12] FILTER MAG, Rikers Body Scanners Risk Jailed New Yorkers' Health, 2020

COMPARING **DETECTION TECHNOLOGIES**

This chart was published by the Criminal Justice Testing and Evaluation Consortium. It compares person-borne contraband detection technology along three variables: cost, detection capabilities and radiation.

Person-Borne Contraband Detection Technologies: Cost, Radiation and Detection Capabilities

Type of Technology	Cost* and Radiation Exposure		Primary Types of Contraband Detected					Penetration Abilities		
	Handheld	Walk-through/ Stationary	Cellular Devices	Narcotics	Explosives	Metallics *weapons, coins*	Nonmetallics *wood, paper, ceramic, plastic, powders, liquids*	On a Person	Within a Body Cavity	Through Body Armor
Backscatter X-Ray	$$$	$$$$		✓	✓	✓	✓	✓		
Continuous Wave	$	$-$$	✓			✓		✓	✓	
Ferromagnetic Detection	$	$	✓			✓		✓	✓	
Ion Scanning	$$$	$$$-$$$$		✓	✓			✓		
Millimeter Wave	$-$$	$$$$	✓			✓	✓	✓		
Multi-Frequency Metal Detection	$	$-$$	✓			✓		✓	✓	
Radiofrequency Detection	$-$$	N/A	✓					✓		
Thermal Imaging	$$$	$$$$	✓	✓	✓	✓	✓			
Transmission X-Ray	$$$	$$$$	✓	✓	✓	✓	✓	✓	✓	✓
Very Low Frequency Metal Detection	$	$-$$				✓		✓	✓	

** Cost figures are estimated and only include the initial upfront cost, and do not include associated costs such as upgrades, maintenance, training, etc.*

$ Under $10K
$$ $10K-$25K
$$$ $25K-$100K
$$$$ $100K+

Radiation Exposure
Level 1 < 1 µSv
Level 2 1- 5 µSv
Level 3 > 5 µSv

NO "SILVER BULLET", **BUT …**

Staff shortages and pandemic protocols have increased the attractiveness of automated contraband detection — with the assistance of technology — to help limit physical searches. Yet, there is no universal system or technology that can detect all contraband. As a result, a multimodal layered approach that includes rigorous and random searches of inmate living, working and recreation areas, in addition to screens at multiple points of entry into the correctional facility, is best practice for contraband detection.[13]

That being said, not all technology is created equal in terms of ***efficiency*** — the topic of this paper. Technology that bolsters the ability of appropriately trained staff to perform their jobs with a high degree of success at minimal cost and maximum safety must now be viewed as the new gold standard. Additionally, as bad as drugs and cellphones are, improvised weapons pose the most clear and present danger to inmates and staff alike. Because the most deadly fabricated weapons are likely to contain metal, technologies that can detect it (while generating the fewest number of false positives) should be prioritized for consideration.[14]

This is why ferromagnetic detection systems (FMDS) shine.

✓ **FMDS are a type of detection system that can be used to detect metallic contraband on a person, in a body cavity or in other difficult-to-screen items (e.g., mattresses). They are ideal for finding weapons, but also cellphones — one distinct advantage for FMDS is their ability to locate a cellular device even if the device has been turned off or the battery removed.**

✓ **FMDS are highly portable, enabling snap inspections and screening in places where inmates may not expect. Additionally, they operate by simple walk-by, meaning what used to take multiple employees to do with hand pats and wands can now be done by fewer employees, quickly and efficiently — at a distance.**

✓ **Additionally, FMDS are one of the only forms of passive, non-emitting detection. They work by detecting "disturbances" created by contraband in the earth's natural magnetic field, not by creating fields of their own that expose individuals to unhealthy ionizing radiation.**

As noted by the Criminal Justice Testing and Evaluation Consortium, a program of the National Institute of Justice, "many walk-through detectors currently on the market are large and expensive, retain sensitive imagery, and may emit higher levels of radiation."[15] FMDS suffers from none of these drawbacks.

Technology promises to improve efficiency, but correctional facilities must discriminate between numerous modalities, and offerings within modalities, to achieve it. Each correctional facility is unique, and differences among facilities require different approaches. The point here is that FMDS should be a "first look" option in most correctional facility applications, especially those trying to do more with less.

