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Disproportionate Minority Contact with the Juvenile Justice System in Shelby County

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A brief background on “DMC” and the “RRI”

What is Disproportionate Minority Contact (DMC)?

The topic of racial and ethnic disparity in the juvenile justice system came to national attention with the 1988 amendments to the Juvenile Justice and Delinquency Prevention Act (JJDP-A), which required states to address disproportionate minority confinement, known as DMC (Sickmund and Puzanchara, 2014). Recognizing that disparity is not limited to secure confinement, and that it may occur at multiple decision points in the justice system, DMC was expanded in the 2002 amendment to the JJDP-A to represent disproportionate minority contact throughout the system.

Under this revised conceptualization, as youth pass through the different stages of the juvenile justice system, they make contact with a series of decision makers, each of whom could render a decision that could potentially result in disparity. Measuring the disparity at each decision point gives an understanding of where disparity is introduced and/or magnified in the handling of cases by the juvenile justice system. Disparity can be calculated and measured at nine decision points where juveniles contact the juvenile justice system: (1) arrest, (2) referral to court, (3) diversion, (4) secure detention, (5) case petitioning, (6) delinquency finding/adjudication, (7) probation, (8) confinement in a secure correctional facility, and (9) judicial waiver to adult criminal court.

Racial/ethnic disparities often accumulate with deeper system involvement

Research suggests that disparity is most pronounced at arrest, the entry point into the juvenile justice system for most juvenile offenders. As youth proceed through the system, disparate treatment at later stages often builds upon disparity at early stages—thus disparity at detention builds upon disparity at referral to court, which builds upon disparity at arrest. The

It is important to understand key terms when discussing issues of racial and ethnic fairness

Disproportionality or overrepresentation refers to a situation in which a larger proportion of a particular group is present at various stages within the juvenile justice system (such as intake, detention, adjudication, and disposition) than would be expected based on its proportion in the general population.

Disparity means that the probability of receiving a particular outcome (e.g., being detained vs. not being detained) differs for different groups. Disparity may in turn lead to overrepresentation.

Discrimination occurs when juvenile justice system decision makers treat one group differently from another group based wholly, or in part, on their gender, race, and/or ethnicity.

Minority or minority group is a culturally, ethnically, or racially distinct group that coexists with the dominant cultural group. As the term is used in discussions of racial and ethnic fairness in the juvenile justice system, minority status does not necessarily mean the group represents a smaller share of the population. In fact, there are many places throughout the U.S. where minority groups represent the majority of the population.

Neither overrepresentation nor disparity necessarily implies discrimination, although it is one possible explanation. If racial discrimination is a part of justice system decision making, minority youth can face higher probabilities of being arrested, referred to court intake, held in short-term secure detention, petitioned for formal processing, adjudicated delinquent, and confined in a secure juvenile facility. Disparity and overrepresentation, however, can result from behavioral and legal factors rather than discrimination. For example, if minority youth commit proportionately more (and more serious) crimes than white youth, they will be overrepresented in secure facilities, even when there was no discrimination by system decision makers.

Research is necessary to reveal the decision points at which disparity occurs and to uncover the dynamics that lead to overrepresentation.

Source: Sickmund and Puzanchara. 2014. *Juvenile Offenders and Victims: 2014 National Report*.

presence of disparity does not always signify the presence of discrimination. Disproportionality may be the result of cultural and behavioral influences, policing practices, implicit or explicit bias in the justice system or, most likely, a combination of all of these factors.

Research in several jurisdictions has found that juvenile court cases in urban jurisdictions are more likely to receive severe outcomes (e.g., detention prior to adjudication, residential placement following adjudication) than are cases in nonurban areas. Because minority populations are concentrated in urban areas, this geographical effect may work to over-

represent minority youth at each stage of processing when case statistics are summarized at the state or county level—even when there is no disparity at the local community level.

The Relative Rate Index is a method of measuring disparity in the justice system

The Office of Juvenile Justice and Delinquency Prevention (OJJDP) developed the Relative Rate Index (RRI) to measure disparities across the stages of the juvenile justice system by comparing rates of juvenile justice contact experienced by different groups of youth. The RRI takes the relative size

of the white and minority populations at each stage of the process and compares it to the immediately preceding stage. The key idea behind the RRI is to quantify the nature of the decisions at each decision point for each racial group and then compare these decisions to identify the unique contributions to disparity made by each decision point.

For example, after arrest, law enforcement must decide if the youth will be referred to juvenile court intake. The RRI compares the proportions (or rates) of white and minority arrests that are referred to court intake. If the rate of referrals relative to arrests for minority youth is greater than the rate for white youth, then there is disparity. If the rates are similar, then there is no disparity. To simplify the comparison of the rates, the resulting minority rate is divided by the white rate to arrive at a ratio (i.e., the Relative Rate Index). These calculations are made with national data in the tables on the following page. If the RRI is near or equal to 1.0, then there is no evidence of disparity. If the ratio is greater than 1.0 (i.e., the minority rate is larger than the white rate) for

decisions that result in youth penetrating the system farther, there is evidence of disparity and this decision process needs further study to understand why. (For diversion and probation decisions, RRIs *less* than 1.0 indicate that disparity exists.) An RRI of 2.0 would indicate a minority rate double the white rate; an RRI of 0.5 would indicate a minority rate of half the white rate.

Over time, an RRI would improve if, for example, the rates dropped for black youth and remained constant for white youth, or if the rates remained constant for black youth but increased for white youth.

The RRI can be applied to any subset of the justice system population. For example, the RRI can be used to assess disparity by gender or age, or to assess disparity by certain offenses.

Although it has been more than a decade since the RRI was introduced, many jurisdictions still have difficulty gathering the data necessary to calculate RRIs at all nine stages for all minority groups.

Collecting data and calculating RRIs is only the first step in the process of ensuring racial/ethnic fairness in the juvenile justice system. OJJDP also developed a model to address disparity. The initial phase is identification through the RRI. The second phase is assessment and diagnosis, which involves discussing probable explanations for observed disparities, asking questions about the data and information collected, and consulting other data sources to verify explanations. The third phase is intervention, which must be tailored to the jurisdiction but often includes making administrative, policy, and procedural changes, such as implementing structured decision making tools at various contact points within the juvenile justice system. The fourth phase is evaluation of interventions, and the fifth is monitoring to determine if any modified/new interventions are needed.

Steps in calculating the Relative Rate Index: National Data

**2017 Case Processing Summary: by race/ethnicity
Counts for Delinquency Offenses**

DECISION POINTS	All	White	Minority	Black	AIAN**	AHPI***	Hispanic
Population at risk (10-upper age)	31,679,500	17,100,000	14,579,600	4,652,300	590,300	1,858,000	7,479,000
Cases referred to juvenile court	818,900	359,800	459,100	287,600	13,600	8,800	149,100
Cases diverted	207,600	110,300	97,400	54,900	3,100	2,600	36,700
Cases detained	213,700	74,600	139,100	85,700	3,600	2,200	47,700
Cases petitioned	466,400	188,800	277,600	182,400	7,800	4,700	82,800
Cases adjudicated	248,100	100,900	147,200	91,700	4,400	2,500	48,600
Adjudicated cases resulting in probation	155,500	65,500	89,900	55,300	2,700	1,900	30,000
Adjudicated cases resulting in placement	69,700	22,200	47,500	29,700	1,100	500	16,200
Cases judicially waived	3,800	1,200	2,600	2,100	100	<50	500

Rates for Delinquency Offenses

RATE	All	White	Minority	Black	AIAN**	AHPI***	Hispanic
Cases referred per 1,000 persons in the population	25.8	21.0	31.5	61.8	23.0	4.7	19.9
Cases diverted per 100 cases referred	25.4	30.6	21.2	19.1	22.9	29.6	24.6
Cases detained per 100 cases referred	26.1	20.7	30.3	29.8	26.2	24.9	32.0
Cases petitioned per 100 cases referred	57.0	52.5	60.5	63.4	57.7	53.1	55.5
Cases adjudicated per 100 cases petitioned	53.2	53.5	53.0	50.3	56.5	53.0	58.8
Probation cases per 100 adjudicated cases	62.7	65.0	61.1	60.4	61.0	75.3	61.8
Placement cases per 100 adjudicated cases	28.1	22.0	32.3	32.4	25.9	18.3	33.3
Cases judicially waived per 100 cases petitioned	0.8	0.6	0.9	1.1	0.8	*0.4	0.6

Relative Rate Indices¹ for Delinquency Offenses

RELATIVE RATES	Minority	Black	AIAN**	AHPI***	Hispanic
Referral rate	1.50	2.94	1.09	0.23	0.95
Diversion rate	0.69	0.62	0.75	0.97	0.80
Detention rate	1.46	1.44	1.26	1.20	1.54
Petitioned rate	1.15	1.21	1.10	1.01	1.06
Adjudicated rate	0.99	0.94	1.06	0.99	1.10
Probation rate	0.94	0.93	0.94	1.16	0.95
Placement rate	1.46	1.47	1.18	0.83	1.51
Waiver rate	1.49	1.79	1.35	*0.67	0.89

