

## Just Tech Advancements In Community Supervision

**Intro** [00:00:01] RTI International's Justice Practice Area presents Just Science.

**Intro** [00:00:09] Welcome to Just Science, a podcast for justice professionals and anyone interested in learning more about forensic science, innovative technology, current research and actionable strategies to improve the criminal justice system. In episode two of our Innovations and Correction season, Just Science sat down with Joe Russo, institutional and community corrections researcher with the University of Denver, to discuss how advancements in technology can improve the probation and parole experience for both officers and clients. Community supervision agencies, such as probation or parole offices, are responsible for providing many services to their clients, including case management, location monitoring, and drug and alcohol testing. As these agencies become more understaffed and underfunded. Technological innovations can help reduce the casework of officers while also reducing the burden on clients. Listen along as Joe describes the need for change in community supervision. The pros and cons of technology, such as check in kiosks and smartphone monitoring, and the future of research and development in this field. This episode is funded by RTI International's Justice Practice Area. Some content in this podcast may be considered sensitive and may evoke emotional responses or may not be appropriate for younger audiences. Here's your host, Peyton Scalise.

**Peyton Scalise** [00:01:16] Hello and welcome to Just Science. I'm your host, Peyton Scalise, for the Justice Practice Area at RTI International. Our topic today is focused on the use of monitoring technologies for community supervision. Community supervision includes pretrial release, probation, and parole. Today, we are excited to speak with Joe Russo to understand how these technologies can support community supervision. Welcome to the podcast, Joe.

**Joe Russo** [00:01:38] Thanks, Peyton, and happy to be with you.

**Peyton Scalise** [00:01:40] Joe Russo is a researcher with the University of Denver, where he has supported a variety of programs funded by the National Institute of Justice. His research focuses on institutional and community corrections technologies, and on identifying the high priority technology needs of agencies across the nation. He previously served in the New York City Police Department of Correction and the New York City Department of Probation. Joe is active in several national organizations, which include the American Probation and Parole Association, the American Correctional Association, and the IJIS Institute. To kick us off, Joe, can you tell us a little bit about what led you to be interested in the use of technology to address issues in community corrections?

**Joe Russo** [00:02:19] I got my start in corrections in New York City in the late 1980s, and my first job was in a federal halfway house in Manhattan. In the technology we use was pretty rudimentary. I think we may have had oral fluid swabs for testing alcohol. We collected urine samples and mailed them off to a lab for testing. On occasion we tested early versions of house arrest bracelets, but that was about it. I later moved on to run the work release program on Rikers Island for the New York City Department of Corrections. Again, you know, no technology to speak of. It really wasn't until I joined the Department of Probation in the mid 1990s that I began to get a glimpse into the power of technology in corrections. During my tenure there, the agency was facing severe budget cuts. Probation was set to absorb a 33% reduction in funding, and so the agency had a choice. It could maintain the status quo and simply increase those caseloads across probation officers who remained, or it can take a more radical approach. Fortunately, the leadership there

