

Authors: Jillian Stein, Leah Pranschke, and Ellie Pasternack

Using Risk/Needs Assessments in Reentry Services

Agencies across the criminal legal system in all 50 states and the District of Columbia use risk/needs assessments tools, or tools that use information to predict the likelihood of future outcomes, to make data-driven decisions about pre-trial release, failure to appear in court, sentencing, supervision, and treatment (Freeman et al. 2021; Electronic Privacy Information Center 2020). These tools use algorithms to predict an outcome based on existing data (Freeman et al. 2021). They most frequently predict the likelihood of recidivism, or a relapse into criminal behavior (National Institute of Justice 2022) but also predict failure to appear in court, successful completion of supervision, and other metrics (Freeman et al. 2021). Risk/needs assessment

tools are often used by courts, correctional facilities, or parole and probation offices for pre-trial release, sentencing, intervention, and supervision decisions (Dipshan et al. 2020). They can also be used to identify areas of risk and needs to guide services provided by organizations that serve participants involved in the criminal legal system (Andrews and Bonta 2010), including community-based organizations (CBOs) that provide reentry services. See summary of findings on Page 2.

This brief draws on literature on risk/needs assessments in the criminal legal system and grantee survey data collected from 89 CBOs that were awarded Department of Labor Reentry Project (RP) grants from 2017 to 2019. The brief has four objectives: (1) describe how risk/needs assessments work, (2) detail which risk/needs assessment tools that CBOs participating in the RP grants used, (3) discuss how reentry service agencies use risk/needs assessment tools in offering employment-focused reentry services, and (4) describe three potential issues with using risk/needs assessments and potential strategies for reentry employment agencies to mitigate them.

How do risk/needs assessments work?

Risk/needs assessment tools that predict risk of recidivism use historical data on the relationship between risk factors and recidivism to predict the likelihood that a specific person will relapse into criminal behavior (National Institute of Justice 2022). Risk factors can be **static** or **dynamic**. Static factors do not change (for example, prior criminal history) or only change in one direction (for example, age). Dynamic factors (such as social connections), also called criminogenic risks, do change. Dynamic factors are often targets for intervention (Andrews and Bonta 2010).

Study background



This issue brief is part of a study funded by the U.S. Department of Labor (DOL), Chief Evaluation Office, that explores the implementation and impact of the [Reentry Project \(RP\) grants](#). DOL's Employment and Training Administration awarded a total of 116 grants in 2017, 2018, and 2019. These grants aimed to improve employment and public safety outcomes and reduce recidivism for people previously involved in the criminal legal system.

RP grantee survey

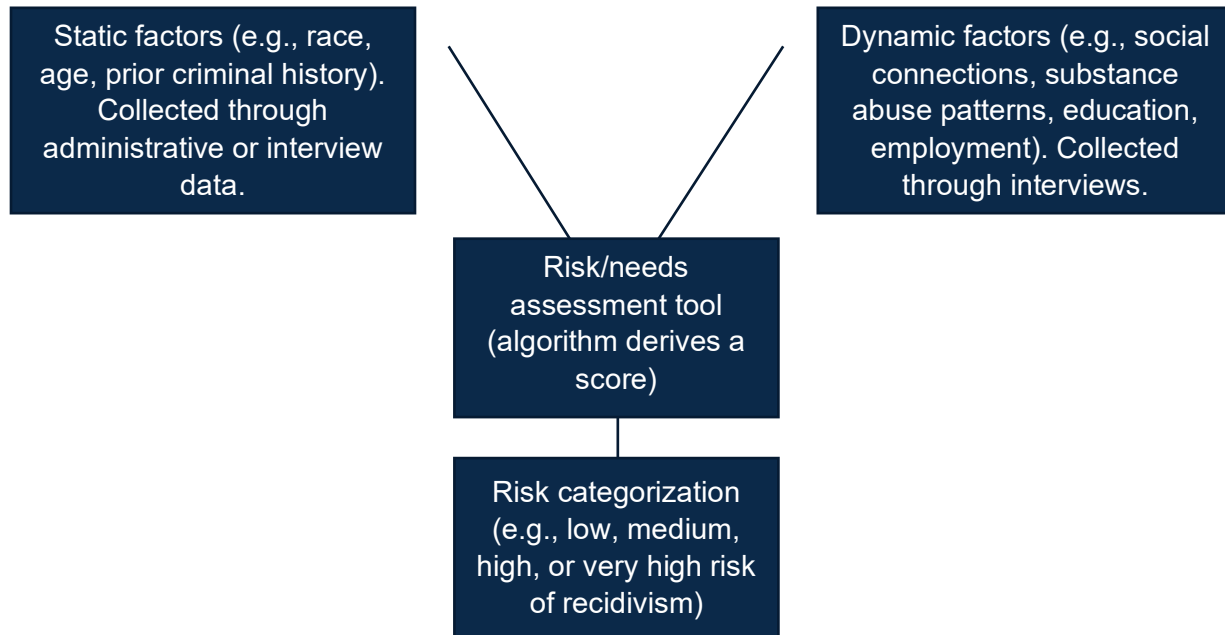
A 20-minute web-based survey was a part of the implementation study. Mathematica administered surveys near the end of each grant cycle for RP grantees awarded grants in 2017, 2018, and 2019. Overall, the survey had a 98 percent response rate.▲