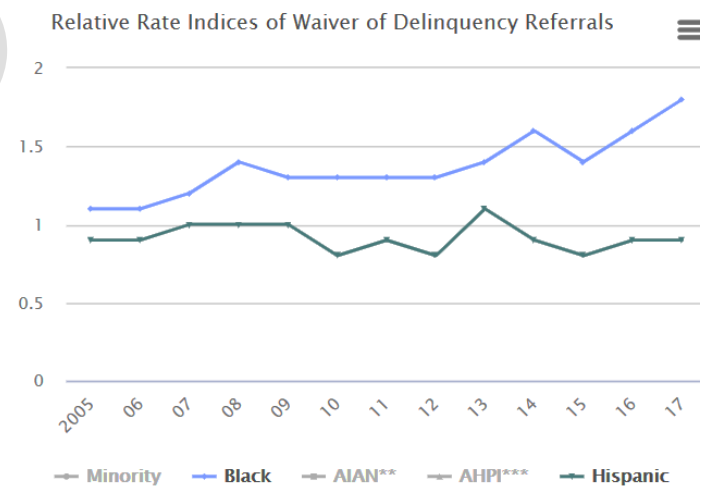
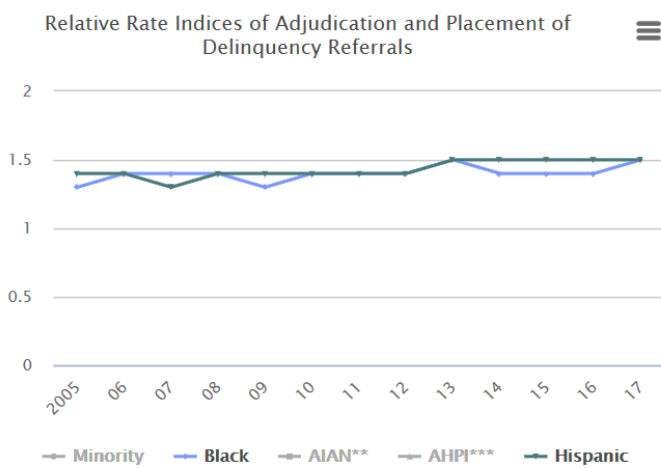
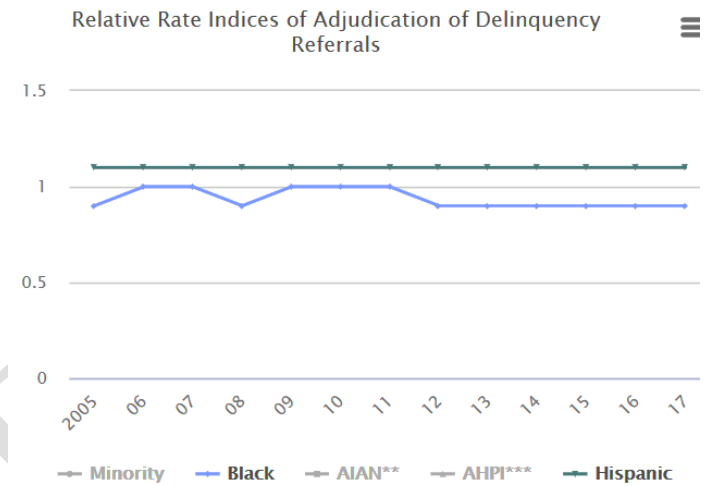
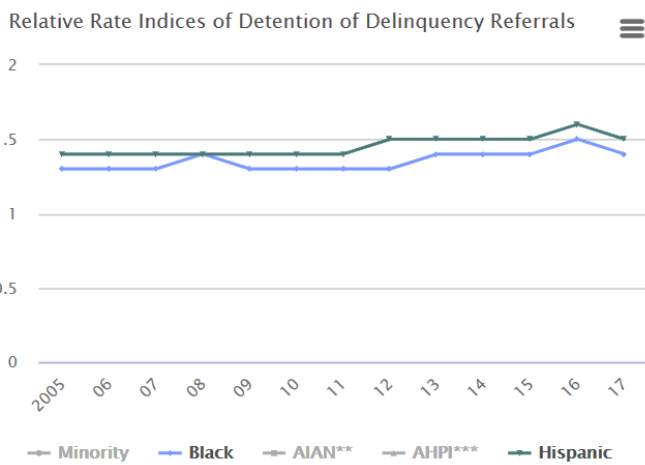
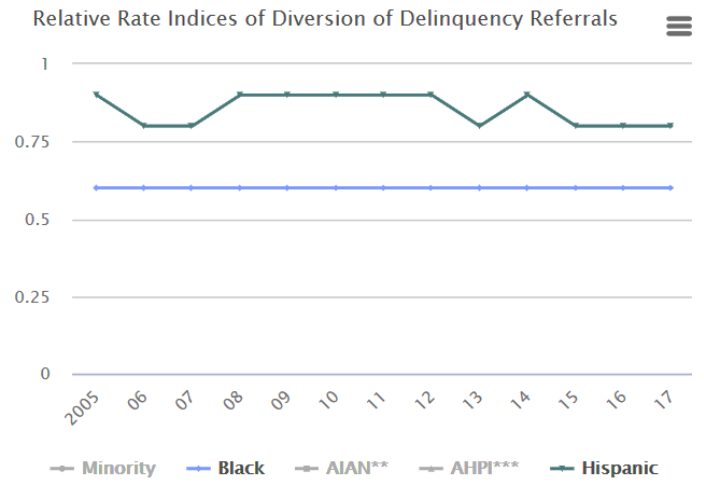
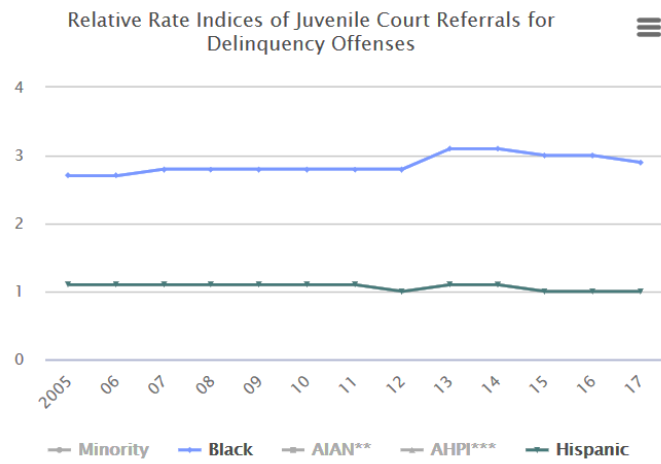
- National RRI data show that there is more disparity for black youth at arrest, detention, out-of-home-placement, and waiver to criminal court than at other stages.

Note: An RRI of 1.0 indicates parity and that the rates being compared are equal. An RRI greater than 1.0 means that the rate for minority youth is greater than the rate for white youth. An RRI less than 1.0 means that the rate for minority youth is less than the rate for white youth.

¹ RRIs are relative to whites.

Source: Puzzanchera et al. 2019. *National Disproportionate Minority Contact Databook* [online data analysis tool].

Nationally, the RRIs have not changed very much



Note: Only the RRIs for black youth and Hispanic youth are displayed here.

Source: Puzzanchera et al. 2019. *National Disproportionate Minority Contact Databook* [online data analysis tool].

What causes DMC?

The Disproportionate Minority Contact (DMC) literature review developed by OJJDP's Model Programs Guide discusses the following causes of DMC.

Differential offending refers to various individual, family, and neighborhood factors that are related to offending—also known as risk factors. Examples of these factors include:

- Economically disadvantaged and unstable communities and neighborhood social contexts
- Family risk factors such as unmarried or single parents, incarcerated parents, poor parent-child communication, and harsh, lax, or inconsistent discipline
- Low-performing institutions, especially public schools
- Delinquent peers
- Greater exposure to violence (trauma)

Differential responses or differential treatment or bias theory posits that the structure of justice decision-making disadvantages minority youth. Minority youth are more likely than white youth to have harsher consequences at each stage of the juvenile justice decision-making process—the system treats minority youth differently (and more punitively). Thus, one would expect to find differential treatment of minority youth even after accounting for legal and extralegal factors (e.g., age, socioeconomic status, school status).

Within the differential treatment framework is the racial or symbolic threat theory which focuses on the social-psychological processes behind decisions that disadvantage one or more racial or ethnic groups compared with others. The thought is that decision makers are influenced by emotions driven by the perception of minority youth as threatening to middle-class standards and public safety.

For many years OJJDP's DMC Technical Assistance Manual provided a detailed list of possible explanations for DMC

Differential opportunity for prevention and treatment—effective programs may be geographically inaccessible to minority youth, or designed for white, suburban youth

Differential behavior—minority youth are involved in more serious crime, participate more deeply in gang activity, begin delinquent activity at earlier ages, and are involved in other social service or justice-related systems such as the child welfare system

Mobility effects—youth may commit crimes in jurisdictions outside their own home areas

Indirect effects—risk factors associated with system involvement are also linked with race

Differential processing or inappropriate decision-making—decisions based on inconsistently applied criteria or criteria are structured in a way that disadvantages some groups

Justice by geography—a Massachusetts DMC study found that police tend to patrol urban minority neighborhoods more aggressively than suburban areas where fewer minorities reside

Legislation, policies, and legal factors—for example, statutes that define drug offenses tend to treat crack cocaine more seriously than powdered cocaine

Attribution theory and labeling theory present other ways to think about what causes DMC. Under attribution theory, decision-makers rely on internal and external factors they perceive to be linked to criminal and delinquent behavior. Labeling theory contends that dominant groups maintain their status by using labels to define deviant or criminal behavior and disenfranchise certain other groups.

In reality, numerous factors are likely involved, including both differential offending and differential responses. The National Academy of Sciences' (2013) *Reforming Juvenile Justice: A Developmental Approach* concluded:

"We know that racial/ethnic disparities are not reducible to either differential offending or differential selection. Many other factors affect disproportionality of minority youth in the juvenile justice system, including the troubling entrenched patterns of poverty, segregation, gaps in educational achievement, and residential instability. DMC exists in the broader context of a "racialized

society" in which many public policies, institutional practices, and cultural representations operate to produce and maintain racial inequities." [239]

OJJDP advised that interventions to reduce DMC should only be implemented after DMC is identified using the RRI approach, contributing mechanisms are assessed through a methodologically sound DMC assessment study, and readiness events are organized to prepare local stakeholders.

Reducing racial disparities is very difficult

OJJDP organized strategies for reducing DMC into three categories:

Direct services: address the risks and needs of the youth. Direct services include such strategies as: prevention and early intervention programs, advocacy for systems-involved youth, diversion programs, and alternatives to secure detention and confinement.

Training and technical assistance: focus primarily on the needs of juvenile justice personnel and law enforcement. Training and technical assistance might include such things as: addressing unintentional racial bias (implicit bias), building cultural competency, improving interactions between youth and juvenile justice personnel, and using structured decision making tools such as risk assessment instruments.

System change: involves altering aspects of the juvenile justice system that may contribute to DMC. System change requires changes to the basic policies and procedures. It can be extremely challenging to alter the basic procedures, policies, and rules that define how a juvenile justice system operates. Systems change typically faces many challenges to implement, not least among them the need for extensive cross-agency coordination. Implementation of systems change is likely to face resistance or criticism from stakeholders. Successful implementation of systems change can have a tremendous impact. National organizations such as the Annie E. Casey Foundation have successfully guided many jurisdictions through systems change processes providing funding and technical assistance (Juvenile Detention Alternatives Initiative (JDAI), Deep End Initiative, and Transforming Juvenile Probation).

OJJDP's DMC TA manual states—

“Identifying high-quality programs that can address specific DMC factors in a given community has been one of the most difficult obstacles in developing effective DMC initiatives.”

Many jurisdictions notice that strategies that reduce numbers of minority youth impacted, may fail to reduce disparity or even make it worse.

OJJDP found that jurisdictions that successfully reduced disparities in used the following eight strategies:

1. Focus on data collection and use
2. Increase collaboration with other state and local agencies, police, judges, and the community

3. Shift the institutional culture from a punitive or procedural focus toward a focus on what was best for the youths and the community
4. Affiliate with national juvenile justice reform initiatives
5. Create alternatives to secure detention, secure confinement, and formal system involvement
6. Focus intentionally on DMC reduction (and not just on general system improvement) while using a non-accusatory tone
7. Maintain leadership at the local level, the state level, or both
8. Make DMC reduction a long-term priority

Changes Shelby County Juvenile Court has made since the MOA align with OJJDP's eight strategies

Focus on data collection and use: As part of its webpage the Juvenile Court of Memphis and Shelby County (the Court) established a DMC dashboard (<https://dashboard.shelbycountyttn.gov/>). The dashboard displayed the progress made toward full compliance with each of the Memorandum of Agreement's (MOA) (see box on the next page) requirements (due process, equal protection, and facility/protection from harm). The dashboard includes displays of the county's RRI matrix, several trend graphics on key variables (i.e., RRI trends and average daily detention population trends), and links to the court's annual report. The dashboard also includes links to each of the reports submitted by each of the MOA monitors.

The data, recommendations, and technical assistance provided by the monitors and others informed the changes made to policies and practices since the agreement.

Increase Court collaboration with state and local agencies, police, and the community: Since the MOA, the Court and/or the county established the Strategic Planning Committee and the Countywide Juvenile Justice Consortium. The Court has engaged the County Attorney, schools, service providers, universities, the Sheriff, Mem-

phis Police Department (MPD) and other law enforcement agencies, Mayor's office and community leaders to craft strategies to address DMC.

Shift the institutional culture from a punitive or procedural focus toward a focus on what was best for the youths and the community:

Since 2013 a number of actions have been taken that fit in this category. One example of such initiatives includes Parent Orientation, a program that informs parents about the court process and outlines expectations for their youth. The Court has implemented a Summons Review Team (SRT) to divert cases from formal processing. A detention risk screening instrument has been implemented to reduce the use of detention. Changes have been made at the detention center to reduced use of isolation and physical force. Suicide risk is reduced through the implementation of suicide screening at the detention center. HOPE Academy, a partnership between the Court and Shelby County Schools, has improved the education services available to detained youth.

Training has been provided for public defenders and the number of public defenders has expanded. Procedures have been established to remove any appearance of conflict of interest in the appointment of private counsel.

Within the Court, new staff positions were created to improve case processing (Expeditor) and focus on DMC (DMC coordinator, later elevated to Deputy Administrator), there has been an increase in the diversity of staff, and the Judge's Executive Cabinet was established. Court personnel at all levels have been trained on a range of topics related to racial disparity (implicit bias, suicide, and trauma). The Court has increased transparency through such things as the public-facing online DMC dashboard, Court Artwork and summer youth programs, and a variety of other community outreach efforts.