was very progressive and willing to be innovative. They invited a group of Canadian researchers to come to New York to talk about the work they had been doing, and we now know of that work as, the what works literature on the principles of evidence based practices for effective correctional treatment. So supported by this research, the agency made a conscious decision to re-engineer its business processes, its entire operations from intake through release of supervision. The budget cuts were the impetus, but the evidence was key as well. So, we knew that we couldn't be all things to all people and even in the best of circumstances. But with the budget cuts right, it was impossible to serve anyone adequately. So, we had to take a really hard look at what we could and couldn't do. The evidence helped us in that it told us not to focus on low-risk clients. The evidence that the Canadians developed was that if you over supervise low risk clients, you actually get worse outcomes. They recidivist more often. So that was key. So where should the focus be? You know, our agency made the decision to focus limited resources on those probationers at the highest risk of violent recidivism. So, the people who they were afraid of, those were the folks that we needed to spend our resources on. So, we worked with consultants to develop risk assessment instruments to divide up the population. High risk, medium risk, low risk. The high-risk folks would be in relatively small caseloads, with working with probation officers, get more intensive supervision, but also participate in cognitive based groups, counseling and the like. This population obviously would require the bulk of the resources and the bulk of the officer's time. To make it work the lower risk cases needed a much different approach. One approach that was low impact in terms of staffing, one where, you know, one officer could manage thousands of probationers at the same time, what we came up with in New York was automated reporting kiosks. We were not the first implementation of this technology. We were certainly the largest in scale, due to the size of the agency. So, this group of low-risk cases would report to a kiosk set up at each of the five boroughs, and they would report monthly to check in and answer basic questions about their status. And through this, they were able to maintain at least a basic level of accountability to their conditions of supervision, again without burdening staff so they can focus on the higher risk folks. As you can imagine, there was quite a bit of resistance to this approach. It was very foreign at the time, kind of allowing people to report to a machine versus a person. And despite the fears of many and the concerns, the sky didn't fall. Quite the opposite. Re-arrest rates went down both for the high risk and the low-risk population. So ultimately, the technology was the key to be able to deliver the appropriate services to the highest risk probationers, which enhance public safety across the board. So, this was really my first exposure to the power of technology to really impact business practices and improve outcomes. So that you know, there's nothing really exciting about kiosks in general. They had been around for quite a while. They're used in other applications banking, ATM machines and so on. So, the innovation really was adapting an existing tool and using it for community supervision purposes to accomplish broader objectives. And, you know, as a pragmatist, that that really sparked my interest rate, not so much in the technology itself, but how can we use it to accomplish the larger mission, which in that case was changing behavior, improving lives, and promoting safer communities?

**Peyton Scalise** [00:06:26] That's amazing. And what year was that where you guys implemented the kiosks?

**Joe Russo** [00:06:30] That was in the early 1990s.

**Peyton Scalise** [00:06:33] Okay, so let's turn to the problem at hand. Why do we need to consider technology as a solution in community supervision?

**Joe Russo** [00:06:39] Well, it's hard to think of any industry that isn't leveraging technology to improve efficiencies and produce better outcomes. And certainly, community supervision is no different. Right. So, there are several factors driving increased use of technology in this field. One is sheer numbers. There's around 3.7 million adults on probation and parole in the US, which is a large amount. This represents the vast majority of people under correctional control. So about 70% of people who are under correctional control are on probation or parole. The other 30% are in prisons and jails. From a system wide perspective, from a societal perspective, you know, incarceration is expensive and has harsh consequences for individuals, their families and communities. So, there's always a push to reduce reliance on incarceration, which is great. But this often increases the burden on community supervision agencies who are already overburdened. And so even though community supervision agencies serve the majority of the population, they only receive a fraction of the available funding. Most of that goes to prisons and jails. Underfunding is not a new challenge. It's perpetual. But the situation is exasperated by the fact that the population tends to be higher risk and have greater needs than ever before. To make matters worse, there's always a growing array of unfunded mandates, whether they be, collecting DNA samples from people who are just sentenced to probation or parole or lifetime Global Positioning System monitoring of sex offenders that add to the workload without necessarily adding additional staff or budget. So funding is always an issue for community supervision agencies. Since Covid, many agencies are experiencing staffing challenges, like never before, turnover rates are much higher. There's trouble filling vacancies, and so many officers have caseloads that are unmanageable. Another factor is the complexity of the community supervision mission. There are several objectives that are sometimes in conflict and tension. The responsible for protecting the public by holding people accountable for the conditions of the supervision. But they're also responsible for changing behavior by delivering or brokering rehabilitative services. So, the balance can be challenging to navigate, and the pendulum can shift between a punishment mindset and a rehabilitation mindset, depending on the political climate or the jurisdiction, the geographic area that you happen to be in. Currently, many agencies are increasingly moving towards the behavioral change objective and working to implement effective evidence-based practices to affect behavior change. But despite efforts, you know, recidivism rates and revocation rates are still persistently high. So, in a nutshell, you know, agencies are overworked, they're underfunded, they're dealing with a much more difficult population and increasingly expected to facilitate behavioral change, which is very difficult to do. Agencies really have no choice, right? They have to explore and leverage technology-based solutions to help them operate more efficiently, do more with less, and ideally produce better outcomes for individuals and communities. Fortunately, agencies have access to a wide variety of technology solutions today more than ever before. Some quick examples. Agencies are using more remote reporting tools that improve officer efficiency by allowing them to maintain contact with more clients more frequently without leaving their office. This technology can remove barriers to success for clients. Can improve appearance rates without creating financial burdens on the clients, such as the financial costs of transportation, time away from work, childcare costs, and so on. It also can eliminate barriers to folks who live in remote areas, so they can access treatment services via virtual systems which may not otherwise be available in some of these jurisdictions. Technology is also being used to improve officer effectiveness. For example, mobile technology allows officers to work in the field rather than the office. In this way, they can create better relationships with their supervisees better relationships with the communities that these people live in. Be more responsive to needs and understand the resources and challenges that are unique to these communities. The Georgia Department of Community Supervision is a leader in this area. All of their officers work in the field. They have no physical office space, and this approach appears to be producing better

