

IN THE SUPREME COURT OF PENNSYLVANIA

No. 21 EM 2019

THE PHILADELPHIA COMMUNITY BAIL FUND, *et. al.*,

Petitioners,

v.

ARRAIGNMENT COURT
MAGISTRATES of the FIRST
JUDICIAL DISTRICT of the
COMMONWEALTH OF PENNSYLVANIA

Respondents.

AMICUS CURIAE BRIEF OF HARVARD AND MIT ALGORITHMIC
JUSTICE INTERDISCIPLINARY RESEARCH GROUP

On Allowance of Objections to the Report of the Special Master
Entered On December 16, 2019

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STATEMENT OF INTEREST OF AMICUS CURIAE

Amicus Curiae is a collaborative group of researchers in the fields of law, statistics, machine learning, sociology, and anthropology at Harvard and MIT. This group researches topics related to algorithmic justice, with a particular focus on pretrial risk assessment instruments. The research group has closely followed the development and deployment of pretrial risk assessment tools, published academic papers on the topic, and carefully studied other research in the field.

The algorithmic justice research group is interested in this case because one of the special master's suggestions is that the Pennsylvania Supreme Court adopt pretrial risk assessment tools to improve Arraignment Court Magistrates' decisionmaking. After careful study, the group has found that, although pretrial risk assessment tools are often promoted as a means of helping judges make more informed and objective pretrial decisions, these tools suffer from serious methodological flaws that undermine their accuracy and effectiveness. As a result, pretrial risk assessments are unlikely to help Arraignment Court Magistrates make better decisions.

SUMMARY OF THE ARGUMENT

The Special Master has recommended that the Supreme Court develop a risk assessment tool to be used by Arraignment Court Magistrates when making bail

decisions.¹ As the Special Master attests “[t]o be useful, a risk-assessment tool must be properly developed, account for bias that may creep into the underlying data, accurately assess whether the defendant presents a community danger, and be routinely tested and calibrated.”² There are no pretrial risk assessment tools that meet these requirements.

Actuarial pretrial risk assessment tools suffer from serious technical flaws that undermine their accuracy, validity, and effectiveness. They do not accurately measure the risks that Arraignment Court Magistrates are required by Pennsylvania law to consider. When predicting flight and danger, many tools use inexact and overly broad definitions of those risks. No tool available today can adequately predict who will perpetrate violence if released. Misleading risk labels hide the uncertainty of these high-stakes predictions and can lead judges to overestimate the risk and prevalence of pretrial violence. Moreover, risk assessments tools rely on deeply flawed and biased data to generate predictions that are neither a reliable nor a neutral measure of underlying criminal activity. Risk assessments that incorporate this biased data will produce biased results.

¹ The Report of the Special Master dated December 16, 2019 and filed on December 17, 2019 (hereinafter Report).

² Report at 3.

These problems cannot be resolved with technical fixes or improvement to existing tools. Accordingly, Amicus Curiae respectfully urges that this Court to reject the Special Master’s suggestion to adopt pretrial risk assessment tools.

ARGUMENT

I. Pretrial Risk Assessments Do Not Accurately Measure Pretrial Risks

When making bail decisions, Arraignment Court Magistrates must identify and mitigate specific pretrial risks, specifically of a person not appearing for trial or of being an unreasonable danger to the community.³ Today’s pretrial risk assessments are ill-equipped to support magistrates in evaluating and effectively intervening on these specific risks, because the outcomes that these tools measure do not match the risks that judges are required by law to consider. For example, many risk assessment tools provide only a “pretrial failure” risk score, which is a combined measure of missing a court appearance or being rearrested. Many scholars have warned that such a composite score could lead to an overestimation of both flight and danger, and can make it more, not less, difficult to identify effective interventions.⁴ This is because the interventions that improve a person’s likelihood of appearing in court (text reminders, transportation services, flexible

³ Pa. Const. art. I, § 14; *Com. v. Truesdale*, 296 A.2d 829, 834 (1972).

