

Smartphone Applications for Community Supervision

This technology brief is the fourth document in a four-part series (**Figure 1**) on technologies to support the monitoring and supervision of individuals on pretrial release, probation, and parole (i.e., community supervision). The goal of this series is to offer foundational insights from use cases, examine the challenges of community supervision, highlight example products, and discuss the future of select technologies and their implications for community supervision. This brief focuses on the use of smartphone applications (apps) for individuals on community supervision.¹

Key Takeaways

- The growing use of community supervision apps is driven by the desire to support individuals on community supervision, improvements in technology, the ubiquity of smartphones in society, the COVID-19 pandemic (i.e., the need to manage individuals remotely), and the increased desire to offer less stigmatizing methods of location tracking.
- Apps may include features such as remote reporting and supervision, treatment delivery, location tracking, calendar management and reminders, goal setting, and substance testing, all of which enable accountability, facilitate behavioral change, and support agency objectives to effectively manage cases.
- When implementing an app, agencies need to identify the app's target population and determine the agency's goals. Some agencies may wish to leverage apps as a support tool for individuals on community supervision, while other agencies may want to leverage apps to ensure individuals are complying with their conditions of release. The purpose will ultimately determine which functionalities are needed and which app is right for the agency.

Community supervision, or community corrections, is a broad term used to identify strategies to execute noncustodial sanctions imposed by either a court or a paroling authority. These sanctions are most commonly applied (1) as a form of pretrial release or diversion, (2) postconviction as a term of probation or another alternative to incarceration initiative, or (3) post-incarceration in the form of parole.² The agencies responsible for supervising individuals on community supervision often function under constrained resources, and officers typically have high-volume caseloads. Agencies are exploring smartphone-based supervision apps as a way of providing cost-effective and remote monitoring and support services to persons on community supervision. Community supervision apps have a variety of functionalities to support both the individuals on community supervision and supervision officers.³ This brief explores smartphone apps and their use in community supervision, explains enabling technologies, discusses functionalities of apps in the context of community supervision, highlights example products, and provides implementation considerations for agencies. Inclusion of a product in this report does not represent a recommendation, endorsement, or validation of product claims by the Department of Justice, National Institute of Justice, RTI International, or CJTEC.

Technologies to Enhance Community Supervision

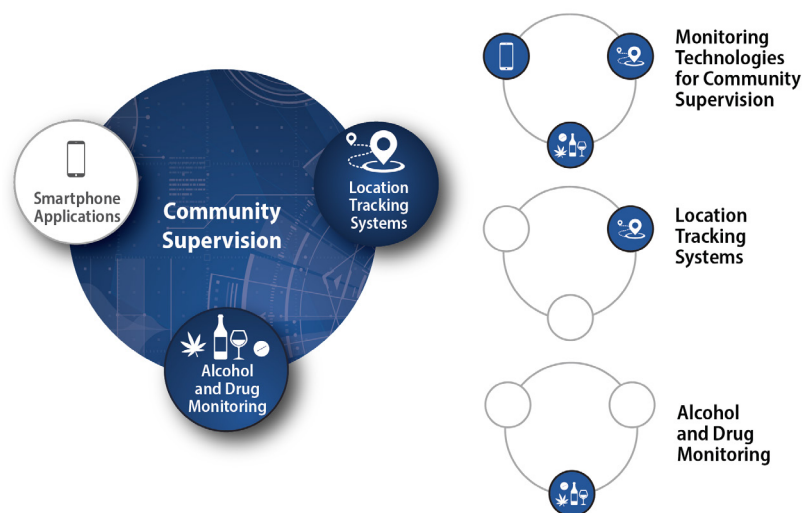


Figure 1: This brief focuses on smartphone-based community supervision applications; additional documents in this series address other community supervision technologies.



Context

What are community supervision applications?

Generally, web-based applications, most commonly referred to as apps, are a type of software designed to run on a mobile device, such as a cell phone, tablet, or watch.⁴ Community supervision apps, more narrowly, are case management and monitoring software tools that can support a wide variety of supervision objectives. For the person on community supervision, these supervision apps are typically installed on their smartphone. They can support accountability objectives by leveraging features such as location monitoring, substance use testing and management, and remote reporting and check-ins. Moreover, community supervision apps can help with behavioral change objectives by serving as a mechanism for delivering treatment programs and resources, transmitting informational content and behavioral nudges (e.g., appointment reminders), and facilitating rewards/incentives for meeting certain milestones.

What has contributed to the growth of community supervision apps?

Over the past several years, increased adoption and affordability of smartphones coupled with advances in smartphone capabilities have fueled the creation of new smartphone apps for community supervision. The onset of the COVID-19 pandemic and the subsequent need for remote methods of supervision accelerated the adoption of community supervision apps.⁵ Although some agencies were using supervision apps before the pandemic, the associated social distancing restrictions created a greater need for remote tools. As agencies were forced to limit or even suspend in-person contact with persons on community supervision, supervision apps became an attractive option, allowing for monitoring and the provision of a range of services without the need to meet in-person. Moreover, practitioners and policymakers are increasingly moving beyond just monitoring and toward the provision of services and resources to encourage and promote the adoption of prosocial behaviors and provide support. With the onset of the pandemic, community supervision agencies have also realized they can successfully supervise without being too restrictive or intrusive. This change in philosophy has sparked an interest in community supervision apps as a support tool.

How do community supervision apps work?

Community supervision apps are installed on a mobile or desktop device and connected to a cloud-based software platform through an internet connection. This cloud-based platform stores data,⁶ facilitates communication between supervision officers and individuals on community supervision; and, in some cases, integrates with third parties or federal/state case management systems (CMSs) (Figure 2).

Although all users are connected to the same database, permissions and layouts of websites and apps can be configured for each user based on the requirements of the court and the agency's operational needs. Generally, a supervision officer at their desk accesses the app through a web browser on their computer, and the app presents a dashboard showing their caseload with customized settings to help manage the caseload. Using the database, app vendors may work with agencies to provide customized reports to help understand operational information such as number of participants who are compliant, drug testing results, and trends for participants using specific features of the app. Individuals on community supervision typically engage with the platform through a smartphone app.⁷ Some vendors offer locked smartphones with limited functions that agencies may choose based on the risk levels of individuals on community supervision or other considerations.

