

IDENTIFYING TECHNOLOGY NEEDS AND INNOVATIONS TO ADVANCE CORRECTIONS

BY JACK HARNE

NIJ and a team led by the RAND Corporation are examining how technology could help corrections agencies relieve staff and facility limitations and improve training, policies, and practices.



The United States has one of the highest incarceration rates in the world: Nearly one out of every 100 adults is in prison or jail, and one out of every 50 adults is on probation or parole.¹

The corrections field faces significant challenges. For one, the demographics of those incarcerated have changed in recent years. Today, the U.S. prison population is aging and includes both a greater proportion of women and more individuals with mental health conditions and disabilities.² All of these demographic changes strain agencies' ability to deliver services and facilities. The number of people under supervision is also increasing, and community corrections agencies are struggling to provide the level of supervision and immediacy needed to help them successfully re-enter the community. Compounding this is a shift in probation caseloads: Officers who once dealt with relatively low-risk individuals who posed little threat to public safety and had few criminogenic needs

now manage higher-risk people who pose a greater threat and may require additional services and increased supervision. Finally, recruiting, training, and retaining corrections staff with the appropriate skills remains extremely difficult. (See sidebar, "Reducing Mortality in Correctional Facilities," on page 6.)

Technology has the potential to help address these challenges, at least in part. For example, mobile device apps might allow officers to better supervise individuals on parole or probation and enable those under supervision to better access services and programs. Telepresence technology, such as telemedicine and video visitation, could improve health care delivery and increase educational and visitation opportunities for people under supervision. (See sidebar, "Expediting Pretrial Release Hearings," on page 4.)

NIJ and a team led by the RAND Corporation are collaborating to identify these types of technology needs and innovative solutions for law enforcement, courts, and corrections agencies, as part of the RAND Priority Criminal Justice Needs Initiative. RAND's research team includes RTI International, the University of Denver, and the Police Executive Research Forum. Together, these groups are holistically examining how technology could help not only mitigate staff or facility limitations but also improve training and organizational policies and practices.

How NIJ Is Advancing Technology in Corrections

The core activity of the Priority Criminal Justice Needs Initiative is eliciting actionable findings. For NIJ, this means identifying needs with enough specificity to inform the Institute's research agenda and includes not only examining current technology needs but also determining future needs.

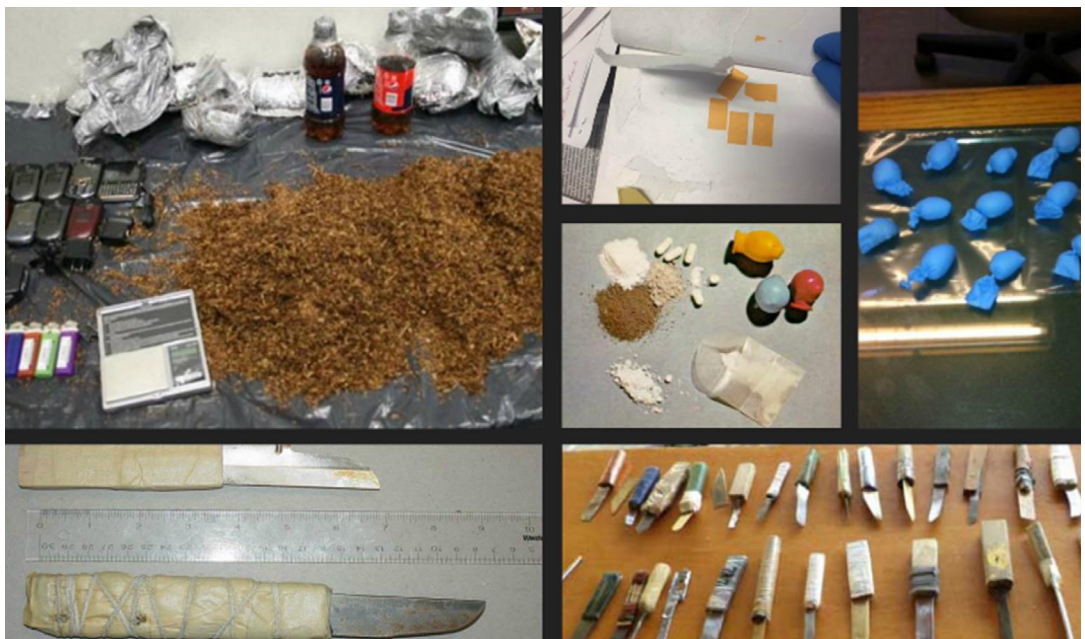
As is clear in the RAND Corporation's report (discussed in the main article), contraband in correctional facilities is a significant concern: It negatively affects an agency's ability to provide a safe environment, maintain inmate wellness, and prevent criminal activity. Some of the most common types of contraband are improvised weapons, drugs and narcotics, cell phones and smartphones, and tobacco.

