

THE EMPIRICAL CASE FOR PRETRIAL RISK ASSESSMENT INSTRUMENTS

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Pretrial risk assessment instruments are used in many jurisdictions to inform decisions regarding pretrial release and conditions. Many are concerned that the use of pretrial risk assessment instruments may be contributing to worsened, not improved, pretrial outcomes, including increased rates of pretrial detention and exacerbated racial disparities in pretrial decisions. These concerns have led prominent organizations to reverse their position on the role of pretrial risk assessment instruments in pretrial system change. Reforms that centered on their use have been rolled back or have failed to be implemented in the first place. However, the scientific evidence behind these concerns is lacking. Instead, the findings of rigorous research show that the results of pretrial risk assessment instruments demonstrate good accuracy in predicting new criminal activity, including violent crime, during the pretrial period, even when there are differences between groups defined by race and ethnicity. Furthermore, the scientific evidence suggests they can be an effective strategy to help achieve pretrial system change, including reducing pretrial detention for people of color and white people, alike, when their results are actually used to inform decision-making. In this article, we review the scientific evidence in relation to three primary critiques of pretrial risk assessment instruments, namely, that their results have poor accuracy and are racially biased and that their use increases pretrial detention rates. We also provide recommendations for addressing these critiques to ensure that their use supports, rather than detracts from, the goals of pretrial reform and articulates an agenda for future research.

Keywords: risk assessment; race; predictive validity; decision-making; evaluation; jail

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The use of pretrial risk assessment instruments was once widely regarded as a promising strategy for advancing pretrial reform efforts. Recently, however, pretrial risk assessment instruments have come under scrutiny over concerns that they are racially biased and contribute to racial disparities in the criminal justice system. Indeed, racial bias in pretrial risk assessment instruments has become a common topic in American public and political discourse (König & Wenzelburger, 2021), and the role of such instruments in pretrial reform is being questioned by many. For example, the Pretrial Justice Institute, a former proponent of the use of pretrial risk assessment instruments to support reform efforts, recently reversed its position, issuing a statement that all pretrial risk assessment instruments should be abolished (Pretrial Justice Institute, 2020). They explain the reasoning for the reversal as follows:

Underscoring this new [Pretrial Justice Institute] position, though, was the understanding, based on research, that these tools are not able to do what they claim to do—accurately predict the behavior of people released pretrial and guide the setting of conditions to mitigate certain behaviors. RAIs [risk assessment instruments] simply add a veneer of scientific objectivity and mathematical precision to what are really very weak guesses about the future, based on information gathered from within a structurally racist and unequal system of law, policy and practice. (Pretrial Justice Institute, 2020, p. 1)

The Pretrial Justice Institute and other advocates against pretrial risk assessment instruments contend that the instruments produce results that have poor accuracy; that they are inherently biased against Black, Indigenous, Latinx, low-income, and other marginalized people; and that where they are implemented, they will serve to exacerbate racial disparities in the nation's jails (Angwin et al., 2016; Barabas et al., 2019; Clayton, 2020; Pretrial Justice Institute, 2020). These are serious concerns that warrant thorough review and investigation using rigorous scientific methods. If these concerns are supported by empirical evidence and cannot be remedied, they should bring an end to the use of risk assessment instruments to inform pretrial decisions. However, we believe these concerns are not supported by the empirical literature on pretrial risk assessment instruments. Instead, as we review in this article, the findings of rigorous scientific investigations suggest that pretrial risk assessment instruments are one strategy that can support—not undermine—efforts to improve the pretrial system.

THE SCIENTIFIC EVIDENCE

Critics assert that pretrial risk assessment instruments produce assessments of risk that have poor accuracy and that their use perpetuates racial disparities and precludes reductions in pretrial detention. Here is what the empirical evidence demonstrates about pretrial risk assessment instruments with respect to these three concerns.

POOR ACCURACY

Decades of research across diverse domains show that statistical predictions are more accurate than unaided human judgments of future behavior generally, and of violent and criminal behavior, specifically (Ægisdóttir et al., 2006; Grove et al., 2000; Grove & Meehl, 1996; Hilton et al., 2006; Meehl, 1954). The results of recent studies show this conclusion

continues to hold in the contemporary criminal justice context (Jung et al., 2020; Lin et al., 2020). Some critiques focus on the prediction of violent crime during the pretrial period, stating that the base rate of this behavior is so low as to preclude reliable and valid prediction (Barabas et al., 2019; Pretrial Justice Institute, 2020). Yet, research demonstrates that pretrial risk assessments can and do predict new violent crime during the pretrial period at levels that are both much better than chance and in keeping with risk assessment instruments used in other contexts (Brittain et al., 2021; DeMichele et al., 2020; Desmarais et al., 2016, 2021; Lowder, Lawson, et al., 2020; Lowenkamp et al., 2020; Marlowe et al., 2020).

