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Geographic Variation in the Cumulative Risk of Imprisonment and Parental Imprisonment in the United States

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Abstract This article reports estimates of the cumulative risk of imprisonment and parental imprisonment for demographic groups in four regions and four states. Regional and state-level cumulative risks were markedly higher for African Americans and Latinos than for whites. African Americans faced the highest cumulative risks of imprisonment in the Midwest, Northeast, and two southern states. Latinos were most likely to serve time in state prison in the West, where their cumulative risk was comparable to that of African Americans. Latino children had a relatively high risk of having a parent imprisoned in the Northeast as well. Racial disparities in the cumulative risk of imprisonment and parental imprisonment did not increase linearly with increases in the cumulative risk for all groups.

Keywords Imprisonment · Inequality · Life course

Introduction

The extraordinary growth of imprisonment in the United States since the 1970s is primarily the product of separate increases in the imprisonment rates of 50 states. Of the roughly 1.6 million Americans currently in prison, nearly 1.4 million are held in state institutions (Carson 2014). Although no state has avoided the prison boom, the scale of imprisonment varies considerably across them (Gottschalk 2015). State imprisonment

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rates vary even more when they are calculated separately for different demographic groups (Muller and Schrage 2014).

Point-in-time measures of the imprisonment rate, however, underestimate the prevalence of imprisonment in the population (Bonczar 2003; Bonczar and Beck 1997; Pettit and Western 2004). Many more people cycle in and out of prison from year to year than are represented in the prison population on a given day. This fact is important because it is not only the experience of currently being imprisoned but also the consequences of having ever been imprisoned that affect the well-being and life chances of prisoners, former prisoners, and their children (Morenoff and Harding 2014; Wakefield and Uggen 2010; Wildeman and Muller 2012).

In this article, we use data from the Bureau of Justice Statistics (BJS) and the Centers for Disease Control and Prevention (CDC) to calculate the cumulative risk of imprisonment and parental imprisonment in state institutions in the eight sampling regions for which representative data are publicly available. We report cumulative risks separately for African Americans, Latinos, whites, African American men, Latino men, white men, and the children of all of these groups. To our knowledge, these are the first estimates of their kind.

The Cumulative Risk of Imprisonment

The cumulative risk of imprisonment is valuable not only as a social indicator but also as a tool for public policy. It yields a perspective on the number of people whose lives have been affected by imprisonment that cannot be attained by examining the imprisonment rate alone. People convicted of offenses carrying long sentences cycle through prison more slowly than people convicted of lesser offenses. This means that they make up a larger share of the prison population than the share of people who have ever been imprisoned. If some demographic groups are more likely than others to be convicted of minor offenses, disparities in the cumulative risk of imprisonment will differ from disparities in the imprisonment rate.

Whether scholars focus on the cumulative risk of imprisonment or the imprisonment rate depends on which dimensions of imprisonment most concern them. The imprisonment rate is most informative about the share of the population currently experiencing the pains of confinement. The cumulative risk of imprisonment, in contrast, tells us more about the proportion of the population facing the collateral consequences of having ever been imprisoned.

The immediate effects of imprisonment are manifold. To imprison people is to harm them; the challenge for governance is determining whether inflicting such harm is necessary in light of the harm they may have inflicted on others (Stuntz 2011:311). Imprisonment subjects inmates to the total authority of prison administrators (Gibbons and Katzenbach 2006:69), severs them from their families and friends (Comfort 2008; Wakefield and Wildeman 2014), and exposes them to violence and illness (Stuckler et al. 2008; Travis et al. 2014:157–232).[1] The imprisonment rate most directly captures the proportion of the population currently undergoing these harmful experiences.

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[1] Several studies have shown that prisoners have lower mortality rates than comparable individuals on the outside, but these findings say as much about threats to life chances in communities where the risk of imprisonment is high as they do about the protective effect of confinement (for a discussion, see Wildeman and Muller 2012).

After leaving prison, many former inmates have difficulty adjusting to the routines and interactions that characterize life on the outside. Some experience acute stress and anxiety (Western et al. 2015). Others struggle to overcome the trauma of solitary confinement (Gawande 2009). Even if imprisonment had no immediate psychological impact on prisoners' well-being, however, it would still affect their quality of life after prison. This is because having a prison record can impede former prisoners' employment prospects (Pager 2003), diminish their civic engagement (Lerman and Weaver 2014; Uggen and Manza 2006), and compromise their access to health care (Brayne 2014; Massoglia and Pridemore 2015; Wildeman and Muller 2012). Former prisoners also face legal barriers to retaining parental rights and receiving welfare, public housing, and financial aid (Travis 2002). The cumulative risk of imprisonment is a good estimate of the prevalence of these post-imprisonment penalties in the population.