Some smartphone apps also allow third parties to input data using an application programming interface (API). These third parties could be treatment providers, drug testing companies, or other agency CMSs.⁸



Elements of a Community Supervision App

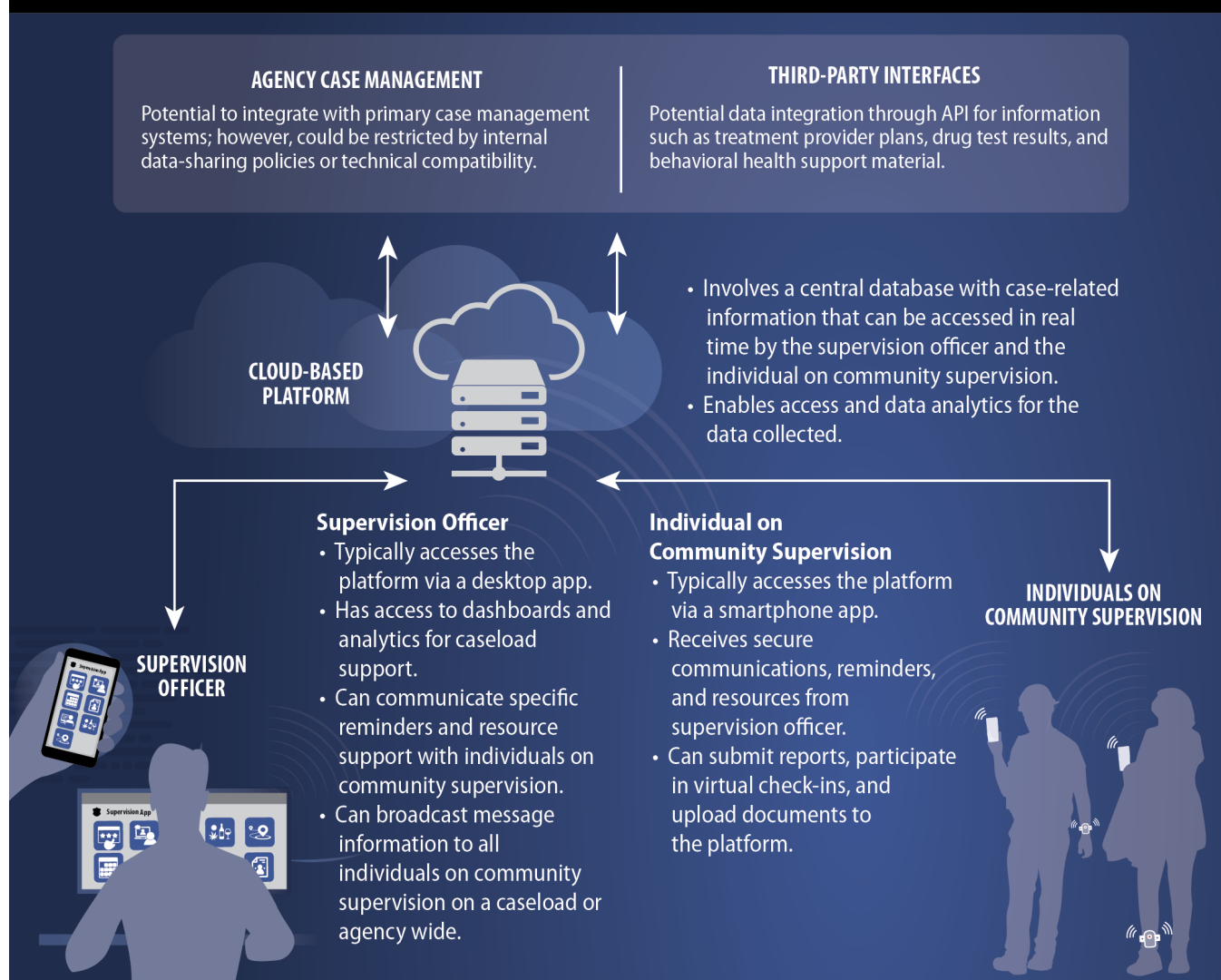


Figure 2: Smartphones and other internet-enabled devices allow community supervision apps to share data from a central cloud-based database.

Functionalities of Community Supervision Apps

Community supervision apps have a variety of functionalities to support both the individuals on community supervision and supervision officers. **Figure 3** provides a summary of these functionalities, and the following pages provide more details on them. Not all apps have all the functionalities captured in Figure 3; some community supervision apps are primarily focused on supporting one objective (i.e., providing support as opposed to ensuring accountability). For example, Uprust's mission is centered around providing support to persons on community supervision and does not support location tracking functionalities. The product examples highlighted in this report are illustrative, not comprehensive, and inclusion of a product in this report does not represent DOJ's, NIJ's, RTI's, or CJTEC's recommendation, endorsement, or validation of product claims.



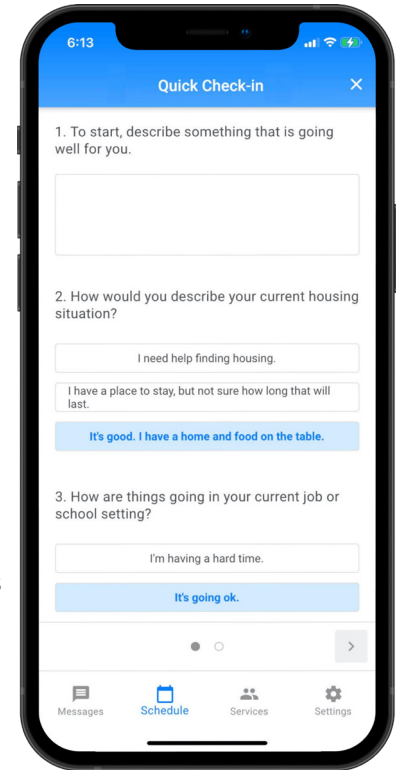
Figure 3: Community supervision apps have multiple functionalities to support individuals on community supervision and the supervision officers.

Remote Reporting

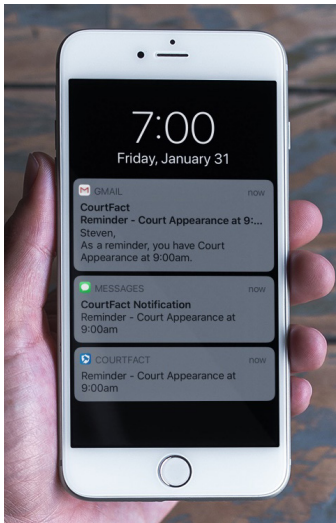
Individuals on community supervision are typically required to report and check-in with their supervision officer at regular intervals and must provide pertinent updates (e.g., change of address, employment status, contacts with law enforcement). Some community supervision apps enable individuals on community supervision to provide reporting and check-ins remotely, and can be scheduled by the officer on a regular basis, randomly driven by the platform's software, or immediately prompted by the officer. Depending on a person's risk level, these remote check-ins can replace or augment face-to-face interactions. Some community supervision apps provide biometric and geolocation verification as part of their remote reporting features.

Goal Setting and Rewards

Goal setting and rewards features in these apps are designed to engage and motivate individuals on community supervision. Some apps allow users to set personal goals for self-improvement and compliance with supervision conditions, providing progress tracking features and automated reminders to help individuals on community supervision stay on track. In addition, gamification elements (e.g., points systems, badges, leaderboards) and tangible rewards like gift cards or vouchers are being incorporated into some apps to incentivize positive behavior based on performance. By integrating goal setting, tracking, and rewards in a user-friendly experience, community supervision apps may be able to foster successful reintegration into society and enhance the overall effectiveness of community corrections programs.



Example: Uptrust supports remote reporting functionalities.



Example: Client Mobile, offered by CourtFact, uses push notifications, SMS text messages, and emails to send important reminders to individuals on community supervision.

Communications

Supervision apps allow for multimodal (e.g., two-way text messaging, voice, video conferencing), remote communication between the officer and the individual on community supervision. A smartphone's camera can be leveraged in creative ways beyond just virtual meetings. For example, an officer could ask the individual on community supervision to conduct a "virtual home visit" using the camera to record a walk-through of their residence, allowing the officer to remotely inspect the contents of drawers, cabinets, or the refrigerator. These apps also allow the individual on community supervision to request an audio or video call with their supervision officer through the app.

