

# Recommendations for Addressing Racial Bias in Risk and Needs Assessment in the Juvenile Justice System

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## Overview

Research indicates that justice interventions and heightened levels of supervision can *increase* the likelihood of future offending for low-risk populations and *reduce* the likelihood of offending for high-risk youth.<sup>1,2,3,4,5</sup> Therefore, identifying who is low-risk—and then limiting the types of justice interventions used for this population—is critical for keeping the public safe while minimizing the level of harm associated with state involvement in a youth’s life. Risk and needs assessments are implemented to assist with the proper identification of a youth’s risk level and to guide decisions on how to best intervene with a youth to prevent recidivism.

A large body of research documents the overrepresentation and differential treatment of people of color in the criminal and juvenile justice systems.<sup>6,7,8,9</sup> Racial and ethnic disparities are often attributed to a variety of systemic inequalities, one of which is the unchecked discretion of justice officials.<sup>10,11</sup> Risk and needs assessments can help reduce bias in juvenile justice sanctions by providing justice officials with a consistent set of criteria to judge a youth’s risk for offending. On average, these assessments are better predictors of a youth’s likelihood of future offending than a justice official’s professional judgment.<sup>12,13</sup> Nevertheless, research finds that risk and needs assessments are more likely to misclassify youth of color as high-risk than their white counterparts.<sup>14,15,16</sup>

Because risk and needs assessments may disproportionately impact youth of color, there is a need to improve their accuracy and underlying properties.<sup>17</sup> This brief aims to enhance the fairness of the juvenile justice system by supporting practitioners’ and policymakers’ ability to make informed decisions regarding the use of risk and needs assessments. It draws on recent research to answer frequently asked questions about 1) what risk and needs assessments measure and how they are developed and used, 2) how racial bias and inequity may affect the accuracy and fairness of these assessments, and 3) what steps can be taken to address their shortcomings, with a focus on supporting racial and ethnic equity in their use.

## Basics of Risk and Needs Assessments

Risk and needs assessment is a process for predicting the probability that a youth will offend in the future. Traditionally, risk and needs were assessed by decision makers, such as judges and probation officers, based on their professional training and experience.<sup>18</sup> Today, a major element of risk and needs assessment is the use of formal risk instruments that score youth on various domains associated with offending (e.g., prior justice-system involvement, school, and peer relationships), and then use these scores to quantify the level

of risk for offending (often as low, medium, and high risk) and identify needs (malleable factors correlated with offending, such as family relationships, education, employment, or substance use) that can reduce the likelihood that youth will offend.<sup>19,20,21,22</sup> Subsequently, this information is used to inform decisions about how to best intervene with youth who break the law. Although risk and needs assessment and risk and needs instruments are distinct terms—the instrument being the actual tool—the terms are often used interchangeably.

This section provides an overview of the basics of risk and needs assessments. It is followed by sections that explore racial bias in such assessments and offer recommendations for mitigating this bias.

## What is risk?

In criminal and juvenile justice, "risk" usually refers to the probability of future offending. Generally, a formal risk and needs assessment estimates the probability that a young person will offend. These probabilities are based on associations identified through statistical analyses of large datasets which contain information on youth who have previously offended.

## How do risk and needs assessments measure risk?

Risk and needs assessments often distinguish between two types of risk factors<sup>23</sup>:

- **Static risk factors.**<sup>24,25</sup> Static factors are characteristics of a youth that cannot be changed. They often have to do with a youth's history (e.g., having a violent criminal history, a history of substance misuse, or a history of suicidal behavior). Static factors also include demographic characteristics such as sex. Most contemporary static risk factors do not include race and ethnicity, but (as will be discussed below) they may include factors that are correlated with race and ethnicity.
- **Needs.**<sup>26,27,28,29,30</sup> Needs, also referred to as dynamic risk factors, are characteristics of a youth that can be changed (e.g., being affiliated with a gang, having anger problems, or being truant from school). Service providers generally seek to influence dynamic risk factors to reduce the likelihood that a youth will offend in the future. For example, active substance misuse is a characteristic that is strongly associated with recidivism and can be addressed through intervention.<sup>31,32</sup>

