

Contents

Key Finding #1: The PSA Can Improve the Accuracy of Pretrial Outcome Predictions	2
Key Finding #2: Implementation of the PSA Can Increase Rates of Release Without Compromising Court Appearance or Public Safety	4
Key Finding #3: Quality Implementation of the PSA and Related Pretrial Strategies Is Key to Sustainable Change	6
Best Practice Recommendations	7
Endnotes	9

Disclaimer

APPR developed this summary—using online searches of academic databases and publicly available information—to provide an overview of current research on this topic. The online search may not have identified every relevant resource, and new research will shed additional light on this topic. APPR will continue to monitor the research and will update this summary as needed. Due to the broad nature of this summary, readers are encouraged to identify areas to explore in depth and to consider the local implications of the research for future advancements related to pretrial goals, values, policies, and practices.

The Public Safety Assessment

The pretrial outcomes that jurisdictions seek—and the only outcomes that can legally be considered when deciding whether to detain or release a person pretrial—are to maximize court appearance and maximize community well-being and safety (i.e., minimize the likelihood of a person’s rearrest). This summary examines the current base of knowledge regarding the effectiveness of the Public Safety Assessment (PSA) in achieving these positive outcomes.

Note to readers: New studies of the PSA—including validation studies and local impact studies—are frequently emerging and will be summarized and posted on APPR’s PSA Research webpage.¹

The Public Safety Assessment (PSA) is an actuarial assessment² that predicts the likelihood of three pretrial outcomes: failure to appear in court pretrial (FTA), new criminal arrest while on pretrial release (NCA), and new arrest on a violent charge while on pretrial release, or new violent criminal arrest (NVCA). It was developed by the Laura and John Arnold Foundation (now Arnold Ventures) in 2013. Through the PSA, the foundation sought to provide judicial officers with improved information regarding the likelihood of pretrial success for people appearing before the court, and to steer the system away from determining pretrial liberty based predominantly on a person’s financial means.³

Researchers developed the PSA using approximately 750,000 cases from roughly 300 jurisdictions nationwide, including Colorado, Connecticut, Florida, Kentucky, Maine, Ohio, Virginia, and all 94 federal judicial districts.⁴ It was then validated on another 500,000 cases from a different mix of jurisdictions.⁵

The PSA uses nine factors to generate scores that predict the likelihood of FTA, NCA, and NVCA. The nine factors are assessed using administrative data and include: age at current arrest; current violent offense; pending charge at the time

of the arrest; prior misdemeanor conviction; prior felony conviction; prior violent conviction; prior failure to appear in the past two years; prior failure to appear older than two years; and prior sentence to incarceration. The PSA results in scaled scores of 1 to 6 for FTA and NCA (with higher scores indicating a greater likelihood of pretrial failure) and the presence or absence of a “violence flag.”⁶

The PSA adheres to specific definitions for FTA, NCA, and NVCA. FTA refers to a person missing a pretrial court hearing and the court, in response, issuing a warrant, capias, or other similar response. NCA refers to a person being arrested while on pretrial release, and includes both a custodial arrest and an arrest by citation or summons. NVCA refers to a person being arrested for a violent offense while on pretrial release, and includes both a custodial arrest and an arrest by citation or summons.

This brief summarizes the research literature on the accuracy of the PSA in predicting pretrial outcomes and presents the results of recent evaluations of PSA implementation from jurisdictions around the country. Jurisdictions that implement the PSA typically do so alongside other commensurate pretrial improvements that include, but are not limited to, increasing the use of citations in lieu of custodial arrest, replacing financial conditions of release with nonfinancial conditions, and establishing or expanding pretrial services. This can make it difficult to disentangle the effects of one policy or practice versus another.

When interpreting the results of PSA implementation evaluations that involve other policy changes, readers should be aware that changes in pretrial outcomes should not be attributed to the PSA alone.

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Key Finding #1: The PSA Can Improve the Accuracy of Pretrial Outcome Predictions

Assessing a person’s likelihood to succeed while on pretrial release is common practice in courts across the country. When implemented properly, actuarial instruments such as the PSA can improve the accuracy of these assessments.⁷ The technical term “predictive validity” is often used to describe whether an actuarial assessment instrument has been properly tested such that the items and cumulative scores on the instrument are demonstrated to have a strong correlation with pretrial outcomes of interest

(e.g., likelihood of court appearance or new arrest while on pretrial release). Validation studies of the PSA in New Jersey,⁸ New Mexico (Bernalillo County),⁹ North Carolina (Mecklenburg County),¹⁰ and Texas (Harris County)¹¹ have all demonstrated that the PSA is a valid predictor of pretrial outcomes. In other words, in these jurisdictions, increases in scores on the FTA, NCA, and NVCA scales correspond with lower rates of pretrial success.