⁴ *E.g.*, Lauryn P. Gouldin, *Disentangling Flight Risk from Dangerousness*, 2016 BYU L. REV. 837, 887–88 (2018).

scheduling) are quite different from the interventions designed to ensure community safety (stay-away orders, curfews, drug testing).

Even when pretrial risk assessment tools break out scores into distinct categories, the data used to define and measure flight and danger are inexact and overly broad. For example, these tools frequently define “public safety risk” as the probability of arrest.⁵ When tools conflate the likelihood of arrest for any reason with a risk of violence, a large number of people will be labeled a threat to public safety without sufficient justification. Risk assessments tools that include technical violations, minor offenses, and false arrests in their definition of danger may increase pretrial incarceration rates.

Some risk assessment tools define public safety risk more narrowly as the risk that a person will be arrested for a violent crime while on pretrial release. But because pretrial violence is exceedingly rare, it is challenging to predict. Risk assessments cannot identify people who are likely to commit a violent crime. The fact is, the vast majority of even the highest risk individuals will not go on to be arrested for a violent crime while awaiting trial. Consider the dataset used to build one the leading risk assessment tools on the market today, the Public Safety Assessment (PSA): 92% of the people who were flagged for pretrial violence did

⁵ For example, the Colorado Pretrial Assessment Tool (CPAT) defines a risk to “public safety” as any “new criminal filing,” including for traffic stops and municipal offenses. THE COLORADO PRETRIAL RISK ASSESSMENT TOOL REVISED REPORT 18 (2012).

not get arrested for a violent crime and 98% of the people who were not flagged did not get arrested for a violent crime.⁶ If these tools were calibrated to be as accurate as possible, then they would predict that every person was unlikely to commit a violent crime while on pretrial release. Instead, risk assessments sacrifice accuracy and generate substantially more false positives (people who are flagged for violence but do not go on to commit a violent crime) than true positives (people who are flagged for violence and do go on to be arrested for a violent crime).⁷ These inaccuracies are very much mediated by race — African Americans are much more likely to be mislabeled as high risk than their white counterparts.⁸ Consequently, a tool that assesses the risk of violence could easily lead Arraignment Court Magistrates to overestimate the risk of pretrial violence and detain more people than is justified.⁹

Finally, current risk assessment instruments are unable to distinguish one person's risk of violence from another's. In statistics, predictions are made within a

⁶ PUBLIC SAFETY ASSESSMENT, PSA RESULTS (2019).

⁷ Julia Angwin et al., *Machine Bias*, PROPUBLICA (May 23, 2016), <https://www.propublica.org/article/machinebias-risk-assessments-in-criminal-sentencing>.

⁸ *Id.*

⁹ For example, a recent study found that people significantly overestimate the recidivism rate for individuals who are labeled as “moderate-high” or “high” risk on a risk assessment. Daniel A., Krauss, Gabriel I. Cook & Lukas Klapatch, *Risk Assessment Communication Difficulties: An Empirical Examination of the Effects of Categorical Versus Probabilistic Risk Communication in Sexually Violent Predator Decisions*, BEHAV. SCI. & L. (2018). Participants greatly overestimated the true recidivism rate for those assessed as moderate-high risk category — the true rate was less than fifty percent of what participants predicted.

range of likelihood, rather than as a single point estimate. For example, a predictive algorithm might confidently estimate a person's risk of arrest as somewhere between a range of five and fifteen percent. Studies have demonstrated that predictive models can only make reliable predictions about a person's risk of violence within very large ranges of likelihood, such as twenty to sixty percent.¹⁰ As a result, virtually everyone's range of likelihood overlaps. When everyone is similar, it becomes impossible to differentiate people with low and high risks of violence. At present, there is no statistical remedy to this challenge.

