

Racial Disparities in Arrests for Drug Violations in the US: What Can We Learn From Publicly Available Data?

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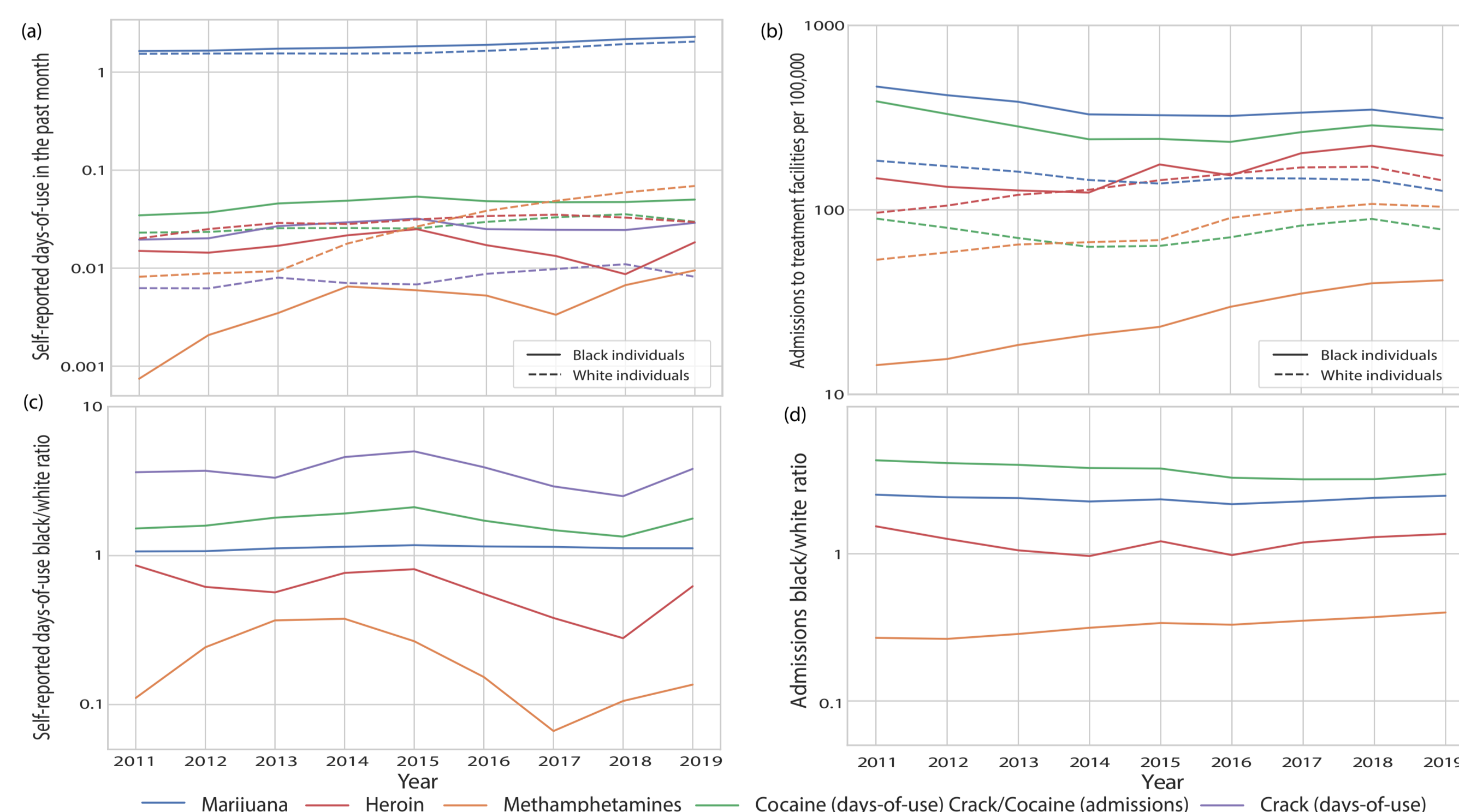
Motivation

US arrest rates for drug violations [have been disproportionately high for black individuals for decades](#). However, the extent to which this is caused by drug-specific discriminatory practices, or as a consequence of wider societal biases, remains unclear.

As data-driven approaches gain popularity in criminal justice, there is an urgent need to [understand these disparities, and ensure that they are not exacerbated by technology](#).

We conduct a county-level analysis of [racial disparities](#) in the US, using data from the National Incident-Based Reporting System (NIBRS), the National Survey on Drug Use and Health (NSDUH) programs, and the Treatment Episode Dataset (TEDS-A).

