The First Step Act (FSA) was enacted in December 2018 to address long-standing problems in the federal sentencing and corrections system. The law aims to enhance public safety through rehabilitative programming, incentivize people incarcerated in federal prisons to participate in programs matched to their risks and needs, and enable those assessed at the lowest risk levels to earn credits toward faster release to community supervision by completing recidivism-reduction programming. In addition to improvements to the prison system, the law includes several sentencing reforms to reduce the application and duration of lengthy prison sentences resulting from mandatory minimums for drug offenses and weapons enhancements.

The Urban Institute has been monitoring implementation of the FSA since it passed.¹ This brief focuses on the implementation of the act’s risk and needs assessment system.² We summarize that system’s key requirements and major takeaways so far; detail the progress and challenges encountered in developing and implementing the risk assessment tool, needs assessment process, and earned time credits (ETCs); and offer suggestions for improvement. To date, the US Department of Justice (DOJ) and the Federal Bureau of Prisons (BOP) seem to be doing what they must do (e.g., meeting statutory deadlines), rather than taking a more creative or vigorous approach and doing what they could do to maximize the impact of the law and safely release as many people as possible from secure custody. The recent change in presidential administrations provides a chance to reassess this approach. Our recommendations are designed to help the DOJ and the BOP fully realize the potential of the risk and needs assessment system to reduce recidivism and time spent in federal prisons.
Tracking the implementation of new laws can be challenging. Although the DOJ has released a series of required reports, often richly detailed, the information can be difficult to interpret and weave together into a clear picture. Moreover, implementation efforts continue to evolve. The overview we provide in this brief is a composite drawn from the various official documents and does not reflect the voices or experiences of people who are housed in BOP facilities or their families, which is an important limitation. The realities across BOP facilities may not comport with the policies and practices described by the official reports. Moreover, the pandemic has further complicated the FSA’s implementation over the past year. Not only have COVID-related health and safety concerns led to changes in day-to-day prison activities, including a reduction in available programming, but Congress enacted emergency release authorities under the Coronavirus Aid, Relief, and Economic Security (CARES) Act that enabled almost 7,000 people in BOP facilities to transfer early to home confinement (Carvajal 2021).

Disentangling the impact of the pandemic from FSA implementation efforts can be tricky.

Key Requirements and Takeaways

To frame our discussion about implementation progress and challenges, in this section we present an overview of the key requirements of the risk and needs assessment system and the major takeaways from the various official reports. The FSA spells out the components of an interlocking risk and needs assessment system, with specific requirements for the DOJ, the BOP, the National Institute of Justice (NIJ), and a statutorily created independent review committee (IRC). In particular, the law directs the DOJ and the BOP to do the following:

- Develop and implement a **risk and needs assessment tool** with input from the IRC. The tool must classify people as being at minimum, low, medium, or high risk of recidivism and include dynamic factors that “can reasonably be expected to change while in prison.”

- Expand the BOP’s programming, after conducting a review of existing programming and a scan of the evidence base, and promulgate a list of approved evidence-based risk reduction (EBRR) programs and productive activities (PAs). By January 2022, the BOP must provide everyone in federal prisons the opportunity to participate in the EBRR programming and PAs they need based on an assessment of their criminogenic needs.

- Provide incentives and rewards for successful participation or completion of approved programs and PAs that match people’s identified risks and needs. The incentives and rewards include increased phone and visitation privileges, transfer to institutions closer to people’s homes, additional incentives to be developed by the BOP, and (for qualified people) earned time credits that can result in early release.

- Set up a new earned time credit program for eligible people (based on offense of conviction) that can be used for early transfer either to prerelease custody (i.e., home confinement or a halfway house) or supervised release. In general, only people assessed as low and minimum risk are eligible for early transfer from prison, but with approval of prison wardens, people can become eligible for early transfer regardless of risk level. A transfer can occur when a person’s
accrued credits equal the remainder of their imposed term of imprisonment; the normal limits on length of stay in prerelease custody do not apply. Transfers to supervised release can occur up to one year early, thereby cutting prison terms.

- Submit periodic reports to the public and Congress about the progress of implementation. The IRC and the Government Accountability Office also have reporting requirements under the law.

As envisioned, each person in BOP custody would be assessed at least annually and be incentivized to pursue programming to reduce their recidivism risk and earn incentives and rewards based on the assessment results. As such, the assessment tool is intended to be the foundation of the new system that will encourage people to pursue programming designed to give them the skills they need to successfully reenter the community.

To date, the BOP has developed, released, and amended a risk assessment tool (Prisoner Assessment Tool Targeting Estimated Risks and Needs [PATTERN]), assessed the population, published a list of approved EBRR programs and PAs, and is moving forward with an upgraded needs assessment system; the DOJ has released a draft rule regarding certain aspects of its earned time system; and the BOP, the DOJ, and the IRC have released required reports regarding various aspects of FSA implementation. Key takeaways from these progress reports on implementing the risk and needs assessment system are summarized in box 1. Although there has been a great deal of work done to implement the FSA, the Biden administration has an opportunity to rethink the approach, revitalize implementation efforts, and maximize the positive impact of the law.

### BOX 1
Some Key Takeaways Regarding Implementation of the First Step Act’s Risk and Needs Assessment System

- **Nearly half (47 percent) of the BOP population assessed by PATTERN is at minimum or low risk of recidivism.** As of November 2020, the PATTERN risk profile for the 130,669 people in BOP custody was: 15 percent at minimum risk, 32 percent at low risk, 20 percent at medium risk, and 33 percent at high risk (NIJ 2021).

- **Distributions of PATTERN scores are similar for people eligible and ineligible for the ETCs.** Roughly half of the BOP population is ineligible for the credits because of their offenses of conviction. The risk profile for people with offenses that make them eligible for earning time credits is about the same as the risk profile for people with offenses that make them ineligible (IRC 2020).