The children of current and former prisoners also suffer due to their parent's imprisonment. Prisoners' children are more likely to exhibit behavioral problems (Geller et al. 2012; Wildeman 2010) and have higher mortality rates (Wildeman 2012) than comparable children. Imprisonment imposes a monetary burden on prisoners and their families (Braman 2004; Geller et al. 2011; Harris et al. 2010), and it may contribute to foster care caseloads (Swann and Sylvester 2006). The cumulative risk of parental imprisonment tells us how many children have been affected by the historic expansion of imprisonment in the United States.

Bonczar and Beck (1997) produced the first estimate of the cumulative risk of imprisonment in the United States by race and gender. Pettit and Western (2004) extended this analysis by calculating cumulative risks over time for different educational groups. Wildeman (2009) generated the first estimates of parental imprisonment in the United States. Pettit et al. (2009) and Western and Pettit (2010) later updated all these estimates. Patterson and Wildeman (2015) showed that black men spend, on average, about 4 % of their working lives imprisoned. However, region- and state-specific estimates of the cumulative risk of imprisonment and parental imprisonment have not been published.

Data

To generate our estimates, we combine corrections data from the Survey of Inmates in State and Federal Correctional Facilities, the National Corrections Reporting Program (NCRP), and year-end counts of prisoners, with population data from CDC Wonder. Our focal data set is the 2004 Survey of Inmates. We rely exclusively on this wave because it is the only wave that includes geographic indicators in the public release file.

The 2004 Survey of Inmates enables us to generate age-specific counts of first imprisonment by region and state of residence and by region and state of offense.[2]

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[2] We use inmates' first imprisonment to calculate the cumulative risk of imprisonment and their first imprisonment since the birth of the focal child to calculate the risk of parental imprisonment. If a male inmate with two children aged 6 and 11 was imprisoned in 2003 for the first time since 1993, this would be the first paternal imprisonment for his 6-year-old child but not for his 11-year-old child. See Bonczar and Beck (1997:8) and Wildeman (2009:273–274) for further discussion of these methods.

These age-specific counts can be used to calculate age-specific first-time imprisonment risks, which, combined over a hypothetical lifetime, yield synthetic cohort estimates of the cumulative risk of imprisonment. Tables 1 and 2 and Figs. 1 and 2 report cumulative risks of imprisonment and parental imprisonment by region and state of residence. Tables 3 and 4 in the appendix report cumulative risks by region and state of offense. Because few inmates committed their offense in a state where they did not reside, these estimates are similar.

The Surveys of Inmates draw a representative sample of state prisoners from eight sampling frames: New York, Florida, Texas, California, the Northeast (except New York), the Midwest, the South (except Florida and Texas), and the West (except California). Because we are interested in regional and state variation and because these geographic indicators are not part of the sampling frame for the federal prisoner subsample, we exclude all federal prisoners.

In addition to the 2004 Survey of Inmates, we use correctional data from the NCRP and year-end counts of prisoners. The NCRP provides an estimate—known as the adjustment factor—of the share of first-time prisoners who were released in less than one year and thus were undercounted in the inmate surveys. We use the total national adjustment factor for 2004 used in previous research (Wildeman 2009). Because the adjustment factor varies little across states and demographic groups, this decision has a negligible impact on our estimates. Our final source of data is CDC Wonder, which provides population-level counts of individuals in the general population of each state in 2004 by age, racial and ethnic classification, and gender.