Summary of findings

- Risk/needs assessments use existing information to predict the likelihood of future outcomes (e.g., reoffending; Freeman et al. 2021; Taxman and Smith 2021).
- Eighty-four percent of the CBOs that participated in the RP grants conducted participant risk/needs assessments, according to the grantee survey. The most common tools were those based on the Risk-Need-Responsivity framework (53 percent of all CBO grantees), the Resource Allocation and Service Matching tool (42 percent), the Integrated Risk and Employment Strategy tool (38 percent), and the Dynamic Risk and Needs Assessment (33 percent). The majority of CBOs used more than one risk assessment. Among those that used an assessment, 32 percent used one assessment, 29 percent used two assessments, and 39 percent used 3 or more assessments.
- Agencies use information generated from risk/needs assessments about a person's highest criminogenic risks to determine their needs and target services accordingly (Duran et al. 2013; Taxman and Smith 2021). Agencies also use risk categorization to determine eligibility for services (Andrews and Bonta 2010). Among the RP CBO grantees surveyed, 98 of those that used a risk/needs assessment reported using the tool in their participant screening process and 85 percent in the development of Individual Development Plans.
- Current literature suggests three major concerns associated with the use of risk/needs assessments:
 - The potential to perpetuate preexisting racial and ethnic bias by assigning incorrectly high-risk categorizations to Black and Hispanic individuals (Freeman et al. 2021; Larson et al. 2016)
 - Variability in predictive validity due to implementation issues or lack of validation in the racial, ethnic, or gender groups agencies serve (Wormith and Bonta 2018; Electronic Privacy Information Center 2020; Desmarais et al. 2022)
 - Lack of transparency on how algorithms decide risk categorizations (Desmarais et al. 2018; Electronic Privacy Information Center 2020)
- Reentry service providers agencies can mitigate these issues in three key ways:
 - Select assessments that are transparent about how risk scores are decided and have been independently reviewed that is, reviewed by a party other than the developer or funder (Electronic Privacy Information Center 2020)
 - Examine how risk categorization relates to eligibility and service provision across race, ethnicity, and gender at their agency (Desmarais et al. 2022)
 - Conduct high-quality training and fidelity reviews (Wormith and Bonta 2018) and a local validation, which is an assessment to determine whether risk categorization predicts recidivism the same way across race, ethnicity, and gender in an agency's population served (Desmarais et al. 2022)▲

Recidivism is usually measured either as the risk of rearrest, reconviction, or reincarceration within a specified time period, often one to three years (National Institute of Justice 2022). Risk of recidivism is typically categorized as low, medium, high, or very high (Andrews and Bonta 2010). Some risk/needs assessment tools also highlight which risk factors more heavily contribute to the overall risk of recidivism (Taxman and Smith 2021). This means that tools may provide information not only about who needs intervention, but where to intervene to reduce the likelihood of future criminal behavior (Duran et al. 2013; Taxman and Smith 2021). Exhibit 1 presents a diagram of the inputs and outputs of risk/needs assessments.