Separately, several studies have examined the rate at which the PSA accurately estimates pretrial success, as measured by area under the curve (AUC) statistics. AUC statistics can fall between .50 and 1.00, with higher AUC scores indicating a stronger tool in terms of case-level accuracy. These studies suggest that the FTA, NCA, and NVCA scales generally perform above what is considered an acceptable threshold for accuracy in the criminal justice field, with AUC scores ranging from .55 (fair) to .68 (good) depending on the specific scale (FTA, NCA, or NVCA) and the local context of the study.¹² Specifically:

- A 2018 statewide validation in Kentucky conducted on a sample of over 168,000 cases produced AUC scores above .64 for all three outcomes. The researchers also showed that the accuracy findings were comparable across race and gender groups, although there were some modest differences in predictive accuracy by race on the FTA scale and by gender on the NCA scale.¹³
- A 2020 validation in Lucas County, Ohio, conducted on a sample of nearly 50,000 cases demonstrated that the PSA is a valid predictor of pretrial outcomes, although accuracy metrics differed somewhat for each scale. Specifically, while AUC statistics were above .60 for all three scales, predictive accuracy of the NCA scale was notably better compared to the FTA and NVCA scales. The authors also noted some differences in accuracy with respect to race and gender, with the tool providing more stable outcomes for white people and men.¹⁴
- A 2020 validation in Harris County, Texas, looked at over 60,000 cases, again producing accuracy statistics above .60 for the NCA and NVCA scales. Prediction of FTA was weaker, with an AUC score of .55 on that scale. Both the NCA and NVCA scales were found to be equally predictive across race and gender groups, with the FTA scale producing small and inconsistent differences by race and gender.¹⁵

Validation studies in local and statewide jurisdictions provide support for the overall utility of the PSA in predicting likelihood of failure to appear, new criminal arrest, and new violent criminal arrest. Further research is needed on the performance of the tool across race and gender subgroups.

Key Finding #2: Implementation of the PSA Can Increase Rates of Release Without Compromising Court Appearance or Public Safety

Studies examining the impact of PSA implementation on pretrial outcomes are mostly descriptive in nature, but taken together they offer useful evidence regarding the potential impact of the PSA on decision making and pretrial outcomes. Below, we summarize the findings of several process and impact evaluations in jurisdictions that implemented the PSA in conjunction with other pretrial reforms. Across studies, findings show that the number of people released pretrial increased following PSA implementation, while court appearance rates remained consistently high and pretrial arrest rates remained stable.

Yakima County, Washington

The PSA was one of many pretrial improvements enacted in Yakima County in February 2016, including replacing secured money bail with nonfinancial release conditions, dedicating public defender and prosecutor staff to first appearance hearings, and establishing pretrial services. Despite a 38% increase in pretrial release rates, there was no concurrent change in court appearance or new pretrial arrest rates following implementation. Specifically, a study comparing 250 randomly selected cases during a six-month period after improvements were implemented with a pre-implementation comparison group (250 cases during a six-month period *before* improvements) found that both groups were equally likely to appear in court (72% vs. 73%) and avoid new arrest (74% v. 72%).¹⁶ In addition, while the study demonstrated that release rates improved for people across racial and ethnic groups, increases in release were greater among Latino and other people of color in the sample.

New Jersey

New Jersey undertook significant statewide pretrial improvements in January 2017 with their Criminal Justice Reform (CJR) policies, which were designed to overhaul the use of financial conditions of release, impose speedy trial requirements, and create due process around preventative detention hearings. CJR policies included judicial officers' use of the PSA to inform pretrial release decisions, as well as implementation of the PSA at the point of arrest; an increase in the use of summonses; the elimination of financial conditions of release for most charges; and greater prosecutorial oversight and screening. According to research, "concerns about a possible spike in crime and failures to appear did not materialize" following implementation.¹⁷ Comparing annual, descriptive data under the prior "money bail" system to that under the CJR system, overall appearance rates remained consistently high (92.7% vs. 89.4%) despite the fact that more than