The Court has worked with the Shelby County Schools' School House Adjustment Program Enterprise (SHAPE) to

reduce the number of children taken into custody from 40 targeted city schools. The Court and Shelby County Schools also established the School-Based Probation Liaison Initiative which authorizes trained faculty at certain schools to maintain regular contact with students on probation and their Juvenile Court counselors, monitor daily attendance and academics, and also serving as mentors and educational advocates.

The Evaluation and Referral (E&R) Section of the Court's Youth Services

Bureau implemented the Youth Assessment and Screening Instrument (YASI) risk and needs assessment. E&R also uses the Trauma Screen and Child PTSD Symptom Scale to identify children exposed to trauma. These assessment tools provided an opportunity to identify high risk youth. Once identified, E&R makes referrals to community service providers and closely monitors compliance and progress in treatment. The goal is to promote healthy development and resilience, reduce recidivism and assist youth in developing into productive

members of society through a holistic, strength-based approach when working with court-involved youth and families.

The Corrective Services Department's Non-custodial Diversion Section began its Ceasefire Program, a collaborative effort between the Court, Tennessee Department of Corrections, US Attorney's Office and Memphis Police Department. Ceasefire is a court-ordered program that works toward deterring serious gang and youth gun violence. In addition, a Community Service Program serves as a symbolic restitution program for delinquent youth who are placed with public and private non-profit agencies that provide work assignments and supervision.

Affiliate with national juvenile justice reform initiatives: The Court has engaged several national organizations to get training and technical assistance on a range of juvenile justice reform areas. The Court participated in the Annie E. Casey Foundation's Juvenile Detention Alternatives Initiative (JDAI). For more than 20 years, JDAI has worked with jurisdictions to reduce the use of detention and address racial and ethnic disparities in detention.

The Court was also a participant in the National Council of Juvenile and Family Court Judges' (NCJFCJ) School-Justice Pathways project that helped jurisdictions identify and reduce referrals to court for school-based incidents. That effort brought in national experts, Judge Steven Teske from Georgia and Kevin Bethel, former Deputy Police Chief from Philadelphia, to learn about strategies used that were effective in their jurisdictions and elsewhere across the nation. Public defenders in Shelby County have attended the National Juvenile Defender Center (NJDC) juvenile defender training. Court personnel have participated in numerous NCJFCJ trainings and conferences.

Create alternatives to secure detention, secure confinement, and formal system involvement: The Court's JDAI work led to the implementation of a Deten-

Overview: Memorandum of Agreement Regarding the Juvenile Court of Memphis and Shelby County, December 17, 2012

The Memorandum of Agreement (MOA) was entered into by the Department of Justice (DOJ), Shelby County, Tennessee through the County Mayor and the County Attorney, and the Juvenile Court of Memphis and Shelby County (the Court) to address the administration of juvenile justice for Children facing delinquency charges before JCMSC and the conditions of confinement of Children at the detention center operated by JCMSC.

The MOA included provisions for the protection of Children's procedural and substantive due process rights as well as their right to equal protection. These provisions work together to ensure that Children appearing before JCMSC on delinquency matters are protected by the guarantees of the United States Constitution.

Substantive Remedial Measures

Due Process: the Court shall develop and implement policies, training, and review mechanisms that will guarantee due process for Children. The Court shall also establish mechanisms that will identify and correct violations of those due process rights.

DMC and Equal Protection: The Court shall ensure that Children appearing before the Court receive equal protection. This shall be done in a manner that promotes community engagement and the integrity of the juvenile justice system. To accomplish this goal, JCMSC shall transform its policies, procedures, practices, and training, as they relate to all stages of the administration of juvenile justice. The Court shall lead the community's efforts to promote fairness in the administration of juvenile justice. To achieve this outcome, The Court shall develop and implement the following provisions:

- DMC Assessment
- Policies and Procedures
- DMC Reduction: Evaluation and Tools
- Training
- Performance Metrics for Equal Protection and DMC Reforms

Protection from Harm: Detention Facility: the Court shall provide Children in the Facility with reasonably safe conditions of confinement by fulfilling the requirements set out in the MOA.

Source: The MOA, available online: <http://www.shelbycountyttn.gov/DocumentCenter/View/5759/DOJ-MOA-12-17-12?bidId=>

tion Assessment Tool (DAT) and the development of the Evening Reporting Center (ERC—funded by the Shelby County Board of Commissioners) to serve as both an alternative to detention and as a requirement for youth on supervised probation. An additional three ERCs have been added throughout the city giving families and their court-involved youth vital services in locations closer to their neighborhoods. The Corrective Services Department within the Court's Children's Bureau is using a Global Positioning Satellite (GPS) to enable youth to remain in the community while waiting on their court appearance rather than being held in detention. From 2013 to 2017 the number of youth detained dropped 42% (*2017 Annual Report Juvenile Court of Memphis and Shelby County*).

Together with the MPD and the Shelby County Sheriff's Department the Court has worked to implement the Juvenile Summons Program whereby law enforcement officers issue juvenile summonses in lieu of physical arrest on seven designated offenses.

The Corrective Services Department has created and implemented multiple programs intended to divert youth from the juvenile justice system such as the Summons Review Team, Diversion Team, and the Precinct Liaison Program. These programs were created to provide qualified children with alternatives to detention, formal court proceedings, and allow them to avoid having a formal juvenile record. The Court's Summons Review Team (SRT) program tracks summons information to assess whether the summons is appropriately being issued, if youth could be warned and released rather than proceeding to court intake. The Diversion Team is a collaborative effort involving Youth Court, Early Intervention Program, Auxiliary Probation Services, Ceasefire, and the Children's Bureau. This new program is designed to provide eligible youth with educational services and life skills to promote positive outcomes and reduce subsequent offending. The Precinct Liaison program assigns an experienced youth services officer to

MPD precincts to serve as a liaison with the Court and assist in screening and/or referral of youth brought to the precinct. The goal is to reduce the need for detention when possible and assist law enforcement in communicating and dealing with youth.

The Court has also entered into a MOA with the Shelby County Sheriff's Office, and later the Memphis, Germantown, and Collierville Police Departments, to implement the Law Enforcement Assessment Phone-in Pilot Program (LEAP) to reduce the number of children who are physically arrested. Officers may also seek advice on other options that would allow children to remain in their home or community placement pending review of their complaint.

The Court has also developed a Graduated Response Grid (GRG) used at intake or the petition stage to determine release, diversion, or a referral for further court proceedings.

In addition, respite beds are available to the Court in a facility called Porter Leath. The Court also makes referrals for counseling services to Youth Villages, a non-profit that deals with emotionally and behaviorally troubled youth.

Focus intentionally on DMC reduction (and not just on general system improvement): Virtually all of the reforms implemented since the MOA have had a stated purpose of reducing DMC. The Strategic Planning Committee, Countywide Juvenile Justice Consortium, DMC Deputy Administrator, contracts with David Roush (focused on the detention center) and NCJJ (focused on DMC data analysis), and ongoing engagement with the County Attorney and law enforcement, continue to keep the focus on DMC reduction.

Maintain leadership at the local level, the state level, or both: Court's leadership, including the Judge, Chief Legal Officer, Magistrate Judges, Court Administrator, Court Services Director, and DMC Deputy Administrator, are from all appearances deeply commit-

ted to reducing disparities in the Memphis and Shelby County juvenile justice system. The Strategic Planning Committee remains in place. In addition, the Court's IT/Research team is eager to have tools in place to better monitor the system's performance themselves and make the results available to the public.

Make DMC reduction a long-term priority: The plans for the Juvenile Assessment Center demonstrate the Court's desire to establish lasting strategies to reduce DMC and divert youth from the juvenile justice system. The Court has maintained an emphasis on: data collection and reporting, use of diversion, detention screening, a strong defense system, and ongoing training of court and law enforcement personnel. All indications are that the Court and the larger community are open to seeking additional innovations/reforms to improve the juvenile justice system and its handling of youth of color.

Understanding the sources of disparity

The DOJ Equal Protection Monitor Assessment Studies and Reports

The DOJ Equal Protection Monitor Assessment Studies use a multivariate statistical analysis technique called logistic regression to find differential treatment of minority youth even after accounting for legal and extralegal factors. In other words, logistic regression can determine the effect of youth race while controlling for other youth and case characteristics.

Logistic regression compares the odds of an event occurring under one set of conditions with the odds of it occurring under an almost identical set of conditions. Odds represent a comparison of the probability of the event occurring to the probability of it not occurring. If the analysis finds that the odds of an event occurring in two slightly different situations are statistically different, then the difference between the two situations can be said to significantly affect the odds of the event occurring. For mathematical reasons, it is impossible to determine

the true odds of a juvenile justice decision point (like detention) in two slightly different situations. However, logistic regression can test whether the average of the fraction formed by the ratio of the two odds (i.e., the odds ratio) across all situations is significantly different from 1. Mathematically, an odds ratio is always positive and can either be greater than 1 or less than 1, depending on which condition is considered to be in the numerator.

Ideally, race would not predict case decisions independent of all other legal and extralegal factors. If race is not a statistically significant predictor, then other things, like differences in offending severity, explain DMC. If race is a statistically significant indicator, then race bias in one form or another is at play.

The DOJ Equal Protection Monitor based the Assessment Studies on analysis of a complicated data set that required substantial restructuring prior to analysis. The reports provide some detail regarding the restructuring and “cleaning” process used, but Court research and IT staff were not able to replicate the procedures to obtain an identical analysis file. Another drawback to the analyses is that they did not include cases diverted by the SRT program. Further, analyzing a file of closed cases for which the court had made an initial disposition action would be the preferred unit of count for the analysis file.

How this report is different

Our goal with the current analysis was to develop something that was easy to explain to a general audience and that could be routinized by the Court’s research and IT staff to be repeated as often as needed.

This analysis looks at select risk factors one at a time. It is not intended to replace logistic regression which can evaluate multiple factors at once. This analysis uses the existing RRI framework to make group comparisons. Court personnel and the larger community have some familiarity with this approach. This analysis draws on the

logic of the chi square test used in OJJDP’s DMC Microsoft Excel workbook with which Court personnel are familiar.

NCJJ suggests that this approach be applied to a well-constructed data file of closed cases which will be beneficial moving forward. The approach enables the Court to readily review trends and monitor changes. And the data file of closed cases can also support periodic logistic regression analyses as well as other analyses to answer any number of other research questions.

Relative Rate analysis for various legal and extra-legal variables

Here NCJJ used the relative rate approach to explore racial disparities in several variables for which the Court has data. In OJJDP’s approach, the first decision point is the arrest decision. Law enforcement decisions largely control the “front door” to the justice system. Although youth can be referred to juvenile court by sources other than law enforcement, law enforcement accounts for the vast majority of court referrals nationwide (Hockenberry & Puzanchera, 2019).

The Tennessee Bureau of Investigation (TBI) collects incident-based data from local police agencies as part of the FBI’s National Incident-based Reporting System. The TBI CrimeInsight website makes the data available to the public with a fair amount of detail.

NCJJ examined the 2010–2017 youth arrest data for agencies in Shelby County to shed light on the trends in the racial disparity in youth arrests overall and to illustrate the offense differences in disparities.

There were some notable differences in the offense profiles for black and white youth. In any given year, about half of all arrests involving black youth were for simple assault (no weapon or serious injury) or larceny-theft. In comparison, drugs and larceny-theft accounted for half of all arrests involving white youth. Over the 2010–2017

period, on average, 10% of arrests of black youth were for a violent crime (murder, rape, robbery, and aggravated assault (with a weapon or serious injury)) compared with 6% for white youth. These differences are influenced by differences in the behavior of the youth, but are also influenced by the behavior of police (community policing patterns, charging decisions).