[13] Criminal Justice Testing and Evaluation Consortium, Contraband Detection Technology in Correctional Facilities, 2021
[14] Ibid
[15] Ibid

DATA — **ANOTHER PATH TO EFFICIENCY**

The utilization of data is an often neglected, but potentially huge, contributing factor in efficiency. How actionable data meets compliance needs and supports incident reporting must be a consideration in any contraband detection technology chosen.

For example, a newer FMDS product on the market, Cellsense® Ultra, uses captured data to improve operations, including event logging and operational statistics that indicate whether the equipment is being used properly, or if detection sensitivity has been tampered with, among other insights. This can be accomplished through remote management and integration via an API.

Access to such data can have a major impact on the workflow that affects correctional facilities and the staff who run them. This includes everything from enhancing officer safety and situational awareness to streamlining the demanding paperwork and procedures that are part of day-to-day operations. Ensuring data accessibility also sets the foundation for next-generation data analytics tools that can help provide valuable information to correctional administrators for cost-related decisions.

FUNDING **THE FUTURE**

Today, many jails and prisons are faced with decaying infrastructure, limited funding and staff shortages that make it increasingly difficult to provide for the needs of inmates and officers. As tight as budgets are now, the vise is likely to squeeze even tighter in coming years. The reality is that cutting taxes or boosting visible social services is often prioritized by lawmakers above enhancing safety at correctional facilities.

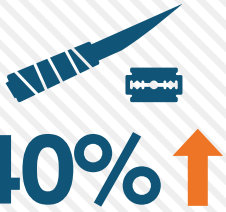
As a result, correctional administrators will no doubt continue to search for more efficient and cost-effective ways to operate. As a way forward, they must turn to new technologies to help them accomplish their goals while creating a safe and sustainable setting. When deciding on what technologies will hold the most value, it's crucial to remember the reason these facilities exist — to control criminal activity. As this paper shows, implementing a smarter approach to contraband detection can ultimately lead to cost and time savings. The result can be leaner, safer, and more effective correctional institutions.

Aside from the efficiency savings associated with the right technological solutions for contraband detection, correctional facilities must also look at the indirect costs of prison crime prevention, especially the use of weapons in crimes that are committed by inmates against other inmates and staff.

Calculating the cost of inaction

According to a 2019 article in the Stanford Law Review, the total cost of incarcerating the marginal prisoner falls somewhere between

$54,000 – $98,000
PER YEAR



40%
IN COST OF INCARCERATION

It is estimated that prison crime can increase the cost of incarceration by as much as 40%.[16]

Not even considering the incalculable human costs involved in such crimes, this is a steep price to pay for something that can be effectively mitigated with current means.

[16] Ben Gifford, Prison Crime and the Economics of Incarceration, Stanford Law Review, 2019

CONSERVING RESOURCES **WHILE ADDRESSING THE CHALLENGE**

Correctional facilities need to get the best value for their limited funding. The good news is that considerable opportunities still exist to gain efficiency and reduce costs by investing in technology that can do more. Capital costs, labor and time all impact operational performance and are all rooted in proper technology decisions. Metrasens' ferromagnetic detection systems line, which features Cellsense® Ultra, is a true enabler of the trifecta of safety, effectiveness, and efficiency, delivering results that embody doing more with less.

Thanks to Metrasens, mass screenings that used to take multiple employees can now be done more quickly and efficiently — with fewer employees at a safer distance from inmates. As part of a comprehensive layered system of defense, our cost-effective equipment can often lessen the number of P.O.s written for body scanners and other modalities, which though effective, come with significantly higher price tags and complexity.

To find out more about how Metrasens can help your facility do more with less, visit ***metrasens.com/corrections-prisons***

ABOUT METRASENS

Correctional facilities are engaged in a daily battle detecting and confiscating contraband. Protecting staff, inmates, and visitors from the dangers of contraband is a leading risk management priority. Metrasens solutions are designed to work with, but also address the trade-offs of, other screening methods. Metrasens' core ferromagnetic technology detects contraband items on person, in person, and in any part of the correctional facility, at any time, safely, while maximizing the use of human capital and monetary resources.

A SAFER WORLD AWAITS

North America and Latin America
630-541-6509

UK, Europe, Middle East, Asia-Pacific
+44 (0) 1684 219000

www.metrasens.com | **info@metrasens.com**

metrasens

SLS170V01