With more than 10 million people jailed each year after their arrest, the sheer volume of cases seen in pretrial hearings limits the thoroughness with which individual cases can be considered. In each case, the judge must quickly review the defendant's prior record, current charges, and other relevant factors to make an initial determination—usually in the span of a few minutes—on suitability for and conditions of pretrial release (Jones, 2013; Stevenson & Mayson, 2017). Evaluating a person's threat to public safety and likelihood of return to court are fundamental components of these pretrial decisions and will occur with or without the use of a pretrial risk assessment instrument ("Bail Reform Act of 1984," 1984). Pretrial risk assessment instruments provide a more efficient, transparent, and fair basis for making these evaluations than a judge scanning a myriad of documents in a matter of minutes. The benchmark is not perfection but rather improving upon unaided human judgment. The latter is widely acknowledged to introduce racial biases, especially under time constraints, whether in pretrial decisions (Arnold et al., 2018; Freiburger et al., 2010) or other high-risk decision contexts, such as medicine (Dehon et al., 2017; Stepanikova, 2012).

RACIAL BIAS

Concerns regarding racial bias often center around an investigation conducted by ProPublica examining assessments conducted using the COMPAS (Brennan et al., 2009) in Broward County, Florida (Angwin et al., 2016; Larson et al., 2016). Several studies have since shown that ProPublica's analysis was flawed and its conclusions misleading in various ways (Chouldechova, 2017; Dieterich et al., 2016; Feller et al., 2016; Flores et al., 2016; Rudin et al., 2020). Furthermore, the psychometric properties of assessment results are affected by the data used to complete the assessments—for reasons including, but not limited to, criminal justice practices in a given jurisdiction (Mayson, 2019; Vincent & Viljoen, 2020). In fact, studies of other pretrial risk assessment instruments in other jurisdictions do not consistently replicate the ProPublica results; some even find the opposite pattern of results, that is, greater predictive validity for people of color than for white people (see Desmarais et al., 2021, for a review).

We know that within the criminal justice system, and across many other areas of society, racial bias exists. These biases exist in the deployment of police, arrest policies, charging decisions, pretrial decisions, and sentencing practices. So, any assessment that relies on data that reflect official records of system contact will have some level of bias, whether conducted using pretrial risk assessment instruments or completed by judges in the absence of pretrial risk assessment instruments (Mayson, 2019; Vincent & Viljoen, 2020). At least with the use of pretrial risk assessment instruments—and in contrast to unaided judicial decisions—the weighting of these factors in estimating the likelihood of pretrial outcomes is clear and transparent (Goel et al., 2021). Furthermore, it is largely because of studies of

pretrial risk assessment instruments that we know that pretrial success rates are actually quite high. Validation studies show that the majority of people who are released pretrial will not be rearrested or fail to appear for their next court hearing (e.g., Cohen & Lowenkamp, 2019; DeMichele et al., 2020; Lowder, Lawson, et al., 2020). Even smaller numbers—typically less than 1% to 3%—will be rearrested for a violent crime while on pretrial release (e.g., Cohen & Lowenkamp, 2019; DeMichele et al., 2020). By citing the findings of the pretrial risk assessment studies, defense counsel may more effectively argue for the release of their clients.

PRETRIAL DETENTION

Several recently published studies show decreases—not increases—in pretrial detention rates among decisions that were informed by pretrial risk assessment results compared with those that were not (Lowder, Diaz, et al., 2020; Viljoen et al., 2019). These findings are in contrast with advocate and public concerns that pretrial risk assessment instruments lead to harsher system responses (Pretrial Justice Institute, 2020; Scurich & Krauss, 2020). Even in studies that fail to find significant increases in release rates following the implementation of pretrial risk assessment instruments, further examination of assessment results and pretrial decisions suggests that adherence to assessment results would have led to higher (not lower) rates of pretrial release (Marlowe et al., 2020; Stevenson & Doleac, 2018).