Trends in drug use

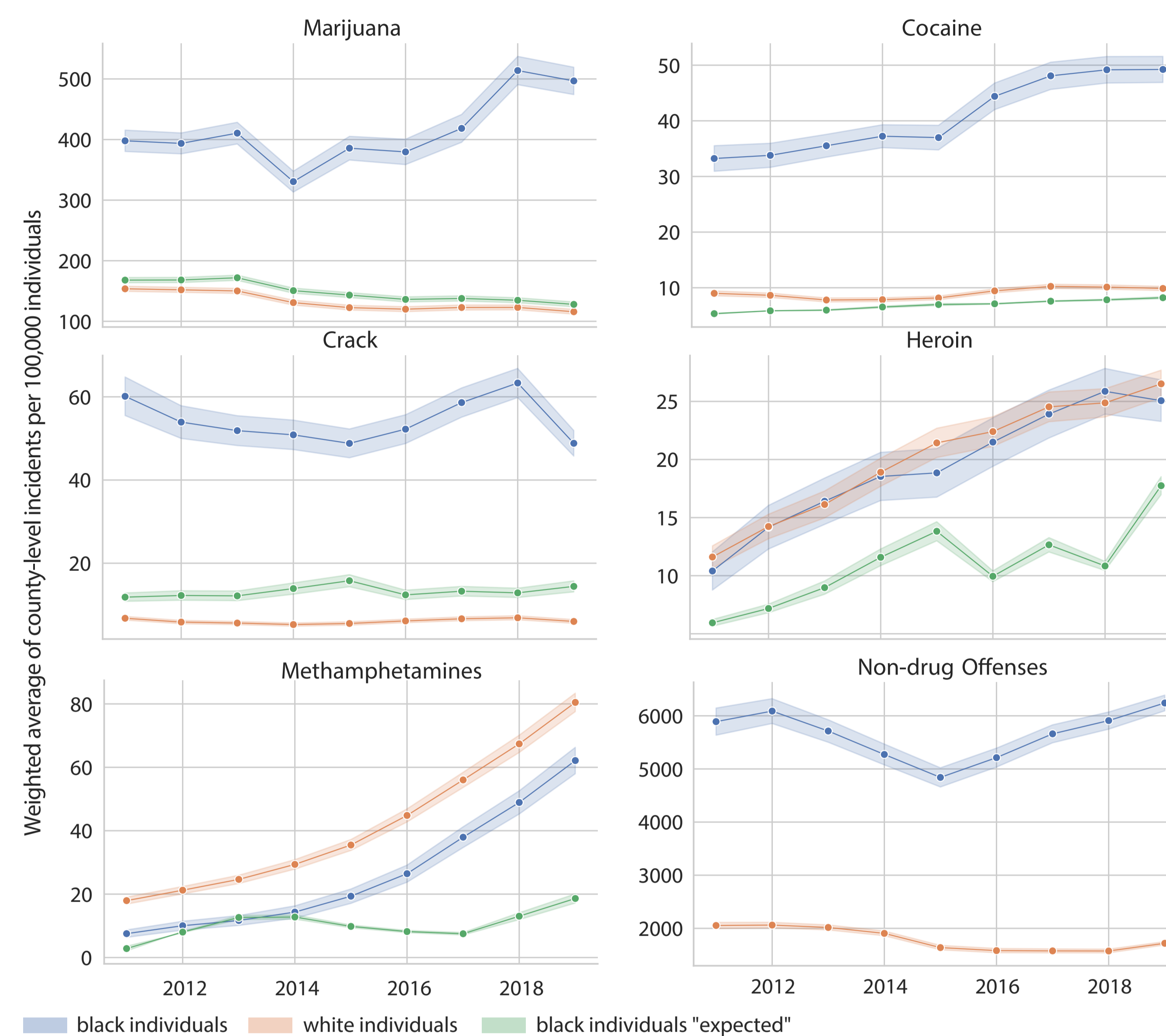


National average of (a) self-reported days-of-use in the past month per person, and (b) rates of admissions to substance abuse treatment facilities per 100,000. At the bottom, the ratio of (c) monthly days-of-use, and (d) rates of admissions, between black and white individuals.

The level of drug use has either increased or remained at the same level for all drugs in the analysis: Marijuana, Heroin, Crack, powdered Cocaine, and Methamphetamine.

For all drugs, the ratio of admissions between black and white individuals is higher than the corresponding ratio of self-reported days-of-use.

Trends in enforcement rates



Average county-level NIBRS incidents per 100,000 individuals, for black (blue) and white (orange) individuals, weighted by the Wilson score confidence. A third (green) line illustrates a naive 'expected' incidents rate for black individuals, calculated by multiplying the rate for white individuals by the national differences in self-reported days-of-use.

The difference in incident rates between white and black individuals [cannot be explained](#) by differences in self-reported days-of-use at the national level.

However, the disparities shrink if we use the relative admission rates, instead of days-of-use, as the base of comparison.

The level of racial disparities in drug incidents appears similar to the [level for non-drug incidents](#).

Compared to days-of-use, the rate of arrests is very small. For Marijuana, about 12,000 days of use translate to a single recorded incident. In practice, the chance of an arrest [heavily depends on circumstances](#) as, e.g., using or buying in public, possession while driving or while engaging in other criminal activities, all increase the chance of arrest.

Is the publicly available data sufficient?

Racial disparities in drug arrests are unlikely to be explained by differences in use between black and white individuals. However, it is impossible to control for many contextual factors, which would be prudent to incorporate before making policy recommendations.

More contextual information and better links between incidents in NIBRS—and questions around drug culture and habits in NSDUH—would significantly advance our [understanding of the observed racial disparities in the data, and their implications for algorithmic tools](#).

Recommendation 1: Record report origin (911 call, routine patrol, etc.), and link secondary to primary incidents.

Recommendation 2: Develop a privacy-preserving model of local variations in drug use.

Recommendation 3: Expand the contextual questions in the NSDUH survey, e.g., how frequently you use in public.

Sociotechnical and fairness implications

Datasets and benchmarks that record arrests, convictions, or recidivism contain a large portion of drug-related offenses.

While context is important for criminal justice data in general, arrests that are discretionary in nature—such as for drug violations—are a [particularly poor proxy for crime](#), and are especially susceptible to concerns around bias.

Recommendation 4: The performance and fairness of algorithmic systems trained on arrests or convictions data should be approached with great care. At the very least, an [analysis of sensitivity to exclusion of drug-related offenses from training data should be conducted](#).