- **The racial and ethnic backgrounds of people eligible and ineligible for the ETCs are similar.** Roughly 40 percent of people who are eligible are Black and 28 percent are Hispanic, whereas 35 percent of people who are ineligible are Black and 31 percent are Hispanic (IRC 2020).

- **Preliminary program-participation rates show differences between people eligible and ineligible for the ETCs.** Rates are higher overall among eligible people than ineligible people, and rates are lower among eligible and ineligible people who are older, Hispanic, and Black (IRC 2020).
Preliminary recidivism rates for people released under the First Step Act are low. Overall, only 11 percent of about 7,000 people released under the First Step Act have recidivated, with an average follow-up period of 10.5 months (DOJ 2020).

Fewer programs can reduce people’s PATTERN scores than qualify them for the ETCs. Fewer than 20 programs can reduce someone’s PATTERN score, whereas participation in any of 80 programs and PAs can yield earned time credits. However, program completions during someone’s current incarceration stay count under PATTERN, whereas only program completions since January 2020 count toward ETCs (BOP 2021; NIJ 2021).

Hours assigned to approved programs and productive activities yield a small amount of ETCs. The BOP’s list of approved EBRR programs and PAs specifies the number of hours awarded at completion for purposes of calculating ETCs, ranging from 3 to 500 hours. Per a rule proposed by the DOJ, only 15 programs would provide credits of more than three weeks (BOP 2021).

Earned time credits are not yet operational. No one has been granted early release based on the ETCs; the extent of credits assigned to date is unclear.

- The DOJ proposed a rule on earning, awarding, losing, and restoring the credits, but did not spell out the BOP’s internal procedures for determining whether the credits will be applied to prerelease custody, supervised early transfer to supervised release, or both.
- The BOP has drafted additional policies to implement the ETCs, some of which are now being negotiated with the BOP’s union (OAG 2020).


Note: The official reports did not document whether or not people had already received credits, but in his testimony to Congress on April 16, 2021, BOP director Michael Carvajal indicated that at least 21,000 people completed programs that qualify for ETCs.

Progress, Issues and Challenges, and Recommendations

This section addresses each of the three key components of the risk and needs assessment system: risk assessment, needs assessment, and ETCs. We detail the progress of implementation so far (table 1 shows major milestones), highlight some of the issues and challenges associated with each component, and offer suggestions for improvement. The recommendations are bulleted throughout the section.
TABLE 1
Key Milestones of the First Step Act Risk and Needs Assessment System

<table>
<thead>
<tr>
<th>Key milestone</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Step Act enacted</td>
<td>December 2018</td>
</tr>
<tr>
<td>PATTERN released</td>
<td>July 2019&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>PATTERN revised</td>
<td>January 2020&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Everyone in BOP custody assessed, first list of approved EBRRR programs and PAs identified, and ETC accrual theoretically begins</td>
<td>January 2020&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>The DOJ and the IRC issue required reports to Congress</td>
<td>December 2020&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>PATTERN corrected and review and revalidation report released</td>
<td>January 2021</td>
</tr>
<tr>
<td>Revised list of approved EBRRR programs and PAs identified</td>
<td>February 2021</td>
</tr>
<tr>
<td>Deadline for sufficient programming capacity to meet criminogenic needs of the BOP population</td>
<td>January 2022&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

Notes: BOP = Federal Bureau of Prisons. DOJ = Department of Justice. EBRRR = evidence-based risk reduction. ETC = earned time credit. IRC = independent review committee. PA = productive activity. PATTERN = Prisoner Assessment Tool Targeting Estimated Risks and Needs. <sup>a</sup> = Statutorily required deadline. There are additional reporting requirements for the DOJ and the IRC regarding the risk and needs assessment. The Government Accountability Office also has reporting responsibilities, including a report due to Congress by early 2022 that audits the use of the risk and needs assessment system in BOP facilities. Among other things, the Government Accountability Office needs to examine whether programming is sufficient for people “to earn the maximum amount of time credits for which they are eligible” (18 USC § 3621: Definitions, from Pub. L. No. 115–391 [2018]).

PATTERN Risk Assessment Tool

The original version of PATTERN was developed by consultants hired by the NIJ, with input from the IRC. The tool was released in July 2019 and was built on an existing BOP assessment tool (BRAVO-R) and other data that were being routinely collected. Although the FSA required that the tool include dynamic risk factors so people would be able to reduce their scores over time, the specific risk factors that were ultimately included and the number of points those factors were worth were determined by the results of regression models that predicted risk of general and violent recidivism.

The original PATTERN contained 16 risk factors (table 2), split between static risk factors, which do not change or are out of a person’s control, and dynamic risk factors, which a person can take steps to change. In general, age and criminal history (both static factors) have a stronger influence on the risk score than any of the dynamic factors. To make the tool gender responsive, separate models were developed for men and women. Separate models were also developed to predict general and violent recidivism. Each person is assessed against the risk factors, and their scores on each item are summed to produce two scores, one for general recidivism and one for violent recidivism. Each score is converted into a risk category (minimum, low, medium, or high) by determining where the score falls in the distribution of possible scores (for instance, people with lower scores have a lower risk of recidivism and fall into a lower risk category). The higher of the general and violent risk categories becomes the person’s overall risk category.
TABLE 2
Risk Factors Included in Original and Revised Versions of PATTERN

<table>
<thead>
<tr>
<th>Risk factor</th>
<th>Men</th>
<th></th>
<th>Women</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Age at first conviction</td>
<td></td>
<td>•</td>
<td></td>
<td>•</td>
</tr>
<tr>
<td>Age at assessment</td>
<td></td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Current offense was violent</td>
<td></td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Current or prior sex offense conviction</td>
<td></td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Criminal history score</td>
<td></td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Infraction convictions (any)</td>
<td></td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Infraction convictions (serious and violent)</td>
<td></td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Amount of time since last infraction (any)</td>
<td></td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Amount of time since last infraction (serious and violent)</td>
<td></td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Number of programs completed (any)</td>
<td></td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Number of technical or vocational courses</td>
<td></td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Federal industry employment (UNICOR)</td>
<td></td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Drug treatment while incarcerated</td>
<td></td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Drug education while incarcerated</td>
<td></td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Noncompliance with financial responsibility</td>
<td></td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>History of violence</td>
<td></td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>History of escape attempts</td>
<td></td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Voluntary surrender</td>
<td></td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
</tbody>
</table>

Sources: OAG (2019, 2020a).