As for the concern that pretrial risk assessment instruments exacerbate racial disparities in pretrial decisions, the empirical evidence simply is not there. To establish that the use of pretrial risk assessment instruments exacerbates racial disparities, we must show that decisions informed by their results differ between groups—for example, that decisions informed by the results of pretrial risk assessment instruments result in higher pretrial detention rates for Black than white people and that these higher pretrial detention rates for Black people are not present following decisions that do not consider assessment results. In other words, we must compare decisions informed by the results of pretrial risk assessment instruments with those made without the use of pretrial risk assessment instruments (Skeem & Lowenkamp, 2020; Vincent & Viljoen, 2020). A fundamental limitation of postimplementation and other nonexperimental research designs that lack comparison samples is that we simply cannot determine the causal effect of a practice or policy on outcomes (Kite & Whitley, 2018). As the authors of the ProPublica investigation themselves note, “higher Northpointe [COMPAS] scores are slightly correlated with longer pretrial incarceration in Broward County. But there are many reasons that could be true other than judges being swayed by the scores.” To that end, recent studies using more rigorous research designs show that even when pretrial risk assessment results demonstrate different levels of predictive validity for one group or another, their use can lead to higher pretrial release rates for all accused persons (Lowder, Grommon, & Ray, 2020; Lowenkamp et al., 2020).

PRETRIAL RISK ASSESSMENT INSTRUMENTS IN PRACTICE

For the reasons given above, the implications of extant research for policy and practice are not to abolish the use of pretrial risk assessment instruments altogether, but rather to ensure that their assessment results are as accurate and unbiased as possible, that the pretrial risk assessment processes are transparent and just, and that both the assessment results and processes support the goals of reform. Below are some strategies to help achieve these aims.

EVALUATION

Pretrial risk assessment instruments should be tested using appropriate research methods and statistics to ensure they are estimating the likelihood of failure to appear in court and new crime during the pretrial period with acceptable accuracy and that items are scored in a uniform and consistent manner regardless of who is conducting the assessment (Douglas et al., 2011; Helmus & Babchishin, 2017). Recognizing the bias that may be embedded in official records (Eckhouse et al., 2019; Mayson, 2019), validation studies should strive to use additional measures of criminal behavior as outcomes of interest, such as convictions, filed charges, or self-report, especially for more serious crimes. Critically, the predictive validity of pretrial risk assessment results should not be tested against new criminal behavior that occurs after cases have been disposed; doing so precludes meaningful conclusions regarding accuracy in predicting behavior relevant to the issue at hand (Douglas et al., 2011). Predictive validity and interrater reliability should be monitored and retested at reasonable intervals to ensure that pretrial risk assessment results continue to meet performance standards and, if not, that steps are taken to improve reliability and validity including, for example, booster training for staff completing and interpreting assessments.

Beyond reliability and validity, however, tests of differential prediction across groups defined by race, ethnicity, gender, socioeconomic status, and other characteristics should be conducted regularly. These evaluations should consider not only differences between groups (i.e., main effects) but also how these characteristics combine to affect outcomes using an intersectionality framework. Although differential prediction does not necessarily result in disparate impact, the goal is nonetheless to minimize bias and promote fairness in the assessment process. This may be accomplished by ensuring that the outcome predicted by a pretrial risk assessment instrument is not skewed relative to the actual behavior of concern. When there is evidence of differential prediction, strategies should be implemented to make the process more fair—for example, by limiting reliance on factors that serve as proxies for race or other protected classes (Helmus & Thornton, 2015; Mayson, 2019) and focusing on the currently charged offense(s) and prior behaviors within time limits (e.g., the past 2 years). Stakeholders, including people with lived experiences of the pretrial system, should be consulted in the process of interpreting the findings of these evaluations (Robinson & Koepke, 2019).

DUE PROCESS AND TRANSPARENCY

The scoring and results of any pretrial risk assessment must be fully disclosed to the person whose risk is being assessed, and he or she must have the opportunity to contest its accuracy (Garrett & Stevenson, 2020; Slobogin, 2020). In reality, lack of transparency is a critique of pretrial risk assessment instruments that can be mitigated easily by sharing individual assessment results and disseminating information on the process through which an instrument was developed, including who was involved and how items were selected and weighted to produce risk estimates (Leadership Conference Education Fund, n.d.; Partnership on AI, n.d.). Accordingly, most widely used pretrial risk assessment instruments publish their item descriptors, rating guidelines, and algorithms online or in their user manuals; however, more efforts are needed to ensure that this information is readily available to the accused, their counsel, and other stakeholders. Finally, the findings of evaluations described above should be reported clearly, in a manner that is in keeping with standards in

the field (Singh et al., 2015) and that promotes understanding and scrutiny by experts and stakeholders alike. It is imperative that the findings of these evaluations are used to support transparency and improve pretrial practices related to risk assessment more broadly.