outcomes, both for the people on supervision, but also for the officers who love the flexibility in their schedule and the autonomy to decide when and how they work, which is kind of a unique perspective. So technology is also, you know, making field work safer for officers through innovations like body worn cameras, lone worker duress systems is providing us the ability to have access to more data and share that data and information with relevant parties, as appropriate. For example, there are platforms that match GPS location data for the person on supervision with police crime scene data, which allows us to solve crimes more quickly or eliminate suspects more quickly. On the other side, information sharing between agencies and treatment providers can help maintain continuity of care, reduce redundancy in assessments, and reduce key to data entry. So really, these are just a few examples of how technology is addressing the challenges that community supervision agencies face on a daily basis.

**Peyton Scalise** [00:11:31] Your research is focused on various monitoring technologies that are used in community supervision. So, this can include, as you were saying, location monitoring, alcohol and drug monitoring, and the use of smartphones. Let's talk about each of these. Starting with location monitoring.

**Joe Russo** [00:11:45] Yeah. So, location monitoring has been around quite a while since probably the late 1980s. And it can be very important in the supervision process depending on the individual's risk level, their needs and the court or parole board orders. It's often used in domestic violence situations to monitor whether the client is stalking a victim or survivor. For sexual crimes, to monitor whether the client is loitering near a school or park, or other places where children may congregate. Also used for those involved with violent gang activity, as it can identify, you know, associations of gang members and, help predict whether there's a risk to public safety based on their, their movements and congregation. Judges often order location monitoring as a condition of prerelease. So, to get folks out of jail before they're convicted of a crime, they're often ordered to, be subject to location monitoring. And this provides the judges and the justice system with an added level of accountability for those individuals. There are several more nuanced benefits for location tracking. For example, it can help a client maintain an acceptable schedule and a curfew and identify when they're viewing from an approved schedule. Without location monitoring, there's no way to be able to have insight into some of these behaviors that can be indicative of a downward spiral or, you know, criminal activity itself. It could be useful for other purposes, such as to connect the clients, as I mentioned, with crimes that were reported, determine whether the client is actually living where they claim to live. So, GPS monitoring can give you that insight. In cases where the probationer maybe homeless and not report that right to location monitoring can provide those insights and let the officer know that there's something that maybe may need to be addressed in terms of housing insecurity. It can also be used for positive purposes. So, you can verify, you know, pro-social behaviors such as reporting to work on time, showing up every day, attending treatment meetings so that the officer can recognize this effort and provide positive reinforcement to the person on supervision. Again, you know, without those location-based services, a lot of these behaviors are not able to be detected. And, and responded to in any way.

**Peyton Scalise** [00:13:50] And, Joe, can you talk to us a little bit about the specific technologies used for location monitoring?

**Joe Russo** [00:13:55] The technology that's used has evolved over time. The earliest iterations were called house arrest systems, and these were devices that use radio frequency or RF technology to link a body worn bracelet or anklet with a base station that