II. The Data Used to Build Pretrial Risk Assessments are Biased and Flawed

In recommending that the Supreme Court develop risk assessments, the Special Master writes that a useful risk assessment tool must “account for bias that may creep into the underlying data.”¹¹ Unfortunately, the data used to build pretrial risk assessments are deeply flawed and racially biased. There is no reliable data source for building risk assessments.

Actuarial risk assessment tools rely on historical records of arrests, charges, missed court dates, convictions, and sentences to generate predictions about an

¹⁰ Stephen D. Hart & David J. Cooke, *Another Look at the (Im-)Precision of Individual Risk Estimates Made Using Actuarial Risk Assessment Instruments*, 31 BEHAV. SCI. LAW 81, 93 (2013).

¹¹ Report at 18.

individual’s propensity for “pretrial failure.” These tools assume that criminal history data are a reliable and neutral measure of underlying criminal activity, but such records cannot be relied upon for this purpose. Arrest records are both under- and over-inclusive of the true crime rate. Arrest records are under-inclusive because they chart only law enforcement activity, and many crimes do not result in arrest. Less than half of all reported violent crimes result in an arrest, and less than a quarter of reported property crimes result in an arrest.¹² Arrest records are also over-inclusive because people are wrongly arrested and arrested for minor violations, including those that cannot result in jail time. Moreover, decades of research have shown that, for the same conduct, African-American and Hispanic people are more likely to be arrested, prosecuted, convicted and sentenced to harsher punishments than their white counterparts.¹³ People of color are treated more harshly than similarly situated white people at each stage of the legal system,

¹² FBI, 2017 CRIME IN THE UNITED STATES: CLEARANCES, <https://ucr.fbi.gov/crime-in-the-u.s/2017/crime-in-the-u.s.-2017/topic-pages/clearances> (last visited January 29, 2020).

¹³ See generally THE SENTENCING PROJECT, REPORT OF THE SENTENCING PROJECT TO THE UNITED NATIONS SPECIAL RAPPORTEUR ON CONTEMPORARY FORMS OF RACISM, RACIAL DISCRIMINATION, XENOPHOBIA, AND RELATED INTOLERANCE REGARDING RACIAL DISPARITIES IN THE UNITED STATES CRIMINAL JUSTICE SYSTEM (2018); LYNN LANGTON & MATTHEW DUROSE, U.S. DEP’T OF JUSTICE, POLICE BEHAVIOR DURING TRAFFIC AND STREET STOPS, 2011 (2013); Stephen Demuth & Darrell Steffensmeier, *The Impact of Gender and Race-Ethnicity in the Pretrial Release Process*, 51 Soc. Probs. 222 (2004); JESSICA EAGLIN & DANYELLE SOLOMON, BRENNAN CENTER FOR JUSTICE, REDUCING RACIAL AND ETHNIC DISPARITIES IN JAILS: RECOMMENDATIONS FOR LOCAL PRACTICE (2015); Sonja B. Starr & M. Marit Rehavi, *Racial Disparity in Federal Criminal Sentences*, J. POL. ECON. 1320 (2014); MARC MAUER, JUSTICE FOR ALL? CHALLENGING RACIAL DISPARITIES IN THE CRIMINAL JUSTICE SYSTEM (2010).

which results in serious distortions in the data used to develop risk assessment tools.

Arrests: For decades, communities of color have been arrested at higher rates than their white counterparts, even for crimes that these racial groups engage in at comparable rates.¹⁴ For example, African-Americans are 83% more likely to be arrested for marijuana compared to whites at age 22 and 235% more likely to be arrested at age 27, in spite of similar marijuana usage rates across racial groups.¹⁵ Similarly, African-American drivers are three times as likely as whites to be searched during routine traffic stops, even though police officers generally have a lower “hit rate” for contraband when they search drivers of color.¹⁶ This leads to an overrepresentation of people of color in arrest data. Predictive algorithms that rely on this data overestimate pretrial risk for people of color.