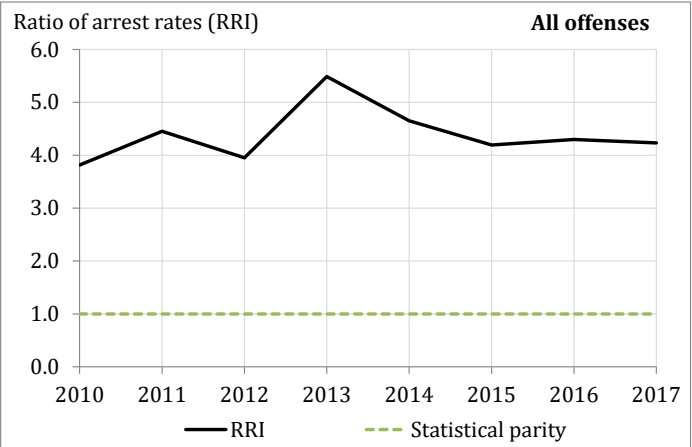
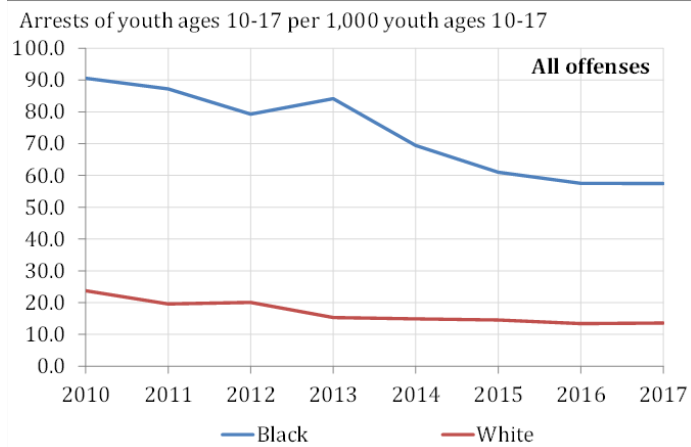
The top left graph on the next page shows the arrest rate trends for black and white youth in Shelby from 2010 through 2017. There has been a substantial decline in the arrest rate for black youth during this time frame. The top right graph shows the black rate relative to the white rate over the time period (the relative rate index or RRI). Although there was a drop in the arrest rate for black youth the disparity remained largely unchanged. This is because there was also a decline in the arrest rate for white youth. This pattern is not common (Sickmund and Puzanchera, 2014, p175-178).

Similar data are presented for the category of person offenses which includes simple assault and other crimes against persons that are not included in the “violent” category. Looking at these statistics for various categories of offenses can help with understanding what is driving the observed disparities and can inform strategies to reduce disparities.

TBI also report data about police handling of juvenile arrests. In 2017, nearly half (47%) of arrests of black youth were handled within the department (were diverted from court), compared with about one-third (32%) of arrests of white youth.

NCJJ also calculated RRIs for several variables using court data, including case-processing variables and demographic or extra-legal variables (such as urban/suburban/rural residence, living arrangements, and family income).

Juvenile arrest rates for black and white youth declined since 2010: 36% for black & 43% for white youth

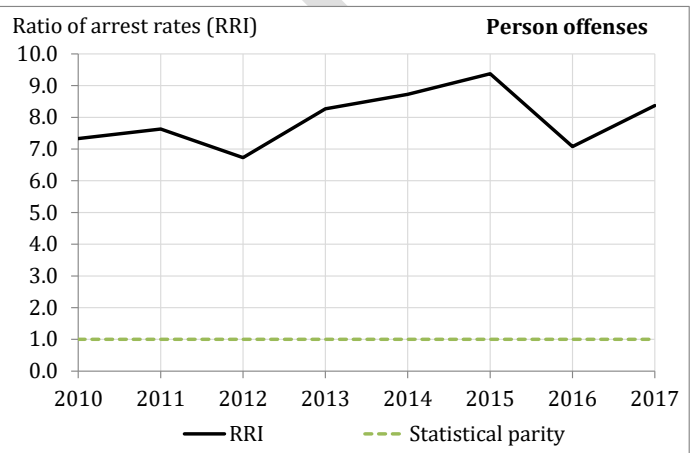
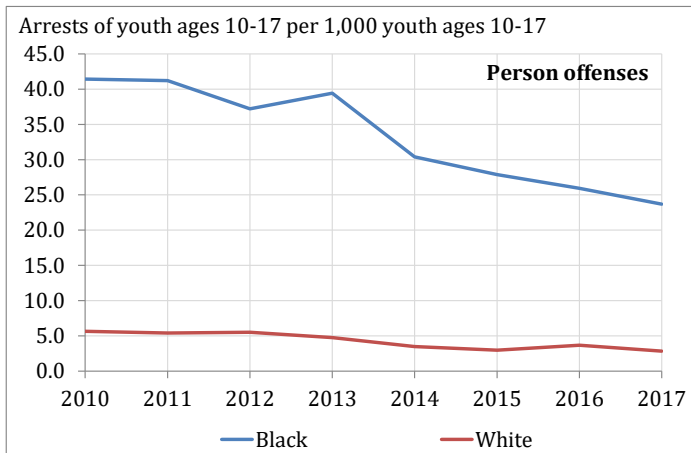


Note: Arrest counts are arrests of youth ages 10-17 for any offense. The ratio (right graph) is based on the rate for black youth divided by the rate for white youth. The larger the ratio, the larger the disparity in the likelihood of arrest.

- Each year since 2010, black youth were about 4 times more likely to be arrested than white youth.

Source: Tennessee Bureau of Investigation's, CrimeInsight website <https://CrimeInsight.TBI.TN.gov>.

Arrest rates for person offenses also declined for both groups since 2010: 43% for black and 50% for white youth



Note: Arrest counts are arrests of youth ages 10-17. The ratio (right graph) is based on the rate for black youth divided by the rate for white youth. The larger the ratio, the larger the disparity in the likelihood of arrest. Person offenses include offenses like murder, assaults (including sexual assault), kidnapping. However, robbery is counted as a property offense and, thus, is not included.

- These graphs illustrate how the likelihood of arrest varies by offense.
- Since 2010, black youth were (at least) 7 times more likely to be arrested for a person offense than their white peers.

Source: Tennessee Bureau of Investigation's, CrimeInsight website <https://CrimeInsight.TBI.TN.gov>.

In 2017, black youth were arrested at significantly higher rates than were white youth

The chi-square analysis finds that for each of the four general offense categories (person, property, drug, and society), black youth in Shelby County are arrested at significantly higher rates than are white youth. The statistical test tells that there is less than a 5% likelihood of the differences occurring by chance.

The data show variation in the degree of disparity by offense category. Drug law violations showed the least disparity—black youth were arrested at a rate that was 1.27 times the rate for white youth. For property crimes the arrest rate for black youth was nearly 4 times the arrest rate for white youth. Disparity was greater for crimes against persons and crimes against society (e.g., gambling, prostitution, and weapons law violations). The arrest rate for person offenses was more than 8 times higher for black youth than for white youth. For crimes against society the arrest rate for black youth was more than 10 times the rate for white youth.

The TBI data can be analyzed to study arrest rates in greater offense detail and to assess departmental and perhaps even neighborhood variations.

Juvenile arrest rates for black youth were significantly higher than the rates of their white peers

Most serious arrest offense	COUNTS		RATES*		RRI
	White	Black	White	Black	
Population (10 to 17)	29,759	61,074			
All arrests	398	3,463	13.37	56.70	4.24
Crimes against persons	83	1,428	2.79	23.38	8.38
Crimes against property	195	1,586	6.55	25.97	3.96
Drug law violations	100	261	3.36	4.27	1.27
Crimes against society	6	130	0.20	2.13	10.56

*Rates are arrests of youth age 10–17 per 1,000 youth ages 10–17 in population group.

BOLD=statistically significant at $p \leq 0.05$.

Note: Arrest counts are arrests of youth ages 10-17 based on most serious offense. The RRIs are based on the rate for black youth divided by the rate for white youth. Robbery is included in the property category.

- These RRI patterns are similar to the national data.

Source: Tennessee Bureau of Investigation's, CrimeInsight website <https://CrimeInsight.TBI.TN.gov>.

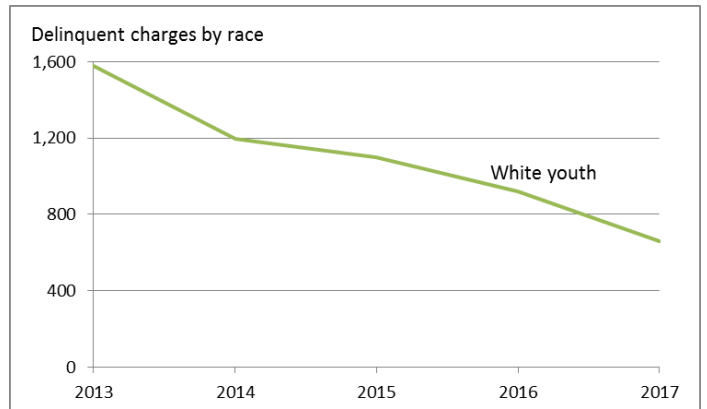
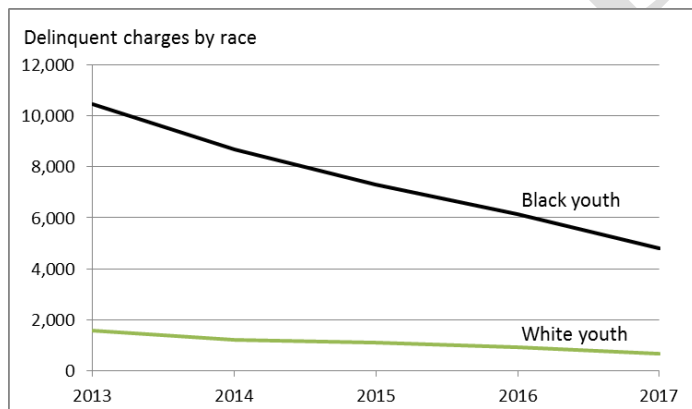
Court data show a 55% drop in delinquency charges from 2013 to 2017

Data obtained from the Court's public-facing website show a large drop in delinquency charges over the 5-year period. Like the pattern for arrests, the decline for black youth (54%) was outpaced by the decline for white youth (58%). Thus, it seems that many

of the changes to practice designed to reduce the number of black youth entering the court system are working, but white youth have also benefitted.

Disparity will be reduced if rates for black youth decline and rates for white youth either remain static or rise. Disparity will also be reduced if rates for white youth rise while rates for black youth remain static or drop.

Overall delinquency charges declined 55% from 2013 to 2017



Note: Data are from the court; counts are charges/incidents.

- For black youth the decline was 54%. For white youth the decline was 58%.

Source: Top 10 delinquent charges grouped by race 2013–2017 counting charges/incidents (amended charged).

Court data show more disparity in referrals from youth living in urban than other areas

The vast majority of complaints involved youth who lived in urban areas. As noted above, this may be because of differences in levels of offending between urban and other areas, but may also be related to differences in policing patterns and police policies and practices regarding referring cases to juvenile court or diverting/deflecting them away from court. The rate of complaints for black youth living in urban areas was more than 10 times the rate for white youth. Conversely, the complaint rate for black youth living in suburban areas was significantly less than the rate for white youth.

Disparity was greatest for complaints referred by MPD

In the Court’s data system a distinction is made between complaints referred to the Court by law enforcement agencies and those that were handled through a juvenile summons that would be diverted from formal court proceedings. The summons complaint rate for cases referred by MPD involving black youth was more than 10 times the rate for white youth. For cases referred by MPD that were not juvenile summons complaints, the rate for black youth was 20 times the rate for white youth.

There were statistically significant disparities for the complaints referred by the Shelby County Sheriff’s Department, but the extent of the disparity was not as great. The complaint rates (both summons and not) for black youth was more than 3 times the rates for white youth.