was located in the client's home. And so, if the client wasn't home or wasn't in proximity to the base unit during curfew times, an alert would be generated and this would be a violation. So, this technology was put into place to provide some accountability that people were maintaining their curfews. But the primary limitation was that it can only determine whether the client was or was not home when they were supposed to be. In the 1990s, as the GPS became more accessible beyond military applications, who were able to use this technology and adapt it to track probationers and parolees throughout the community in real time. And this was a major advancement, obviously, over house arrest systems. These early GPS systems were rudimentary. You know, looking back, they were two piece and very cumbersome. The GPS receiver and transmitter was about the size of a lunch box, fairly heavy, and had to be carried by the client, sometimes in a fanny pack or some kind of a backpack. An ankle bracelet was electronically linked to that receiver and transmitter. So, there would be notification. If the client left the GPS device behind. So, this two-piece model was dominant for quite a while. Over time, the two components got smaller, became, you know, much more manageable for the client. But the next major innovation was a one-piece unit that combined both the GPS transmitter and receiver into a device that was secure to the client's leg. And this was advantageous largely because it was less equipment to maintain. It was one piece versus two, less things to keep clean and inventory, less susceptible to loss or damage. One of the key variations in GPS devices over the years is whether the tracking is active or passive. And so active tracking basically takes a GPS location point at predetermined intervals throughout the day. It might be once every five seconds and immediately sends that data to a monitoring center that's maintained by the vendor of the technology or the agency, if they choose to have a monitoring center. Passive tracking takes this location points in the same way but doesn't transmit the data in real time. Rather, it waits, and it transmits the data all at once one time per day. So, you're getting there's some lag in how you're receiving that data. More recently, in terms of advancement, there's been a big push to de-stigmatize location monitoring to the extent possible and make it less burdensome on the client. So, manufacturers have worked really hard to both reduce the size of these devices to make them less obtrusive and reduce the stigma around it, and also to make the form more comfortable to wear. These devices don't come off. They're put on the on the ankle. They remain there until, you know, the probation department or the court decides that they come off. So, it's important that there's some level of comfort as well. Also, as battery life is improved, the charging requirements are not quite as burdensome in terms of keeping these devices fully charged. More recently, again, the push to de-stigmatize manufacturers are developing wrist worn one piece tracking devices with the look and feel of a smartwatch, although, you know, a little bit bigger with the same kind of form and function, obviously less obtrusive, less dignifying, and kind of the most recent advancement has been the use of smartphone based tracking systems that leverage the inherent or the native location services in today's smartphones, GPS, Wi-Fi, cell tower triangulation to track clients throughout the community. One last advancement I'll talk about is in domestic violence protective services for the victim survivor. Right. So, the folks who perpetuate these crimes are tracked. But now the survivor is also tracked via smartphone applications and other technologies so that they have advanced notice if the client is approaching their proximity. So, they have advanced notice of that. And they can also directly alert authorities if they feel like they're in danger at any point in time. So, this has been a very important advancement as well.

**Peyton Scalise** [00:17:53] That's amazing. And can you talk to us a little bit about any negative consequences, such as over tracking or false alerts.

**Joe Russo** [00:18:00] Yeah. So, every technology has limitations that have to be considered and recognized. You know location monitoring can be very powerful. But kind of as I alluded to earlier, one of the key issues is the risk of over supervising individuals. You know, it's kind of like the old mantra, right? Just because we can do something doesn't mean we should do it. And, you know, based on the evidence about, you know, the risks of over supervising, the low risk offenders increasing, you know, the risk of failure, we need to be very cognizant of net widening and make sure that people who otherwise could be in the community and manage safely without tracking or manage without tracking, and only those who are higher risk or warrant an additional level of security or scrutiny, be subject to location tracking. So, you know, in a nutshell, there should be a compelling reason why we should track a client's location. For example, you know, a very high-risk violent offender or someone with a known victim who's likely to be targeted again or where the crime or the criminal history has a location element to it. These are examples of cases where it would seem that location tracking is more useful or makes most sense. There's a great example in Chicago that's been in the media, where there was a serial stowaway who, through cutting, would successfully board airplanes without a boarding pass, and she was able to get on, you know, 30 flights over the years and, and fly all over the country. And the authorities eventually put this woman on GPS so that they would get alerts whenever she approached the airport and then people would be on notice. So, this is a very uncommon scenario, but one that screams for GPS as a logical way to address the problem. Again, where there's a known victim, you know, where location is central to the criminal behavior, these elements make most sense. Some of the other considerations are the workload implications for staff. So, GPS, it takes a lot of time and resources to monitor and respond to violations such as a low battery or a dead battery, removal attempts of the device zone violations, or a missed curfew. Right. All of these events need to be responded to in some way and need to be validated and some action taken, or else the offenders will come to believe that there's no consequences for those behaviors. Further, you know, any requests to change an approved schedule have to be approved by the officer. So that could be burdensome and time consuming and important, because you don't want these clients to miss opportunities to work overtime or, you know, go to a different job location that the boss wants them to go to because, you know, it takes hours to get approval right from the supervising officer to make that adjustment. The other major factor is, you know, GPS generates a lot of information outside of, you know, specific violation behavior. So, if you're in the wrong location, that's a clear cut violation. But there are other behaviors that could be indicative of a problem that could be investigated, such as, you know, who the person is associating with, and which can be determined with GPS. Right. Other GPS monitored folks, diversions from previous patterns to and from work, access time spent in particular locations. This is all information that would not have been available without GPS, but could be valuable in the supervision process, could be indicative of, you know, problematic behaviors that can be addressed before they become, you know, criminal, for example. Also, with any technology, you know, there's technical limitations. And so, while vast improvements have been made over the years, false alerts can happen. It's very difficult to tell if a client wearing a GPS device on his ankle has banged the device into a doorway as they're leaving their home to get to work in a hurry, or they're taking a hammer to it to try to get it off right, the device only sees impact. You don't know intent. Nuisance alert can be caused by location inaccuracies caused by drifts in the satellites or solar flares. I mean, these are satellite-based systems, and they're subject to environmental interference from time to time. It just happens. It's not as common as it used to be. And manufacturers have developed ways to mitigate against these occurrences. But they do happen. Some areas are GPS challenged, such as urban canyons. So G.P.S. is less effective in a place like downtown Manhattan or on a reservation where there's no cellular service that can impact the technology. So, you know,