¹⁴ Megan Stevenson & Sandra G. Mayson, *The Scale of Misdemeanor Justice*, 98 B.U. L. REV. 731, 769-770 (2018). This comprehensive national review of misdemeanor arrest data has shown systemic and persistent racial disparities for most misdemeanor offenses. The study shows that “black arrest rate is at least twice as high as the white arrest rate for disorderly conduct, drug possession, simple assault, theft, vagrancy, and vandalism.” *Id.* at 759. This study shows that “many misdemeanor offenses criminalize activities that are not universally considered wrongful, and are often symptoms of poverty, mental illness, or addiction.” *Id.* at 766.

¹⁵ “[R]acial disparity in drug arrests between black and whites cannot be explained by race differences in the extent of drug offending, nor the nature of drug offending.” Ojmarrh Mitchell & Michael S. Caudy, *Examining Racial Disparities in Drug Arrests*, JUST. Q., Jan. 2013, at 22.

¹⁶ *Ending Racial Profiling in America: Hearing Before the Subcomm. on the Constitution, Civil Rights and Human Rights of the Comm. on the Judiciary*, 112th Cong. 8 (2012) (statement of David A. Harris).

Charges: Empirical research has found that African-American defendants face significantly more severe charges than white defendants, even after controlling for a multitude of factors.¹⁷ For example, prosecutors have been found to be almost twice as likely to file mandatory minimum charges against African-American defendants than similarly situated white defendants.¹⁸ Persistent patterns of differential charging make prior charges an unreliable variable for building risk assessment tools.

Convictions & Sentences: Compared to similarly situated white people, African-Americans are more likely to be convicted¹⁹ and more likely to be sentenced to incarceration.²⁰

Risk assessments tools that incorporate biased and flawed data will produce biased and flawed results. There are no technical fixes for these distortions or alternative data sources to use.

CONCLUSION

Pretrial risk assessment tools do not guarantee or even increase the

¹⁷ Sonja B. Starr & M. Marit Rehani, *Racial Disparity in Federal Criminal Charging and its Sentencing Consequences*, (U. Mich. L. & Econ. Working Paper Series, Working Paper No. 12-002, 2012).

¹⁸ *Id.* at 2.

¹⁹ Shamena Anwar, Patrick Bayer & Randi Hjalmarsson, *The Impact of Jury Race in Criminal Trials*, 127 Q. J. ECON. 1017, 1019 (2012).

²⁰ David S. Abrams, Marianne Bertrand & Sendhil Mullainathan, *Do Judges Vary in Their Treatment of Race*, 41 J. L. STUD. 347, 350 (2012).

likelihood of better pretrial outcomes. This brief specifically addresses two fundamental, technical problems with actuarial risk assessment tools: They do not accurately measure the risks that Arraignment Court Magistrates must consider, and the data used to build these tools distorts their predictions.

For the reasons explained above, Amicus Curiae respectfully requests that this Court reject the Special Master's suggestion to develop and adopt pretrial risk assessments.

Respectfully Submitted,

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Dated: January 30, 2019

CERTIFICATION OF WORD COUNT

I hereby certify that this brief contains 2,267 words, as determined by the word-count feature of Microsoft Word, the word-processing program used to prepare this petition.

Dated: January 30, 2019

s/Susan M. Lin

Susan M. Lin

CERTIFICATE OF COMPLIANCE WITH Pa.R.A.P. 127

I hereby certify, pursuant to Pa.R.A.P. 127, that this filing complies with the provisions of the Public Access Policy of the Unified Judicial System of Pennsylvania: Case Records of the Appellate and Trial Courts that require filing confidential information and documents differently than non-confidential information and documents.

Dated: January 30, 2019

s/Susan M. Lin

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CERTIFICATE OF SERVICE

I hereby certify that I caused true and correct copies of the foregoing Amicus Brief to be served upon the persons indicated below by PACFile and First Class Mail, which service satisfies the requirements of Pennsylvania Rules of Appellate Procedure 121:

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