



**Analysis Plan: Justice Reinvestment Initiative and Racial Equity in the Vermont Justice System  
June 15, 2021**

As part of the Justice Reinvestment Initiative, funded by the Bureau of Justice Assistance (BJA), The Council of State Governments (CSG) Justice Center is assisting the Vermont Justice Reinvestment II Working Group by examining the extent to which racial disparities existed across Vermont's judicial and corrections systems between 2015 and 2019. Earlier analysis efforts by CSG Justice Center staff during the system analysis and policy development phase of Vermont's current Justice Reinvestment Initiative identified Black-White racial disparities in the court and Department of Corrections (DOC) systems; however, due to time constraints, staff were not able to conduct a full in-depth analysis, and the Justice Reinvestment II Working Group adopted policy options recommending further study. Expanding on this earlier work, this analysis will investigate racial disparity patterns over time and provide insight into the drivers behind them. As the results allow, CSG Justice Center staff will offer actionable recommendations to address racial disparities moving forward.

The proposed analysis includes:

- High-level analysis of sentencing and corrections patterns across racial groups
- In-depth analysis of sentencing patterns across racial groups and of factors that contribute to any observed disparities
- Assessment of data to identify ways to improve future analysis and monitor racial disparities

Importantly, due to the demographic composition of Vermont's justice-involved population, we anticipate that this work will focus on disparities between Black and White adults, as statistical analysis requires sufficiently large samples for each racial group that we investigate.

### **Example Analysis Questions**

The following are examples of the types of questions the CSG Justice Center is seeking to answer through the proposed analysis.

- To what extent does the likelihood of receiving a sentence to incarceration vary by race? To what extent does sentence length vary by race?
- Adjusting for key defendant and case factors, to what extent does the likelihood of receiving a prison sentence differ by race?
- To what extent does representation among corrections populations differ by race (including people who are incarcerated, on parole, probation, and furlough)?

### **Methodology**

Using data from the courts, DOC, and the Vermont Criminal Information Center (VCIC) from 2015 to 2019, CSG Justice Center staff will employ the following analytic methods (*see glossary of terms on the next page*):

- Descriptive statistics and a Relative Rate Index (RRI) to identify racial disproportionality
- T-tests and chi-square tests to identify meaningful differences in descriptive statistics



- Regression to help pinpoint the extent that racial disparity is explained—or not—by important case and defendant characteristics like offense severity or criminal history
- Propensity score matching may be used to estimate the extent to which similarly situated Black and White people experience similar outcomes
- Power analysis to ensure that sample sizes are adequate to detect meaningful differences across racial groups

**Anticipated Project Timeline and Key Deliverables**

The schedule outlined below will be refined as CSG Justice Center staff obtain necessary data from partners.

**January–June 2021** Develop analysis plan; gather data (CSG Justice Center staff have received DOC data and initial courts data and are waiting for additional courts data as well as VCIC data); submit application to Institutional Review Board (IRB) (application approved April 2021).

**June–October 2021** Conduct quantitative analysis; if data allows, formulate recommendations for how to improve practices to reduce racial disparities at key decision-making points; present results to the working group.

**October–December 2021** Develop a report that reviews the main quantitative results and any recommendations shared in the presentation; provide guidance to help strengthen data collection.

**Glossary of Terms**

|   |   |
|---|---|
| <b>Racial disparity<sup>1</sup></b>           | <ul style="list-style-type: none"> <li>• Racial disparity refers to any situation in which different racial groups experience unequal treatment or outcomes.</li> <li>• Evidence of disparity is distinct from understanding the processes that contribute to it.</li> </ul>  |
| <b>Descriptive statistics<sup>2</sup></b>     | Statistics that summarize information about a data set (e.g. means, proportions).   |
| <b>T-test and chi-square test<sup>3</sup></b> | Statistical tests that determine if observed differences in means or proportions between groups are meaningful, rather than simply a product of chance.   |
| <b>Relative rate index (RRI)<sup>4</sup></b>  | <p>A standardized way to compare the experiences of different racial/ethnic groups within the justice system:</p> <ul style="list-style-type: none"> <li>• For each racial category, the number of people at each decision point of interest is divided by the number of people at the previous decision point.</li> <li>• The rate for the non-White group is divided by the rate for the White group. The comparison of these two rates provides a relative rate index that demonstrates how the groups are treated.</li> <li>• Whenever groups are treated equally, the RRI is equal to “1.” An RRI greater than 1 indicates worse outcomes for the non-White group; an RRI lower than 1 indicates better outcomes for the non-White group.</li> </ul> |



|   |   |
|---|---|
| <b>Regression analysis<sup>5</sup></b>        | Statistical method for determining the relationship of one variable to another.   |
| <b>Propensity score matching<sup>6</sup></b>  | <ul style="list-style-type: none"> <li>• This method is used to create two statistically indistinguishable groups and isolate the effect of a variable of interest on an outcome by comparing “apples to apples.”</li> <li>• This approach is typically used in situations where an experiment is not feasible or ethical (as is often the case in policy analysis).</li> </ul> |
| <b>Statistical power analysis<sup>7</sup></b> | A method for determining if a sample (data set) is large enough to run particular statistical tests and obtain meaningful results.  |

*This project was supported by Grant No. 2019-ZB-BX-K002 awarded by the Bureau of Justice Assistance. The Bureau of Justice Assistance is a component of the Department of Justice’s Office of Justice Programs, which also includes the Bureau of Justice Statistics, the National Institute of Justice, the Office of Juvenile Justice and Delinquency Prevention, the Office for Victims of Crime, and the SMART Office. Points of view or opinions in this document are those of the author and do not necessarily represent the official position or policies of the U.S. Department of Justice.*

<sup>1</sup> Rowena Fong, Ruth McRoy, and Alan Dettlaff, “Disproportionality and Disparities,” *Encyclopedia of Social Work*, June 2, 2014; accessed June 15, 2020. <https://oxfordre.com/socialwork/view/10.1093/acrefore/9780199975839.001.0001/acrefore-9780199975839-e-899>.

<sup>2</sup> Frederick J. Gravetter and Larry B. Wallnau. *Statistics for the Behavioral Sciences, 9<sup>th</sup> Edition* (Belmont, CA: Wadsworth Cengage Learning, 2010).

<sup>3</sup> Ibid.

<sup>4</sup>Development Services Group, Inc. *Disproportionate Minority Contact* (Washington, D.C.: Office of Juvenile Justice and Delinquency Prevention, 2014). Accessed May 3, 2021, [https://www.ojjdp.gov/mpg/litreviews/Disproportionate\\_Minority\\_Contact.pdf](https://www.ojjdp.gov/mpg/litreviews/Disproportionate_Minority_Contact.pdf)

<sup>5</sup> Roxy Peck, Chris Olsen, and Jay L. Devore. *Introduction to Statistics and Data Analysis, 5<sup>th</sup> Edition* (Boston, MA: Cengage Learning, 2016).

<sup>6</sup> Stephen L. Morgan and Christopher Winship. *Counterfactuals and Causal Inference* (New York: Cambridge University Press, 2007).

<sup>7</sup> Christopher L. Aberson. *Applied Power Analysis for the Behavioral Sciences*. (New York: Routledge, 2010).