agencies need to be aware of how the technology works, what combination of location services are being used? GPS, cell phone tower triangulation, Wi-Fi and be able to understand their environment and select the vendor that best meets their needs based on the technology approach that they use. And then, you know, also, you know, technology like this can be circumvented, right? So, clients can take these devices off. Most of them are built to be removed in case of medical emergency. They can wrap these devices in materials that won't allow signals to be transmitted. Most of these systems detect these events. And so, they're documented. And you know, they are violations, but they can't necessarily prevent these events. And so, agencies just need to be realistic about, you know, what the technology can and cannot do.

**Peyton Scalise** [00:22:56] So alcohol and drug testing are important conditions of parole and probation. Can you tell us a little bit about the technologies that can monitor individual drug and alcohol use?

**Joe Russo** [00:23:05] In terms of alcohol testing, ignition interlock is one of the more established methods of alcohol testing. It's most often used in cases where individuals are convicted of DWI or DUI, driving while under the influence, or driving while intoxicated. In many states, this is mandated by legislation, so there's laws that basically tie the agency's hand. If you're convicted of a DWI or the second DWI, you will have an ignition interlock device installed on your car. So, these devices are installed in the client's car, and the individual must provide a clean breath sample in order to get the car to start. These devices have security measures now, which include video cameras that confirm the identity of the person providing the sample so that you don't get your buddy to blow into the device. And then he leaves, and you drive off. Other, you know, advancements include rolling tests where, you know, you provide a breath sample while the car is in motion, and also to prevent circumvention as well. Interlock can be expensive on the downside, and the costs are usually borne by the person on supervision, but the evidence shows that it's effective. Researchers determine that repeat DWIs have reduced by 20% while the device is installed, so it does have impact. However, longer term behavioral change is likely more dependent on treatment, and you know how well the individuals are progressing with their alcohol problem versus how well the tools are monitoring the testing where they're using alcohol. So, it just kind of points to a larger concept that most of these technologies are just tools. They have to be incorporated into a larger case management system, incorporated with the appropriate treatment modalities to get the desired effects long term. But one major disadvantage of alcohol interlock devices is that, you know, individuals can easily circumvent monitoring just by borrowing another car, right? If you borrow a car from your friend who doesn't have an interlock device installed, then you're able to drive. Other technologies that are observed in recent years include portable breathalyzers. These devices are provided to clients. They're to be carried around throughout the day. When prompted, the individual provides a biometric authentication of some kind, and the person provides a breath sample that is captured and analyzed by the device. And so positive results or missed tests are wirelessly transmitted to the supervisor and officer in near real time. And some of these devices can be paired with smartphone applications, which I know we'll talk about in a little bit. So, the advantage of this type of technology allows for remote testing without having the client leave work and come to an office to be tested by a probation officer. It can be done discreetly, so if you're in a meeting, you can excuse yourself and go to the restroom and provide a sample. It can be destigmatizing from that aspect as well. One of the most powerful innovations in alcohol testing over the years is transdermal alcohol monitoring, which allows for remote, continuous, noninvasive testing without the active participation of the client. So, to explain that one of the ways the human body processes alcohol is through the skin via insensible perspiration. So basically sweat,