In 2015, informed by the report, NIJ solicited proposals for research on identifying the interdiction modalities agencies use to keep contraband out of correctional facilities and what is known about their efficacy. NIJ saw this research as a first step toward gaining a more complete understanding of the contraband issue within correctional facilities and addressing the problem.

The Urban Institute, in collaboration with the American Correctional Association and the Fortune Society, submitted the winning proposal. The three-year effort will use a mixed-methods approach. The project team will hold focus groups with correctional administrators and formerly incarcerated individuals to help finalize key data measures for a national survey and in-depth case studies.

Based on a stratified sample from 600 to 800 U.S. correctional facilities, the survey will generate national estimates of the prevalence of contraband and use of different interdiction modalities. In-depth case studies in up to nine facilities will supplement the survey data. The case studies will include a comprehensive review of contraband policies, administrative data, and semistructured interviews with correctional staff. The case studies will help shed light on the motivations for adopting certain contraband interdiction modalities, implementation challenges, and the efficacy of interdiction modalities.

The research team expects to complete the project by December 2018.



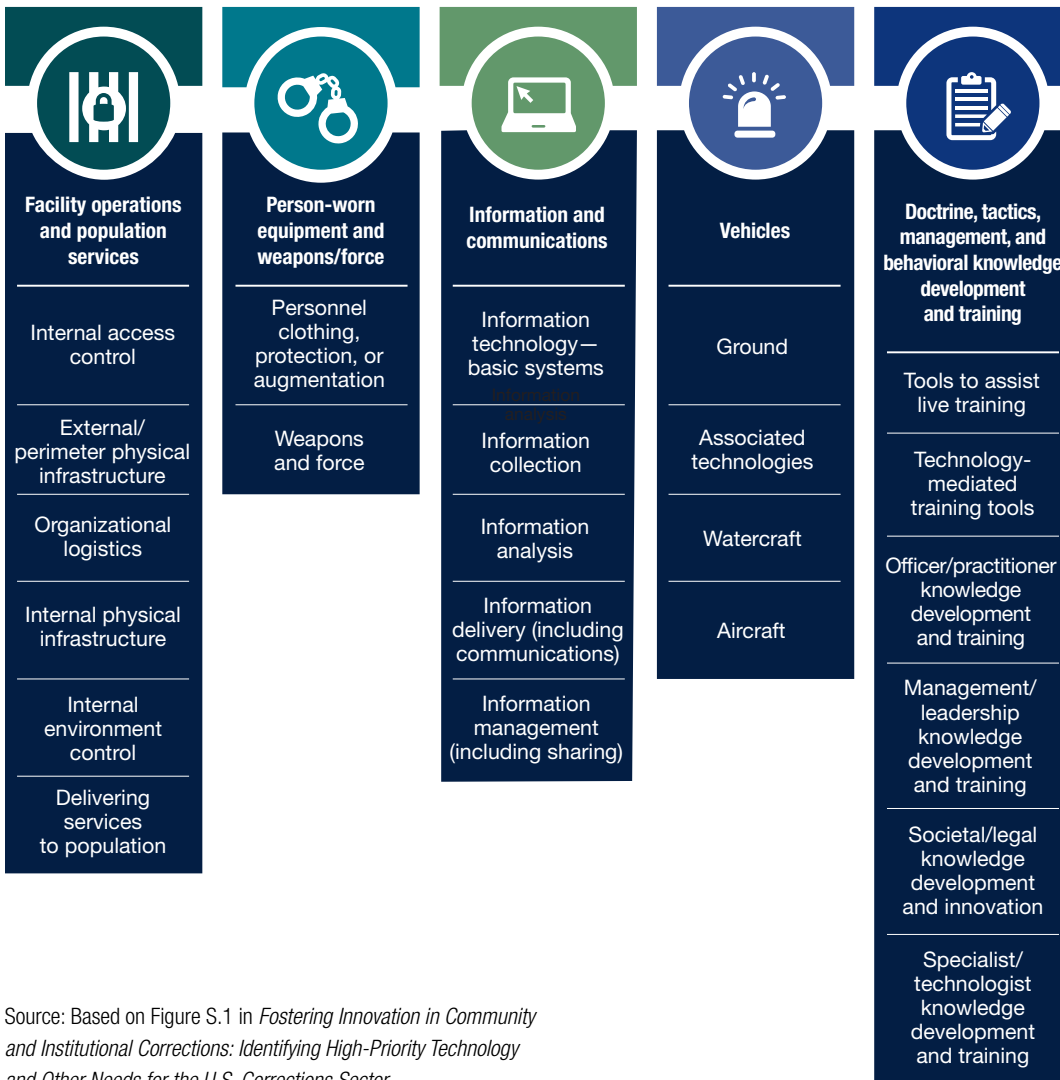
Examples of contraband items seized inside Ohio prisons. Photo credit: (c) Correctional Institution Inspection Committee