PRETRIAL DECISIONS AND PRESUMPTION OF RELEASE

Pretrial risk assessment instruments were not designed to be—nor should they be—the sole determinate of any pretrial release decision. They also should not replace judicial decision-making. Instead, assessment results should inform pretrial decisions by aiding in the identification of the large group of lower risk defendants and the small group of higher risk defendants (Desmarais & Lowder, 2019). In some jurisdictions, the adoption of a pretrial risk assessment instrument has not led to the desired reductions in pretrial population in jails, but often this is because many judges are unwilling to release people pretrial, regardless of their level of assessed risk (Stevenson & Doleac, 2018). When judges actually use the results of pretrial risk assessment instruments to inform their pretrial decisions, the findings of rigorous research show that rates of pretrial release increase (Lowder, Diaz, et al., 2020). Moreover, given that most people detained pretrial are suitable candidates for release based on the criteria of flight risk and danger to the community, there should be a presumption of release to the community during the pretrial period (Hamilton, 2020).

KEY POINTS

In their statement against pretrial risk assessment instruments, the Pretrial Justice Institute outlined their vision for reform. Specifically, they state,

The focus should be on implementing a very narrow detention net and providing robust detention hearings that honor the charge of the Supreme Court forty years ago. And we must prioritize helping people succeed—from assistance with court appointments to connecting people to support services—while addressing the needs of all people victimized by crime. (Pretrial Justice Institute, 2020, p. 11)

We agree. However, we believe that the scientific evidence suggests that pretrial risk assessment instruments can be part of the solution, rather than part of the problem. We summarize our key points below:

- *Pretrial risk assessment will occur with or without the use of pretrial risk assessment instruments.* Information on prior system involvement and estimates regarding the likelihood an individual will appear in court or commit a new crime during the pretrial period will continue to be introduced and considered in pretrial decisions, as a matter of law and policy, at least for the foreseeable future. Currently, most pretrial decisions are based upon state law and bail schedules that require consideration of some combination of current charge(s), criminal history, prior failures to appear in court, and ties to the community (Widgery, 2020). Eliminating the use of pretrial risk assessment instruments will not eliminate consideration of these factors while these laws and bail schedules remain in effect.
- *Using pretrial risk assessment instruments is better than the status quo.* Abolishing pretrial risk assessment instruments and allowing judges to return to the practice of making unaided, subjective judgments of what factors contribute to risk would be a major step backward. Although the use of pretrial risk assessment instruments will not eliminate pretrial detention

and racial bias, they are a step in the right direction. A review of the full body of empirical evidence on pretrial risk assessment instruments supports this viewpoint. This is not to suggest that all pretrial risk assessment instruments are equally well-suited to supporting the goals of pretrial reform nor that they should not be scrutinized and improved. Continued efforts to evaluate and improve the predictive accuracy, equity, and impact of pretrial risk assessments, especially for marginalized groups, are needed. Indeed, one advantage of pretrial risk assessment instruments over the status quo is that they are much easier to fix than biases in unaided human decision-making (Berk & Kuchibhotla, 2020; Goel et al., 2021).

- *Using pretrial risk assessment instruments can help achieve the goals of pretrial reform as part of a multistrategy approach.* The scientific evidence reviewed here shows that the implementation of pretrial risk assessment instruments can support the effectiveness of broader efforts to transform the pretrial system by providing an evidence base to inform a presumption of release, elimination of money bail, improved representation at pretrial proceedings, provision of pretrial services, diversion to community-based programs, and, ultimately, reductions in rates of pretrial detention. For these reasons, pretrial risk assessment instruments can help jurisdictions realize less carceral and more just pretrial systems if their results are used to inform decision-making in meaningful ways. The response, then, should not be to abolish the use of pretrial risk assessment instruments altogether but rather to ensure that they are implemented properly and that their results are used as intended. That said, pretrial risk assessment instruments are definitely not the only strategy that should be implemented to support pretrial reform nor should their implementation preclude other efforts to improve the pretrial system. No one solution will be sufficient to fix our deeply flawed pretrial system. It is not realistic to expect pretrial risk assessment instruments—or any single strategy—to do so.
- *More research is needed to determine the effectiveness of various strategies in improving the pretrial system.* Despite the critiques and controversy, pretrial risk assessment instruments are one of the few strategies with demonstrated effectiveness in supporting efforts to improve the pretrial system. Other promising strategies, including enforcing due process protections for release hearings and employing policies that make the court appearance easier, such as providing bus passes to people with court summons or offering onsite childcare at courts (Robinson & Koepke, 2019; Woods & Allen-Kyle, 2019), have been the subject of limited, empirical investigation (Hatton & Smith, 2020). The degree to which these strategies effectively reduce pretrial detention rates, increase racial equity in pretrial decisions, and help people succeed during the pretrial period must be established in rigorous research that moves beyond evaluations of outcomes using postimplementation and pre–post designs.

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