70% of people were released pending disposition of their case. Moreover, pre- and post-implementation levels of pretrial arrest were consistently low (12.7% vs. 13.7%), although the report suggests that these results should be interpreted with caution, given challenges in compiling pre-implementation arrest data.¹⁸

Mecklenburg County, North Carolina

When Mecklenburg County implemented the PSA in 2014, the jurisdiction was already in the process of shifting pretrial practice and culture (e.g., training in best practices related to pretrial release and detention, education around risk assessment, changes in leadership). An independent evaluation of over 93,000 cases reported that, following implementation of the PSA and related policy changes, the county released more people pretrial while court appearance rates remained high. In both the 30 months before and 18 months after implementation, more than 80% of people successfully attended all pretrial hearings, and fewer than 4% missed two or more pretrial court appearances. There was also “no detectable” effect on new arrests during the pretrial phase: percentages fluctuated but remained relatively stable throughout the four-year study period, including for any offense (20–28%), any felony offense (6–12%), and any violent felony offense (5–8%). In terms of conditions of release, researchers observed that there was little racial disparity in the percent of white or Black people with financial conditions set either before or after the policy shift. However, despite the lower overall rate of initial detention after implementation, Black people were detained at higher rates across all risk levels relative to their white counterparts.¹⁹

Lucas County, Ohio

Beginning in 2015, Lucas County officials sought to implement a variety of pretrial improvements concurrent with the PSA. These improvements led to a significant decrease in bookings: an average of almost 1,600 bookings per year. Subsequently, pretrial release rates decreased after implementation of the PSA (80%) as compared to the pre-implementation period (86%). However, this trend likely reflected a pattern of more serious charges being booked into jail rather than being an effect of the PSA itself. Releases were lowest immediately following implementation of the PSA (70%); however, they increased gradually, culminating in an average release rate above 80% in the final months of the study period. Additionally, pretrial success rates increased following implementation of the PSA and other pretrial reforms in Lucas County. Compared to rates observed prior to implementation of the PSA, there were significant decreases in FTA (30% vs. 24%), NCA (20% vs. 15%) and NVCA (6% vs. 4%) rates after implementation of the reforms.²⁰

Studies indicate that while PSA policies (and related pretrial improvements such as expanding diversion programming, reducing the use of financial conditions of release, and developing or enhancing pretrial services) are associated with increases in the number of people released pretrial, court appearance and arrest rates remain largely unchanged relative to rates observed prior to the implementation of the PSA and other pretrial improvements.

Key Finding #3: Quality Implementation of the PSA and Related Pretrial Strategies Is Key to Sustainable Change

Increasingly, research suggests that actuarial tools such as the PSA are not self-executing, and that achieving desired outcomes will require robust implementation and critical examination of related policies. Indeed, a meta-analysis of over 73 assessment tool implementation studies across criminal justice and clinical settings found that the impact on professional decisions of adopting actuarial assessments was modest overall and highly sensitive to the quality of implementation. Ultimately, the authors concluded that, "...despite some promising findings, professionals do not consistently adhere to tools or apply them to guide their risk management efforts, and match to the risk principle is moderate."²¹

A 2018 study that used time trend analysis to examine PSA implementation in Kentucky underscores this finding.²² While the author observed a 13% increase in nonfinancial release rates immediately following a statewide shift in policy toward the use of assessment-based pretrial decisions and away from financial conditions of release, ultimately the rates declined over time, nearly reverting to pre-reform levels at the end of the study period.

One explanation for this is that while the types of people being released and their conditions of release shifted upon initial implementation of an assessment tool, the changes faded over time because judges exercised their discretion to override the assessment results. As the author asserts, risk assessments require a supportive policy context to ensure successful implementation: "Behind risk assessments are people and design choices. What level of judicial discretion to allow? What criminal justice interventions to recommend for each risk group? How to communicate statistical risk to the decision-makers? What accountability measures are in place? Getting these choices right may take time and revision; determining what constitutes right takes discussion amongst stakeholders."²³

Successful implementation of the PSA may depend on culture change and comprehensive, sustainable implementation policies.