The team's approach involves a mixed-method process. The team begins with an extensive literature review on current and emerging challenges in law enforcement, courts, and corrections and on potential solutions to those challenges. It looks at various sources, including existing literature and analysis, research partners' studies, media reports, publications, conference presentations, and surveys and statistical data. Next, the team engages in structured brainstorming with practitioners to further elaborate on challenges and potential solutions. Then, through structured, small-group

discussions that use RAND's Delphi method,³ the team prioritizes the needs and potential solutions.

Researchers, advocacy organizations, manufacturers, and other stakeholders participate in the discussions. But the practitioner is the foundation. Practitioners, such as corrections officers, provide unique insights into how technology can address crime and justice challenges, insights developed from years of dealing with those challenges every day. The team is currently developing a web-based platform that will allow a

Figure 1. Main Categories and Subcategories of the Criminal Justice Technology Taxonomy



Source: Based on Figure S.1 in *Fostering Innovation in Community and Institutional Corrections: Identifying High-Priority Technology and Other Needs for the U.S. Corrections Sector*.

Expediting Pretrial Release Hearings

NIJ is exploring the use of video technology in pretrial release hearings. The purpose is to identify protocols that improve practices and maximize return on investment, using videoconferencing to expedite pretrial release hearings for defendants who are being held in jail awaiting trial.

Key considerations include:

- Conducting videoconferences between courtrooms and jails.
- Meeting the needs of defendants, victims, witnesses, jails, and courts.
- Supporting court processes in jail settings, including access to counsel and court interpreters.
- Promoting cost-efficient outcomes, including transportation, prisoner security, and pretrial release.

For more information, including a Phase 1 report, visit NIJ.gov, keyword: videoconferencing.

broader community of practitioners to participate in identifying and prioritizing solutions.

Identifying Corrections Technology Needs

In 2015, RAND published *Fostering Innovation in Community and Institutional Corrections: Identifying High-Priority Technology and Other Needs for the U.S. Corrections Sector*. This report presents findings and recommendations from the team's initial literature review of challenges and opportunities in the corrections sector. The report also details how a 25-member expert panel prioritized the needs and potential opportunities.⁴

Panel members were divided into two working groups: one for community corrections and one for institutional corrections. Each group worked through a structured needs-generation process that included two sets of facilitated discussions. The first set identified problems and opportunities for corrections, and the second framed the needs that would contribute to addressing each problem.

The panel identified more than 200 needs, then systematically ranked and prioritized them based on each member's assessment of whether the need contributed to accomplishing eight policy goals:

- Facilitating positive behavioral change.
- Protecting the rights of victims/restitution.
- Holding offenders accountable.
- Protecting the public.
- Saving money or time.
- Improving correctional competencies.
- Improving officer and detainee health.
- Reducing officer and detainee injuries.