but not in liquid form, in vapor form. And so, the ankle bracelet worn by the client collects these vapors throughout the day, measures alcohol concentration levels, and wirelessly transmits the data to a monitoring station. Security features are in place so that the client can't remove the bracelet without an alert being set off, and also so that nothing is placed in between the client's skin and the device to obscure or obstruct the testing process. The bracelets, you know, can be a bit bulky and obtrusive. And also, the device has limited capacity to detect low levels of drinking. In the area of drug testing, obviously, you know, urinalysis has been around for several decades, and it's still considered to be the gold standard and is widely accepted by community supervision agencies. Preliminary results can be provided at the point of collection, and presumptive positive results can be sent to a laboratory for further confirmation. But despite the wide acceptance that there are, you know, some significant disadvantage, obviously it's very invasive, very distasteful, that one wants to be collecting urine samples because the sample has to be directly observed by a same sex staff person to avoid, you know, adulteration or tampering. Urine, unlike other specimens, can be more susceptible to tampering or adulteration. Samples often can't be provided on demand, which leads to a lot of time spent waiting in a waiting room until the sample can be provided. So, despite being the gold standard, there are some limitations. Other methods include oral fluids or saliva testing. Much like your analysis, oral fluids can provide point of contact results for that preliminary result, and then positives can be sent to a lab for confirmation. Some of the key advantages of oral fluids testing include the relatively, you know, noninvasive nature of sample collection can be done in the field, can be done anywhere, right. There's no issue with that. Oral fluids can detect drugs that were recently ingested as opposed to urinalysis where they're where there's some lag time. But on the other side, there's a shorter window of detection as compared to your analysis. So, the different detection methods have different advantages and disadvantages. In terms of window detection. The sweat patch is another method that's been used in community supervision over the years. So, in this method of patches affixed to the client shoulder and the patch collect sweat over a period of two weeks. And so, the patch is then sent to a laboratory for analysis to detect for drug use. The advantages include the noninvasive nature of the specimen collection, but also the long detection period. Two weeks is fairly long for drug use. Disadvantages include the possibility of environmental contamination. So, these patches are, you know, designed to exclude environmental interference. But on occasion there might be exposure from the outside in. So, if you're exposed to chemicals or other things in the air or drugs, that's a concern that some agencies have. Also, the sweat patch only detects from the time that it's applied, so it does not detect prior drug use. Hair testing is another method not used as often, but its main advantage is a long window of detection. So, a hair sample typically will give you 90 days of data. Also, relatively noninvasive and gender neutral. Some key disadvantages include potential bias related to hair color. So, researchers have identified the fact that cocaine tends to bind to darker hair in higher concentrations than lighter hair. So, it doesn't mean that cocaine was or was not used, just that detection is more probable or more likely for someone who has darker hair. So, there's racial implications and bias as well that need to be accounted for. Another factor is a lack of timely results that officers often like to see, so that they can promptly address a drug use and deliver interventions. Other technologies are in development or are emerging but not yet mature. For example, there are systems that are developed to analyze sweat samples from a client's fingerprints, so they would put their finger on a device and that would be able to detect drug use in real time. Wearable technologies in the form of wristwatches similar to Fitbits or Apple Watches, are also in development that can provide continuous alcohol monitoring, again in a less obtrusive form than the ankle worn devices.



**Peyton Scalise** [00:30:22] That is so interesting and a topic I'm really excited to learn more about. So, smartphones became a very important piece of monitoring during the Covid crisis. Can you tell us how these devices were used in community supervision?