Resource Directory

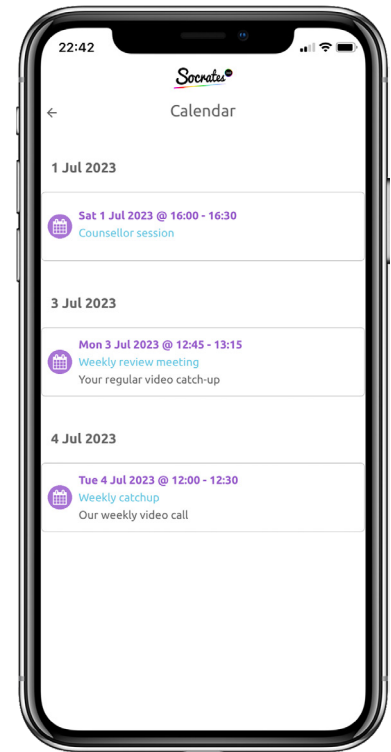
Supervision apps often include a list of service provider resources relevant to the individual on community supervision such as the location of Alcoholics Anonymous meetings, emergency shelters, employment services, and food banks. These resources may be prepopulated for each jurisdiction, and agencies may choose to supply or vet the list of resources to ensure the individual receives an acceptable level of service. In some cases, the location-based services native to the smartphone allow the individual to find service providers closest to them. Some apps offer referrals and communications with

third-party providers (e.g., mental health provider) within the supervision app. Other resources may provide support to individuals on community supervision for specific reintegration objectives or goals (e.g., information on where/how to obtain a driver's license, tips for finding employment, information on local parenting classes). In addition, users can upload and manage documents in these apps (e.g., vocational training certificate, proof of ID).



Calendar Event Management and Reminders

Individuals on community supervision typically have a variety of important obligations, including court appearances, drug tests, and counseling appointments. Missing a court date or drug test can have significant negative consequences for the individual, such as receiving a technical violation or jail time. Community supervision apps often include a calendar and reminder system to support individuals in meeting these important obligations. This feature enables supervision officers and treatment providers to populate an individual's calendar with important appointments. Once events are added to the calendar through the app, these systems can generate a series of reminders in an effort to improve compliance. Research suggests that automated reminders are an effective practice. Studies have demonstrated that text reminders can increase court appearance rates,⁹ improve attendance for meetings with probation/parole officers,¹⁰ and help individuals on community supervision reach their substance use treatment goals.¹¹ Individuals on community supervision in Arkansas, for example, who received text reminders 1 day before their appointment had 29% fewer “no-shows” and 21% fewer cancellations.¹⁰ In addition to the growing body of literature showing the effectiveness of reminders, legislators are also recognizing the importance of electronic reminders for individuals on community supervision. The Colorado legislature, for instance, unanimously passed a bill in 2019 to create a statewide court text reminder program and voted to expand the program in 2022 from an opt-in system to an opt-out system.^{12,13}



Example: Socrates 360 has an organizer module that includes a calendar feature that allows officers, mentors, and service providers to add appointments.

Substance Use Testing and Management

Note: Substance use monitoring is explored in-depth in a separate brief in this series: <https://cjtec.org/alcohol-and-drug-monitoring-for-community-supervision/>.

Some supervision apps can be linked with a portable breathalyzer for remote alcohol testing. Apps that have this feature allow the supervision officer to send a message to the individual on community supervision, prompting them to submit a test. The individual confirms their identity, either through biometrics or facial recognition, and video-records themselves taking the breath test. Identity confirmation and test results are captured and sent to the supervision officer or monitoring center. Some supervision apps can also help manage the drug testing process. For example, apps allow the officer to create a customized drug testing schedule (including random testing) for each individual. On days when testing is required, the app sends an automated notification instructing the individual to report to provide a sample. Some apps document that these notifications were sent and confirm that the individual received the notification.

Service Delivery

The power of technology has greatly diminished the requirement for in-person interaction to provide services, including behavioral health services and educational services. For example, some supervision apps incorporate secure videoconferencing so that individuals on community supervision can easily interact with treatment providers. Supervision apps are increasingly leveraging the growing number of free or low-cost third-party providers specifically designed to deliver evidence-based interventions (e.g., cognitive behavioral therapy) to address treatment needs. For example, some apps allow an individual to self-manage through exercises designed to identify their triggers for drug use and practice coping skills to prevent relapse. Other apps may focus on other services such as mental health, smoking cessation, and financial literacy. Some vendors curate and aggregate content and make it available through the app, while others have developed original content. Several studies have reinforced the utility of smartphones and similar technologies in a variety of health domains, including substance use prevention and mental health.¹⁴

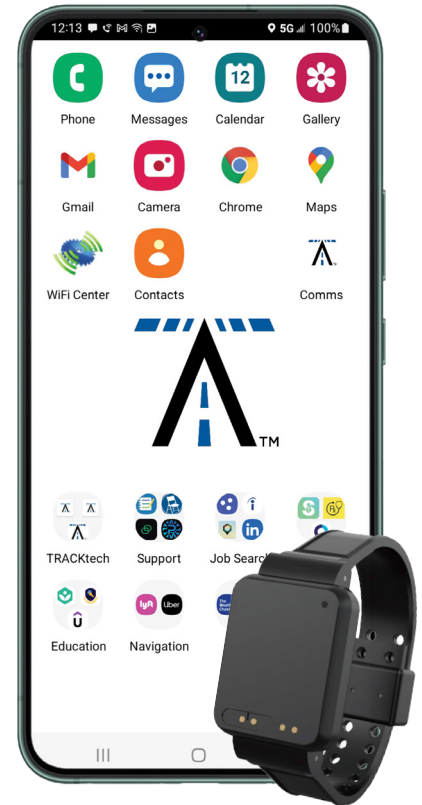
Location Monitoring

Note: Location monitoring is explored in-depth in a separate brief in this series: <https://cjtec.org/location-tracking-systems-for-community-supervision/>.

Supervision apps can offer many of the basic features of traditional location tracking systems (LTS). For example, supervision apps are capable of geotemporal mapping, tracking both device location and time. This functionality enables supervision officers to create inclusion and exclusion zones, establish and monitor curfews, confirm work attendance, and generate alerts in the event of a violation. Although some apps support location monitoring, not all community supervision apps offer this feature. Some companies are focused on providing support as opposed to ensuring accountability through location monitoring.

Monitoring the location of an individual on community supervision first requires knowing the location of the tracking device (in this case, the smartphone). Technologies native to smartphones (e.g., Global Navigation Satellite System, Wi-Fi, cell tower triangulation) can determine the location of the smartphone. Next, effective monitoring requires confirming the tracking device is with the individual on community supervision. Confirming that a smartphone is with the individual on community supervision can be done periodically with authentication technologies (e.g., passwords, fingerprints, facial recognition) or continuously via securely attached wrist or ankle tethers.