Table 1 Cumulative risk of imprisonment in a state institution

Sampling Region	Adults				Men			
	Total	White	Black	Latino	Total	White	Black	Latino
Midwest	5.9	3.4	18.6	8.2	10.3	5.9	34.4	13.6
South	6.5	3.2	13.9	8.1	11.3	5.5	26.3	13.5
Florida	6.8	3.0	17.8	3.4	11.5	4.8	31.9	6.3
Texas	8.2	2.8	18.2	9.5	12.6	3.7	27.4	16.4
West	6.9	3.5	13.9	14.0	11.3	5.6	21.0	23.8
California	5.8	2.2	14.0	7.2	9.9	3.7	23.6	12.1
Northeast	4.3	1.8	14.9	9.5	8.0	3.2	28.0	16.4
New York	4.8	1.4	10.6	8.2	8.9	2.5	20.3	15.0

Notes: Region- and state-level cumulative risk of imprisonment in a state institution for all adults, whites, African Americans, Latinos, men, white men, African American men, and Latino men. Regions and states reflect inmates' region and state of residence. The eight sampling units in the Survey of Inmates in State and Federal Correctional Facilities are New York, Florida, Texas, California, the Northeast (except New York), the Midwest, the South (except Florida and Texas), and the West (except California).

Sources: Bureau of Justice Statistics, CDC Wonder.

Table 2 Cumulative risk of parental or paternal imprisonment in a state institution

Sampling Region	Parental				Paternal			
	Total	White	Black	Latino	Total	White	Black	Latino
Midwest	7.1	3.9	19.3	9.3	6.3	3.3	17.7	8.8
South	7.9	4.1	15.3	8.1	6.9	3.4	13.9	7.0
Florida	7.6	2.8	18.5	3.8	5.9	1.8	14.8	3.5
Texas	8.6	2.2	20.7	8.8	6.3	1.2	14.8	7.4
West	7.1	3.4	9.9	11.5	5.6	2.5	7.6	9.9
California	6.6	2.0	13.4	8.0	5.7	1.7	10.9	7.1
Northeast	5.4	1.7	18.4	11.6	4.9	1.4	17.1	10.2
New York	4.6	1.0	10.9	5.3	4.2	0.9	9.7	5.1

Notes: Region- and state-level cumulative risk of parental and paternal imprisonment in a state institution for all children, white children, African American children, and Latino children. Regions and states reflect inmates' region and state of residence. The eight sampling units in the Survey of Inmates in State and Federal Correctional Facilities are New York, Florida, Texas, California, the Northeast (except New York), the Midwest, the South (except Florida and Texas), and the West (except California).

Sources: Bureau of Justice Statistics, CDC Wonder.

Methods

We use the same synthetic cohort life table methods used to analyze the cumulative risk of imprisonment for men in two BJS reports (Bonczar 2003; Bonczar and Beck 1997).
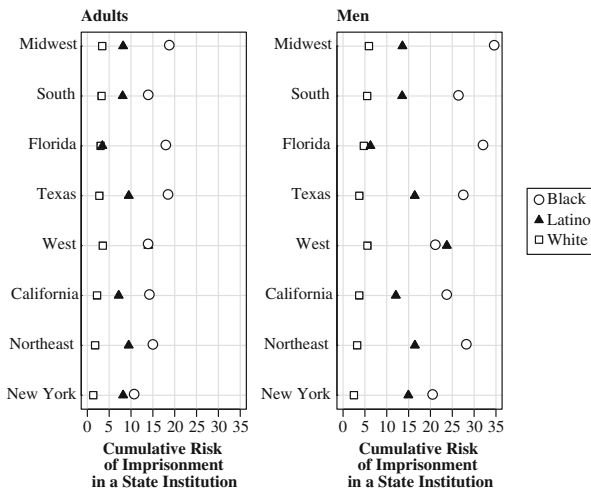
Fig. 1 Region- and state-level cumulative risk of imprisonment in a state institution for whites, African Americans, Latinos, white men, African American men, and Latino men. Regions and states reflect inmates' region and state of residence. The eight sampling units in the Survey of Inmates in State and Federal Correctional Facilities are New York, Florida, Texas, California, the Northeast (except New York), the Midwest, the South (except Florida and Texas), and the West (except California). *Sources:* Bureau of Justice Statistics, CDC Wonder
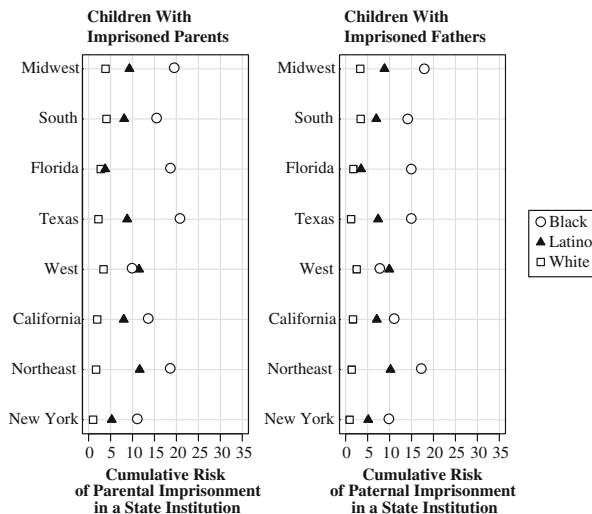
Fig. 2 Region- and state-level cumulative risk of parental and paternal imprisonment in a state institution for white children, African American children, and Latino children. Regions and states reflect inmates' region and state of residence. The eight sampling units in the Survey of Inmates in State and Federal Correctional Facilities are New York, Florida, Texas, California, the Northeast (except New York), the Midwest, the South (except Florida and Texas), and the West (except California). *Sources:* Bureau of Justice Statistics, CDC Wonder