Best Practice Recommendations

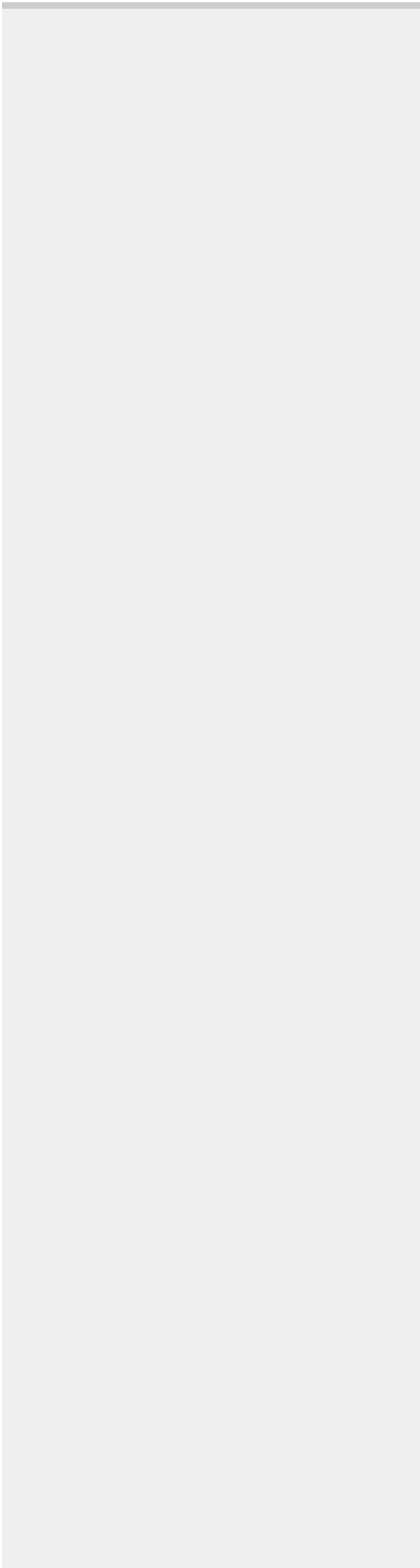
Best practice recommendations for the use of pretrial assessments in general are described in the Pretrial Assessment Tools summary²⁴ and emphasize the use of locally validated assessments, transparency in developing and validating assessments, and the quality of implementation.

With regard to implementing and using the PSA specifically, jurisdictions must adhere to Arnold Ventures' PSA Core Requirements:²⁵

1. Use the PSA only for the group of people for whom it was developed. This includes adults charged with an offense who have been arrested and booked into jail and are waiting for their case to be disposed.
2. Score the PSA using only the nine PSA factors. Answer the PSA's nine factors using only the data and the definitions detailed in the Guide to the PSA Factors and Outcomes²⁶ and the PSA Scoring Manual.²⁷
3. Do not alter the PSA's nine factors, their point values, and the scaled scoring rules.²⁸
4. The PSA's nine factors must be used to calculate three scores: Failure to Appear (FTA), New Criminal Arrest (NCA), and New Violent Criminal Arrest (NVCA). FTA and NCA must be reported as a scaled score, and NVCA must be reported as the presence or absence of a flag. Report these three scores separately. Do not combine them into one score.
5. To avoid human error, assessors must use an automated system²⁹ to calculate PSA scores. Calculating the scores by hand is strictly prohibited.
6. Be transparent. Include a person's results for each of the PSA's nine factors and their three scores on each pretrial assessment report.³⁰
7. Implement an ongoing quality assurance process³¹ to ensure that the PSA is scored accurately and reported correctly.

Jurisdictions that use the PSA should also follow the recommended practices to implement the PSA with fidelity and use it responsibly:

1. Validate the PSA before using it in your jurisdiction. If you cannot validate it prior to its use, validate it after one year of use. Revalidate the PSA every few years.

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2. Develop a Pretrial Decision Framework³² that is consistent with your jurisdiction's pretrial laws and local practices. Specify the pretrial decision points when the PSA will be used. Use the framework to inform pretrial decisions at those points.
 3. Create and use a Release Conditions Matrix.³³ The matrix should include pretrial release conditions informed by pretrial law and research. Release conditions should be the least restrictive ones that help the person appear in court and remain law-abiding pretrial. The matrix should never include detention or financial conditions of release.
 4. In the pretrial assessment report, show the results of the PSA factors and express the person's PSA scores as a likelihood of success, not failure.
 5. Use a case management system to track court case processing decisions, such as release or detention, release conditions, and people's pretrial success, such as court appearances and no new arrests.
 6. Measure pretrial processes and outcomes³⁴ informed by the PSA as frequently as practical (monthly, quarterly, or semi-annually). Include measurements of disparities based on race, ethnicity, gender, socioeconomic factors, and other demographics of interest. Adjust pretrial policies and practices to eliminate disparities.
 7. At least every 3 to 6 months, have a multidisciplinary team monitor, evaluate, and improve pretrial practices informed by the PSA. The team should consist of pretrial justice stakeholders and the broader community, including the people most impacted by the pretrial justice system.