Continuous location monitoring using smartphones paired with a securely attached wrist or ankle tether can accomplish much of the functionality of traditional tracking systems without the stigma associated with bulky ankle bracelets. In practice, “continuous” monitoring sets a time interval for checking the location because of the demands of the battery, and more commonly, the time intervals might be in minutes and not actually continuous. The interval frequency needs to be balanced between the security need and battery demands. In this approach, a secure, body-worn (i.e., ankle or wrist) tether is



Example: TrackTech offers a wrist-worn tether that communicates with the TRACKphone via Bluetooth to track and monitor the location of individuals on community supervision.



Example: AIR Connect, offered by Corrisoft, is a lightweight, tamper-proof, ankle-worn teether that pairs with AIR Mobile, a specialized smartphone, via Bluetooth to ensure the phone is with the individual at all times.

connected via radio frequency to the smartphone. The result is similar to the traditional two-piece LTS; however, the components are much smaller than those currently offered by manufacturers. Much like traditional LTS, location points are gathered continuously, and an alert is generated if the two devices (smartphone and tether) are separated, indicating that the integrity of the location points has been compromised. Further, alerts may be generated if the bracelet is tampered with or removed. The continuous confirmation configuration allows for the creation of inclusion and exclusion zones and may be most appropriate for moderate- to high-risk individuals or in situations in which a primary objective is to monitor location.

Periodic location monitoring using smartphones (i.e., no physical tether) is the prevalent model today. The individual on community supervision may be prompted by a message on the supervision application to conduct a check-in to confirm identity/proximity, at which time the device's location point is captured. To authenticate that the individual on community supervision is with the device, some solutions leverage automated biometrics (e.g., fingerprint, voice verification) or credentials/passwords. Others may capture the individual's photo or video, which can be reviewed

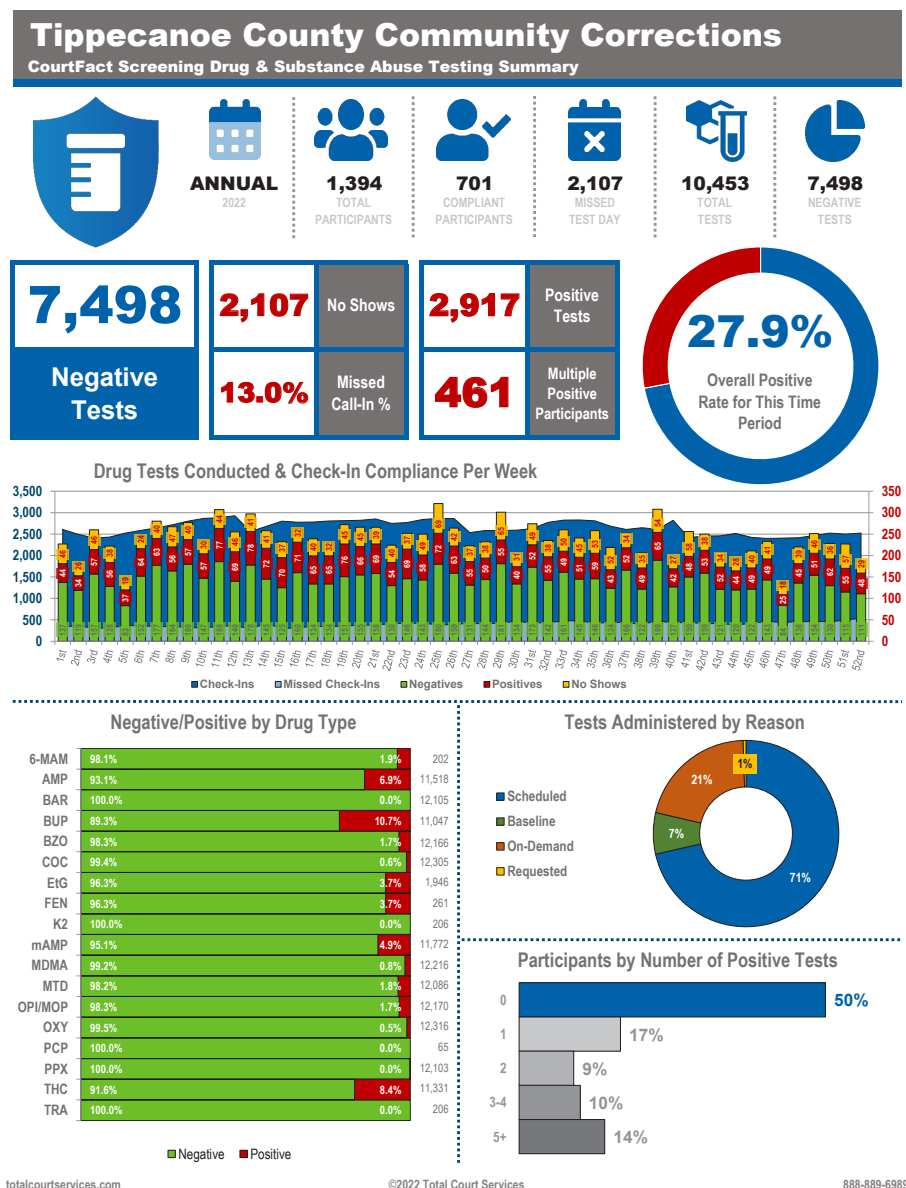


and compared with a baseline image to validate identity. These check-ins can be programmed to be random, on demand, or scheduled at specific times of the day to determine, for example, whether the individual on community supervision has arrived at work on time or is attending a counseling session. Many apps only store location points that are validated, to confirm the person is with the phone. Although these apps may gather location data throughout the day, only some location points are also associated with an identity/proximity confirmation. Periodic location monitoring may be more suitable for lower-risk individuals who may not require continuous or on-demand monitoring.

Smartphone-based location tracking offers additional options in the spectrum of graduated sanctions. For example, an individual on community supervision who is doing well on a traditional ankle-worn LTS could progress to a supervision app with periodic location monitoring. Similarly, an individual on community supervision who has no location monitoring requirements but is not in compliance may be sanctioned with a supervision app rather than a traditional LTS. Note: The use of traditional LTS does not preclude using supervision apps that provide access to resources and additional functionalities.

Data Analytics

Vendors offer a variety of analytics on the data collected through the smartphone app that can support both supervision officers and agencies. Analytics dashboards support agency leaders by creating alerts or prioritizing individuals on community supervision by need, such as highlighting individuals who missed a check-in or drug test. Additionally, many vendors work with agencies to create custom analytics and reports of agency-wide activity. These reports may help agencies understand analytics such as how the individual on community supervision, officer, and case manager use the app; caseloads; and overall agency statistics and trends, such as check-in compliance, reporting compliance, and types of events scheduled through the app.



Example: CourtFact provides user-friendly analytics reports, such as this substance use testing summary for Tippecanoe County Community Corrections..

Advantages and Limitations of Community Supervision Apps

Community supervision apps provide a myriad of advantages and limitations for both the individual on community supervision and the supervision officer, as seen in **Figure 4**.