Because the risk of imprisonment late in life is small, we consider the cumulative risk to ages 55–59. We generate estimates exclusively for the total population and for men because estimates of the cumulative risk of imprisonment for women are highly unstable. We use synthetic cohort life tables to estimate the cumulative risk of parental and paternal imprisonment as well. Like Wildeman (2009), we follow children through age 16.

Although many previous estimates of the cumulative risk of imprisonment and parental imprisonment (e.g., Pettit and Western 2004; Wildeman 2009) have used both synthetic cohort and birth cohort life tables to demonstrate the robustness of their estimates, we cannot include birth cohort life tables because all earlier waves of the inmate surveys exclude regional and state-level information from the public release file. Because the imprisonment rate decreased in Texas, California, and New York and increased in Florida from 1996 to 2012, our reliance on the 2004 Survey of Inmates may lead us to slightly overestimate current cumulative risks in the former states and slightly underestimate them in the latter. Our regional estimates should be less affected because regional imprisonment rates were relatively stable over this period (University at Albany n.d.).

Our results are not directly comparable to previous national-level cumulative risks for four reasons. First, excluding federal prisoners conservatively biases our results not only because it reduces the number of first imprisonments used to generate the estimates but also because prisoners currently incarcerated in a state prison whose first imprisonment was in a federal facility are dropped as well. Second, the rate of growth in the imprisonment rate was smaller from 2003 to 2005 than it was from 1990 to 2004. Our exclusive reliance on the 2004 survey therefore pushes our year-end adjustment slightly downward. Third, the relevant adjustment factor for our 2004 data is smaller

than the adjustment factor in earlier periods. Finally, unlike Pettit and Western (2004), who estimated the cumulative risk of imprisonment to ages 30–34, we estimate the cumulative risk of imprisonment to ages 55–59.

The first three differences in our estimation strategy pull our estimates downward; the last difference pushes our estimate for adults upward. Thus, our estimates of the cumulative risk of imprisonment should be closer to the national-level risks generated in previous studies than should our estimates of the cumulative risk of parental imprisonment. In using the 2004 survey alone, we sacrifice the ability to compare our estimates to previously reported national estimates, which are based on counts of state and federal prisoners recorded in multiple inmate surveys, for the ability to compare risks of imprisonment in state institutions across regions and states.

Results

Table 1 reports the cumulative risk of imprisonment for adults and men in the eight sampling regions. The largest increases in imprisonment during the prison boom took place in the South and the West (Travis et al. 2014:42). This fact is reflected in the relatively high cumulative risk of imprisonment for all residents of the South (6.5) and West (6.9) as well as the southern states of Florida (6.8) and Texas (8.2).

Table 1 also shows the cumulative risk of imprisonment for different demographic groups. For ease of comparison, we plot these estimates in Fig. 1. Two features of the plot stand out. First, whites, African Americans, and Latinos faced dramatically different likelihoods of being imprisoned in a state institution. For whites, the cumulative risk of imprisonment ranged from 1.4 to 3.5, whereas for African Americans and Latinos, it spanned 10.6 to 18.6 and 3.4 to 14.0, respectively. In no region did whites have a greater risk of experiencing imprisonment than African Americans or Latinos.