Risk and needs assessments can also examine **protective factors**. Protective factors are characteristics that mitigate the likelihood of offending and foster prosocial outcomes, such as a youth's strong commitment to school or prosocial involvement (e.g., volunteering).<sup>33</sup>

Assessment items that measure risk factors, protective factors, and needs are usually grouped into various domains, such as prior contact with the justice system, family, peers, education and employment, substance use, mental health, and attitudes.<sup>34</sup> Youth are scored on each of these domains, usually through a count measurement (e.g., 0 to 100), and the scores for each domain are then weighted and tallied. Based on predetermined cut-off points or numeric boundaries, these counts are assigned to a risk level (e.g., a score of 0 to 20 = low risk, 21 to 50 = medium risk, 51 to 100 = high risk).

## What decisions do risk and needs assessments inform?

Risk and needs assessments are used to inform several key decisions in the juvenile justice system. Many of these decisions are made by courts; however, in some jurisdictions, these decisions are also made by corrections or community supervision agencies.

- **Pretrial detention of youth.**<sup>35,36</sup> Justice officials, often judges, decide whether youth may remain in the community, or are instead detained while their cases are pending and have not yet been disposed.<sup>a</sup> Pretrial risk includes the risk of non-appearance in court (often called "flight risk"), in addition to the risk of offending.
- **Diversion of youth to another youth-serving system.**<sup>37,38</sup> Justice officials, often the court or probation agencies, decide whether a youth can be diverted out of the formal juvenile justice process and into an informal alternative, such as Virginia's Monitored Diversion Program<sup>39</sup> or Texas's Special Needs Diversionary Program.<sup>40</sup>
- **Commitment of youth to a secure placement.**<sup>41</sup> At a disposition hearing (i.e., the juvenile justice equivalent of an adult's sentencing hearing), courts decide whether a youth who is adjudicated delinquent (i.e., the juvenile justice equivalent of an adult's guilty conviction) should serve time in a secure residential facility. Alternatively, courts may place a youth on community supervision, such as probation or parole.<sup>42,43,44,45</sup> At the hearing, defense attorneys, prosecutors, family members, probation officers, diversionary program providers, and various stakeholders may be present to make recommendations, which may be informed by results from a risk and needs assessment.
- **Services, treatment, or intervention that youth may be required to complete.**<sup>46,47,48</sup> Youth who are placed under supervision—whether in locked and secure institutions, less secure residential facilities, or in the community—may also be required to participate in specific services, treatments, or interventions. Risk and needs assessments may inform decisions about those required services. Service providers may conduct subsequent assessments to tailor the treatment.
- **Re-entry planning.**<sup>49,50</sup> When a youth's supervision is ending, risk and needs assessments can be used to create discharge or transition plans to support reintegration back into the community.

There is no "one size fits all" risk assessment that can be used to inform every decision throughout the life of a case. For example, typically, different tools are needed for decisions related to pre-trial detention and disposition.<sup>51</sup>

## Who conducts risk and needs assessments?

A variety of officials or service providers may conduct a risk and needs assessment, depending on the purpose(s) for which the assessment will be used.

- **Justice officials.**<sup>52,53</sup> Police, probation officers, facility staff, or court-ordered evaluators can conduct risk and needs assessments/screenings to inform decisions at various points in a youth's involvement with the justice system. Often, the assessment is used upon intake (prior to a youth seeing a judge) to inform decisions regarding pretrial detention. Justice officials may administer additional assessments to make subsequent decisions to place youth into diversionary programs or to inform the disposition of youth who are adjudicated as delinquent or status offenders.
- **Service providers.**<sup>54,55</sup> Case workers or licensed clinicians may conduct a risk and needs assessment to determine whether a youth is eligible for a diversionary program. They may conduct additional assessments after a youth's acceptance into a program to tailor service delivery or treatment plans.