The complaint rate for black youth living in urban areas was more than 10 times the rate for white youth in urban areas

Current resident location	COUNTS		RATES*		RRI
	White	Black	White	Black	
Population (10 to 17)	29,759	61,074			
Urban	122	2,702	4.10	44.24	10.79
Suburban	147	157	4.94	2.57	0.52
Rural	2	16	X	0.26	X
Town	5	11	0.17	0.18	1.07
Unknown	0	6	X	0.10	X

*Rates are per 1,000 youth ages 10–17 in population group.

BOLD=statistically significant at p≤0.05. X=too few cases.

Note: Counts are complaints referred to court in 2017.

Source: Court data file provided to the DOJ Equal Protection Monitor.

The complaint rate for black youth referred by Memphis PD was 20 times the rate for white youth

Source of referral	COUNTS		RATES*		RRI
	White	Black	White	Black	
Population	29,759	61,074			
Memphis PD	34	1,401	1.14	22.94	20.08
Memphis PD - Juvenile summons	41	906	1.38	14.83	10.77
Shelby Sheriffs Dept	14	109	0.47	1.78	3.79
Sheriff’s Dept - Juvenile summons	27	206	0.91	3.37	3.72
Other non LE agency	3	22	X	0.36	X
Other LE agency	24	30	0.81	0.49	0.61
Other LE - Juvenile summons	124	93	4.17	1.52	0.37
Probation officer	7	118	0.24	1.93	8.21
School	2	6	X	0.10	X

*Rates are per 1,000 youth ages 10–17 in population group.

BOLD=statistically significant at p≤0.05. X=too few cases.

Note: Counts are complaints referred to court in 2017.

Source: Court data file provided to the DOJ Equal Protection Monitor.

Complaints referred by probation also showed significant disparity. Probation-referred complaints for black youth were more than 8 times the rate for whites. Because referrals from

probation involve youth already in the system, disparity in referrals from probation will tend to linger even after disparity is diminished from other referral sources given the influence of past disparity.

Black youth living with their mother only or other relatives were significantly more likely to be referred than similarly situated white youth

Living arrangements	COUNTS		RATES*		RRI
	White	Black	White	Black	
Population (10 to 17)	29,759	61,074			
Both biological parents	40	110	1.34	1.80	1.34
Father and stepmother	9	23	0.30	0.38	1.25
Mother and stepfather	3	92	X	1.51	X
With mother	118	2,036	3.97	33.34	8.41
With father	64	154	2.15	2.52	1.17
With relatives	28	332	0.94	5.44	5.78
Foster family	1	62	X	1.02	X
Group Home	5	17	0.17	0.28	1.66
Residential	2	6	X	0.10	X
Institution	1	26	X	0.43	X
Unknown	1	8	X	0.13	X
Other	4	26	X	0.43	X

*Rates are per 1,000 youth ages 10–17 in population group.

BOLD=statistically significant at $p \leq 0.05$. X=too few cases.

Note: Counts are complaints referred to court in 2017.

Source: Court data file provided to the DOJ Equal Protection Monitor.

Black youth living with unmarried parents were 13 times more likely to be referred than white youth

Parent's marital status	COUNTS		RATES*		RRI
	White	Black	White	Black	
Population (10 to 17)	29,759	61,074			
Married	80	268	2.69	4.39	1.63
Never married	76	2,108	2.55	34.52	13.52
Divorced/separated	58	149	1.95	2.44	1.25
Absent mother	0	8	X	0.13	X
Deceased mother	7	43	0.24	0.70	2.99
Absent father	1	54	X	0.88	X
Deceased father	2	43	X	0.70	X
O O W Child	2	8	X	0.13	X
Unknown	50	211	1.68	3.45	2.06

*Rates are per 1,000 youth ages 10–17 in population group.

BOLD=statistically significant at $p \leq 0.05$. X=too few cases.

Note: Counts are complaints received in 2017.

Source: Court data file provided to the DOJ Equal Protection Monitor.

Substantial disparities were seen for youth living with mothers only

Court data on complaints in 2017 showed that youth living with mothers only were 70% of black youth involved in complaints and 43% of white youth involved in complaints. Further, black youth accounted for 95% of youth living with only their mothers. Among youth living with their mothers only the complaint rate for black youth was more than 8 times the rate for white youth. Similarly, for those living with relatives, the complaint rate for black youth was more than 5 times the rate for white youth. Among those with other living arrangements the differences between rates for black and white youth were not significantly different or there were too few cases.

Disparities were also seen for youth living with never married parents

Parental marital status tends to align with youth living arrangements. As such, differences in complaint rates follow an expected pattern. The majority (73%) of black youth involved in complaints in 2017 were in households with a never married parent, compared with 28% of complaints involving white youth. The complaint rate for black youth living with a never married parent was substantially higher—more than 13 times—than the corresponding rate for similarly situated white youth.

Measures of poverty were associated with disparities

In 2017, the federal poverty level for a mother and one child was \$16,240. For a family of four it was \$24,600. Among black youth involved in complaints, 26% were from families on public assistance, and an additional 22% were in families with an income below \$15,000. In comparison, among white youth involved in complaints, 8% were in families on public assistance, and an additional 14% were in families with an income below \$15,000.

Complaint rates for black youth whose families were on public assistance were more than 16 times the rate for white youth with families on public assistance. At other family income levels, disparities reached statistical significance if there were enough cases to support the calculations. For youth in families with an income in the \$50,000 to \$99,999 range the complaint rate for black youth was less than half of the rate for white youth.

Disparities were largest among youth with school behavior characterized as unsatisfactory

There were similar proportions of youth with satisfactory school behavior among black youth (42%) and white youth (45%), but the complaint rate for blacks was more than 4 times the rate for whites. Thirty percent of black youth were in the unsatisfactory school behavior category, compared with 18% of white youth. The complaint rate for black youth with unsatisfactory school behavior was more than 8 times the rate for white youth with unsatisfactory school behavior. Relatively few youth involved in complaints were identified as not in school (7% for black youth, 6% for white youth). Among youth not in school, the complaint rate for black youth was more than 5 times the rate for white youth. The school behavior variable in the Court's complaint data was unknown for nearly one-quarter of all complaints in 2017 (22%).

Complaint rates for black youth in public assistance and low income households were well above rates for whites

Family income	COUNTS		RATES*		RRI
	White	Black	White	Black	
Population (10 to 17)	29,759	61,074			
Public assistance	22	754	0.74	12.35	16.70
Under \$5,999	3	65	X	1.06	X
\$ 6,000 TO \$ 9,999	22	295	0.74	4.83	6.53
\$ 10,000 TO \$14,999	14	284	0.47	4.65	9.88
\$ 15,000 TO \$19,999	4	341	X	5.58	X
\$ 20,000 TO \$29,999	26	491	0.87	8.04	9.20
\$ 30,000 TO \$49,999	45	245	1.51	4.01	2.65
\$ 50,000 TO \$99,999	53	44	1.78	0.72	0.40
\$100,000 or more	14	3	0.47	X	X
Unknown	73	370			2.47

*Rates are per 1,000 youth ages 10–17 in population group.

BOLD=statistically significant at $p \leq 0.05$. X=too few cases.

Note: Counts are complaints received in 2017.

Source: Court data file provided to the DOJ Equal Protection Monitor.

Black youth with unsatisfactory school behavior were nearly 9 times more likely to be referred than white youth

School behavior	COUNTS		RATES*		RRI
	White	Black	White	Black	
Population (10 to 17)	29,759	61,074			
Satisfactory behavior	123	1,226	4.13	20.07	4.86
Unsatisfactory behavior	49	879	1.65	14.39	8.74
Not in school	17	189	0.57	3.09	5.42
Unknown	87	598	2.92	9.79	3.35

*Rates are per 1,000 youth ages 10–17 in population group.

BOLD=statistically significant at $p \leq 0.05$. X=too few cases.

Note: Counts are complaints received in 2017.

Source: Court data file provided to the DOJ Equal Protection Monitor.

Levels of disparity varied by offense category and offense seriousness

The offense profile for white and black youth varied considerably. For white youth, 35% of cases closed in 2017 involved a property offense as the most serious offense and public order offense cases accounted for 24%. For black youth, person and property offenses were most common—each accounted for 36% of all cases closed in 2017.

Overall, the delinquency referral rate for black youth was nearly 4 times the rate for white youth. However, for person offenses (e.g., murder, rape, robbery, and assault), black youth were 7 times more likely to be referred than their white peers.

Compared with complaints involving white youth (26%), a larger proportion of complaints involving black youth (31%) included felony-level offenses only. Complaints involving only misdemeanor offenses accounted for the majority of complaints for black youth (51%) and white (54%) youth.

Complaint rates for cases involving only felonies, only misdemeanors, and those involving lesser offenses were significantly higher for black youth than white youth in 2017.

Black youth were 7 times more likely to be referred for a person offense than were white youth

Most serious offense	COUNTS		RATES*		RRI
	White	Black	White	Black	
Population (10 to 17)	29,759	61,074			
All delinquency	336	2,698	11.29	44.18	3.91
Person	68	979	2.29	16.03	7.02
Property	119	982	4.00	16.08	4.02
Drugs	68	129	2.29	2.11	0.92
Public order	81	608	2.72	9.96	3.66

*Rates are per 1,000 youth ages 10–17 in population group.

BOLD=statistically significant at $p \leq 0.05$. X=too few cases.

Note: Counts are cases closed in 2017.

- Only drug offense case rates were similar for black youth and white youth.

Source: Court data files sent to the state monthly.

The only offense seriousness category where blacks had lower rates than whites was the “Felony & Misdemeanor” category

Offense seriousness	COUNTS		RATES*		RRI
	White	Black	White	Black	
Population	29,759	61,074			
Murder only	0	8	X	0.13	X
Felony only	73	907	2.45	14.85	6.05
Felony & misdemeanor	40	372	1.34	0.61	0.45
Misdemeanor only	151	1,461	5.07	23.92	4.71
Less than misdemeanor	12	136	0.40	2.23	5.52

*Rates are per 1,000 youth ages 10–17 in population group.

BOLD=statistically significant at $p \leq 0.05$. X=too few cases.

Note: Counts are complaints received in 2017.

Source: Court data file provided to the DOJ Equal Protection Monitor.

Black youth with prior adjudications were referred to juvenile court at a higher rate than white youth

Prior adjudications	COUNTS		RATES*		RRI
	White	Black	White	Black	
Population (10 to 17)	29,759	61,074			
Prior delinquency	57	1,034	1.92	16.93	8.84
Prior drug/alcohol	16	138	0.54	2.26	4.20
Prior status	2	31	X	0.51	X
Prior dependency/neglect	53	635	1.78	10.40	5.84

*Rates are per 1,000 youth ages 10–17 in population group.

BOLD=statistically significant at $p \leq 0.05$. X=too few cases.

Note: Counts are cases closed in 2017.

Source: Court data files sent to the state monthly.

The rate at which black youth were detained for property cases was more than 3 times the rate for white youth

Detention by offense	COUNTS		RATES*		RRI
	White	Black	White	Black	
All delinquency	34	592	10.12	21.94	2.17
Person	19	323	27.94	32.99	1.18
Property	6	164	5.04	16.70	3.31
Drugs	2	16	X	12.40	X
Public order	7	89	8.64	14.64	1.69

*Rates are per 1,000 youth ages 10–17 in population group.

BOLD=statistically significant at $p \leq 0.05$. X=too few cases.

Note: Counts are cases closed in 2017.

Source: Court data files sent to the state monthly.

Black youth were detained at higher rates than white youth for felonies and for misdemeanors

Detention by offense seriousness	COUNTS		RATES*		RRI
	White	Black	White	Black	
Murder only	0	7	X	87.50	X
Felony only	13	339	17.81	37.38	2.10
Felony & misdemeanor	8	175	20.00	47.04	2.35
Misdemeanor only	6	166	4	11	2.86
Less than misdemeanor	4	30	X	22	X
Firearm	5	315	62.50	83.78	1.34

*Rates are per 100 complaints referred in 2017.