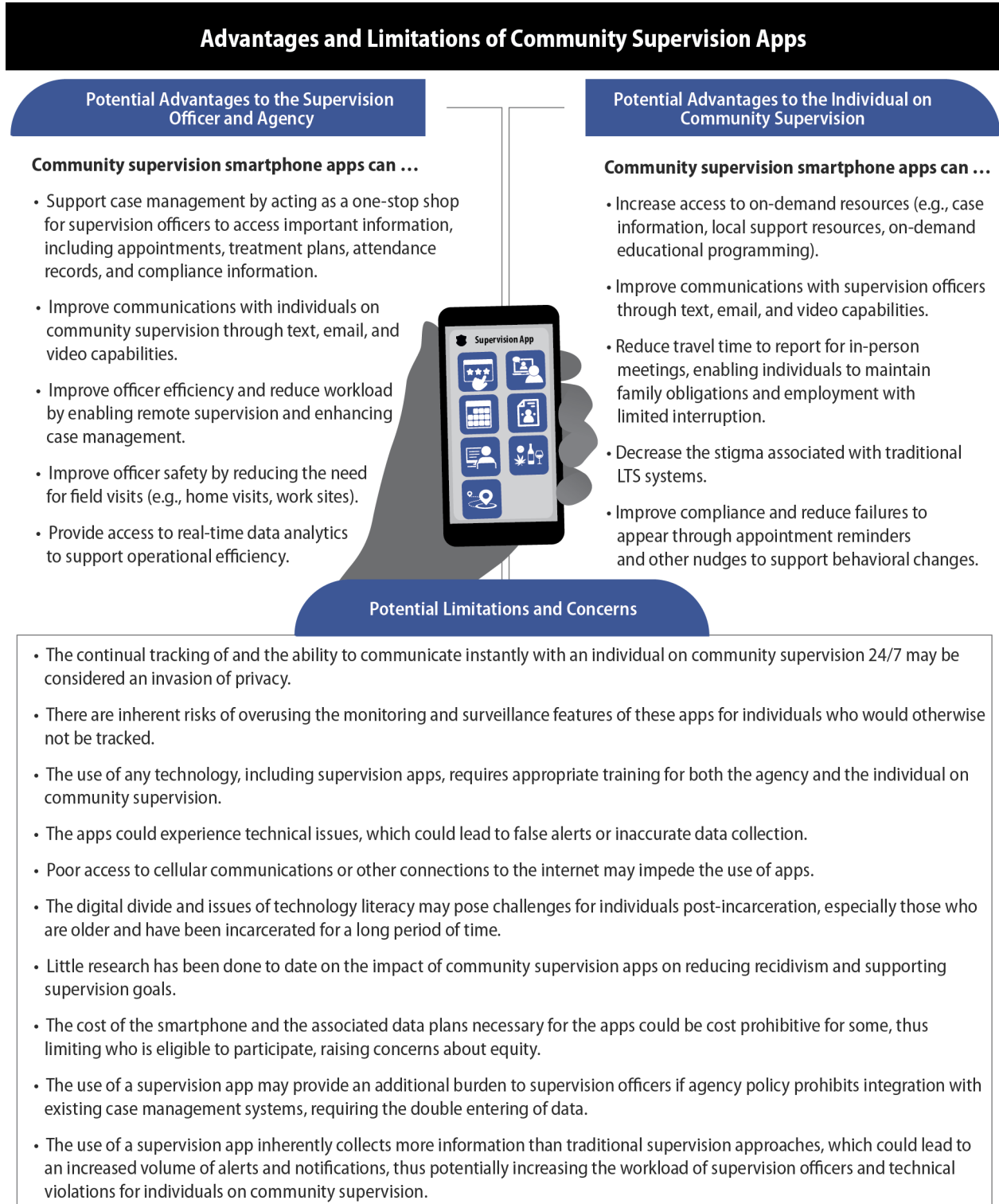


Figure 4: Community supervision apps provide a more efficient experience for both the individual on community supervision and supervision officer.

The functionalities of community supervision apps can be used to enhance case management.

Case management in the context of community supervision, sometimes referred to as “client management,” includes connecting the individual on community supervision with the appropriate resources, setting goals and tracking progress, reporting information to the supervision officer, and monitoring conditions set by the court or supervision agency.¹⁵ Combined, many of the functionalities of supervision apps that have been discussed previously can support effective case management. For example, apps that support remote breath alcohol testing can automate the testing process, capture the results in the individual’s file, and notify supervision officers of results. This capability enables supervision officers to monitor the conditions of release (e.g., twice-daily breath testing), track progress, and report that information.

Community supervision apps have analytics to alert and prioritize cases for the supervision officer to both attend to the cases needing immediate assistance and to more efficiently manage their caseloads. Many supervision apps use color coding to help the supervision officer (e.g., red for individuals on community supervision who are out of compliance or need immediate attention, yellow for those who need further investigation, and green for those who are in compliance). In addition, the nature of the cloud-based software platforms allows many community supervision app vendors to customize the app for agencies’ particular needs.



Example: The Pokket app by Acivilate offers a dashboard view with color coding to quickly identify individuals that are out of compliance and provide interventions.

“The smartphone app has really freed up case managers’ time to allow our attention on the more critical areas. The alerts help identify things that need attention right away.”

—Katie Medrano, Case Manager Coordinator, Tippecanoe County Corrections



Although community supervision apps can enhance case management broadly through various functionalities, they are generally not integrated with an agency's state CMS.

CMSs are tools used by supervision agencies to collect, monitor, and report information on individuals on community supervision to better support evidence-based decision-making and comply with state requirements. Some agencies purchase CMSs, while others develop CMSs internally. Supervision agencies implementing an app need to consider its integration with the agency's current CMS. An app may be able to support complete data integration or one-way data integration or may not be able to support data integration at all, as seen in **Figure 5**.