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<sup>a</sup> Decisions in juvenile justice cases are made at multiple junctures. The pretrial phase occurs both before and during a trial (though, notably, the word trial is used even though there is often no formal trial). In the adjudication phase, the court determines whether a youth committed a delinquent act or status offense (akin to a guilty or innocent verdict in the adult system). In the disposition phase, the court determines the sanction or intervention imposed upon a youth who has been adjudicated as delinquent or a status offender (similar to sentencing in the adult system).

## How commonly are risk and needs assessments used?

In 2017, all 50 states had at least one risk and needs assessment available to inform decisions about how to intervene with youth involved with the justice system. Moreover, 82 percent of states (42 states) had a state statute or probation agency policy supporting or requiring the implementation of a risk and needs assessment instrument for youth who are justice system-involved.<sup>56</sup>

Although the use of risk and needs assessments is becoming commonplace in juvenile justice systems, considerable variability still exists in the types of risk and needs assessments used and the level of control state governments have in their implementation. As of 2017, most states (74 percent; 38 states) had adopted a single risk instrument, a 15 percent increase since 2013. The remaining states either allow localities to govern the use of risk instruments (7 states) or have multiple risk instruments governed by state, local, or regional authorities (6 states). In addition, results of a state scan indicate that, among the 34 states that had a statewide assessment in place during this time, there are over 20 different risk and needs assessments being implemented. Approximately half of these states (18 states) were using a proprietary assessment and the other half (16 states) opted to develop their own tool.<sup>57</sup>

## How is the accuracy of a risk and needs assessment determined?

Reliability and validity are central components of risk and needs assessments—regardless of whether the assessment is a proprietary instrument, like the Youth Assessment and Screening Instrument (YASI), or a state-developed tool like the Maryland Comprehensive Assessment and Service Planning Risk Screen and Needs Assessment. In risk and needs assessment, validity refers to the degree to which an assessment can identify the likelihood of future offending for a select population, and reliability refers to how consistently the assessment identifies this likelihood of future offending. To be considered a reliable and valid instrument, a risk and needs assessment should, at a minimum, have the following:

- **Inter-rater reliability.**<sup>58</sup> Users of a risk and needs assessment tool should come to similar conclusions about a youth's risk and needs when independently assessing the same youth.
- **Construct validity.**<sup>59</sup> Items that make up a risk instrument should be measures of risk and needs.
- **Predictive validity.** As previously mentioned, risk and needs assessments predict whether a youth is likely to offend in the future—that is, they provide an estimated probability of future offending—and there is always some degree of error associated with a prediction. At the individual level, a prediction error occurs when a risk and needs assessment misclassifies a youth—for example, the assessment makes a prediction of high risk but the youth does not reoffend. In risk and needs assessment, two main types of accuracy are assessed: *overall accuracy* and the *direction of errors*.<sup>b</sup> The *overall accuracy* of the assessment is generally understood as the degree to which it achieves the following: 1) Many or most of the youth designated as high risk actually reoffend, 2) fewer of those designated as medium risk reoffend, and 3) even fewer of those designated as low risk reoffend.<sup>c</sup> In classification schemes with more than two levels of risk (e.g., low, medium, medium-high, and high), which is typically the case, an important question is the *direction of errors*.<sup>d</sup> For example, do youth designated as medium risk offend at higher or lower rates than predicted?

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<sup>b</sup> Prediction accuracy is a complex technical topic, with additional types of prediction errors that sometimes require trade-offs. As a result, comparing accuracy across groups to assess fairness also involves additional complexities and trade-offs that are beyond the scope of this article. (See Berk, R., Heidari, H., Jabbari, S., Kearns, M., & Roth, A. (2018). Fairness in criminal justice risk assessments: The state of the art. *Sociological Methods & Research*, 0049124118782533).