Notes: PATTERN = Prisoner Assessment Tool Targeting Estimated Risks and Needs. “Number of technical or vocational courses” and “Federal industry employment (UNICOR)” are combined into a single “Work programming” measure in the revised version of PATTERN. “Drug education while incarcerated” is incorporated into the “Number of programs completed (any)” measure.

Included risk factors may be included in the general model, the violent model, or both models.

The NIJ uses the area under the curve (AUC) statistic as its main measure of PATTERN’s predictive performance. The AUC value represents the probability that a randomly selected person who reoffends receives a higher PATTERN score than a randomly selected person who does not reoffend. The original PATTERN tool performs well compared with other commonly used risk assessment tools, with an AUC of 0.80 for the men’s general tool and 0.78 for the men’s violent tool. The AUC for the women’s general tool was 0.79 and for the women’s violent tool was 0.77 (OAG 2019). A good AUC in the criminal justice context is generally considered to be anything above 0.70. Another key consideration for tool performance was whether the tool was biased across racial and ethnic groups. Again, the NIJ used AUC as the key metric and found little variation (OAG 2019).

After PATTERN was released, the NIJ sought public comments and feedback on the tool, and it incorporated them into a revised version of PATTERN that was released in January 2020. Changes to the tool fell into three categories: changes to the risk factors (e.g., adding or removing risk factors or changing how they were measured), changes to how the factors were weighted, and changes to the risk category cut points. The specifics of those changes are as follows:

- Changes to risk factors
Dynamic risk factors were added and others were adjusted. The new tool added measures for the amount of time since the last infraction (any and serious/violent), added scores for noncompliance with financial responsibility and education to the men’s tool, included additional programs to count toward the program completion measure, and combined technical and vocational courses with participation in federal industry employment (UNICOR) into a single work programming measure.

Racially biased risk factors were removed. The new tool removed age at first conviction and voluntary surrender because of their correlation with race. On average, Black people tend to have an initial conviction at younger ages than other racial groups, likely because of disproportionate law enforcement presence in Black communities and schools (Crutchfield et al. 2009). Whether a person is allowed to voluntarily surrender themselves to a BOP facility after sentencing is left to the discretion of the judge and is correlated with pretrial release, which tends to be granted more commonly to white defendants (Cohen 2012). Other risk factors left in the tool are likely also associated with race (e.g., the criminal history score), but we assume that the decision on which factors to remove was based on balancing removal of racially biased risk factors with maintaining predictive accuracy.

Changes to risk factor weights

Most risk factor weights remained the same or similar in the updated PATTERN. Weights for a few factors changed more substantially (e.g., age at assessment is weighted higher for women, criminal history score is weighted higher overall), but because the weights are drawn from the results of the regression models used to develop the tool, this was likely a consequence of the changes in the risk factors rather than a deliberate adjustment.

Changes to risk category cut points

The risk category cut points are determined by the average predicted risk of recidivism. Between the original and revised versions, the thresholds for risk of violent recidivism were reduced slightly (table 3), resulting in more restrictive cut points for the violent risk categories, particularly for men.
### TABLE 3
Ranges of Approximate Predicted Risk of Recidivism by Risk Category

<table>
<thead>
<tr>
<th>Risk category</th>
<th>General recidivism</th>
<th>Violent recidivism</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Original</td>
<td>Revised</td>
</tr>
<tr>
<td>Minimum</td>
<td>0–10%</td>
<td>0–10%</td>
</tr>
<tr>
<td>Low</td>
<td>11–24%</td>
<td>11–31%</td>
</tr>
<tr>
<td>Medium</td>
<td>25–79%</td>
<td>32–74%</td>
</tr>
<tr>
<td>High</td>
<td>80–100%</td>
<td>75–100%</td>
</tr>
</tbody>
</table>

**Sources:** DOJ (2020) and OAG (2019).

**Notes:** These numbers may be estimates because of differences in how data were presented across reports. The 2019 OAG report states the exact risk cutoff probabilities, whereas in the 2020 DOJ report, the probabilities are described as “risk of recidivism” without specifying whether the number refers to the average or maximum risk probability for that category.

In January 2021, the NIJ released the results of a review and revalidation of PATTERN that identified several potential issues, including scoring errors and differences in how the model was developed compared with how the tool is implemented in practice. The specifics of those findings are as follows:

- **Scoring errors**
  - Time without serious/violent infractions was weighted incorrectly for the men’s violent tool and women’s general tool; it was overweighted for the men’s violent tool and underweighted for the women’s general tool. The criminal history score was also overweighted for the women’s violent tool.
  - The minimum- and low-risk category cut points for the men’s general tool were misreported. The cut points that were actually used were slightly more restrictive than were reported.

- **Differences in the model versus implementation**
  - Several risk factors are meant to be calculated in relation to a person’s assessment date. Because PATTERN was developed on a population of people who had been released already, the tool development process used release date rather than assessment date.
  - Several risk factors, including number of infraction convictions, number of programs completed, work programming, and drug treatment during incarceration, were incorrectly calculated in the models but have been correctly calculated during implementation. There were a variety of issues identified.

