Community Corrections Technology: Experts Identify Top Needs for Tech Solutions to Probation and Parole System Challenges

Corrections agencies may turn to smart digital gear to better train and equip supervisors and monitor offenders to keep them on the path toward compliance.

The systemic problems facing the nation's prisons and jails, from the fallout of mass incarceration to the infusion of deadly new drugs, have received extensive public exposure. Just as challenging, if far less visible, are problems related to the larger offender population in community corrections — those on probation or parole.

In 2018, those on parole after incarceration or serving probation in lieu of a term behind bars totaled more than 4.4 million individuals in the United States, a threefold increase since 1980.[1]

Corrections policymakers are turning to digital technology to keep offenders on track and give their supervisors potent new tools. A workshop of national experts in community corrections, sponsored by the National Institute of Justice, has identified priority needs for leveraging technology to enhance supervision and offender outcomes. Among the key identified needs to emerge from the expert collaboration are:

- *Training officers* — Leverage training technology, including virtual reality and augmented reality, to train officers.

- *Monitoring officer well-being* — Develop wearable technology that could help monitor officers' vital signs, track their location, identify emergencies through physiological signs, send assistance when needed, and build a database on officer safety.

- *Managing offender conduct* — Develop technology to track offender location and program compliance, including behaviors contributing to criminal conduct. As officer caseloads expand, technology can help officers work more efficiently; for example, by quickly prompting them on an offender's primary needs or risks.

- *Combating substance abuse* — Develop technology to assess drug use, especially for complex synthetic drugs.

This article first briefly discusses factors informing the growth of the community corrections population and leading approaches to managing and supporting that population. It next describes the process governing the expert workshop's analysis of priority technology needs in community corrections, then selectively discusses top identified technology needs organized under four major themes:

1. Managing human resources

2. Facilitating positive behavioral change

3. Holding offenders accountable

4. Improving operational effectiveness

An Approach to the Pressing Demands of a Large Population

Several factors contribute to the size of the offender population serving time in community settings. They include:

- Cost savings: Most community corrections programs cost far less than incarceration.

- Economic self-sufficiency: Offenders who remain in their community can continue to support themselves and their families through paid employment.

- Program access: Offenders who remain in their community can have better access to drug programs, rehabilitation services, and other treatment programs than incarcerated offenders.

- Flexibility: Community corrections settings can be used at multiple points in the criminal justice process, such as pretrial release, probation, and parole.

- Security: Community corrections spare offenders the unsafe conditions often found in prisons and jails. Populations at higher safety risk include developmentally disabled and mentally ill individuals.

- Punishment: Monitored home confinement, under restrictive terms of probation or parole, punishes offenders for their crimes.

- Reentry: Community corrections offer intermediate stages of reentry that can make an offender's transition back into the community more likely to succeed.

Keeping offenders in their communities, however, brings heightened risk to public safety. Offenders confined at home have more opportunities than those behind bars to continue on a criminal path.

The corrections supervision field has adopted models for evaluating the risks posed by offenders placed in community corrections, assessing their needs, and determining their likely response to programming. The leading model for setting appropriate levels of offender treatment given those needs and risks is known as the

Risk-Need-Responsivity model. Researchers have concluded that technology adapted to that model can help supervisors do their jobs while keeping offenders on track toward their program and treatment goals. For example, wearable devices or smartphones using artificial intelligence could reinforce programming with reminders to offenders, positive messaging, or even warnings based on monitored stress levels or the offender's location.[2]

The Needs Identification Process

A nationally representative panel of corrections administrators and academics convened as part of NIJ's Priority Criminal Justice Needs Initiative. Initiative partners are the RAND Corporation (RAND), the University of Denver, RTI International, and the Police Executive Research Forum.

The panelists identified and ranked research and practice needs for leveraging technology to enhance community supervision. The ranking method, developed by RAND, used a formula that considered both the importance of each need and the likelihood of success if that need were prioritized in practice.

Identification of Priority Needs

Summaries of the highest priority supervision technology needs that have been identified by the expert panel, under each of the four themes, are presented below.