<sup>c</sup> At the individual level, if a youth assessed as high-risk doesn't reoffend, that is a prediction "error"; similarly, if a youth assessed as low-risk does reoffend, that is also an error. (For intermediate levels of risk, discussions on prediction errors for individuals is less straightforward if the predicted outcome is a simple dichotomy.)

<sup>d</sup> In binary schemes, such as low/high risk, for each prediction there is only one possible direction of error for each prediction.

- **Generalizability and local validation.**<sup>60</sup> Local validation studies should be conducted by jurisdictions and/or their research partners prior to using a tool, regardless of whether that tool has been successfully used in other jurisdictions (and validated on other populations). This holds particularly true for youth populations that demonstrably vary in characteristics across jurisdictions. For example, a tool that works well in an urban jurisdiction with a population of youth who are predominately Black may not work well in the same way in a rural jurisdiction with a population of Native youth. Local validation includes verifying that youth given different risk classifications (e.g., low, medium, and high) actually offend at different rates and that the instrument works equally well for different subpopulations of youth (e.g., youth of different racial and ethnic backgrounds, ages, or genders). Validating an instrument on a jurisdiction’s own target population can help inform any changes to the tool that are necessary to accurately identify a youth’s risk.<sup>61,62</sup>

Unfortunately, most assessments have not been tailored to the jurisdictions in which they are used. It is even more rare for follow-up studies to be conducted to assess whether updates need to be made to the tool.<sup>63,64</sup> Failure to make systematic updates to tools is problematic because research finds that the predictive accuracy of these assessments varies across time and place.<sup>65,66</sup>

## Racial Bias in Risk and Needs Assessments

Risk and needs assessments must accurately identify, across different populations, a youth’s level of risk, as well as the needs or dynamic risk factors that should be addressed through intervention to reduce the odds of offending. Although risk and needs assessments have the potential to reduce racial and ethnic disparities by providing a consistent metric for justice officials to judge risk for offending, some research finds that these tools disproportionately misclassify youth of color as high risk. Despite similarities in the overall accuracy across racial and ethnic groups, there can still be systematic directional differences in errors. For instance, some studies find that for youth of color, errors are more likely to be an over-prediction of risk.<sup>67,68</sup> Concerns about racial disparities in the use of risk and needs assessments is a matter found in adult corrections as well.<sup>69,70,71</sup>

The following section further explores questions about the accuracy of risk and needs assessments that have been raised by stakeholders seeking to uphold racial and ethnic equity and fairness in juvenile justice processes. We focus especially on how racial biases can be embedded into these instruments.

- **Measuring “risk.”** As mentioned previously, risk typically refers to the probability that a youth will offend in the future. Typically, the analyses used to create and refine risk and needs assessments do not measure offending directly—that is, they do not measure youth behavior. Rather, offending is measured by the justice system’s response to youth, based on official data on re-arrests, technical violations, and reconvictions that serve as proxies for offending. Research has shown that youth of color, particularly Black youth, are more likely than white youth to be arrested, to have their case referred to court (as opposed to being diverted to another system), and to be placed in secure detention<sup>72</sup>—even after accounting for actual rates of offending.<sup>73</sup> Using justice system responses to offending rather than actual offending as the outcome criterion in a risk and needs assessment introduces bias into the instruments and can cause youth of color to be unduly classified as higher risk than they should be.
- **Items and domains.** In addition to the use of criminal justice responses, like arrests, as a proxy for offending, the domains and items included in risk and needs assessments also have the potential to introduce racial bias into the instrument. In particular, items related to juvenile justice history (e.g., previous involvement with the justice system, age at first arrest, prior incarceration) that are included in most risk and needs instruments add bias due to the fact that communities of color are historically overrepresented in the juvenile justice system.<sup>74</sup> For example, age of first arrest is an important predictor of offending; however, if police are more likely to arrest youth of color, then using age of first arrest will build in racial bias. Similarly, items related to whether youth live with family members (or

have friends) with a prior conviction or who have been incarcerated can also be problematic due to racial and ethnic disparities in the justice system.