According to the review and revalidation report, once these errors were corrected, approximately 11 percent of men and 10 percent of women fell into different risk categories (NIJ 2021). Of particular concern were the people who moved between the low- and medium-risk categories, as that is the threshold for eligibility to be released early based on the ETC system. Roughly 1.9 percent of men became ineligible after rescoring and 2.3 percent of men became eligible, whereas 3.2 percent of
women became ineligible and 1.3 percent of women became eligible (NIJ 2021). No information was provided about how the errors were distributed by race and ethnicity, but everyone whose risk categories were affected by the errors was to be reassessed by the end of February 2021. Based on the corrected version of PATTERN, as of November 2020, 15 percent of people in BOP custody were at minimum risk, 32 percent were at low risk, 20 percent were at medium risk, and 33 percent were at high risk.

Since PATTERN was first released, it has undergone several changes. The NIJ plans to release another revised version of the tool in mid-2021, and the tool will be reviewed and revalidated on an annual basis. Given these expected ongoing changes, there are several issues that could be monitored to ensure the tool is accurate, fair, and does not create unnecessary barriers to moving people out of secure custody.

RECIDIVISM RATES AND RISK CATEGORIES
The cut points that separate the risk categories are derived from the baseline recidivism rates for people released from BOP custody, and the risk category someone falls into depends on their risk score and the associated predicted risk of recidivating (see table 3). For example, the threshold for “low risk” for general recidivism (24 percent) was set at approximately half the baseline recidivism rate (47 percent), and the “low risk” threshold for violent recidivism was set at 12 percent, approximately two-thirds the baseline violent recidivism rate (15 percent) (OAG 2019). It is important to note that the way these cut points are determined is a policy choice—there is no standard definition of what probability of recidivism counts as “low” or “high.” For that reason, it falls to the BOP to determine the “acceptable” level of risk required before someone would be eligible for early release.

Recommendations
The current criteria for eligibility for early release stand at roughly 30 percent probability of general recidivism and roughly 10 percent probability of violent recidivism (DOJ 2020). The administration should reassess these thresholds and whether they could be adjusted to make them less restrictive.

As people begin to be released under the ETC program, the Biden administration should monitor recidivism rates and assess them against the criteria for each category to ensure the tool is well calibrated. For example, recidivism rates much lower than the criteria may suggest that people with higher risk scores could also be eligible for release with little negative impact to public safety.

BOX 2
What Are the Recidivism Rates So Far of People Released under the First Step Act?
In its December 2020 report on FSA implementation, the DOJ reported recidivism rates for people released under the First Step Act. Though the rates are preliminary, reflecting an average follow-up time of 10.5 months (compared with the three-year period used for official recidivism rates), they are lower than might be expected. Overall, only 11 percent of people released under the First Step Act have
recidivated. Extrapolated out to the full follow-up period, we might expect a general recidivism rate of roughly 38 percent. For comparison, the general recidivism rate for the population that PATTERN was developed on was 47 percent. Violent recidivism rates were not reported.

The BOP defines general recidivism as a new arrest or return to BOP custody within three years of release (NIJ 2021). Others have noted that this definition of recidivism is overly broad, as it includes arrests that may not reflect participation in criminal activity as well as technical violations of community supervision (Brennan Center School of Law 2019; FSA IRC 2020). The follow-up period begins once a person completes their BOP term. In other words, people who are in prerelease custody (halfway houses or home confinement) and are rearrested or returned to BOP facilities for disciplinary or other violations are not counted as having recidivated. As FSA implementation continues and time spent in prerelease custody increases, violations and return to secure custody should be monitored.

Note: * Excluding traffic offenses except driving under the influence and driving while intoxicated.

RACIAL EQUITY
Since releasing PATTERN, the NIJ has removed two risk factors from the tool because of their association with race and has found that its predictive performance (in terms of AUC) does not vary significantly across race and ethnicity. It is important to note though that similar performance across race and ethnicity does not necessarily mean the tool is not influenced by racial bias. Structural and institutional racism have “baked in” racial bias into earlier stages of the system—policing, prosecution, sentencing—that is reflected in the data that went into developing the tool and the recidivism outcomes that determine performance.

To date, the only measure of equity or fairness of PATTERN that has been reported has been a comparison of AUC across race and ethnicity. Several types of “algorithmic fairness” have been proposed, such as overall accuracy equality, statistical parity, conditional procedure accuracy equality, conditional use accuracy equality, treatment equality, and total fairness, each of which defines fairness slightly differently (table 4; Berk et al. 2018). By their definitions, it is impossible to fulfill all of these types of fairness at the same time, and there is often a tradeoff between fairness and accuracy. For example, statistical parity would require the tool to predict that the same proportion of Black, white, and Hispanic people will recidivate, but among people convicted and sentenced in the federal system, people across racial and ethnic groups are not rearrested at the same rate—Black and Hispanic people are rearrested at higher rates than white people (Hunt and Dumville 2016). At the same time, the rearrest data are biased because of greater correctional control of Black and Hispanic people through racially disparate surveillance, policing, and sentencing. Imposing the statistical parity restriction on the tool would improve fairness by reducing the impact of the bias in the rearrest data, but it would also result in lower accuracy precisely because it does not reflect the data.

Finding the appropriate balance of accuracy and equity will require thoughtful and deliberate discussion about priorities. If the administration is serious about mitigating racial and ethnic disparities in the federal system, it may be willing to accept some reduction in accuracy. It could also consider making changes to the tool’s inputs and outputs, such as using convictions rather than rearrests to measure criminal history and recidivism (Roberts Freeman, Hu, and Jannetta 2021). Appropriately
measuring the performance and equity of a risk assessment tool also requires accounting for the context in which the tool is implemented, including the frequency of recidivism and the cost of predicting outcomes incorrectly (Tiry and Kim 2021).

**Recommendation**

To better inform future versions of PATTERN, the BOP and the DOJ should examine and report on how it meets or does not meet multiple other definitions of fairness, which definition of fairness should be prioritized, and whether prioritizing one definition requires any changes to how PATTERN works.