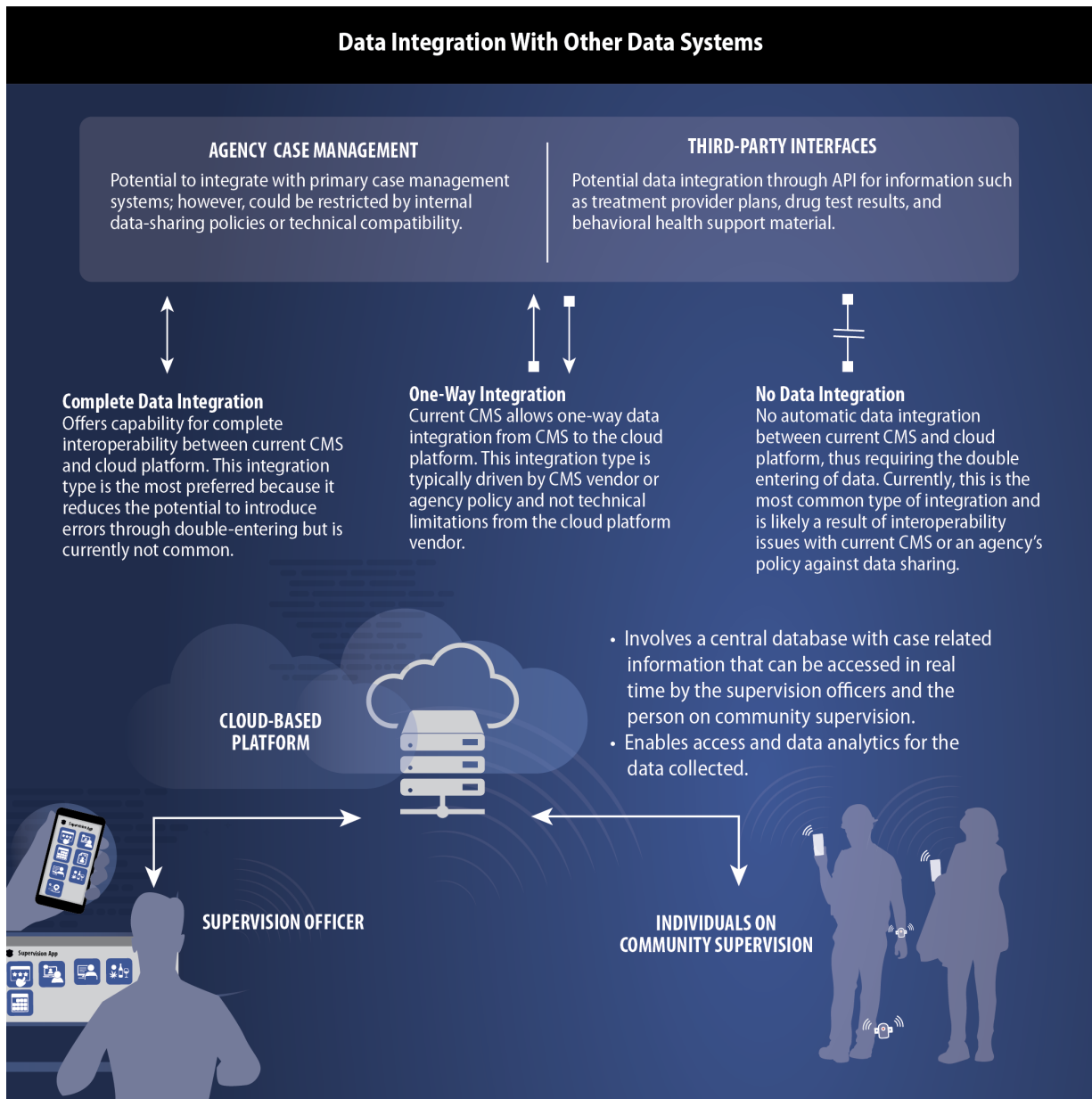


Figure 5: Depending on an agency's current CMS interoperability capabilities and an agency's data-sharing policies, data collected from the app may be able to integrate directly with an agency's current CMS.



Implementation Considerations for Community Supervision Apps

Agencies considering the implementation of smartphone-based community supervision apps must think about practical considerations, which include agency priorities balanced with risk level; technical considerations, such as technology realities and legal precedents; and ethical considerations, such as the risks of monitoring for the person on community supervision.

Practical Considerations

Purpose: Agencies should understand and clearly articulate why they are considering a community supervision smartphone app and identify the problem they are trying to solve. Supervision agencies have different reasons for wanting to use a community supervision app. For example, some agencies may wish to use community supervision apps to improve efficiency by helping supervision officers better manage large workloads, while others may want to use the video check-in capabilities to reduce the travel burden on individuals who typically have to travel far distances to check in with their supervision officer. Agencies may seek to address multiple purposes. Most community supervision apps on the market offer comparable features and address various needs; agencies should consult vendor websites to match their needs with the apps' capabilities. A needs assessment can help agencies better identify and articulate the problem(s) they are trying to solve, the available resources, and how the app will help achieve the desired outcome. Ultimately, a community supervision app should be used in a way that is consistent with agency policies, mission, vision, and values. Similarly, it is important to obtain input from the individuals on community supervision on the value and benefits they recognize for smartphone apps.

Goals: Once a purpose has been defined, agencies should identify the goals they are trying to achieve and set timelines, milestones, and specific outcome measures. Evaluating progress against these metrics is critical in evaluating success and understanding where modifications and improvements may be needed.

Workload: Although the promise of adopting community supervision apps may improve efficiency and save agencies money in the long run, these tools can be time consuming to implement. In addition, an agency's digital competency and willingness to change will have a significant effect on the time and resources needed to implement and achieve its desired goals. It is important to evaluate and understand the specific requirements each user of the tool will need to address. Agencies should also consider their processes for responding to alerts and violations before implementing an app. If a vendor does not provide support to help triage these events, it will likely take significant personnel resources to do this in-house.

Risk level: An individual's risk level is a key determinant of the potential use of community supervision apps. Higher-risk individuals may not be good candidates for community supervision apps to replace their electronic monitoring devices, although all risk levels may benefit from the support for behavioral change. Some apps offer options and features for electronic monitoring geared to different risk levels. For example, some apps offer the tethering of a device to support more discreet and continuous location monitoring. Lower-risk individuals who do not need location tracking can benefit from apps that provide access to behavioral health support, reminders, and communication modalities with their supervision officer. Another consideration is that whether the individual on community supervision will take responsibility to ensure compliance to make the app work. Compliance may include the following: individuals on community supervision must keep their phone on and charged, the phone must be maintained (in good condition) with the necessary software updates, individuals on community supervision must not delete the app, and individuals on community supervision must maintain an adequate data plan to support the app's functions. For untethered phones, compliance may require individuals on community supervision to keep their phones close and may designate any allowances for when the phone can be turned off such as when at work and sleeping.

Cost: Understanding all costs associated with adopting a smartphone app is very important; the cost may vary by vendor, size of the agency, and desired features, and cost information is not readily available on vendors' websites. Vendors



may charge fees for installation, training, support, and data storage. Some apps require the individual on community supervision to use their own phone, sometimes referred to as bring your own device (BYOD) as opposed to a vendor-provided smartphone. Most smartphone apps are part of a cloud-based system whereby users may incur a monthly or annual subscription cost instead of a onetime purchase fee for the app. Agencies should communicate with vendors and their procurement teams to understand both onetime and recurring costs associated with implementing a community supervision app.

Typically, vendors charge a daily rate for users, which varies based on the features and volume of users. Vendors whose products include full tracking features may offer a locked device, call center support, and field service support for devices, and fee collection from users increases the daily rate. The daily rates for vendors with full tracking can range from less than \$1 to more than \$10 per user depending on the features. Vendors may also discount the daily rate for large agencies, which may include an inventory of devices for new users and replacement devices. Vendors offering apps that do not track devices and for which users supply their own smartphones charge much less and may range from less than \$1 per user per day to \$3 per user per day depending on the features. Some vendors may simply charge a monthly fee for a number of users with defined features. For most apps, vendors offer subscriptions with monthly fees for as long as a person uses the app.

Community supervision apps are intended to provide an agency with cost savings. The pandemic forced many agencies to experiment with community supervision apps to reduce face-to-face interactions for safety reasons. Some of these agencies found that labor savings from reduced travel time have helped them better manage their caseloads and provide more time for officers to focus their attention on higher-risk individuals on community supervision. In addition, some agencies have seen increased operational efficiency by having ready access to the individual's, supervision officer's, and agency's data to better understand how the agency is performing. These savings depend on the agency. Further research is needed to quantify these savings.