Endnotes

1. See <https://advancingpretrial.org/psa/research/>.
2. Actuarial assessments draw on large data sets about people who have previously come into contact with the justice system to identify factors that are associated with the likelihood of a specified outcome (e.g., failure to appear, new arrest, etc.). These factors are then entered into actuarial (or probabilistic) models that estimate outcomes for similar people in future cases.
3. Arnold Ventures. (2019). *Public Safety Assessment FAQs* ("PSA 101"). https://craftmediabucket.s3.amazonaws.com/uploads/Public-Safety-Assessment-101_190319_140124.pdf.
4. For more information on how the PSA was developed, see: Arnold Ventures. (n.d.). *Criminal justice data used to develop the Public Safety Assessment*. <https://craftmediabucket.s3.amazonaws.com/uploads/PDFs/Criminal-Justice-Data-Used-to-Develop-the-Public-Safety-Assessment-Final.pdf>.
5. Advancing Pretrial Policy & Research. (2020). *Achieving pretrial justice with the Public Safety Assessment: Stakeholder education* [Lesson plan]. <https://cdn.filestackcontent.com/security=policy:eyJleHBpcnkiOjQwNzg3NjQwMDAsImNhbgwiOlsicGljaylsInJlYWQiLCJ3cmI0ZSIsIndyaXRIVXJsliwic3RvcmluLCJjb252ZXJ0liwicmVtb3ZlliwicnVuV29ya2Zsb3ciXX0=,signature:9df63ee50143fbd862145c8fb4ed2fcc17d068183103740b1212c4c9bc858f63/2g9eDbcoQJSsb70mghgE>.
6. To learn more about the PSA and how it works, see <https://advancingpretrial.org/psa/about/>. Note that overall rates of pretrial arrest for a new violent offense are low across the sample on which the tool was developed: for people without a violence flag, the NVCA rate was 1–3%, and for those with a violence flag, the NVCA rate was 4–11%.
7. For a detailed review of the prior research on actuarial assessment versus unaided human assessment, see the research brief on pretrial assessment tools at <https://cdn.filestackcontent.com/security=policy:eyJleHBpcnkiOjQwNzg3NjQwMDAsImNhbgwiOlsicGljaylsInJlYWQiLCJ3cmI0ZSIsIndyaXRIVXJsliwic3RvcmluLCJjb252ZXJ0liwicmVtb3ZlliwicnVuV29ya2Zsb3ciXX0=,signature:9df63ee50143fbd862145c8fb4ed2fcc17d068183103740b1212c4c>.
8. Grant, G. A. (2019). *2018 Report to the Governor and the Legislature*. New Jersey Judiciary. <https://www.njcourts.gov/courts/assets/criminal/2018cjrannual.pdf?c=95Y>.
9. Ferguson, E., De La Cerda, H., & Guerin, P. (2019). *Bernalillo County Public Safety Assessment review—July 2017 to March 2019*. University of New Mexico. <https://www.bernco.gov/uploads/files/PublicSafety/Bernalillo%20County%20Public%20Safety%20Assessment%20Review%20-%20July%202017%20to%20March%202019%C2%A0.pdf>.
10. Redcross, C., & Henderson, B. (with Miratrix, L., & Valentine, E.). (2019). *Evaluation of pretrial justice system reforms that use the Public Safety Assessment: Effects in Mecklenburg County, North Carolina* [Brief 2]. MDRC Center for Criminal Justice Research. https://www.mdrc.org/sites/default/files/PSA_Mecklenburg_Brief2.pdf.
11. Greiner, J. Stubenberg, M. & Halen, R. (2020). *Validation of the PSA in Harris County, TX*. <http://a2jlab.org/wp-content/uploads/2020/11/Validation-of-the-PSA-in-Harris-County-TX.pdf>.
12. Findings with respect to predictive accuracy across race and gender groups and the potential for racial disparities in assessment outcomes and related pretrial practices will be more fully explored in a forthcoming APPR research brief.
13. DeMichele, M., Baumgartner, P., Wenger, M., Barrick, K., Comfort, M., & Misra, S. (2018). *The Public Safety Assessment: A re-validation and assessment of predictive utility and differential prediction by race and gender in Kentucky*. <https://craftmediabucket.s3.amazonaws.com/uploads/PDFs/3-Predictive-Utility-Study.pdf>.
14. Lowenkamp, C., DeMichele, M., & Warren, L. K. (2020). Replication and Extension of the Lucas County PSA Project. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3727443.
15. Greiner et al., 2020.
16. Brooker, C. M. B. (2017). *Yakima County, Washington pretrial justice system improvements: Pre- and post-implementation analysis*. Pretrial Justice Institute. <https://justicesystempartners.org/wp-content/uploads/2015/04/2017-Yakima-Pretrial-Pre-Post-Implementation-Study-FINAL-111517.pdf>.
17. Grant, 2019, p. 5.
18. Challenges included lack of a master statute table making charge comparisons difficult, fewer fingerprint records to find a unique verifiable identifier, and changes in court rules, case-related policies, and practices.