**TABLE 4**

<table>
<thead>
<tr>
<th>Type of algorithmic fairness</th>
<th>Definition</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall accuracy equality</td>
<td>The tool correctly predicts whether someone will or will not recidivate the same proportion of the time across protected groups.</td>
<td>The tool accurately predicts whether someone will recidivate or not 70% of the time for all groups (e.g., Black, white, and Hispanic).</td>
</tr>
<tr>
<td>Statistical parity (i.e., distributional equity)</td>
<td>The tool predicts the same proportion of people to recidivate across protected groups.</td>
<td>The tool predicts that 30% of the people in each group will recidivate.</td>
</tr>
<tr>
<td>Conditional procedure accuracy equality (i.e., sensitivity)</td>
<td>Among people who recidivate, the tool correctly predicts recidivism the same proportion of the time across protected groups.</td>
<td>Among the people who recidivate in each group, the tool correctly predicts recidivism 90% of the time for each group.</td>
</tr>
<tr>
<td>Conditional use accuracy equality (i.e., precision)</td>
<td>Among people the tool predicts will recidivate, the same proportion of people actually recidivate across groups.</td>
<td>Among the people the tool predicts will recidivate, 80% of people in each group actually recidivate.</td>
</tr>
<tr>
<td>Treatment equality (i.e., error rate balance)</td>
<td>The ratio of false positives (people who are predicted to recidivate and do not) and false negatives (people who are predicted to not recidivate and do) is the same across groups.</td>
<td>The tool predicts 10% more false positives than false negatives in each group.</td>
</tr>
<tr>
<td>Total fairness</td>
<td>All five of the other definitions are achieved.</td>
<td>Unfortunately, this is impossible to achieve in practice.</td>
</tr>
</tbody>
</table>


**EVIDENCE-BASED PROGRAMMING**

One of the key questions raised after PATTERN’s release was which types of programming would be considered “evidence based” for the purposes of PATTERN and earning time credits, as well as whether the BOP has sufficient capacity for programming to allow people to meaningfully reduce their risk scores. In part because of data limitations—the BOP did not routinely track program participation for all programs—only a subset of programs could be demonstrated to reduce recidivism during the PATTERN
development process. Only these programs currently count toward the program completion risk factor included in PATTERN, but this is expected to increase as collection of program participation data expands and improves (box 3 provides more information about qualifying programs). The BOP has approved a longer list of programs and PAs for ETCs and assigned the hours awarded for completion of each of them.

At the same time, there is a tension between having many options for programs that count toward ETCs and ensuring those programs are evidence based. The IRC has expressed serious concern about the underlying evidentiary basis for the BOP designating programs as evidence based and has recommended systematic evaluations of existing programs to determine their effectiveness (FSA IRC 2020). Programming capacity is still a concern, and the COVID-19 pandemic has exacerbated issues with access to programming: the pandemic has significantly reduced program delivery for almost two-thirds of the approved programs (OAG 2020b), although in April 2021, the BOP director indicated that 49,000 people were enrolled in EBRR programs and PAs (Carvajal 2021).

**Recommendation**

The Biden administration should review the lists of approved programs and PAs for PATTERN and the ETCs and monitor the progress of expanding programming to meet the 2022 deadline.

**BOX 3**

**What Programs Qualify for PATTERN Score Reductions and Can Yield Earned Time Credits?**

Successful completion of evidence-based recidivism reduction programming can reduce someone’s risk score under PATTERN and lead to ETCs. Successful completion of productive activities can also result in ETCs. There are separate lists of approved programs for purposes of PATTERN scoring (NIJ 2021) and for accruing ETCs (BOP 2021); the list for accruing credits is much longer. Qualified programs completed during someone’s current incarceration stay count for purposes of PATTERN, but only qualified programs completed since January 2020 count for purposes of the ETCs. The potential concern with the different lists is that someone could earn credits for many EBRR program completions aligned with their needs, but not see their risk level reduced because the same programs are not credited by the PATTERN tool. The following programs qualify for PATTERN score reductions and ETCs:

- **Qualifying programs for PATTERN.** Successful completion of the following courses during someone’s current incarceration stay are recognized: adult continuing education, National Parenting from Prison Program, Life Connections Program, BRAVE Program, Challenge Program, Skills Program, Sex Offender Program (residential or nonresidential), STAGES Program, and the Mental Health Step Down Program. The list represents specific programs, except for adult continuing education, which appears to be a collection of programs (NIJ 2021).

- **Qualifying work, drug treatment, and education programming for PATTERN.** Technical and vocational courses completed during current incarceration stays count for PATTERN. Employment in federal industries (UNICOR) is counted as a program completion if a person worked at least one day. PATTERN also assesses whether a person has a substance abuse treatment need and if so, whether they have completed residential or nonresidential treatment
drug treatment. Finally, educational status is assessed through PATTERN and receiving a GED can reduce someone’s PATTERN score.

- **Qualifying EBRR programs and productive activities for earned time credits.** The BOP identified 80 programs and PAs that can yield ETCs and assigned the number of hours to be awarded upon successful completion, from 3 to 500 hours (BOP 2021). The list seems to include all the programs, work programs, drug treatment, and education incorporated into PATTERN except for adult continuing education.

  The BOP must provide appropriate EBRR programs and PAs to everyone in the BOP population by January 2022 (the FSA required two years after the completion of the initial risk and needs assessment). To meet this goal, the BOP is working to expand the program offerings and the IRC has recommended additional evaluation of programs to ensure their effectiveness as described below:

  - **Expanding program offerings.** To expand its program offerings, the BOP is overseeing a process to review externally submitted programs for inclusion in the programs and PAs list. The BOP has hired MITRE to assess whether the suggested programs satisfy the FSA requirements; the BOP will determine whether the program should be added to the approved list (see the BOP website).

  - **Bolstering the evidence base for EBRR programs through evaluation.** Although the IRC recognized that the BOP needed to release a list of EBRR programs and PAs so people could start earning credits, the committee concluded that the evidence base was insufficient for much of the programming at the BOP (Byrne 2019; FSA IRC 2020). The IRC urged the BOP to undertake a major evaluation effort of its programs.