Exhibit 1. Flow of inputs and outputs in risk/needs assessments



Source: Andrews and Bonta (2010); Taxman and Smith (2021).

Research suggests that actuarial assessments remove the bias that is often associated with human discretion, leading to more accurate predictions (Gottfredson and Moriarty 2006; Taxman and Smith 2021). For example, an intake coordinator might be affected by a person’s demeanor during an assessment and consciously or unconsciously factor it into their prediction, when demeanor during the assessment has no relationship to recidivism risk (Gottfredson and Moriarty 2006). However, other research highlights the potential for these tools to perpetuate racial and ethnic bias (Freeman et al. 2021) and questions the accuracy of outcomes on the basis of tools’ low predictive validity and/or opaque algorithms (Desmarais et al. 2018; Electronic Privacy Center 2020; Desmarais et al. 2022). These potential issues are discussed in more detail below.

What risk/needs assessments do CBOs use?

Many different risk/needs assessments are available. Most CBOs (84 percent) that participated in the RP grants conducted risk/needs assessments with participants, according to a grantee survey. In fact, the majority used more than one risk assessment. Specifically, 32 percent of the 89 CBOs used one assessment, 29 percent used two assessments, and 39 percent used 3 or more assessments.

Top two risk/needs assessments that RP CBO grantees used

1. **Risk-Need-Responsivity (RNR) framework**
The RNR framework’s three key principles say providers should plan responsive services that target the needs of people at highest risk for recidivism. It is the basis for some of the most widely used assessments, including the [Level of Service Inventory-Revised](#) and the [Level of Service/Case Management Inventory](#).
2. **Resource Allocation and Service Matching tool**
The tool has three steps: assess risk of reincarceration, assess job readiness, then deliver targeted services based on risk and readiness scores. It uses the RNR framework to calculate risk in its first step.

Source: RP Grantee Survey; Andrews and Bonta (2010); Duran et al. (2013).

Of the CBOs that used risk/needs assessments, 53 percent used assessments explicitly based on the Risk-Need-Responsivity (RNR) framework. The RNR framework contends that there are three principles at the core of effective programming for justice-involved people:

1. Offer more intense services to **higher-risk** people.
2. Target criminogenic **needs** for intervention.
3. Provide interventions in ways **responsive** to a person’s ability and learning style (Andrews et al. 1990).

Other common tools, some of which also incorporate elements of the RNR framework (Duran et al. 2013), included the Resource Allocation and Service Matching tool (used by 42 percent of CBOs that reported using an assessment), the Integrated Risk and Employment Strategy tool (used by 38 percent of CBOs), and the Dynamic Risk and Needs Assessment (used by 33 percent of CBOs). Some of these tools also incorporate elements of the RNR framework (Duran et al. 2013). Grantees also reported using tools such as COMPAS, one of the leading tools state justice agencies and court systems use to predict recidivism (Dipshan et al. 2020).

How do reentry service agencies use risk/needs assessments?

Agencies that provide employment-focused reentry services use risk/needs assessments for two purposes: screening and service planning (see boxes below). Among the RP CBO grantees that reported using a risk/needs assessment in the survey, 98 percent reported using risk/needs assessments as part of their participant screening process and 85 percent to support development of Individual Development Plans as part of service planning.

Screening	Service Planning
Staff can use risk classification to screen participants for service eligibility. According to the RNR framework’s “Need” principle, programming should be tailored to people at the highest risk of recidivism. In many cases, participating in services alongside people who are high risk may negatively affect people who are at low risk (Andrews et al. 1990; Smith et al. 2009). Using risk/needs assessments to screen clients may reduce this potential issue.	Effective interventions target criminogenic needs, meaning factors in a person’s life that are directly related to recidivism (Smith et al. 2009; Taxman et al. 2004). To design interventions, staff can use risk/needs assessment tools that provide feedback on how much each criminogenic need contributes to a client’s overall risk. If a person’s employment instability and substance use patterns are contributing to higher risk categorization, staff can target case management and services accordingly (Duran et al. 2013).