Needs Related to Managing Human Resources	
Problem or Opportunity	**Associated Need**
Agency alerts — Signaling when an officer is hurt or in distress.	Analyze technology's potential to improve officer safety.
Officer skills — Monitoring compliance.	Assess costs, risks, and benefits of virtual reality or augmented reality for skill development.
Officer skills — Assessing quality of officer interventions with offenders.	Assess viability of video analytics to assess quality of officer interventions.
Officer-offender interventions – Speeding up feedback on the quality of interventions.	Evaluate wearable communication technology's potential for improved feedback.

The panelists emphasized the great potential of virtual reality and augmented reality technologies for officer training. Virtual reality (VR) is video simulation used for training, education, or entertainment. Augmented reality (AR) superimposes images, sounds, smells, or other perceptual information over real-world imagery. The U.S.

military has effectively deployed VR and AR systems for years, the study report noted, and decreasing costs now make them more affordable for law enforcement. The New York City Police Department has used VR for active-shooter training, and the Chicago Police Department is examining use of VR for police interactions with subjects affected by mental illness, the panel report said.

In the realm of officer safety, panelists focused on the potential of wearable technology to detect emergencies through an officer's physiological indicators while fixing the officer's location and alerting authorities.

Needs Related to Facilitating Positive Behavioral Change	
Problem or Opportunity	**Associated Need**
Offender compliance — Failure to appear at appointments is costly and disruptive.	Evaluate automated reminder technologies such as smartphone applications and texts.
Offender compliance — A reward system could improve compliance.	Identify best practices and benefits of incentive programs, both automated and manual.
Officer monitoring of compliance — Existing resources are not designed to help officers quickly identify offenders' criminogenic needs.	Develop tools that can be used as an interactive "cheat sheet" to prompt officers about offenders' primary issues.
Officer mobility — There is a movement toward mobile, community-based supervision, versus office-based supervision.	Develop research on the effectiveness of mobile, community-based supervision.
Officer mobility — Agencies need guidance on technology to enable a more mobile supervision workforce.	Develop research to enable strategies to allow officers to work more effectively in the field.

Community corrections succeed when they are able to change offender behavior. The panel report noted that community corrections have been seen as ineffective in altering offender behavior and insufficient as a punishment. Moreover, success rates of probation and parole are declining, and violators often end up in prison or jail, exacerbating mass incarceration. The panel report cited data from the Pew Charitable Trusts showing that, in 2016, at least 29% of offenders on probation exited probation unsuccessfully, and at least 30% of paroled offenders exited parole unsuccessfully.[3]

Facilitating behavioral change through evidence-based practices has emerged as a point of emphasis in community corrections. Tools are available to help assess criminal risk factors and identify individual needs. But the panel stressed the need for independent validation of these tools, both for the intended purpose and the target population.

The demands on supervision officers come sharply into focus for those agencies where officers are required to manage larger, more general caseloads. Often, the panel report noted, those officers must manage offenders with widely varying risks and needs. The panelists urged development of technology tools that can promptly access case records and brief an officer on a given offender's primary risks or needs, highlight current issues, and identify strategies for engagement.

The panelists also emphasized the need to leverage technology to improve offender compliance with mandated events, such as court appearances, supervisor appointments, and scheduled drug tests. The panel called for more research on technology-driven reminder systems.

Research on the validity of the trend toward supervision officer mobility and away from the "fortress probation" model was another priority need. The panel noted a need for more research on the effectiveness of an officer-mobility approach. Some panelists noted that, although working in the field had advantages, a lack of access to quiet spaces could hinder targeted interventions.

Needs Related to Holding Offenders Accountable	
Problem or Opportunity	**Associated Need**
Limited evidence — Agencies lack evidence on which offenders should be part of location-monitoring programs.	Conduct research to identify populations best served by location monitoring and optimal time periods.
Low-risk offenders — Agencies lack evidence on technology-based strategies to monitor lower-risk offenders.	Conduct research on the most effective strategies accounting for differences in offender characteristics.

Global Positioning System (GPS) technology has anchored offender location devices for over 20 years, the report noted. But technology enhancements are needed in two areas in particular: supporting supervision objectives and prioritizing alerts.