However, the magnitude of group differences in the risk of imprisonment varied considerably across states and regions. African Americans had the highest risks in the Midwest (18.6) and Northeast (14.9), as well as in Texas (18.2) and Florida (17.8). Latinos instead confronted the greatest likelihood of imprisonment in the West (14.0), where their risk was comparable to that of African Americans (13.9).

As documented in previous research on national cumulative risks, black men's cumulative risk of imprisonment was extreme, ranging from more than one in five in New York to more than one in three in the Midwest. These figures are especially notable because, unlike previous national cumulative risks, they exclude federal prisoners. In the Midwest, South, Northeast, Florida, and Texas, more than one in four African American men could expect to spend some portion of their lives in state prison. Despite their universally high risks, African American men's chances of being imprisoned in a state institution differed notably across regions: they were more than 60 % more likely to have been imprisoned in the Midwest than in the West. Latino men, in contrast, faced the greatest risk of imprisonment in the West, where their chances exceeded one in five.

The main pattern of our results changes very little when we examine the cumulative risk of parental imprisonment for children. Table 3 and Fig. 2 show that white children had cumulative risks of parental imprisonment ranging from 1.0 to 4.1 across sampling regions, compared with 9.9 to 20.7 for African Americans and 3.8 to 11.6 for Latinos. The cumulative risk of parental imprisonment was highest in the Midwest, Northeast,

Florida, and Texas for African American children and highest in the Northeast and West for Latino children. Because most imprisoned parents are fathers, the results for paternal imprisonment are very similar.

Is racial disparity in the cumulative risk of imprisonment and parental imprisonment simply a function of the cumulative risk for all groups? Figure 3 provides a suggestive answer. The figure plots the total cumulative risk of imprisonment against racial disparity in the risk. The top two panels depict risks and disparities for adults and men. The bottom two panels depict parental and paternal risks and disparities. All four plots yield roughly the same conclusion: the regions and states with the highest cumulative risks of imprisonment typically were not the regions and states with the highest racial disparities in the cumulative risk. If anything, the relationship is downward sloping and curvilinear. These findings, like those of other studies, suggest that large racial disparities in the cumulative risk of imprisonment or parental imprisonment do not simply reflect a high cumulative risk for all groups (Muller 2012).
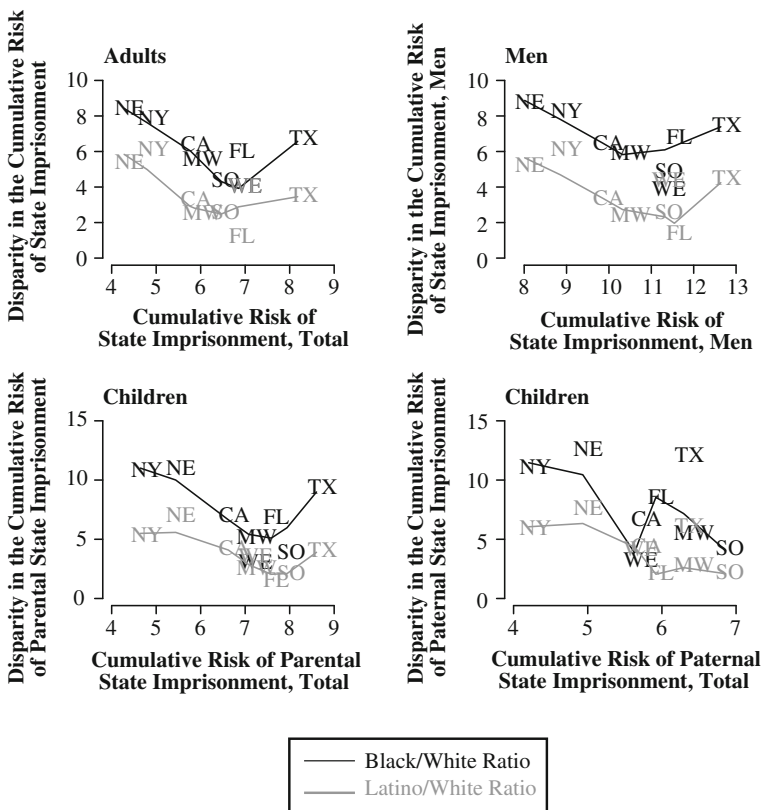
Fig. 3 The relationship between disparity in the cumulative risk of state imprisonment, men's state imprisonment, parental state imprisonment, and paternal state imprisonment, and the total cumulative risk of state imprisonment, men's state imprisonment, parental state imprisonment, and paternal state imprisonment, respectively. Regions and states reflect inmates' region and state of residence. The eight sampling units in the Survey of Inmates in State and Federal Correctional Facilities are New York, Florida, Texas, California, the Northeast (except New York), the Midwest, the South (except Florida and Texas), and the West (except California). *Sources:* Bureau of Justice Statistics, CDC Wonder