What potential issues are associated with risk/needs assessments, and what strategies can possibly mitigate those issues?

Using risk/needs assessments for service planning and program screening can help staff develop targeted treatment plans and screen out participants who may not benefit from services (Duran et al. 2013; Taxman and Smith 2021). However, potential issues associated with risk/needs assessments not only compromise their usefulness but may even harm the participants whom organizations, such as nonprofits or government agencies, seek to help (Freeman et al. 2021). The following section details three potential issues identified in the literature and strategies that the literature suggests to mitigate those issues. Because a CBO on its own may not possess the resources needed to implement these strategies, an external organization interested in equity-focused work in the criminal legal system might work across CBOs to mitigate potential issues with risk/needs assessments.

Issue 1: Potential to perpetuate preexisting racial and ethnic bias in the criminal legal system.

Criminal history, one of the strongest predictors of recidivism, is often calculated using prior arrests, convictions, or incarceration (or a combination; Freeman et al. 2021). But racial profiling, the over-policing of Black communities (Freeman et al. 2021), and higher rates of sentencing for Black and Hispanic individuals compared to their White counterparts (Schlesinger 2005) create deep inequities in the legal system. These inequities mean more Black and Hispanic individuals are likely to have a criminal history, and consequently, a higher risk categorization (Freeman et al. 2021). This was the case in an independent investigation of the COMPAS tool, which compared predicted recidivism with actual recidivism and found that Black individuals were indeed likely to be incorrectly categorized as high risk (Larson et al. 2016).

Potential mitigation strategies: To reduce bias in screening and service planning decisions made based on recidivism risk, mindful agencies obtain evidence from developers or independent evaluators of the risk/needs assessment to verify that the likelihood of recidivism is indeed higher for people the assessment categorizes as high risk, across all racial and ethnic groups (Desmarais et al. 2022). Agencies can also work with external researchers or evaluators to conduct a local validation, determining whether risk categorization predicts recidivism the same way across race, ethnicity, and gender in their population served (Desmarais et al. 2022; Larson et al. 2016). Finally, proactive agencies periodically examine how screening and service provision relates to the race, ethnicity, and gender of their participants to ensure that eligibility and service decisions do not systematically differ across groups (Desmarais et al. 2022).

Issue 2: Variability in predictive validity. Predictive validity, or the accuracy of assessment results to predict the outcomes they intend to predict (Desmarais et al. 2022), can vary widely depending on both how an assessment is implemented and whether the assessment has been validated with the population with whom it is being used. Predictive validity is not a function of the assessment, but the assessment's results in a given population (Desmarais et al. 2022). For this reason, predictive validity for the same assessment can vary. For example, predictive validity for the Level of Service Inventory-Revised ranges for different age groups, from the low teens (poor predictive validity) to the high forties (better predictive validity; Wormith and Bonta 2018). Poor predictive validity can also be explained in part by implementation issues. Although the assessment ultimately makes a prediction based on an algorithm, the assessment still relies on interviews conducted by case managers to gather information on risk factors. Thus, incorrect implementation of the assessment (e.g., misunderstanding of questions, or excessive use of a case manager overriding a score) could compromise its predictive validity (Wormith and Bonta 2018). However, assessments can also have poor predictive validity when they have not been validated in a population akin to the one an agency serves. For example, if an agency uses a tool with a predominantly Native American population but the tool has not been validated with Native American participants, predictive validity might be compromised (Electronic Privacy Information Center 2020).