Smartphone ownership model: One major consideration of current supervision apps is smartphone ownership. The two variations of ownership model are BYOD and "corporate owned." As with any technology, each model has advantages and disadvantages (see callout box). Decisions about which model to use should be guided by the risk levels of the individuals on community supervision and the agency's objectives in using the app.

Ownership Model Advantages and Disadvantages

BYOD is the most prevalent model and is typically less expensive because the individual on community supervision provides the hardware (i.e., the smartphone). Although BYOD is the less expensive option, this model may have associated security concerns because devices built for the general consumer market are not designed to be a criminal justice supervision tool. For example, in addition to access to the app, the individual on community supervision retains control of all the native features of the smartphone (e.g., power, SIM card, battery). Further, they have access to other functionalities such as Wi-Fi settings and airplane mode that can allow them to intentionally avoid location monitoring or communication with their supervision officer. Finally, controlling other apps, such as location spoofing and other conflicting software the individual might download on the smartphone, can be difficult. Although many of these behaviors can be detected and officers can respond appropriately, they cannot necessarily be prevented. These limitations can be managed and may be less important if the target population is lower-risk individuals or if the primary objective is support. The agency must also consider governing law and department regulations for what information can be accessed on a person on community supervision's smartphone.

In the corporate-owned model, agencies purchase or lease a locked-down, customized smartphone with the supervision app installed. The corporate-owned model is generally costlier; however, it offers far greater security. Mobile device management, or similar approaches, can be used to control what can and cannot be done on the smartphone. For example, access to and tracking of the internet or the ability to call or text certain individuals can be restricted or limited, based on case needs. Corporate-owned phones may also require authentication and compliance for use of the enabled smartphone features. Therefore, this approach may be more appropriate for medium- to higher-risk individuals or those not complying with their conditions of supervision.

Source: Advantages and disadvantages were synthesized from primary research with experts, vendors, and agencies.

Technical Considerations

Data integration and interoperability: Agencies should determine if their selected app can or should be integrated with their other systems, such as local, state, or federal CMSs.¹⁶ An app may be able to support complete data integration or partial data integration or may not be able to support data integration at all. Integration depends on two factors: (1) whether the current CMS has the technical capability to connect to a cloud platform and (2) an agency's data-sharing policy. Full data integration enables more efficient and accurate case management because it limits the need to view or double-enter data into multiple systems, thus reducing any potential data entry issues. However, if the app's benefits (for the individual on community supervision and the agency) outweigh the burden of double-entering data, agencies may not mind double-entering data into their CMS. This all depends on agency preference. Moreover, the importance of data integration and interoperability largely depends on an agency's data-sharing policies. For agencies that have strict regulations on data sharing, the capability of integrating with their CMS is less important. Community supervision apps developed by vendors that also offer CMSs typically offer complete data integration. For example, BI Incorporated offers a case management software—BI Total Access—and a smartphone app—BI SmartLINK. Because the vendor offers both products, the two can be easily integrated to automate data sharing and reduce the need for double-entering data.

Smartphone data storage: Mobile apps on smartphones act as the interface between the user and the cloud-based software platform. Some apps may store data on the smartphone locally so the user can access and interact with the app regardless of whether there is an internet connection. Other apps do not store any data on the smartphone and require an internet connection any time the individual on community supervision wants to access information on the app. The decision to store data locally or not is typically determined by the app developer for various reasons, including to ensure compliance with data privacy mandates (e.g., Health Insurance Portability and Accountability Act [HIPAA]) or other software architecture reasons. Agencies should understand how an app handles data and if it meets their needs. For example, agencies in rural areas or areas with a large homeless population may prefer a solution that allows for offline use to accommodate individuals with limited internet access or other software architecture reasons. Agencies should understand how an app handles data and if it meets their needs.

Data security and privacy regulations: Agencies should consult their legal team to consider the various regulations and standards related to app development and operation. Because community supervision smartphone apps are typically cloud-based systems, agencies need to understand data ownership and governance. Personal health and other sensitive data may be transmitted via the smartphone app; thus, agencies should consider apps that comply with industry, state, and federal standards (e.g., HIPAA, Criminal Justice Information Services, Federal Risk and Authorization Management Program). Moreover, it is a best practice for agencies to examine ethical and privacy considerations associated with community supervision apps, including the perceptions of the individuals on community supervision.

Data portability: Data portability is the ability to move, copy, or transfer data easily from one platform database to another. This ability is important if an agency ever wants to switch to another vendor and platform and wants to transfer data. It is important for agencies to understand whether an app offers data portability. Although most of the newer systems are cloud based and developed with the ability to share data either directly or through APIs, vendors may charge a fee to export the data.



Ethical and Equity Considerations

Cost burden: Many community supervision agencies require the person on community supervision to own the phone and pay associated costs to maintain an adequate data plan to support the use of the app in addition to any non-app-related activities. Depending on the app's features, vendors may charge a daily or monthly fee for using their platform. There is growing recognition that these fees may be counterproductive and a potential barrier to successful reentry. Some jurisdictions have shifted away from requiring individuals on community supervision to shoulder this burden and are opting to absorb the costs directly.

Net widening: Net widening refers to the growing number of people surveilled by the criminal justice system as a result of administrative changes. Some have pointed out that electronic monitoring and surveillance via community supervision apps have created a form of e-carceration, a sanitized but potentially dehumanizing form of imprisonment.¹⁷ These apps may have unintended consequences, including enhanced surveillance that may lead to more technical violations. Agencies may consider using community supervision apps as a tool in a larger strategy to avoid the possibility of oversurveillance based on one indicator. Note that some apps such as Uptrust and Pokket are not used to monitor and sanction but rather to support and nudge individuals into compliance.

Privacy and security: A first-of-its-kind study was recently published analyzing privacy concerns related to 16 community supervision apps.¹⁸ The study highlighted several key privacy issues related to implementing and using supervision apps that agencies should be aware of:

- **Permissions (end-user license agreement [EULA]):** When an app wants to collect data from an individual's device, by law it is required to ask permission. Some supervision apps do not function until permissions are granted. Note that EULAs can be very long and written by lawyers and, therefore, very difficult for many users to fully understand.
- **Third-party libraries:** Smartphone apps typically include third-party libraries, sometimes referred to as SDKs (software development kits), that may have access to sensitive data about people using the apps and may even monetize their use of the app.
- **Trackers:** A tracker is software that collects data about the person using a device or how the device is used.

Considerations Questions to Ask

Practical

- ☐ What is the purpose for using a smartphone app and what problem does it solve?
- ☐ How will the agency measure success in meeting the purpose?
- ☐ Will the app features help the intended populations and people at various risk levels?
- ☐ What is the agency's incentive to use an app in addition to its current tools?
- ☐ What are the must-have features? What resources (funding, staff, infrastructure) are needed to support using the app?
- ☐ Who are the intended users of the app?
- ☐ Who will lead the pilot and what group of individuals on community supervision is best to start?
- ☐ What is the intended population risk level and will the app address the needs?
- ☐ Who will review the product's federal, state, and agency data requirements and compliance?
- ☐ What training is required for officers and individuals on community supervision?

Technical

- ☐ What other agency systems will the smartphone app need to integrate with and can this be automated?
- ☐ Who will do the initial training and help troubleshoot issues with the app for users?
- ☐ Can data be exported to a new system? Is there a cost?