Another critical role of community supervision is monitoring substance use. Panelists called for development of additional technologies, beyond urinalysis, to detect a variety of substances and, if feasible, wirelessly communicate their presence to authorities.

Panelists noted that lower-risk offenders present a dilemma: As offenders, they must be monitored, but resources should be prioritized to address higher-risk offenders. Experts on the panel urged that new technology be developed to monitor lower-risk offenders, allowing officers to focus more on higher-risk offenders.

Research to date has examined the appropriate level of supervision for a given offender risk level. As the problems identified in the table above suggest, new technologies for monitoring lower-risk offenders could free up supervisors to appropriately concentrate on higher-risk offenders.

Improving Operational Effectiveness	
Problem or Opportunity	**Associated Need**
Information costs — It can be costly and time-consuming to provide victims with required information.	Research risks and benefits of "victim portals" for accessing information.
Technology selection — Evaluating software and other technology tools can be difficult.	Identify best practices with respect to technology selection.
Service coordination — There is the potential for more efficient internal and external service coordination through the use of geographic information systems.	Develop case studies highlighting the potential benefits of leveraging geographic information systems and associated practices.
Communication technology — Many agencies rely on outdated methods to communicate with offenders.	Identify best practices for modernizing communication technology.
Information access — Offender management is diminished when officers cannot access previously collected data.	Develop user interfaces that help officers collect the data needed to do their jobs. Develop case studies demonstrating the impact on impact of improved user interfaces on case outcomes.
Data management — Agencies have large quantities of data that could be analyzed as potential precursors of success or failure.	Research the predictive value of data.

The panel observed that many community supervision agencies fail to effectively use all of the data available to them to inform policy and practice. It was noted that sudden changes in an offender's dynamic risk or needs factors could signal future problematic behaviors.

The panelists pointed out that new dashboard tools could help transform data into useable intelligence.

For caseload management, the panelists noted that new voice-to-text technology could help officers verbally create case notes that are seamlessly integrated in case-management systems. Another recent advancement, enhanced voice translation technology, could be used to help officers navigate an increasingly diverse offender population.

New technologies can fundamentally enhance communications between supervisors and offenders. Smartphone-based or computer-based video, texts, instant messaging, email, and social media all could strengthen lines of communication. But panelists cautioned that such communications might not satisfy legal notice requirements, such as the requirement to give notice ahead of a drug test.

Conclusion

Stressed resources in the face of formidable program and process demands in community corrections agencies underscore the importance of prioritizing the research, policy, and practice needs of the field. Application of emerging technologies to community supervision offers the promise of more effective offender management by supervisors and better odds that offenders will successfully complete probation or parole. Prioritizing needs can help guide policymakers and practitioners in building successful strategies for meeting today's community corrections' challenges.

Additional Information

For more information on this topic –

- [OJP's Community Corrections Equipment and Technology page](#).

- Resources from NIJ's Criminal Justice Testing and Evaluation Consortium:

  - The [Technology Foraging web page](#), which offers report on trends and developments, and provides insights and guidance, related to technologies, products, and practices in areas of interest to criminal justice, including corrections and community supervision.

  - ["Fostering Innovation in Community and Institutional Corrections: Identifying High-Priority Technology and Other Needs for the U.S. Corrections Sector,"](#) by Brian A. Jackson et al.

About this Article

Notes

[note 1] Laura M. Maruschak and Todd D. Minton, "Correctional Populations in the United States, 2017-2018," Washington, DC: U.S. Department of Justice, Bureau of Justice Statistics, August 2020, NCJ 252157, 2, https://www.bjs.gov/content/pub/pdf/cpus1718.pdf.

[note 2] Eric Martin and Angela Moore, "Tapping Into Artificial Intelligence: Advanced Technology To Prevent Crime and Support Reentry," *Corrections Today,* May/June 2020, https://www.ojp.gov/pdffiles1/nij/255100.pdf.

[note 3] See figure 6 on page 9 of Pew Charitable Trusts, "Probation and Parole Systems Marked by High Stakes, Missed Opportunities," chart book, September 2018, https://www.pewtrusts.org/-/media/assets/2018/09/probation_and_parole_systems_marked_by_high_stakes_missed_opportunities_pew.pdf.