Potential mitigation strategies: Thoughtful agencies ensure that all staff administering risk/needs assessments are trained by a qualified professional using a meaningful curriculum and including supervised practice of staff (Wormith and Bonta 2018). Agencies may also plan fidelity reviews to monitor the implementation of risk/needs assessments, including how screening and service planning decisions are made after a risk categorization (Wormith and Bonta 2018). To ensure they are using an appropriate assessment for the population they serve, agencies can complete a local validation to determine an assessment's performance in the jurisdiction in which they operate. If agencies lack the capacity to conduct this validation themselves, they can partner with external researchers or evaluators (Desmarais et al. 2022) or, at a minimum, select an assessment that has been independently validated with

a population similar to the population they serve (Electronic Privacy Information Center 2020; Desmarais et al. 2022).

Issue 3: “Black box” algorithms. Many risk/needs assessment algorithms are proprietary, complicating an agency’s ability to understand what criteria are used in the assessment’s decision making and how those criteria are weighted to determine a person’s risk (Desmarais et al. 2018; Electronic Privacy Center 2020). This compromises agencies’ ability to use assessments to determine which services may be most helpful to participants (Andrews and Bonta 2010). It is also difficult for independent reviewers, or those not affiliated with the tool’s funders or developers, to evaluate assessments (Desmarais et al. 2018; Electronic Privacy Information Center 2020).

Potential mitigation strategies: To reap the benefits of risk/needs assessments for service planning, agencies can select assessments that are transparent about how scores are decided. For example, a tool that clearly scores criminogenic need may be preferable over a tool that delivers a risk categorization with little or no explanation (Electronic Privacy Information Center 2020; Andrews and Bonta 2010). As stated earlier, agencies should seek to select tools that have been independently reviewed (Electronic Privacy Information Center 2020) and ideally conduct their own validation studies (Desmarais et al. 2022).

Conclusion

The review of literature shows that the criminal legal system and reentry service providers use a range of risk/needs assessments to make data-driven decisions about pre-trial release, sentencing, intervention, supervision, and service offerings. Although these tools limit the reliance on human judgment in predicting outcomes based on a combination of risk factors, they may operate using proprietary algorithms that compromise the usefulness of results (Desmarais et al. 2018; Electronic Privacy Information Center 2020), possess poor predictive validity when used in a new population (Electronic Privacy Information Center), and even perpetuate racial and ethnic bias in the criminal legal system (Freeman et al. 2021). When deciding whether and which risk/needs assessment to use, employment-focused reentry providers may consider strategies such as selecting tools with clear algorithms, conducting proper training and local validations independently or in partnership with an evaluator, and examine how screening and service provision relates to race, ethnicity, and gender. These strategies might mitigate potential issues and improve the usefulness of assessments as they work to support participants successfully reenter into their communities.