As described above, individual items on a risk and needs assessment are often categorized into domains, such as prior justice system involvement, family, and education and employment. Research has shown that domains that are confounded with race due to historical and systemic inequality (e.g., prior involvement with the justice system) can make the tool less accurate for people of color. For example, among adults, research finds that a large portion of misclassifications made by risk and needs assessments (e.g., classifying an individual as high risk for offending when they are actually low risk for offending) are due to the criminal history domain in these instruments.<sup>75</sup>

Even domains that seem equitable at face value, such as education, can be subject to racial bias when they contain items that are confounded with systemic and historical inequity.<sup>76</sup> For example, in the education domain, many risk and needs assessments contain items about whether a youth has a history of being suspended or expelled from school. These items can be problematic because it is well documented that youth of color, particularly Black youth, are suspended and expelled from school at disproportionately higher rates than their white peers.<sup>77</sup>

- **Scoring and weighting.** As previously described, total scores for each domain of a risk and needs assessment tool are weighted and then tallied to create a continuous scale (e.g., ranging from 0 to 100). Then, based upon predetermined cut-off points, these counts are assigned to a risk level (e.g., a score of 0 to 20 = low risk, 21 to 50 = medium risk, 51 to 100 = high risk). Given that many of the items and domains included in risk and needs assessments are confounded with race and ethnicity, failure to account for this fact by adjusting weights and/or shifting cut-off points can make the tool more likely to misclassify youth of color. For example, research has shown that when the prior justice system history domain is weighted to have less of an impact on the overall risk score for youth of color, there are reductions in disproportionality—that is, the odds of youth of color ending up in the higher risk categories decrease.<sup>78</sup>

## Can risk and needs assessment reduce bias in juvenile justice systems?

Before the development of risk and needs assessment tools, juvenile justice decisions were based on the judgment of a particular decision maker, such as a judge or probation officer. As a consequence, the decisions made by juvenile justice officials varied based on their level of experience and their potential biases. Research has demonstrated that implicit bias, defined as stereotypes or attitudes that unconsciously affect decisions and actions, influences juvenile justice decisions.<sup>79</sup> For example, research has shown that police and probation officers viewed hypothetical youth who committed an offense as more mature, responsible for their behavior, and deserving of punishment when the officers had been primed to believe that the youth were Black.<sup>80</sup> Similar results were found in a study that examined implicit bias in judges.<sup>81</sup>

As discussed previously, today's risk and needs assessments are based on tools that are statistically derived and based on predictions tested on large samples of youth. Research shows that these more modern assessments are, on average, more predictive of offending than the decisions of trained professionals.<sup>82,83</sup> Additionally, research on the implementation of risk and needs assessments shows that justice officials are supportive of these assessments and believe that using risk and needs assessment strengthens fairness in juvenile justice decisions. However, officials differ in their levels of confidence in and reliance on risk and needs assessments, depending on whether they have received training on the risk instrument and whether they perceive the assessment as valid.<sup>84</sup> These differences highlight the importance of training justice officials to properly administer risk and needs assessments, since doing so can increase reliance on the assessments, enhance support for their use, and help ensure that the assessments are used correctly.

## Recommendations

### What steps can help remove racial bias in risk and needs assessments?

Although risk and needs assessments have shown promise in creating more equitable and fair justice decisions—compared to those based on a decision maker’s discretion—racial and ethnic equity continues to be a concern for the juvenile justice system. Additional steps should be taken by policymakers to minimize the likelihood that the use of risk and needs assessments will perpetuate harmful inequities in the system. This requires analyses to examine how risk and needs assessments are working, both within and across racial groups in the jurisdictions where the assessment is being used. These analyses must examine an assessment’s items, domains, and overall risk level scoring. When problems are identified in assessment tools, several technical approaches may be helpful for limiting racial bias.