**Joe Russo** [00:30:33] Like you, I'm probably most excited about smartphone applications of all the technologies that we've talked about, these apps were available prior to Covid but really exploded in use since then, obviously due to the restrictions that were in place at the time. And they've really changed the nature of supervision in a lot of ways, you know, ushering in a new era of tele-supervision, as some of us call it, the ability to remotely provide services to clients. As we all know, Covid was terrible, but it really exposed some silver linings, namely, that agencies were able to quickly and effectively adapt and provide services to clients remotely and not in person. And so, smartphone applications were one of the things that these agencies began to leverage more and more. So essentially, these smartphone applications are basically case management and monitoring tools that can improve connection and communication between the supervision officer and the person on supervision. Two major factors have made these applications so attractive. You know, first is the ubiquity of smartphones, right? So, something like 95% of the population under 50 owns a smartphone. And we often hear anecdotally that even justice involved individuals. And people just released from jail and prison have no trouble getting a smartphone. That's one of the first things that they acquire. So, everyone has it. It's not a barrier. The second big thing is power. These are the phones that we all carry around with us are powerful handheld computers with cameras and video recorders and location-based services. We access the internet, we communicate in multiple formats, we download other applications. We can leverage peripheral devices, as I mentioned, like portable breathalyzers or other sensors that are built into these smartphones for vital signs monitoring and health monitoring. All are contained within these devices that all of us carry, and all of these features can be useful to the supervision process. And one of the key benefits is since the technology behind the smartphones is driven by the consumer market, there's continuously going to be advances just naturally occurring that the community supervision sector or public sector in general could never support on its own. Right. We're not big enough to warrant that kind of attention from these big vendors and manufacturers. So, the smartphones will continue to evolve, and community supervision can leverage those advancements to enhance the supervision process. So, these applications come in several different flavors depending on what the vendor chooses to focus on. Most commonly, features include remote reporting, so clients can use these apps to remotely check in with their officer and submit reports on things like their current residence, their employment status, whether they've been contacted by police or any particular needs that they might have at that time. These check ins can be scheduled, they can be random, or they could be prompted on demand by the probation officer. If the client needs more personal interaction, these applications support right variety of communication modes, whether it's two-way text or video meetings or just old school voice. Some applications also offer a way for officers to provide positive reinforcement or electronic affirmations to clients who are in compliance. The systems that I really love are those that support gamification, that agencies can redeem for tangible rewards like bus passes or movie tickets or something that's meaningful, you know, to that client. These apps often include resource directory, so people on supervision can easily access information on, you know, where's the nearest AA meeting or food pantry or whatever the case might be. You know, things that are right there on the phone, easily accessible. Some applications facilitate document sharing so that the officer can make the conditions of supervision available right on the smartphones. So, there's never any confusion about what the obligations are. In the other direction, the person on supervision can share photos of their pay stub so that they can prove to the officer that they're working and are still gainfully employed, again, without the obligation or

the burden of having to physically go to the probation office. And one of the most powerful features is the ability to maintain a calendar of important events, such as court dates or treatment sessions, or, you know, the need to submit a drug test sample, and also the ability to set up automated reminders to prompt folks about these obligations. You know, we know that people on supervision often lead chaotic lives, right? And they can forget to meet some of these obligations inadvertently. If they do, the consequences can be severe, or it could be violations that could be a return to incarceration, which have been proven to be effective in avoiding failure to appear and avoiding, you know, bench warrant issues for missed court dates. So, there is good research behind the effectiveness of reminders. One of the more unique capabilities is that the client's family or pro-social network can be included in some of these features. So, for example, I could authorize my significant other to access my calendar. So, she can remind me about my court date and tell me to dress properly and, you know, and show up report. And so, the more social support that you can get, the more likely it is that people will succeed. Other applications provide, you know, direct access to treatment support applications or third-party applications like breaking free, which is a drug treatment tool and other cognitive behavioral skills, building tools that are available. So, the idea is to get as many tools, as many resources together on one application as possible to get the client on track and to prepare them for success. And I think it's pretty exciting. But these tools are powerful, and they can be used, you know, for a variety of different risk levels. Another key distinction is who owns the smartphone. So, in most configuration the application is just downloaded on the client's phone much like any other application. And the client maintains access to all of the native features of the phone as well as the application itself. The other approach is a locked down phone, which is provided by the vendor to the client. So, in this case, only certain features are accessible. So, the client may not be able to turn the phone off or turn location services off. Or the client may be limited in terms of who he or she can call or message, or you know what they can and can't do with internet browsers. So much, much more locked down, much more secure than the bring your own device model.

**Peyton Scalise** [00:36:44] Wow. That's a big leap from the kiosks of 1995, it seems.

**Joe Russo** [00:36:50] Absolutely.

**Peyton Scalise** [00:36:51] Joe, can you tell us a little bit about what some of the key challenges or limitations are with this type of research, and where do we need to go next with this research?