  **Notes:** Given the inconsistent terminology used in appendix A of NIJ (2021) and the BOP’s approved list of programs and productive activities, we have assumed that “Step Down” refers to the Mental Health Step Down Program and “Parenting” refers to the National Parenting from Prison Program.

**Needs Assessment**

The FSA contemplated an integrated risk and needs assessment system that would assess a person’s risk of recidivism and identify the specific areas (criminogenic needs) that should be addressed to lower their risk. The needs assessment component is critical to developing an individualized case plan that specifies the type and amount of programming each person needs, but its development has lagged behind the risk assessment tool. The DOJ released its first draft of the risk assessment tool in July 2019 (OAG 2019) and indicated that everyone would have an initial risk assessment by January 2020. The BOP did not release the enhanced needs assessment system, however, until August 2020 (BOP 2020).

The BOP has identified 13 needs to be assessed: anger/hostility, antisocial peers, cognitions, dyslexia, education, family/parenting, finance/poverty, medical, mental health, recreation/leisure/fitness, substance abuse, trauma, and work. One of the needs, dyslexia, is statutorily required by the First Step Act. The approved BOP EBRR programs and productive activities map to these needs. The BOP also identified the measures or data sources it would use to assess each need, including the presentence investigation report for historical data and various tools for psychological and educational assessments (BOP 2020).
The IRC, in its December 2020 report, expressed concerns with the BOP’s approach to needs assessment, noting the reliance on the presentence report and self-reported information, the inaccessibility of information to frontline BOP personnel, and the limited means of determining the extent of any identified need (FSA IRC 2020). The BOP acknowledged the need to improve data collection and data systems associated with its needs assessment process (BOP 2020).12

**Recommendation**

The Biden administration should review the BOP’s current needs assessment process, consider the IRC’s concerns, and expressly describe any plans for addressing those concerns.

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*The IRC would encourage DOJ and BOP to begin a serious, deliberate project...to design, construct, validate, and implement a truly complete and integrated needs assessment system for federal inmates. Special care should be taken to determine the effect of such a system on inmate risk category assignments and to ensure that it reliably and accurately matches identified needs with relevant Bureau programming.*

—FSA IRC (2020)

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**Earned Time Credits**

The First Step Act dictated many facets of the ETCs (box 4), but left numerous things to BOP discretion, including what EBRR programs and productive activities could yield credits and the rules and calculations for accruing and applying the credits toward early release to prerelease custody and supervised release. This section discusses the progress of ETCs to date, including the BOP’s preliminary decisions about how to operationalize them, what the progress suggests about the long-term success of the ETCs, and how the ETCs might be improved.

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**BOX 4**

**What Are the Statutory Requirements of the Earned Time Credits?**

The First Step Act enumerated many features of the earned time credits. These included the following:

- **Eligibility to earn credits** is based on the offense of conviction; the law includes a long list of disqualifying offenses.
- **Amount of credit** is based on risk level (10 days per 30 days of programming generally, 15 days per 30 days of programming for people at minimum and low risk).
• Requirements to **redeem credits** for early transfer to prerelease custody (i.e., a halfway house or home confinement) or supervised release include the following:
  
  o Accrued credits must equal the remainder of someone’s imposed term of imprisonment.
  
  o For prerelease custody, someone must have two reassessments at low- or minimum-risk or warden approval of a petition to be transferred. To approve, the warden must determine that the person would not pose a danger to the community, is unlikely to recidivate, and has made a good-faith effort to lower their recidivism risk through participation in recidivism reduction programs or productive activities.
  
  o For early supervised release, someone must be at minimum or low risk in the last reassessment.\(^b\)

• A person must be in prerelease custody until serving 85 percent of their prison term, except that the BOP director may transfer someone to begin a term of supervised release up to 12 months early.

• The BOP must determine via regulation when to provide incentives and rewards and when to transfer; federal probation must be consulted.

**Notes:**

\(^a\) People with final orders of removal for immigration violations can earn credits but are not eligible for prerelease transfer. 

\(^b\) It is unclear whether the warden exception also applies to early transfer for supervised release. Federal defenders assumed it did in a summary of ETCs. See [https://www.fd.org/sites/default/files/criminal_defense_topics/essential_topics/sentencing_resources/1sa_etc_handout.pdf](https://www.fd.org/sites/default/files/criminal_defense_topics/essential_topics/sentencing_resources/1sa_etc_handout.pdf).

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Two years after the FSA was enacted, no one has been released early (either to prerelease custody or supervised release) based on earned time credits (DOJ 2020). Although the DOJ indicated that people could start accruing credits for programming completed after January 2020 (the date by which everyone would be assessed), the December 2020 DOJ report did not indicate whether anyone had actually accrued credits or had had them applied toward other incentives and rewards. At an April 2021 Senate Judiciary Committee hearing, however, the BOP director testified that more than 21,000 people had completed programs that were eligible for ETCs, but he did not specify the types of programs or the extent of credits accrued. We know the pandemic has reduced the BOP’s ability to provide programming, which has undoubtedly limited the potential for the ETCs, but the CARES Act also enabled some people who might have otherwise benefited from the programming and credits to transfer to home confinement (though there is now a controversy about whether some of them will need to return to BOP custody when the pandemic emergency ends).\(^13\)

According to the DOJ (OAG 2020b), an internal FSA working group developed a proposal for awarding ETCs, resulting in a draft BOP policy, First Step Act 2018—Time Credits: Procedures for Implementation of 18 USC Section 3632(d)(4), that was provided to the BOP’s national union. Negotiations with the union began in early March 2020 but have been delayed by the pandemic. The draft policy included the draft regulation, FSA Time Credits, which the BOP released in November 2020. The proposed rule covered earning, awarding, losing, and restoring ETCs. The proposed rule also incorporated the list of approved EBRR programs and productive activities, along with the number of
hours awarded for successful completion of programs after January 2020 (BOP 2021), and specified an equivalency rate of eight hours equaling one day for purposes of calculating credits.\(^{14}\)

The BOP accepted comments on the proposed rule until January 2021. Critics described the draft as being too stingy with time awarded for program completion, too tough with forfeiting and restoring credit, and too narrow regarding which programs are relevant, both with respect to the time frame (post–January 2020 and not while in prerelease custody) and the requirement that programs be linked to a person’s case plan (FSA IRC 2020).\(^ {15}\) The BOP’s final policy for ETCs will not go into effect until the rule is finalized and the draft policy is negotiated with the union. In the interim, the BOP is tracking program completions consistent with the draft rule.