- **Rethinking domains and items.** The racial biases associated with specific domains, such as juvenile justice or criminal history, can sometimes be addressed by altering how the domains are weighted in determining the overall score, and which domains are used in an assessment. Specifically, less weight may be given to a domain that is known to vary greatly by race, or a biased domain may be replaced altogether.<sup>85</sup> Similarly, items that have the potential for bias can be dropped from the assessment.

To help to remove racial bias in an assessment instrument, states and jurisdictions should consider having an existing body, such as their State Advisory Group<sup>86</sup>—or a specially developed advisory group—review and flag items or domains that may introduce bias into the instrument. Any group charged with this task should include diverse voices, including representatives who have been involved, or had a family member involved, in the justice system. States and jurisdictions can then partner with researchers to test the extent to which these changes improve the instrument’s ability to accurately predict future offending. These steps, however, can be difficult to implement if the risk instrument is proprietary.

- **Tailoring cut-off points.** Part of the examination and local validation of a risk assessment instrument’s performance involves the cut-points used to rank a continuous measure (e.g., 1–100) as high, medium, or low risk. Research has shown that tailoring the cut-points to youth in a specific jurisdiction can increase the predictive power of the risk and needs assessment and reduce racial bias.<sup>87</sup> For example, if a domain with known bias, such as prior justice system history, is included in the calculation of overall risk scores, this can result in youth of color having higher total risk scores, on average. Tailoring the cut-points to address bias would require changing the cut-points so that scores that fall within a given range (e.g., 51 and 100) will categorize one group of youth as “high risk,” but in another group of youth, scores that fall within a different range (e.g., 75 and 100) will be categorized as “high risk.”
- **Measuring “risk.”** Given that communities of color are disproportionately represented in each juncture of the justice system<sup>88</sup>—even after accounting for actual rates of offending<sup>89</sup>—using justice system responses to offending rather than actual offending as the outcome criterion in a risk and needs assessment introduces bias into the instruments. This bias in measurement can be mitigated by using risk and needs instruments that have been validated with less biased measures of offending, such as self-report.
- **Continuous quality improvement.** Testing the accuracy of a tool should not be a one-time event. The population of youth who come into contact with the juvenile justice system, and the frequency and types of offenses that are most commonly committed—as well as state policies and regulations, community resources, and juvenile justice research and data—are all continuously evolving. Any risk and needs assessment should also evolve over time, particularly as new data make it possible for the statistical models that undergird these assessments to “learn” from prior mistakes.

## Conclusions

Although research has shown that risk and needs assessments have the potential to reduce racial and ethnic disparities in the justice system, hidden biases in these tools that lead to inaccurate classifications of youth of color as high risk for offending can further perpetuate inequality, particularly because these tools are being used increasingly to inform the justice system's response to youth who have broken the law.<sup>90</sup> For example, incorrectly classifying a youth who is low risk as high risk can lead to a stronger sanction for that youth, such as incarceration. Not only will incarceration have a detrimental impact on a youth's development, it can also increase risk to the community, since incarceration has been found to increase recidivism of low-risk, nonviolent offenders.<sup>91,92,93</sup>

As the reliance on risk and needs assessments in the juvenile justice system continues to grow, it is critical that practitioners and policymakers carefully consider the accuracy of the risk and needs assessment being used in their jurisdiction for different racial and ethnic groups of youth, and consider the impact that this tool has on youth, families, and the greater community. To work toward mitigating racial and ethnic disparities in the juvenile justice system by improving risk and needs assessments, policymakers and practitioners should have systems in place for the following:

- Validating risk and needs assessments on the targeted jurisdiction population (regardless of whether the tool has been validated elsewhere)
- Reviewing risk and needs assessments for reliability among users and within the targeted jurisdiction
- Evaluating the performance of risk and needs assessments for potential racial bias and disparate impact on youth of color, including a review of domains and items, cut-off scores, and measurements for risk (offending)
- Engaging in continuous quality improvement—both by continuously refining the risk and needs instrument itself and ensuring that the decision makers using the tool (e.g., probation officers and judges) support its use and have the training and resources needed to implement the tool as intended.

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