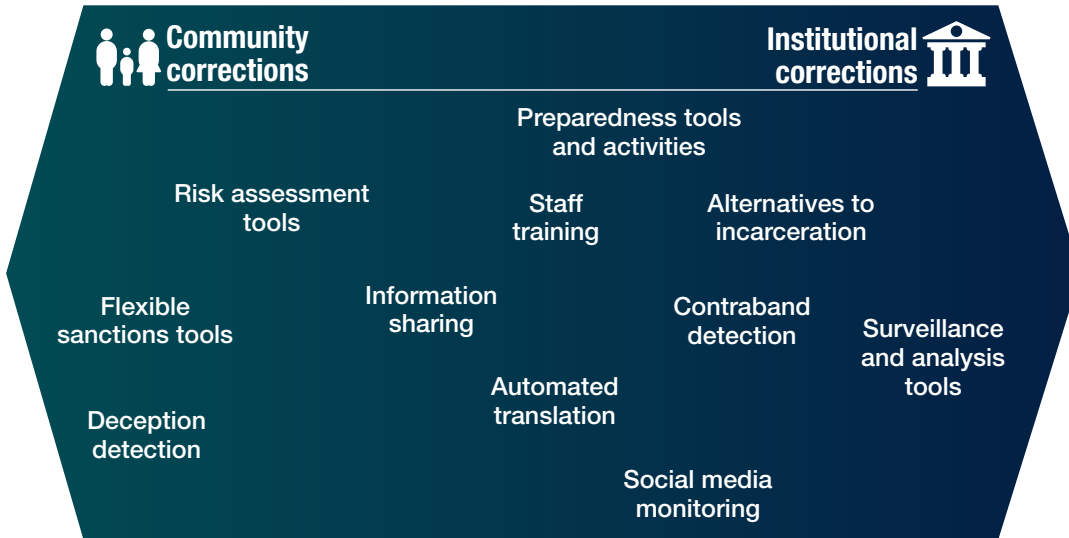
The resulting set of needs provides a menu of innovative options for addressing key problems or capitalizing on emerging opportunities in corrections.

High-Priority Needs

To help frame the discussion, RAND divided corrections technology and practices into five main categories and multiple subcategories (see Figure 1 on page 3).

The panel identified 19 high-priority needs for community corrections and 29 for institutional corrections. All of the community corrections needs fall within two categories:

Figure 2. Priorities for Innovation for Corrections



Source: Based on Figure S.2 in *Fostering Innovation in Community and Institutional Corrections: Identifying High-Priority Technology and Other Needs for the U.S. Corrections Sector*.

- **Information and Communications:** These include risk assessment and data collection tools (e.g., tools to effectively detect deception) for both criminal justice-involved individuals and staff. They also include information sharing and data-systems interoperability, informed in part by the need for practitioners and treatment providers to be able to access records for supervision and service delivery.
- **Doctrine, Tactics, Management, and Behavioral Knowledge Development and Training:** These are related to preparing for natural disasters, guiding the application of risk assessment tools, and developing resources to help officers deal with higher-risk individuals under community supervision. They also include training and resources to help officers better deal with individuals under supervision who have mental health conditions and for selecting and calibrating sanctions for individuals who violate the terms of their sentences.
- **Facility Operations and Population Services:** This includes the use of telepresence technologies for both visitation, to reduce the introduction of contraband into a facility, and medical treatment, to reduce the need to transport inmates out of secure facilities.
- **Information and Communications:** These include tracking contacts between detainees and employees and improving surveillance systems to help address contraband.
- **Doctrine, Tactics, Management, and Behavioral Knowledge Development and Training:** These are related to contraband brought into facilities by staff, staff training on how to address mental health issues of justice-involved individuals, and the jail space management issues resulting from justice reinvestment. (See sidebar, “How NIJ Is Advancing Technology in Corrections,” on page 2.)

Common Needs

The 29 institutional corrections needs fall into three categories:

The report's authors examined common needs across institutional and community corrections and found that

Reducing Mortality in Correctional Facilities

According to the Bureau of Justice Statistics, mortality rates in local jails and state prisons have been rising. In 2013, there were 3,479 deaths (including suicides) in prisons — the highest number since data collection began in 2001.¹

As part of its ongoing corrections work under the Priority Criminal Justice Needs Initiative, the RAND Corporation convened a panel of 16 corrections officials, researchers, and federal partners at its Washington, D.C., office on May 16-17, 2016. The group discussed the challenge of reducing fatalities among staff and detainees from a variety of causes, including homicide, suicide, and death from alcohol or drugs.

Former NIJ Director Nancy Rodriguez attended the first day of the workshop and spoke with the group about the importance of the Priority Criminal Justice Needs Initiative. She stressed NIJ's commitment to corrections in the Institute's ongoing evaluation of its strategic plan.

RAND expects to release its report from the workshop in 2017.