Many questions remain about whether the ETCs can eventually fulfill their potential. To what extent will people be able to reduce their risk levels based on program participation? How many people will be able to use the credits for early transfer to prerelease custody and supervised release, how much will the credits be worth in terms of time out of secure facilities, and how well will the BOP, residential reentry centers (halfway houses), and federal probation coordinate on continuity of care? How well will people benefiting from the credits fare when they reenter their communities? What are long-term recidivism effects? As discussed below, there are still opportunities to increase the impact of the ETCs.

ELIGIBILITY FOR CREDITS

According to the IRC, about half of the BOP population is ineligible for the ETCs based on offense of conviction. The IRC also determined that the overall PATTERN risk profile of people eligible to earn credits is about the same as the risk profile for people with offenses that make them ineligible. Nonetheless, in a December 2020 report, the DOJ recommended that the list of disqualifying offenses be expanded. How the current administration will respond is unclear. In addition, the IRC found that the demographic and racial makeup are similar for people eligible and ineligible for the ETC. Roughly 40 percent of people who are eligible are Black and 28 percent are Hispanic, and 35 percent of people who are ineligible are Black and 31 percent are Hispanic (FSA IRC 2020). A reassessment of the qualifying offenses seems warranted, particularly because preliminary program participation rates show a possible incentive effect, with higher rates of program participation among people eligible for the ETCs compared with those who are ineligible (FSA IRC 2020).

Recommendations

The DOJ should recommend legislative changes to reduce the number of people disqualified from ETCs based on their offense of conviction.

The DOJ should continue to monitor the differences between people eligible and ineligible for the credits with respect to racial and demographic characteristics, PATTERN scores, program participation, and recidivism rates.
THE VALUE OF PROGRAM CREDITS

Taken together, the proposed equivalency rate (eight hours equals one day) and the designated number of hours per program assigned by the BOP yield few credits, even for the most intensive programs. Fifteen of the 80 approved programs and productive activities generate 500 hours of credit, and one program generates 240 hours. The rest of the programs and activities range from 3 to 104 hours. A program credit of 500 hours granted at completion would be equal to 62 days, and lead to either 21 or 31 days of earned time credit (depending on one’s risk level). Earning three weeks or a month of credit for the most intensive program that could occur over six months or longer seems inadequate. For comparison, Congress granted up to one year off for successful completion of the Residential Drug Abuse Program, yet the BOP has only given it 500 hours of credit. A 2009 review of state ETCs found that credits were granted as either one-time awards or on a recurring basis. The typical range for one-time awards credits at the time was between 30 and 120 days. For recurring awards, the study found that states generally credited one day for each day of participation (Lawrence 2009).

Recommendation

The DOJ and the BOP should reconsider and increase the hours/days awarded for successful completion of the approved list of EBRR programs and activities (e.g., count any day in which someone participated in the programming).

GUIDELINES AND PROCEDURES FOR TRANSFERRING EARLY TO PRERELEASE CUSTODY OR SUPERVISED RELEASE

The proposed rule issued by the BOP did not include the procedures for determining whether someone will have the credits applied toward early transfer to prerelease custody or toward supervised release. The BOP may have drafted procedures that await review by the union, but in the meantime it remains unclear how the BOP will determine whether and when a person is ready to be transferred early to prerelease custody or supervised release. The ability to transfer someone to supervised release up to one year early is a particularly important part of the First Step Act. Leaving BOP custody early for supervised release (and switching to the custody of federal probation) will allow someone to actually shorten their prison term and reduces the BOP prison population. The extended period in prerelease custody reduces someone’s time in BOP secure facilities, but the person continues to be in BOP custody.

What will the criteria for readiness be, what will the process be for making timely decisions, and how will the BOP regularly calculate the ETCs to know when they will be equal to the remaining term of imprisonment? What guidance will wardens receive to assess petitions for transfer to prerelease custody or supervised release and make their determinations?
Recommendations

The BOP should provide guidance to wardens that encourages approval of petitions for early transfer to prerelease custody for people who meet the criteria and whose last two reassessments have not been low or minimum risk.

The BOP should provide guidance about when to recommend early transfer to supervised release and maximize the possibility of reducing prison terms by one year. We have not seen any guidance on this provision and we urge serious consideration of a broad interpretation of the law.

The BOP should determine and publicize how the requirement that the amount of accrued credit must be equal to the remainder of the prison term will be operationalized.

CONTINUITY OF CARE FROM BOP SECURE FACILITIES TO PRERELEASE CUSTODY TO SUPERVISED RELEASE

The lack of continuity of care from BOP institutions to prerelease custody to supervised release is a long-standing problem (CCTF 2016). Coordination among BOP facilities, Residential Reentry Centers (or halfway houses), home confinement, and US Probation and Pretrial Services will become increasingly important as people are transferred early via the ETCs. Such coordination can increase the likelihood of success for people released. Shuman (2020) highlighted this issue in an article in Federal Probation Journal, and the problem may only get worse as the length of time in prerelease custody increases, followed by the term of supervised release. The Criminal Law Committee of the Judicial Conference has already identified some legislative fixes that would address some of the inconsistent standards and rules that govern their supervision of people released to prerelease custody either under the old rules, the First Step Act (provisions related to compassionate release and elderly pilot), or under the CARES Act (Shuman 2020). The FSA required the BOP to include input from US Probation and Pretrial Services as it developed its guidelines governing early transfer to prerelease custody or supervised release, the level of supervision, and the consequences for violating the conditions. In addition, the BOP is required “to the greatest extent practicable” to enter into agreements with US Probation and Pretrial Services to supervise people placed in home confinement. The status of these efforts is uncertain.