BOLD=statistically significant at $p \leq 0.05$. X=too few cases.

Note: Counts are complaints received in 2017.

Source: Court data file provided to the DOJ Equal Protection Monitor.

Prior history contributes to differences in referral rates

Prior contact with the juvenile court was fairly common for black youth. Among cases involving black youth in 2017, more than one-third (38%) involved youth with a prior delinquency adjudication and 24% involved youth with a prior dependency/neglect adjudication. The corresponding proportions for cases involving white youth were 17% and 16%, respectively.

The referral rate for black youth with a prior delinquency adjudication was significantly higher than the rate for white youth; in 2017, black youth with at least one prior delinquency adjudication were nearly 9 times more likely to be referred than white youth with a prior delinquency adjudication. Referral rates for black youth with a prior drug/alcohol or dependency/neglect adjudication were also significantly higher than rates for white youth.

Overall detention rates were higher for black youth, but levels varied by offense

Person offenses include serious offenses (e.g., murder, robbery, assaults); as such, it is not surprising that, for both race groups, detention rates were higher for person offense cases than for cases involving other offenses. However, the detention rate for person offense cases involving black youth was not significantly higher than the rate for white youth. In contrast, the detention rate for property offense cases involving black youth was significantly higher than the rate for white youth.

Regardless of offense seriousness, detention rates were higher for black youth

Complaints against black youth involving felonies, misdemeanors, or some combination of felonies and misdemeanors were significantly more likely to be detained than similar complaints against white youth. However, the rate at which black youth were detained for complaints involving firearms was not significantly higher than the rate for white youth.

What a new and improved DMC workbook could do for the Court

OJJDP has long required states to report detailed race/ethnicity data for population and 9 juvenile justice system decision points as a means of assessing DMC. OJJDP developed an Excel workbook to facilitate reporting. States were required to enter counts for these 10 key data points (see table below). From these data inputs, the remaining worksheets calculated case processing rates for minority youth and white youth, determined if differences between the rates were statistically significant (more than just a

chance difference based on a chi-square analysis), and displayed the ratio of the rates (i.e., the relative rate index, or RRI). The Court has used this same workbook for reporting purposes [see “Shelby County’s Juvenile Court Dashboard,” located at <https://dashboard.shelbycountyttn.gov/relative-rate-index> for the latest data]. The workbook provided OJJDP with uniform reporting from various jurisdictions, but it was not terribly useful for those reporting jurisdictions.

NCJJ has played a key role in OJJDP’s efforts to monitor and assess DMC. NCJJ developed and disseminated data resources on the National DMC Databook, which was a component of

OJJDP’s Statistical Briefing Book for many years.* Given the Court’s need to monitor and assess DMC in an efficient manner, NCJJ augmented the familiar OJJDP DMC workbook to make it more useful to the Court’s information needs. The modifications enable the DMC workbook to: 1) add data more easily (copy paste rather than keying individual entries), 2) store multiple years of data, 3) generate both annual and trend table and graphic displays automatically, and 4) benchmark Shelby County against national data. These changes will enable the Court to make better use of the data they routinely produce, using a reporting tool with which they are intimately familiar.

The data entry page from the OJJDP DMC workbook: a jurisdiction enters counts for 10 decision points for various race/ethnicity groups for a year and rates and RRIs are calculated automatically

Data Entry Section									
AREA REPORTED									
State :XXXXXX									
County: YYYYYYY									
Reporting Period Month / Year through Month / Year									
Total Youth	White	Black or African-American	Hispanic or Latino	Asian	Native Hawaiian or other Pacific Islanders	American Indian or Alaska Native	Other/ Mixed	All Minorities	
1. Population at risk (age YY through XX)									0
2. Juvenile Arrests									0
3. Refer to Juvenile Court									0
4. Cases Diverted									0
5. Cases Involving Secure Detention									0
6. Cases Petitioned (Charge Filed)									0
7. Cases Resulting in Delinquent Findings									0
8. Cases resulting in Probation Placement									0
9. Cases Resulting in Confinement in Secure Juvenile Correctional Facilities									0
10. Cases Transferred to Adult Court									0

Source: Office of Juvenile Justice and Delinquency Prevention. (2011). *RRI_Template.xlsx*.

* The DMC Databook is currently offline until OJJDP develops guidance on new state DMC reporting requirements.

Ease of use and multiple years of data will facilitate data-informed decisionmaking

The improvements NCJJ implemented in the DMC workbook are subtle, but they dramatically improve the workbook’s value and utility. Chief among these improvements was setting up a new data entry sheet. The original workbook distributed by OJJDP was designed to capture data for a single year; users entered data into the “Data Entry” sheet and the remaining sheets

created case processing rates and RRI based on the reported data. The completed workbook was submitted to OJJDP to comply with federal reporting requirements. This structure satisfied OJJDP’s needs, but it did little to support a jurisdiction’s need to monitor change over time.

The new data entry sheet draws on features of Microsoft Excel that make a worksheet dynamic. Specifically, Excel worksheets can behave similar to a database table: users can routinely

add rows of data into a sheet and everything using that sheet will automatically detect and use the new data. In practice, this allows one worksheet to store many years of data, which can be used to create annual and trend displays, all within one workbook.

The new data entry worksheet may not look pretty, but it is the foundation for the enhanced features of the workbook.

A new data entry sheet enables blocks of data to be added year by year

Year	Decision point	Total Youth	White	Black or Afi	Hispanic	Asian	Native Hawaiian	American Indian	Other/ Mixed	All Minorities
2015	1. Population at risk (age 10 through 17)	105,148	31,806	62,822	7,497	2,803		500		73,497
2015	2. Juvenile Arrests									0
2015	3. Refer to Juvenile Court	6,192	635	5,346	164	15	0	0	32	5,557
2015	4. Cases Diverted	4,985	554	4,258	137	13	0	0	23	4,431
2015	5. Cases Involving Secure Detention	968	46	896	16	1	0	0	9	922
2015	6. Cases Petitioned (Charge Filed)	1,813	110	1,654	34	2	0	0	13	1,703
2015	7. Cases Resulting in Delinquent Findings	1,225	45	1,151	17	1	0	0	11	1,180
2015	8. Cases Resulting in Probation Placement	833	24	789	13	0	0	0	7	809
2015	9. Cases Resulting in Confinement in Secure	267	6	253	3	1	0	0	4	261
2015	10. Cases Transferred to Adult Court	66	2	62	2	0	0	0	0	64
2016	1. Population at risk (age 10 through 17)	103,313	31,335	61,004	7,862	2,896		216		73,101
2016	2. Juvenile Arrests									0
2016	3. Refer to Juvenile Court	4,951	493	4,269	147	8	0	4	30	4,458
2016	4. Cases Diverted	4,486	468	3,836	138	8	0	4	23	4,009
2016	5. Cases Involving Secure Detention	899	50	820	17	1	0	0	11	849
2016	6. Cases Petitioned (Charge Filed)	1,664	99	1,523	33	2	0	0	7	1,565
2016	7. Cases Resulting in Delinquent Findings	1,255	79	1,144	19	1	0	0	12	1,176
2016	8. Cases Resulting in Probation Placement	810	56	732	10	1	0	0	11	754
2016	9. Cases Resulting in Confinement in Secure	348	5	332	10	0	0	0	1	343
2016	10. Cases Transferred to Adult Court	83	4	78	1	0	0	0	0	79
2017	1. Population at risk (age 10 through 17)	102,498	29,759	61,074	8,520	2,934		211		72,859
2017	2. Juvenile Arrests									0
2017	3. Refer to Juvenile Court	5,369	599	4,302	168	4	0	0	23	4,497
2017	4. Cases Diverted	4,705	566	3,949	167	5	0	0	18	4,139
2017	5. Cases Involving Secure Detention	869	35	805	20	1	0	0	8	834
2017	6. Cases Petitioned (Charge Filed)	1,488	88	1,360	30	1	0	0	9	1,400
2017	7. Cases Resulting in Delinquent Findings	1,208	62	1,116	20	1	0	0	9	1,146
2017	8. Cases Resulting in Probation Placement	668	44	590	23	2	0	0	9	624
2017	9. Cases Resulting in Confinement in Secure	498	20	474	3	1	0	0	0	478
2017	10. Cases Transferred to Adult Court	140	11	122	6	0	0	0	1	129

Data visualizations are a meaningful addition to the DMC workbook

For most people, graphical displays of data are more readily understood than mere text and tables. Data visualizations can be used to effectively communicate information to those who are not researchers.

The top image to the right shows the RRI summary for 2017, using the revised DMC workbook. The bars represent the ratio of case processing rates between black youth and white youth for 9 decision points. The green vertical line is fixed at a ratio of 1.0, which is where the rates for both groups are equal (“statistical parity”). This summary shows that, in 2017:

- Delinquency cases involving black youth were three times more likely to be referred to juvenile court than cases involving white youth.
- Once referred to court, cases involving black youth were three times more likely to involve pre-disposition detention than cases involving white youth.
- Cases involving black youth were less likely to be diverted, be placed on formal probation, or be judicially waived to criminal court than cases involving white youth.

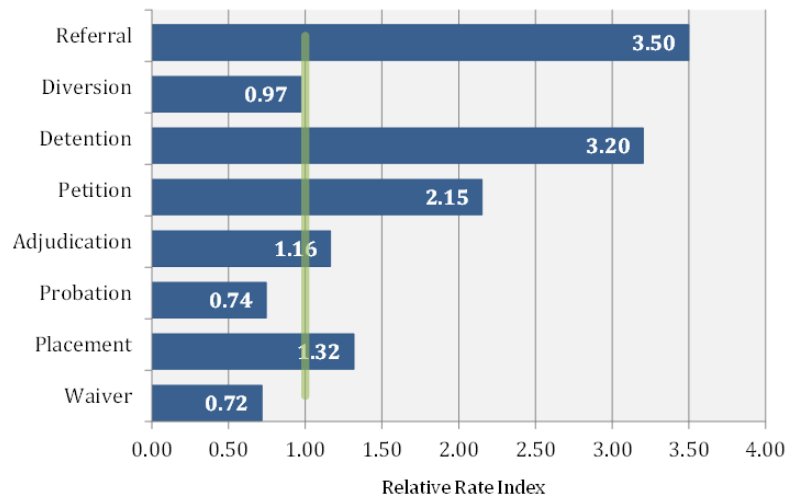
In addition to comparing annual case processing rates, the revised DMC workbook also supports monitoring changes over time. With all the data stored in one central place, tracking changes over time is straightforward. The center image to the right shows trends in the ratio between referral rates for black and white youth in Shelby County since 2015, as well as the national trend.

- Although the referral rates are higher for black youth than white youth, the ratio has declined. Comparatively, the national ratio has remained relatively steady over the same period.