Conclusion

In this article, we provide the first region- and state-level estimates of the cumulative risk of imprisonment in the United States. Our estimates point to three broad conclusions. First, the cumulative risk of imprisonment and parental imprisonment was dramatically higher for African Americans and Latinos than it was for whites. In no sampling region was an estimate for whites as high as the estimate for African Americans or Latinos. Second, there was considerable variation in which regions had the highest and lowest cumulative risks for each group. African Americans faced the highest cumulative risks in the Midwest, Northeast, Florida, and Texas; Latinos faced the greatest risks in the West. Third, the sampling regions with the highest cumulative risks for all groups were generally not the regions with the highest racial disparities in those risks.

Future research should attend to the region- and state-specific differences we document (Barker 2006; Campbell and Schoenfeld 2013; Garland 2013). Why are black men more than 60 % more likely to serve time in state prison in the Midwest than the West while Latino men are 75 % more likely to serve time in state prison in the West than the Midwest? Why is racial disparity in the cumulative risk of imprisonment comparatively low in the West, where the absolute risk of imprisonment for all groups is relatively high? The answer to these questions should concern not only scholars of punishment but also policy-makers interested in addressing the negative consequences of having ever been imprisoned.

Appendix

Table 3 Cumulative risk of imprisonment in a state institution

Sampling Region	Adults				Men			
	Total	White	Black	Latino	Total	White	Black	Latino
Midwest	5.9	3.4	18.8	8.2	10.4	6.0	35.1	13.7
South	6.4	3.2	13.8	7.5	11.1	5.4	26.1	12.2
Florida	6.7	3.0	17.5	3.4	11.3	4.7	31.1	6.3
Texas	8.2	2.7	18.1	9.7	12.7	3.7	27.2	16.8
West	6.9	3.6	13.9	14.0	11.4	5.7	21.0	24.0
California	5.7	2.1	14.1	7.2	9.7	3.5	23.8	12.1
Northeast	4.3	1.8	15.1	9.2	8.1	3.3	28.5	16.0
New York	4.7	1.4	9.9	8.2	8.6	2.5	18.8	15.0

Notes: Region- and state-level cumulative risk of imprisonment in a state institution for all adults, whites, African Americans, Latinos, men, white men, African American men, and Latino men. Regions and states reflect inmates' region and state of offense. The eight sampling units in the Survey of Inmates in State and Federal Correctional Facilities are New York, Florida, Texas, California, the Northeast (except New York), the Midwest, the South (except Florida and Texas), and the West (except California).

Sources: Bureau of Justice Statistics, CDC Wonder.

Table 4 Cumulative risk of parental or paternal imprisonment in a state institution

Sampling Region	Parental				Paternal			
	Total	White	Black	Latino	Total	White	Black	Latino
Midwest	7.1	3.9	19.7	9.3	6.4	3.3	18.1	8.9
South	7.8	4.0	15.1	7.7	6.7	3.4	13.6	6.5
Florida	7.6	2.7	18.7	3.8	6.0	1.7	15.3	3.5
Texas	8.6	2.1	21.0	8.9	6.4	1.2	15.4	7.5
West	7.1	3.5	9.9	11.5	5.7	2.6	7.6	9.9
California	6.5	1.9	13.1	8.0	5.6	1.6	10.6	7.1
Northeast	5.4	1.7	18.3	11.4	4.9	1.4	16.9	10.0
New York	4.6	1.0	10.7	5.3	4.2	0.9	9.5	5.2

Notes: Region- and state-level cumulative risk of parental and paternal imprisonment in a state institution for all children, white children, African American children, and Latino children. Regions and states reflect inmates' region and state of offense. The eight sampling units in the Survey of Inmates in State and Federal Correctional Facilities are New York, Florida, Texas, California, the Northeast (except New York), the Midwest, the South (except Florida and Texas), and the West (except California).

Sources: Bureau of Justice Statistics, CDC Wonder.

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