**Joe Russo** [00:37:00] Yeah. So, there are several challenges. Some are related to any research in Denver. But some are very particular to technology. One big challenge is the breadth of the universe. Right. So, there are hundreds of manufacturers, vendors, inventors all working on solutions. But solutions don't only come from the justice space, right. They come from other industries as well. You know, as we talked about. So, keeping track of all of these different industries, not all of these developments can be very challenging. Further is, you know, the rapid growth of the technology. As technology evolves, as new products are developed, it gets harder to kind of keep on top of all of it. Further as the field is so fragmented, right? Yeah. Federal agencies, state agencies, local agencies, nonprofit, for profit. It can be challenging to keep track on what different jurisdictions are exploring, how they're implementing these technologies and what their experiences have been. So just kind of the scope of technology and how they're being applied can be onerous to kind of keep on top of. We talked about how technology can change rapidly, and development is iterative, which is a good thing, right? What gets introduced is going to be refined and improved over the years hopefully. So, while that's a

good thing, it can impact testing and evaluation efforts in a variety of ways. Right. So by the nature of technologies, these evaluations become somewhat point in time and can become outdated very quickly. Further, it can be a disincentive for manufacturers to participate in testing and evaluation efforts. For example, there have been situations where, you know, manufacturers have declined to participate in evaluation efforts because they're actively working on a new model. And of course, they want their latest and greatest to be tested and evaluated and publicized. But the timing may not work. So that could be a challenge. The lack of standards in the field could be a major challenge, you know, with very few exceptions. The technology used in community supervision doesn't have established standards. Researchers don't have performance metrics necessarily against which to evaluate these technology solutions. And so, they have to kind of work with the agencies and work with the field to kind of develop ad hoc performance metrics versus having an established, you know, commonly accepted standard. NIJ the National Institute of Justice developed standards for offender tracking technologies several years ago. But those are, you know, woefully out of date. And ideally, you know, the funding is available to kind of develop more standards and certification efforts around the technologies that are used by community supervision agencies. I think that would be very helpful. The larger research question here, beyond whether the technology works as its intended, is, you know, what is the impact on the objective? You know, what problem are we trying to solve? And is it successful? Very often, you know, technologies are implemented without a lot of forethought in terms of planning for evaluations. And there are legitimate reasons for this, right? Some technologies are just legislatively mandated, like GPS for sex offenders or ignition interlock for alcohol related crimes. And agencies may not have a choice. Right? They don't have the luxury of determining whether it's effective or not. It's been mandated. Or there could be pressure to move forward due to staffing shortages or other factors. But, you know, ideally, you know, agency leaders should be able to identify clearly the purpose and the objectives they have when they're deploying a particular supervision technology, right. Other challenges include the difficulty in isolating the impacts of technology on a particular issue. These technologies are tools, right? They're not a program. They should be used in conjunction with a larger case management plan associated with treatment or other things that address the needs that the individuals might have. So, the challenge is always, you know, how do we isolate the effectiveness of a tool given the variables of what interventions, other interventions are being implemented with the client, so that that can be a major challenge in terms of evaluating technology. And the agency might emphasize one objective over another. Right. So, it can be difficult to identify what the best measures of success can be. So that's a complicating factor. Also, how agencies use the technology can vary. So, some of those nuances can make it challenging to do research in this area as well. I feel like investment in these areas would be very worthwhile and money well spent.

**Peyton Scalise** [00:41:11] Well, that's all we have time for today. I want to thank our guest, Joe Russo for the excellent conversation. Thank you so much for your time today and for sitting down with Just Science to discuss monitoring technologies for community supervision.

**Joe Russo** [00:41:23] Thank you. It's been a pleasure.

**Peyton Scalise** [00:41:25] I'd also like to thank you, the listener, for tuning in today. If you enjoyed today's conversation, be sure to like and follow Just Science on your podcast platform of choice. I'm Peyton Scalise, and this has been another episode of Just Science.

**Outro** [00:41:39] Next week, Just Science sits down with Neal Parsons and Todd Craig to discuss the technology used to identify contraband and correctional facilities. Opinions or points of views expressed in this podcast represent a consensus of the authors, and do not necessarily represent the official position or policies of its funding.