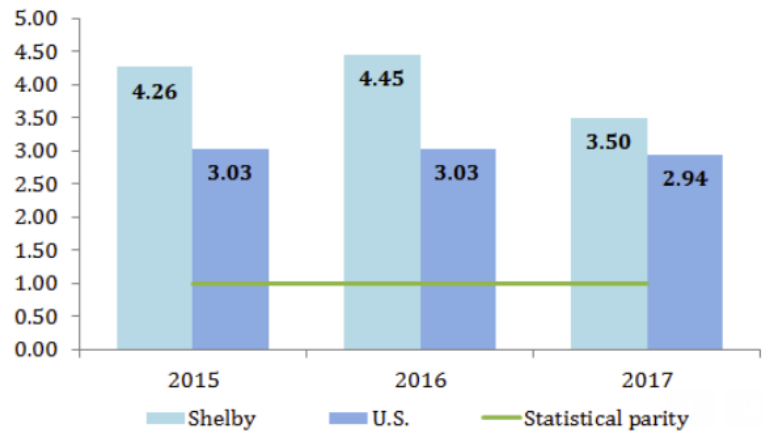
The bottom image to the right shows trends in the ratio between detention rates for black and white youth in

Once data are entered into the augmented DMC workbook, graphic RRI displays are generated automatically

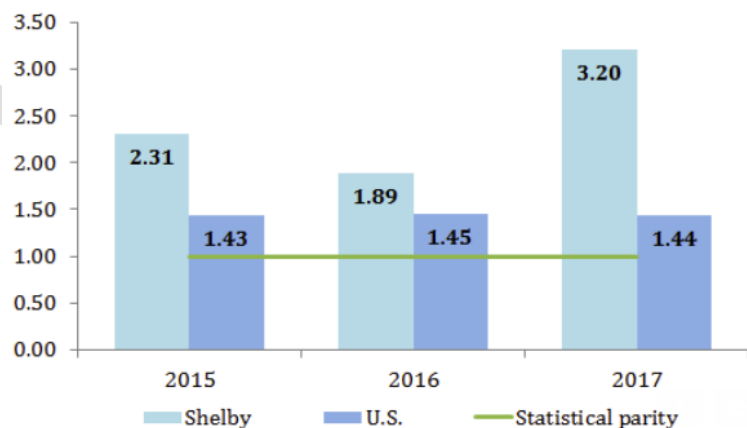
Black-to-white relative rate summary, 2017



Referral to Juvenile Court: Black to white RRI trends



Cases Involving Secure Detention: Black to white RRI trends



Note: Bars represent the ratio of case processing rates between black youth and white youth. The green vertical line represents statistical parity—rates for both groups are equal when the ratio of the rates equals 1.0.

Source: Data for Shelby County were adapted from their annual RRI workbooks. U.S. data adapted from the National DMC Databook [formerly available at <https://www.ojjdp.gov/ojstatbb/dmcd/b/>].

Shelby County since 2015, as well as the national trend.

- Nationally, the ratio for detention rates has remained flat. Shelby County saw substantial reduction in the ratio from 2015 to 2016 but then in 2017 the ratio reached a level above the 2015 figure.

Seeing this sort of fluctuation is not uncommon when a jurisdiction is implementing substantial policy and practice changes. Closer examination of data (e.g., looking at offense detail or geographic detail) may provide insight regarding factors associated with these changes.

What a new and improved research data extract could do for the Court

The Court's information system contains a great deal of data on youth involved in delinquency, status offense, and dependency cases before the court, and on the Court's handling of those cases. A data extract of closed cases with a carefully designed set of variables will not only enable the Court to capture the data needed to populate the new and improved DMC workbook, but also a data set that can support any number of other analyses to address a variety of research questions. Specifications for the file will need to be provided to the information system service provider and there will be some cost involved in their designing the code to enable the Court to extract the data when needed. Procedures should be developed to add diverted SRT cases that are not included in the Court's information system into the extract to create a data set that represents all the complaints/cases closed either formally or informally during the year.

Such a data set, based on a well-crafted research extract, would facilitate research staff ability to conduct regular analysis on subsequent offending to better pinpoint programs or dispositions that are effective in reducing reoffending—what works. This would better position the Court to

conduct assessments of whether there are disparities in youth receiving dispositions that are effective.

Researchers working on strategies to reduce race bias in risk assessments have suggested statistical techniques for removing the impact of race bias in risk assessment (Gottfredson and Snyder, 2005; Schwartz, York, Greenwald, Ramos-Hernandez, and Feeley, 2016). Typical DMC analyses (RRIs) focus on whether there is disparity in the imposition of harsher responses to offending behavior. Schwartz, et al., (2016) instead use predictive analytics in an approach designed to reduce bias in “what works” rather than focusing on reducing bias in harsh responses. They analyze the data to determine if there is a statistically significant difference between minority and majority populations with respect to receiving what works. Their algorithm doesn't use variables that couldn't, or shouldn't, have a cause-and-effect relationship with reoffending such as race (or community racial make-up). Nor does it rely on variables that reflect decisions made by people about the youth, notably criminal history (prior arrests, prior adjudications, etc.). Instead they used other variables such as socioeconomic status, employment status, education status, mental health status, substance abuse status, community characteristics (e.g., poverty, income, wealth, income and wealth gap), and information on the types/pattern of past criminal behavior (e.g., theft, assault, drug possession). Although they did not find that predictive analytics eliminated racial disparities completely, they did learn that predictive analytics and machine learning reduced racial bias leading to fairer and more equitable dispositions for minority youth.

The first step in that analytic direction would be to have a thorough understanding of what works, which requires a comprehensive analysis of subsequent offending detailed by program and disposition type.

A new and improved data extract would also enable Court research staff to conduct logistic regression analyses

like those conducted by the DMC monitor. Such analyses should be performed on an annual basis.

Because the Court has made so many changes since the MOA, it has become almost impossible to discern the impact of any one of those changes. Moving forward, it would be advisable to set a short-term halt to changes in policy and practice (perhaps 6 months) in order to collect data from a period of time that is not in flux. Then additional strategies can be implemented (and the implementation dates recorded) so that their impact can be studied.

Additional strategies to be considered to reduce racial disparities in case processing

The Court and others in Shelby County have already taken the recommended actions to reduce racial disparities in case processing. Although there have been some improvements for some decision points, there remains more work to do. There will need to be continued vigilance to guard against “backsliding.” The Court's continued engagement of national experts to provide continued guidance demonstrates the Court's willingness to keep on fighting the fight, so to speak.

In general other jurisdictions have had success reducing racial disparities by:

- Removed or reduced practitioner discretion;
- Required additional documentation of decisions; or
- Increased oversight of discretionary activities.

The suggestions made here are things that have been implemented in other jurisdictions with varying success. Some of these suggestions may seem not all that different from strategies the Court has already taken, but are rather suggested tweaks or extensions intended to maintain momentum.

To mitigate unconscious bias:

- Continue to deliver organization-wide training and perhaps develop specific training for emerging leaders, high-potential leaders and/or senior leaders.
- Provide coaching for line staff and supervisors and establish formal mentoring and reverse mentoring.
- Conduct 360-degree feedback with diverse colleagues.
- Formalize personal and organizational commitment and accountability—tie incentives to diversity and inclusion goals.
- Use organization-wide and departmental diversity scorecards to track goal progress to keep everyone on the same page and prevent “backsliding.” Meet regularly to share and discuss diversity scorecard information.

To maintain accountability:

- Continue to review policies and practices on a regular basis.
- Require documentation of decisions. Consider including justifications for decisions beyond what is required for detention overrides. Include this information on diversity scorecards.
- Increase oversight of discretionary activities.
- Continue to make DMC information public. Consider adding a timeline visualization that will show the public when various action steps (program implementation, policy changes) take place.

Considerations for specific decision points: Arrest decision

- Police officers should be trained on the problem of DMC.
- Police should understand why the role of law enforcement as gatekeepers is important in helping to eliminate disproportionate minor-

ity contact in the juvenile justice system.

- Police officers should be trained on adolescent development and effective communication with youth.
- New officers should be trained on the various pre-court diversion options available in dealing with youth.
- The Court, schools, and law enforcement should continue to work together to reduce the volume of cases referred to court for misbehavior at school.

Detention decision

- Consider the possibility of eliminating admission to detention without prior judicial approval. In other jurisdictions, when police were required to obtain a court order to detain juveniles accused of non-serious offenses, DMC disappeared at this decision point with non-serious juvenile offenders and an equal proportion of white and minority non-serious juvenile offenders were transported to detention. This, of course, may require a statutory change.
- Continue to study the Detention Assessment Tool (DAT-3) and consider further adjustments to the scoring and thresholds. This should include testing the impact of devaluing (or eliminating) prior adjudications in the scoring. Similarly, further study of failure to appear warrants may uncover opportunities for establishing reminders that could have a positive impact.

Petition decision

- Continue to study the impact of the GRID tool on petition and disposition decisions. Focus on reducing disparity in youth receiving what works.

Transfer decision

- Continue to work with prosecutors to ensure they understand their role in reducing DMC at this decision point. In many county jurisdictions, this decision point is not the focus of DMC efforts because the numbers of transfers are too few for the RRI analysis. This is unlikely to occur in large metropolitan jurisdictions.
- Prosecutors can play a key role in broader community violence reduction efforts (e.g., the Boston gun project) that can have an impact on disparity at this decision point.

To communicate with the public

Below are some strategies used in other jurisdictions to improve communications with the public and enlist broad community support for making changes to reduce disparities:

- Draft reports that focus on the action steps taken and recommendations and not on complicated study methods.
- Use language to frame the issue in a way that presents DMC as something that is everyone's concern. Moving the needle on DMC is likely to require a community-wide effort. Entry into the system is not controlled by the Court. Other decision points benefit from community engagement (community supports for youth, program development, alternatives to detention).
- Seek support from top leaders in government to address issues that are beyond the Court's control.

The National Academies of Sciences' new report includes a discussion about reducing racial disparities (2019, p236, 239-240)

Root Causes of Disparities

While there has been much debate among scholars as to the root causes of these disparities, most emphasize some combination of differential selection and treatment by the justice system (possibly attributable to implicit or explicit bias) and differential offending by white and minority youth (differences in the actual extent of engaging in law-breaking behaviors), likely the result of disparities in the social conditions children grown up in (National Research Council, 2013, p. 223). Differential selection suggests that a combination of differential enforcement and differential processing by the juvenile justice system leads to more minority youth being arrested, convicted, and subsequently confined than White youth (Piquero, 2008, p. 65). Differential offending, conversely, is viewed as contributing to disproportionality through differences in rates at which racial or ethnic groups engage in different types of criminal behavior (National Research Council, 2013, p. 223-225).

The idea that racial disparities, particularly in violent crime, are largely attributable to persistent structural disadvantages disproportionately concentrated in Black communities was first theorized by Sampson and Wilson (1995) and, in a recent review, was validated. Although they specifically analyzed data related to adults, Sampson, Wilson, and Katz (2018) argue that a general thesis of racial invariance can be applied in the juvenile context. As they frame it, this thesis is “the assertion that racial disparities in rates of violent crime ultimately stem from the very different social ecological contexts in which Blacks and Whites reside, and that concentrated disadvantage predicts crime similarly across racial groups” (Sampson, Wilson, and Katz, 2018, p. 14). The authors find that (i) large racial disparities in violent crime and ecological contexts (e.g., concentrated poverty, family disruption) continue to exist, (ii) structural ecological factors are strong predictors of violent crime and account for a substantial proportion of racial disparities, and (iii) the predictive power of these factors transcends racial boundaries. That is, the societal contexts in which youth find themselves—resulting from, in part, the failure of youth-serving systems, such as education, child welfare, and health care, to create positive, supportive environments for youth—lead to disparities in rates of engaging in or being victimized by crime.

The increase in racial disparities in recent years is particularly troubling given the system's goal of promoting fairness and the federal mandate to reduce racial and ethnic disparities. A possible explanation for the increase in disparate treatment over time is the decline in serious offenses, the type that allows less discretion in deci-

sions to prosecute and sentence. As the number of less serious offenses increases as a proportion of the total, there may be more discretion for practitioners at every stage of the process, potentially resulting in more biased decisions (Arnold, Dobbie, and Yang, 2018; National Council on Crime and Delinquency, 2007). Other possible explanations include: (i) disparities in access to alternatives to incarceration, (ii) disparities in the selection of alternatives to incarceration due to a family's inability or perceived inability to participate in a placement alternative, which depends on the parental or family involvement, (iii) disparities in offending driven by widening social inequalities and structural disadvantages, and (iv) disparities in the selection of youth referred to the juvenile justice system from other adolescent-serving systems, such as schools (Hager, 2015; Mears and Cochran, 2015).