Recommendations

The BOP and US Probation and Pretrial Services should work together to develop solutions for better continuity of care, particularly given the potentially lengthy periods of prerelease custody followed by terms of supervised release.

The BOP should clarify the status of the guidelines governing early transfer to prerelease custody or early transfer to supervised release and any agreements with US Probation and Pretrial Services to supervise people in home confinement.
TRANSPARENCY AND ACCOUNTABILITY

Transparency about implementation activities promotes accountability and enables people outside the executive branch to identify instances where implementation choices deviate from the intent or spirit of the law. The FSA imposed numerous reporting requirements on the BOP, the NJU, and the FSA IRC. Each agency has set up a website with the reports and other information about progress on implementation. Yet despite these reports and other publicly available information, there are still gaps in our understanding of the status of implementation, and the BOP could be more forthcoming about its plans. A recent oversight hearing by the Senate Judiciary Committee highlighted some of these gaps and also heard several senators criticize BOP’s rigid interpretation of the various provisions of the FSA.16

Recommendations

The DOJ and the BOP should publicly explain the process and timetable for making the final decisions about the ETCs, including required negotiations with the national union.

The DOJ, the FSA IRC, and the BOP should carefully monitor the experience of people benefiting from the ETCs, including postrelease recidivism rates and disciplinary actions and returns to secure facilities while people are in extended prerelease custody or home confinement.

Conclusion

The risk and needs assessment system created under the FSA is the product of a legislative compromise. The result is a long list of disqualifying offenses for the ETCs, an inordinately complicated system for linking risk and needs assessments to the calculation and application of ETCs, credits that do not directly shorten prison terms (because of the 85 percent rule) but instead extend time spent in “prerelease custody” except to allow early transfer to supervised release (functionally shortening the prison term), and numerous reporting requirements. The law is very prescriptive in many respects, imposing specific requirements and timetables, yet the DOJ and the BOP retain substantial discretion about how the law will be operationalized. The DOJ has made significant progress in meeting its deadlines and milestones, but much work remains.

To date, the DOJ and the BOP seem to be doing what they must do (e.g., meeting statutory deadlines), rather taking a more creative or vigorous approach and doing what they could do to maximize the impact of the law and safely release as many people as possible from secure custody. The change in administration provides a chance to reassess this approach. There are opportunities for the BOP to modify decisions already in place or pending, actively monitor the impact of PATTERN and the ETCs (particularly with respect to risk level and race) and adjust as appropriate, and be even more transparent about ongoing challenges and the work that remains to be done.

The risk and needs assessment system is not completely conceptualized (or at least not publicly explained) or implemented. Important questions remain about the final rules governing the ETCs, including BOP procedures guiding decisions about early release to prerelease custody and supervised

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release and the required levels of supervision. PATTERN will undergo further revision, the needs assessment system will be further modified, and programming must be expanded to meet the needs of the entire BOP population. Although the BOP has released many reports and provided updates on its website, it and the DOJ should post and clarify what policies and program statements remain under development and the timetable for their completion. Both agencies should also continue to monitor the impact of the new authorities, including the recidivism rates, and be as transparent as possible about their findings and plans for ameliorating problems they identify. Examining the risk and needs assessment system through a lens of racial equity will be particularly important.

In our first brief in spring 2019, we identified many implementation-related questions, including the overarching question about how vigorously the Bureau of Prisons and the Department of Justice would exercise their discretion to promote the objectives of the legislation (Samuels et al. 2019). History suggested that the BOP would be cautious and conservative, and this has been borne out. The current administration has an opportunity to change the trajectory of the First Step Act’s implementation, fulfill the law’s promise, and bolster the impact of its risk and needs assessment system.

Notes


3 For full lists of reports, see the websites of the BOP, the National Institute of Justice, and the First Step Act Independent Review Committee.


6 While successful participation in programming or productive activities may be sufficient for certain incentives and rewards (e.g., phone privileges, visitation, and transfer to facilities closer to people’s homes), time credits appear to require successful completion of programming or productive activities (see 18 USC § 3632 [d]).

7 People transferred from BOP facilities to prerelease custody are still serving their terms of imprisonment and are part of the BOP population. Once they are transferred to supervised release, they have completed their prison terms and are serving their term of supervised release under the supervision of US Probation and Pretrial Services (USPPS). Under certain circumstances (i.e., through memoranda of understanding with the BOP), USPPS officers can supervise people on prerelease custody, but with BOP guidance.

8 A commonly accepted interpretation of AUCs is that an AUC of 0.70 indicates a strong association, an AUC between 0.60 and 0.70 indicates a moderate association, and an AUC less than 0.60 indicates a weak association (Jones 1996).
Compiled written feedback is available on the NIJ’s website (see https://www.ojp.gov/pdffiles1/nij/254142.pdf) and is summarized in OAG 2020a.

The NIJ contracted with Rhys Hester and Ryan Labrecque to conduct a statutorily required annual review and revalidation of PATTERN.

This is assuming they are otherwise eligible based on their offense of conviction.

In June 2021, the BOP released a new report on needs assessment that maps the EBRR programs and PAs directly to each of the 13 needs (see https://www.bop.gov/inmates/fsa/docs/fsa_needs_assessment_overview.pdf).

See this OLC slip opinion from the end of the previous administration, “Home Confinement of Federal Prisoners after the COVID-19 Emergency.”

Families Against Mandatory Minimums, Justice Action Network, and National Association of Criminal Defense Lawyers, comments to the BOP on proposed FSA earned time credits rule, January 2021; Federal public and community defenders, comments on Docket No. BOP-1176P, RIN 1120-AB76, FSA Time Credits Legislative Committee First Step Act (FSA) of 2018 (2021).


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