Note

1. Margaret E. Noonan, Harley Rohloff, and Scott Ginder, *Mortality in Local Jails and State Prisons, 2000–2013* — *Statistical Tables*, Washington, D.C.: U.S. Department of Justice, Bureau of Justice Statistics, August 4, 2015, NCJ 248756, <http://www.bjs.gov/index.cfm?ty=pbdetail&iid=5341>.

the top-tier needs identified by both working groups included improved risk assessment, emergency preparedness, and training to help staff better manage individuals with mental health issues. (See sidebar, “Corrections Innovations Needs Tool,” on page 7.)

The authors also listed the lower-tier needs from one working group that were described as top-tier needs by the other group:

- Alternative ways to deliver training (virtually or by video, without practitioners having to leave their day-to-day roles).
- Speech-to-speech and text-to-speech translation tools.
- Social media monitoring.
- Alternatives to incarceration, including managing certain inmate groups (e.g., the elderly) in nonsecure settings.

- Handheld technologies to detect electronic devices and weapons at a distance.
- Information-sharing technologies.

After examining the common needs across institutional and community corrections, the report's authors proposed several priorities for innovation in corrections (see Figure 2 on page 5). They also proposed the following five-step agenda for corrections in the United States:

- Develop and improve technology. Corrections needs new technology to meet its specialized needs.
- Adapt technology to corrections. Although some existing technologies can meet corrections needs, tools must address the complexities, sensitivities, and legal concerns of community and institutional settings.

Corrections Innovations Needs Tool

To give readers interactive access to the data behind the panel's prioritization, RAND launched the corrections innovations needs tool online. The tool presents the needs identified in the report and allows users to reprioritize them based on their own experiences and assessment of a need's contribution to accomplishing the eight policy goals. The tool also allows users to:

- View the relationship among and the priority of specific problems, issues, or technology areas.
- Generate data that can identify which of the innovation options are most valuable to them, based on their policy preferences.
- Get information that can be a launch point to investigate new tools, practices, and technologies.

Access the tool at <http://www.rand.org/jie/justice-policy/projects/priority-criminal-justice-needs/needs-tool.html>.

- Perform research and analysis. Some needs identified by both working groups require new knowledge to guide practice.
- Validate tools. There is a clear call to demonstrate that existing tools actually do what they say they do.
- Change organizations' policies and practices. Policymakers and decision-makers can build incentives into grants and other mechanisms to shape behavior, but outside forces can only facilitate — not execute — new innovations.

Technology innovation is not always about the development of new technology. It can also involve improving existing technology, adapting technology from other sectors, or even simply adopting existing technology more broadly or using it more effectively. This innovation agenda represents a starting point for developing a research agenda to transform corrections. Rooted in present problems and current opportunities, the agenda represents a snapshot in time, one that should be revisited both as technology and society change and as it becomes possible to elaborate on and expand the agenda.

About the Author

Jack Harné is a physical scientist in NIJ's Office of Science and Technology.

For More Information

Learn more about the Priority Criminal Justice Needs Initiative at <http://www.rand.org/jie/justice-policy/projects/priority-criminal-justice-needs.html>.

Read the full report, *Fostering Innovation in Community and Institutional Corrections: Identifying High-Priority Technology and Other Needs for the U.S. Corrections Sector*, at [NIJ.gov](http://www.nij.gov), keyword: 248580.

This article discusses the following grant:

- "Identifying the Highest Priority Criminal Justice Technology Needs," grant number 2013-MU-CX-K003.

Notes

1. Brian A. Jackson et al., *Fostering Innovation in Community and Institutional Corrections: Identifying High-Priority Technology and Other Needs for the U.S. Corrections Sector* (Santa Monica, CA: RAND Corporation, 2005), xi, <https://www.ncjrs.gov/pdffiles1/nij/grants/248580.pdf>.
2. *Ibid.*, 9-12.
3. RAND developed the Delphi method in the 1950s in support of its work for the military, forecasting the impact of technology change on warfare in terms of challenges and opportunities. The Delphi method is a structured approach to elicit consensus from a small group of experts on a given subject. As applied in the Priority Criminal Justice Needs Initiative, the method involves a series of facilitated discussions among the experts based on the findings of the literature review. Data on individual participants' views, rather than group consensus, are captured. Statistical techniques are used to characterize the distribution of views, cluster different subsets of views, and assess uncertainty. At the end of a discussion, the individuals in the group independently and anonymously rank challenges and solutions; they are then given the group consensus for discussion and invited to revise their initial rankings.
4. When identifying and selecting the members of the panel, RAND sought to build a panel with representation from various geographic locations, agency sizes, and levels of technical expertise to provide a deep and broad knowledge base.

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