References

- Andrews, D. A., and J. Bonta. “Rehabilitating Criminal Justice Policy and Practice.” *Psychology, Public Policy, and Law*, vol. 16, no. 1, 2010, pp. 39–55. <https://doi.org/10.1037/a0018362>.
- Andrews, D. A., J. Bonta, and R. D. Hoge. “Classification for Effective Rehabilitation: Rediscovering Psychology.” *Criminal Justice and Behavior*, vol. 17, no. 1, 1990, pp. 19–52. <https://doi.org/10.1177/0093854890017001004>.
- Desmarais, S. L., D. A. D’Amora, and L. P. Tavárez. “Advancing Fairness and Transparency: National Guidelines for Post-Conviction Risk and Needs Assessment.” NCJ No. 305117. Council of State Governments Justice Center, 2022. <https://www.ojp.gov/library/publications/advancing-fairness-and-transparency-national-guidelines-post-conviction-risk-0>.
- Desmarais, S. L., K. L. Johnson, and J. P. Singh. “Performance of Recidivism Risk Assessment Instruments in U.S. Correctional Settings.” In *Handbook of Recidivism Risk/Needs Assessment Tools*, edited by J. P. Singh, D. G. Kroner, J. S. Wormith, S. L. Desmarais, and Z. Hamilton (pp. 3–29). John Wiley & Sons, 2018. <https://onlinelibrary.wiley.com/doi/book/10.1002/9781119184256>
- Dipshan, R., V. Hudgins, F. Ready, and Z. Warren. “The Most Widely Used Risk Assessment Tool in Each U.S. State.” *Legaltech News*, July 13, 2020. <https://www.law.com/legaltechnews/2020/07/13/the-most-widely-used-risk-assessment-tool-in-each-u-s-state/>.
- Duran, L., M. Plotkin, P. Potter, and H. Rosen. “Integrated Reentry and Employment Strategies: Reducing Recidivism and Promoting Job Readiness.” NCJ No. 243628. Council of State Governments Justice Center, 2013. <https://www.ojp.gov/ncjrs/virtual-library/abstracts/integrated-reentry-and-employment-strategies-reducing-recidivism>.
- Electronic Privacy Information Center. “Liberty at Risk: Pre-Trial Risk Assessment Tools in the U.S.” 2020. <https://epic.org/documents/liberty-at-risk/>.
- Freeman, K. R., C. Hu, and J. Jannetta. “Racial Equity and Criminal Justice Risk Assessment.” Urban Institute, 2021. <https://www.urban.org/research/publication/racial-equity-and-criminal-justice-risk-assessment>.
- Gottfredson, S. D., and L. J. Moriarty. “Clinical Versus Actuarial Judgments in Criminal Justice Decisions: Should One Replace the Other?” *Federal Probation*, vol. 70, no. 2, 2006, pp. 15–18.
- Larson, J., S. Mattu, L. Kirchner, and J. Angwin. “How We Analyzed the COMPAS Recidivism Algorithm.” *ProPublica*, May 23, 2016. <https://www.propublica.org/article/how-we-analyzed-the-compas-recidivism-algorithm?token=Tu5C70R2pCBv8Yj33AkMh2E-mHz3d6iu>.
- National Institute of Justice. “Recidivism.” 2022. <https://nij.ojp.gov/topics/corrections/recidivism>.
- Schlesinger, T. “Racial and Ethnic Disparity in Pretrial Criminal Processing.” *Justice Quarterly*, vol. 22, no. 2, 2005, pp. 170-192. <https://doi.org/10.1080/07418820500088929>.
- Smith, P., P. Gendreau, and K. Swartz. “Validating the Principles of Effective Intervention: A Systematic Review of the Contributions of Meta-Analysis in the Field of Corrections.” *Victims & Offenders*, vol. 4, no. 2, 2009, pp. 148–169. <https://doi.org/10.1080/15564880802612581>.

Taxman, F. S., E. S. Shepardson, J. M. Byrne, A. Gelb, and M. Gornik. "Tools of the Trade: A Guide to Incorporating Science Into Practice." NIC No. 020095. National Institute of Corrections, 2004.
<https://nicic.gov/tools-trade-guide-incorporating-science-practice>.

Taxman, F. S., and L. Smith. "Risk-Need-Responsivity (RNR) Classification Models: Still Evolving." *Aggression and Violent Behavior*, vol. 59, 2021, Article 101459.
<https://doi.org/10.1016/j.avb.2020.101459>.

Wormith, J. S., and J. Bonta. "The Level of Service (LS) Instruments." In *Handbook of Recidivism Risk/Needs Assessment Tools*, edited by J. P. Singh, D. G. Kroner, J. S. Wormith, S. L. Desmarais, and Z. Hamilton (pp. 117–145). John Wiley & Sons, 2018.

Suggested citation for this brief: Stein, Jillian, Leah Pranschke, and Ellie Pasternack. "Using Risk/Needs Assessments in Reentry Services." Princeton, NJ: Mathematica, January 2022.

Additional briefs and reports developed for the Reentry Project evaluation are available here:

<https://www.dol.gov/agencies/oasp/evaluation/completedstudies/Reentry-Projects-Grant-Evaluation>.

This brief was prepared for the U.S. Department of Labor, Chief Evaluation Office, under contract number #DOLQ129633249/1605DC-17-U-00106. The contents of this publication do not represent the views or policies of the Department.