Ethical and Equity

- ☐ Does this smartphone app support the agency's community supervision philosophy? Will its use be mandatory?
- ☐ Will this app lead to overtracking of low-risk individuals?
- ☐ How invasive is the smartphone app?
- ☐ Does the smartphone app allow third-party trackers?
- ☐ How may the solution negatively affect the daily life for the person on community supervision?
- ☐ Who is paying for the smartphone or smartphone app? Can they afford it?



Future of Community Supervision Apps

The future of smartphone apps in community supervision is driven by several important trends:

- Smartphone capabilities are evolving and enabling more supervision features at a lower cost.
- Consumer markets are driving the increased miniaturization and affordability of smartphones, enabling more widespread use of apps for community supervision.
- Ubiquitous mobile connections to the internet are improving accessibility and performance.
- The increased use of cloud-based software platforms is driving costs down.
- Policies enabling integration and interoperability of new smartphone app platforms with legacy CMSs will increase usability and operational efficiency.
- Advances in sensor technology coupled with advanced analytics and artificial intelligence (AI) may offer new ways to support successful reentry and reduce recidivism.

Smartphone capabilities are evolving and enabling more supervision features at a lower cost.

Consumer markets are driving investment in smartphones to offer new capabilities. Smartphones are essentially powerful handheld computers that also provide cellular communications. Among other features, smartphones typically integrate a touchscreen interface, internet access, cloud-based data storage, camera, speaker, video recorder, location-based services, and an operating system capable of running downloaded applications. Further, peripheral devices, such as personal breathalyzers and other sensors, can be linked with the smartphone to expand supervision capabilities. As smartphone technology continues to advance, agencies can leverage these developments in ways that traditional electronic supervision devices simply cannot support.

Consumer markets are driving the increased miniaturization and affordability of smartphones, enabling more widespread use of apps for community supervision.

The large consumer electronics market is continuing to drive the cost of hardware (i.e., the smartphone) down. This phenomenon will likely continue to drive the adoption of smartphone apps in community supervision. Although there is no accurate count of the number of individuals on community supervision who use a supervision app, reporting about agencies adopting and implementing apps in recent years has been extensive.

Ubiquitous mobile connections to the internet are improving accessibility and performance.

According to Pew Research Center, 95% of U.S. adults ages 30 to 49 and 96% of those 18 to 29 reported owning a smartphone.¹⁹ The growth of smartphones and cloud-based applications that require wireless internet connections for operation and convenience is fueling the expansion of wireless communications infrastructure. At the same time, smartphones are becoming more capable; the same can be said for wireless telecommunications infrastructure. The accessibility, availability, and speed of connections to the internet using cell tower signals, Wi-Fi, or Bluetooth continue to improve. The deployment of 5G communications is also improving the speed and ability to provide more hyperlocal information because 5G connections will become closer to the devices than the current 4G cellular network connections.



Increased use of cloud-based software platforms is driving costs down.

Applications for large consumer and enterprise markets drive investments into cloud-based infrastructure; security and tools offer affordability to smaller market applications like community supervision. Cloud-based tools require minimal on-premises support that many agencies lack. Business and government cloud applications also drive improved security, which smaller companies are able to adopt.

Policies enabling integration and interoperability of new smartphone app platforms with legacy CMSs will increase usability and operational efficiency.

Today, few CMSs allow direct data integration and interoperability with third-party community supervision apps because of data security concerns. Ultimately, the inability to integrate third-party community supervision apps with an agency's CMS creates extra work for the agency because they often have to double-enter data from the app into their CMS, potentially leading to data entry errors, and may require agencies to access data from multiple systems.

Advances in sensor technology coupled with advanced analytics and AI may offer new ways to support successful reentry and reduce recidivism.

Smartphones are equipped with a variety of multimodal sensors that can be used to offer important insights into behavioral tendencies and potentially support interventions. As technology advances, it is possible that innovations in smartphone sensors and data analytics may support the development of new methods to detect or screen for substance use. For example, Samsung has filed a patent on a smartphone with a built-in sensor to detect a user's blood alcohol content.²⁰

Current Research Examples: Integrating Advanced Sensors and AI into Supervision

Several research projects are exploring new ways to integrate sensors, analytics, and AI to identify insights that can be used to monitor and support individuals on community supervision.

For example, researchers from the Stevens Institute of Technology evaluated the use of smartphone sensor data to identify people with cannabis intoxication in the natural environment. They found that a combination of time features (i.e., day of the week and time of day) and smartphone data had a 90% rate of accuracy in detecting people experiencing a cannabis high.²¹ These researchers collected data from 102 smartphone sensors and found that some of the most important sensors for detecting cannabis intoxication included GPS data and motion sensor data (accelerometer). A similar study from researchers at the University of Pittsburgh found preliminary evidence supporting the use of gait-related features measured by smartphone accelerometer sensors to detect alcohol intoxication.²² The results of these studies may have future implications for building detection models for triggering interventions for substance use.

Lastly, Researchers from Purdue University, Florida State University, and University of Alabama-Huntsville, in partnership with Tippecanoe County Community Corrections, the Tippecanoe County/Purdue High Tech Crime Unit, and the Tippecanoe County (IN) Sheriff's Department, are undertaking a project focused on leveraging AI-enabled tools and technology to reduce recidivism rates for individuals on parole. AI offers a window into the individual's life by collecting data through a wearable bracelet and a smartphone. The wearable device will capture health information, including stress and heart rate, while the smartphone will collect other information ranging from an individual's location to the photos they take. The captured data will be used to identify risky behaviors, stressful scenarios, and other behavioral and physiological factors that may correlate with recidivism. The goal is to find opportunities for early interventions to assist individuals in successfully integrating into society.²³



More research is needed to understand the effectiveness of community supervision apps.

Use of smartphone apps for community supervision is still relatively new, and little research has been done to date on the impact of community supervision apps on reducing recidivism and supporting supervision goals. More research is needed to evaluate the effectiveness of these supervision apps. Potential follow-on research questions include the following:

- Does the use of supervision apps improve outcomes for individuals on community supervision?
- Does the use of supervision apps reduce costs for agencies?
- Which type of apps (tracking or nontracking) are most effective for supporting outcomes of individuals on community supervision?
- What are the real statistics for smartphone ownership and use for different populations?
- How does the use of community supervision apps affect outcomes for people at different risk levels?
- How does the use of community supervision apps affect outcomes for people of different races, ethnicities, and genders?
- Do outcomes differ based on whether the use of these apps is voluntary or mandatory?



Endnotes

1. Different entities use different words to describe and define individuals on community supervision (e.g., offenders, clients). For consistency, this document uses the terms *person(s) on community supervision* or *individuals on community supervision* to align with the Centers for Disease Control and Prevention's guidance on [Preferred Terms for Select Population Groups & Communities](#).
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5. Reliable estimates for the number of individuals or agencies using smartphone applications for community supervision are not currently available. Conversations with experts, vendors, and agencies point to increased use and interest in smartphone applications because of COVID-19.
6. Application data may be stored in the cloud or locally on the device, depending on the type of data and application.
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