The existing literature is insufficient to draw conclusions about the relative contribution of differential offending, differential enforcement and process, and structural inequalities to these disparities, it is clear that this lack of progress in reducing disparities within the juvenile justice system leads to negative outcomes for youth and the system itself (Aizer and Doyle, 2015; National Research Council, 2014; The Pew Charitable Trusts, 2015). Ensuring that youth *perceive* that they have been treated fairly contributes to social learning, moral development, and legal socializing during adolescence (OJJDP, 2012). Reducing racial and ethnic disparities in the administration of juvenile justice, thus, is critical to achieving a fair juvenile justice system and promoting positive adolescent development.

Theories of legitimacy suggest that those who perceive the justice system to be more legitimate are more likely to comply with the law (National Academies of Sciences, Engineering, and Medicine, 2018; Tyler, 1990), although questions remain as to the causal connection between changes in treatment and changes in compliance (Nagin and Telep, 2017). The experiences of others, or vicarious experiences, may also influence attitudes. Indeed, Black youth consistently report more negative attitudes towards the police than White youth (Hurst, Frank, and Browning, 2000; Peck, 2015). These experiences likely lead minority youth to perceive the justice system as biased.

Moreover, the formation of attitudes toward the justice system over the course of adolescence and early adulthood varies dramatically by race and ethnicity. Black youth, for example, often have a negative view of the justice system based on personal experiences or events they have witnessed. Latinx and White youth report similar attitudes toward the justice system during adolescence, but White youth, over time, have been

found to view the system more positively than Latinx youth. These results suggest that attitude differences emerge through the course of adolescence. Indeed, White youth are the only group whose attitudes about the system become more positive as they age (Fine and Cauffman, 2015).

Reducing Racial Disparities in the Juvenile Justice System

... In the same report, the committee urged that “reform efforts to reduce racial/ethnic disparities should pay special attention to the arrest and detention stages at the front end of the system” (National Research Council, 2013, p. 239). It is also critical for school systems to invest in developmentally appropriate alternatives to punitive and discretionary school disciplinary practices as they are more likely to result in a referral to the juvenile justice system (National Research Council, 2013, pp. 239-240). ...

Because racial and ethnic disparities within the juvenile justice system may also result from disparities in rates of engaging in or being victimized by different types of criminal behavior, policies that prioritize some groups for extra prevention programming to reduce criminal involvement or delinquency may be appropriate. For instance, if there are differences in group rates of offending due to differences in family, neighborhood, or school social conditions, evidence-based interventions that are targeted, implemented upstream, and preventive in focus may have positive effects on individual and social behaviors. Practitioners and communities have a greater chance of creating positive behavioral and environmental changes if they select interventions based on the characteristics and circumstances of the participating individual, group, or community and follow established implementation and evaluation frameworks, such as those included in Office of Juvenile Justice and Delinquency Prevention's [Model Programs Guide](#). In short, because the factors that drive human behaviors (including delinquent and criminal behaviors) are rooted in social and structural conditions that different racial groups experience differently, the most successful solutions will address changes to both the systems' policies and the individuals and communities that they serve.

It is important to note that there is no inherent trade-off between reducing racial and ethnic disparities and promoting public safety. It is possible to improve outcomes for youth without harming public safety. To achieve this goal, it is critical to understand the root causes of disparities in the justice system and implement policies and practices that target these inequalities while continuing to hold youth accountable.

Recommended Next Steps

We would recommend the following as next steps to take in the near term:

Design specifications for a new and improved research data extract

The Court will need to decide on the variables to be included. Any variables that are currently not well reported may require additional quality assurance efforts to ensure that the data included in the research extract are collected consistently and are trusted. As part of designing the specifications for the data extract, the Court should develop an offense ranking so that a “most serious offense” can be identified for each complaint. Similarly, dispositions should be ranked for severity so that a “most severe” disposition can be identified for each case.

Designing extract specifications will also require working with the Court’s information system service provider, and thus, there is some cost involved. The final specifications should be well documented. Procedures for extracting the data on closed complaints and adding records for closed SRT cases to the file must also be well documented.

Finalize a new and improved DMC workbook

A new and improved DMC workbook will need to be finalized to take advantage of the information included in the research extract. Further enhancements could be made to the workbook, such as enabling offense or geographic comparisons.

Plan for and set a short-term freeze on policy and practice changes

This recommendation will allow the Court to establish post-MOA baselines for future DMC reduction efforts. It is likely that such a change-free period need only be 6 months or so. The timing of it should be informed by the current plans for additional policy and practice changes, with an eye toward a natural break point between implementations.

Design subsequent offending analyses to identify programs and practices that are effective at reducing reoffending

Ideally the subsequent offending analyses would be conducted regularly (at least annually) and would examine reoffending probabilities by youth characteristics, case processing characteristics, and dispositions (with specific program information). Reoffending analyses should be flexible regarding time frame (e.g., reoffending within 6 months, 1 year, 2 years).

The subsequent offending analysis will identify those programs and practices that work better. What works can then become the focus of disparity analysis.

Obtain arrest data from state or local law enforcement

Adding the arrest decision point to the RRI matrix, or other DMC analysis, will present a more complete picture of how youth proceed through the juvenile justice system. This information can form a foundation for continued collaboration and discussion with law enforcement about their role as gatekeepers into the juvenile justice system. Having data detailed by departments or by more localized geography may also help identify where additional training may be useful (e.g., adolescent development, effective communication with youth, improving police-community relations).

There are a couple options for obtaining these data. One option is to work directly with state or local law enforcement. This would involve developing a data request that details juvenile arrests in a calendar year by race/ethnicity. Since there are multiple departments that serve Shelby, it may be prudent to initiate a request through the Tennessee Bureau of Investigation (TBI) as they serve as the repository of law enforcement data in Tennessee.

Another option is to use CrimeInsight [<https://crimeinsight.tbi.tn.gov/>], TBI’s online data tool, to download the required data. This is the approach we used to look at race-specific arrest rate trends in Shelby. CrimeInsight makes a wide range of official data publicly available, but the tool does take a little time to figure out. Unlike in other jurisdictions, however, Tennessee has long been a good reporter of law enforcement data. Advances in technology have now made the data readily accessible. As such, we encourage adding these data into the revised DMC workbook.

Use the new extract to conduct logistic regression analyses

The logistic regression analyses contributed uniquely to understanding DMC. It is vitally important that this analysis become part of the Court’s routine research functions. This analysis identifies the contribution any given variable makes to the observed disparities independent of all other variables.

Conduct regular data check-ins after the short-term policy and practice change hiatus

The Court does regularly review its data. It may be able to use those data to look more closely at decisions by providing decisionmakers with their own data and the overall averages for comparison and then discussing outliers. A “diversity scorecard” provides a way to monitor the data and push for change. Encouraging decisionmakers to discuss their decisions internally can create a natural coaching process that increases consistency. Judicial officers can review data on judicial decisions; probation staff can review probation decisions; and so on. Each decisionmaker can establish personal goals and measure progress with the diversity scorecard.

Create a template for DMC update reports to be regularly released to the public

NCJJ recommends that the DMC update reports focus on the actions taken, and the results of those actions, rather than on complicated analyses and methods. The Court has made public all of the DMC monitor reports since the MOA. Now that the MOA has ended, there needs to be a vehicle for the Court to keep the public informed.

It will be important to engage the public in creative problem solving moving forward as many of the disparities having an impact on youth stem from disparities having an impact on the broader community. Some of the disparity at the front end of the system might be alleviated with additional supports for families in the community. The community can become a partner in addressing the issue of racial disparities.

DRAFT

References

- Aizer, A., and Doyle, J. (2015). Juvenile incarceration, human capital, and future crime: Evidence from randomly assigned judges. *Quarterly Journal of Economics*, 130(2), 759–803.
- Arnold, D., Dobbie, W., and Yang, C. (2018). Racial bias in bail decisions. *Quarterly Journal of Economics*, 133(4), 1885–1932.
- Fine, A., and Cauffman, E. (2015). Race and justice system attitude formation during the transition to adulthood. *Journal of Development and Life-Course Criminology*, 1, 325.
- Gies, S., Cohen, M., and Villarruel, F. (2009). "Intervention." *Disproportionate Minority Contact Technical Assistance Manual, Fourth Edition*. Washington, D.C.: Office of Juvenile Justice and Delinquency Prevention.
- Gottfredson, D., & Snyder, H. (2005). *The Mathematics of Risk Classification: Changing Data into Valid Instruments for Juvenile Courts*. Washington, DC: Office of Juvenile Justice and Delinquency Prevention.
- Hager, E. (2015). Our prisons in black and white: The race gap for adults is shrinking. Why is it widening for juveniles? Available: <https://www.themarshallproject.org/2015/11/18/ourprisons-in-black-and-white>.
- Hockenberry, S. and Puzanchera, C. (2019). *Juvenile Court Statistics 2017*. Pittsburgh, PA: National Center for Juvenile Justice.
- Hurst, Y., Frank, J., and Browning, S. (2000). The attitudes of juveniles toward the police: A comparison of black and white youth. *Policing: An International Journal*, 23(1), 37–53.
- Juvenile Justice and Delinquency Prevention Act (JJDP) of 1974 (P.L. 93-415, 42 U.S.C. 5601 et seq.)
- Mears, D., and Cochran, J. (2015). Mass incarceration and prisoner reentry: A problem that will not go away. *Academy of Criminal Justice Sciences Today* 40(1), 4–10.
- Model Programs Guide. (2014). Disproportionate Minority Contact (DMC). *Literature Review*. Washington, DC: Office of Juvenile Justice and Delinquency Prevention.
- Nagin, D., and Telep, C. (2017). Procedural justice and legal compliance. *Annual Review of Law and Social Science*, 13(1), 5–28.
- National Academies of Sciences, Engineering, and Medicine. (2019). *The Promise of Adolescence: Realizing Opportunity for All Youth*. Washington, DC: The National Academies Press.
- National Council on Crime and Delinquency. (2007). *And justice for some: Differential treatment of youth of color in the justice system*. Oakland, CA: National Council on Crime and Delinquency.
- National Research Council. (2014). *Implementing Juvenile Justice Reform: The Federal Role*. Washington, DC: The National Academies Press.
- National Research Council. (2013). *Reforming Juvenile Justice: A Developmental Approach*. Washington, D.C.: The National Academies Press.
- Office of Juvenile Justice and Delinquency Prevention. (2012). *Report of the attorney general's national task force on children exposed to violence*. Washington, DC: U.S. Department of Justice.
- Peck, J. (2015). Minority perceptions of the police: A state-of-the-art review. *Policing: An International Journal of Police Strategies and Management*, 38(1), 173–203.
- Piquero, A. (2008). Disproportionate minority contact. *Future of Children*, 18(2), 59–79.
- Puzanchera, C. and Hockenberry, S. 2019. *National Disproportionate Minority Contact Databook*. National Center for Juvenile Justice, Office of Juvenile Justice and Delinquency Prevention. [Online data analysis tool] <https://www.ojjdp.gov/ojstatbb/dmc/db/>
- Sampson, R., Wilson, W., and Katz, H. (2018). Reassessing "Toward a Theory of Race, Crime, and Urban Inequality": Enduring and new challenges in 21st century America. *DuBois Review: Social Science Research on Race*, 15(1), 13–34.
- Schwartz, I., York, P., Greenwald, M., Ramos-Hernandez, A., and Feeley, L. (2016). Using Predictive Analytics and Machine Learning to Improve the Accuracy and Performance of Juvenile Justice Risk Assessment Instruments: The Florida Case Study. In *Handbook on Risk and Need Assessment* (pp. 156-179). Routledge.
- Sickmund, M. and Puzanchera, C. (2014). *Juvenile Offenders and Victims: 2014 National Report*. Pittsburgh, PA: National Center for Juvenile Justice.
- The Pew Charitable Trusts. (2015). *Re-examining juvenile incarceration: High cost, poor outcomes spark shift to alternatives*. Baltimore, MD: The Pew Charitable Trusts.
- Tyler, T. (1990). *Why People Obey the Law*. New Haven, CT: Yale University Press.