19. Redcross, C., & Henderson, B. (with Miratrix, L., & Valentine, E.). (2019). *Evaluation of pretrial justice system reforms that use the Public Safety Assessment: Effects in Mecklenburg County, North Carolina* [Brief 1]. MDRC Center for Criminal Justice Research. https://www.mdrc.org/sites/default/files/PSA_Mecklenburg_Brief1.pdf. Percentages are estimates based on Figure 13 (p. 29).
20. Lowenkamp et al., 2020.
21. Viljoen, J. L., Cochrane, D. M., & Jonnson, M. R. (2018). Do risk assessment tools help manage and reduce risk of violence and reoffending? A systematic review. *Law and Human Behavior*, 42(3), 181–214. <https://doi.org/10.1037/lhb0000280>. See, in particular, page 181.
22. Stevenson, M. (2018). Assessing risk assessment in action. *Minnesota Law Review*, 58, 303–384. <https://scholarship.law.umn.edu/cgi/viewcontent.cgi?article=1057&context=mlr>.
23. Stevenson, 2018, p. 306.
24. See <https://cdn.filestackcontent.com/security=policy:eyJleHBpcnkiOjQwNzg3NjQwMDAsImNhbgwiOlsicGljayIsInJlYWQiLCJ3cmI0ZSIsIndyaXRlVXJsliwic3RvcnUiLCJjb252ZXJ0liwicmVtb3ZlliwicnVuV29ya2Zsb3ciXX0=,signature:9df63ee50143fbd862145c8fb4ed2fcc17d068183103740b1212c4c9bc858f63/iSanlf86Sz2j4il9sCwY>.
25. See <https://advancingpretrial.org/psa/psarequirements>.
26. See <https://advancingpretrial.org/guide/psa-factors-outcomes/>.
27. See <https://cdn.filestackcontent.com/security=policy:eyJleHBpcnkiOjQwNzg3NjQwMDAsImNhbgwiOlsicGljayIsInJlYWQiLCJ3cmI0ZSIsIndyaXRlVXJsliwic3RvcnUiLCJjb252ZXJ0liwicmVtb3ZlliwicnVuV29ya2Zsb3ciXX0=,signature:9df63ee50143fbd862145c8fb4ed2fcc17d068183103740b1212c4c9bc858f63/K6Sz4MEwQUOtMDKHBHzQ>.
28. A jurisdiction must not alter the PSA's nine factors, their point values, and the scaled scoring rules *unless* adjustments are made based on rigorous research. See Arnold Venture's PSA Core Requirements at <https://advancingpretrial.org/psa/psarequirements/>.
29. For more information on using an automated system, see <https://advancingpretrial.org/guide/guide-to-psa-automation/>.
30. For more information on the pretrial assessment report, see <https://advancingpretrial.org/guide/guide-to-the-psa-report/>.
31. For more information on quality assurance processes, see <https://advancingpretrial.org/guide/guide-to-quality-assurance/>.
32. For more information on the Pretrial Decision Framework, see <https://advancingpretrial.org/guide/guide-to-the-pretrial-decision-framework/>.
33. For more information on the Release Conditions Matrix, see <https://advancingpretrial.org/guide/guide-to-the-release-condition-matrix/>.
34. For more information on performance measurement, see <https://advancingpretrial.org/guide/guide-to-outcomes-and-oversight/>.