



**The author(s) shown below used Federal funding provided by the U.S. Department of Justice to prepare the following resource:**

**Document Title:** Evaluating Impacts of the Philadelphia Police School Diversion Program: An Alternative to Arrest Policing Strategy

**Author(s):** Naomi E. S. Goldstein, Amanda NeMoyer, TuQuynh Le, Rena Kreimer, Angela Pollard, Alexei Taylor, Fengqing Zhang

**Document Number:** 304409

**Date Received:** March 2022

**Award Number:** 2017-CK-BX-0001

**This resource has not been published by the U.S. Department of Justice. This resource is being made publicly available through the Office of Justice Programs' National Criminal Justice Reference Service.**

**Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.**

## Cover Page

**Federal award number:** NIJ 2017-CK-BX-0001

**Project title:** Evaluating Impacts of the Philadelphia Police School Diversion Program: An Alternative to Arrest Policing Strategy

**Report Date:** 12/31/2021

**Report Authors:**

Naomi E. S. Goldstein, Amanda NeMoyer, TuQuynh Le, Rena Kreimer, Angela Pollard, Alexei Taylor, and Fengqing Zhang.

**Project Director/Principal Investigator (PD/PI)**

**Name:** Naomi Goldstein, Ph.D.

**Title:** Professor of Psychology, Co-Director of the JD/PhD Program in Law and Psychology, and Director of the Juvenile Justice Research & Reform Lab at Drexel University

**Contact information (e-mail, address, and phone):** [neg23@drexel.edu](mailto:neg23@drexel.edu),

**Award recipient organization (name and address):** Drexel University

**Project period (as it appears on the award document):** 01/01/2018 – 12/31/2021

**Award amount (as it appears on the award document):** \$1,081,046.00

This project was supported by Award No. 2017-CK-BX-0001 awarded by National Institute of Justice, Office of Justice Programs, U.S. Department of Justice. The opinions, findings, and conclusions or recommendations expressed are those of the author(s) and do not necessarily reflect those of the Department of Justice.

## **Abstract**

Developed as a strategy to dismantle the school-to-prison pipeline and improve school and community safety, the Philadelphia Police School Diversion Program represents an important shift in school policing policy and practice. Since 2014, Philadelphia police officers no longer arrest youth for specified summary and misdemeanor offenses on school grounds, provided the youth has no adjudication history or open court case. The Diversion Program could serve as a model for other U.S. jurisdictions seeking alternative-to-arrest policing strategies in school contexts, but widespread replication should be informed by long-term program impacts on relevant stakeholders. Thus, we conducted a long-term evaluation to identify the Diversion Program's effects on (1) community safety, (2) collateral consequences for diverted youth, (3) school community safety, (4) school police officers' beliefs about the program, and (5) return on investment to taxpayers.

This evaluation relied upon a rigorous, quasi-experimental design. Using police, school, and child welfare administrative records, we compared moderate- (i.e., 1-2 years) and long-term (i.e., 4-5 years) outcomes related to recidivism and collateral consequences between students diverted through the program (quasi-experimental group, n = 1,281) and students arrested in schools for similar offenses in 2013-2014, the school year before Diversion Program implementation (quasi-control group, n = 531). Results indicated that significantly fewer diverted youth than propensity score matched arrested youth experienced a recidivism arrest (i.e., arrest for a new offense in school or in the community) in the five years following their referring school-based incident, suggesting that Diversion Program implementation contributed to enhanced community safety. Further, results indicated that diverted youth were less likely than matched arrested youth to be suspended from school in the one year following their referring school-based incident. We did not observe significant differences between matched diverted and

arrested youth in rates of school dropout, on-time graduation, or future child welfare involvement.

Examination of annual, system-level descriptive police and school data revealed that the number of school-based arrests in Philadelphia decreased by 84% from baseline (i.e., 2013-2014, the academic year prior to Diversion Program implementation) to the fifth year of program operation. During the same time period, the number of serious behavioral incidents in Philadelphia schools also decreased, by 34%. These results indicate that a policing strategy that reduces school-based arrests can do so without compromising school safety.

Initiated the week before Diversion Program implementation, school police officers from the Philadelphia Police Department have been completing annual surveys about the program, their relationships with school community members, and their perceptions of school safety. From baseline to year 5 of program operation, we observed a considerable increase in the percentage of SPO survey respondents who philosophically agreed with the program and a significant increase in SPO agreement with the types of behaviors for which they were expected to arrest students. Further, after five years of Diversion Program operation, officers generally viewed the program as improving their relationships with students and school staff and as improving school safety.

Finally, in partnership with the Vera Institute of Justice, we conducted a cost-benefit analysis to estimate total taxpayer costs of the program and return on investment based on results from the current evaluation, budget and administrative documents, and extant literature. Results of this analysis indicated that, compared to costs associated with school-based arrests in the year before program implementation, the Diversion Program produced an annualized cost savings of more than \$1.6 million in its first year of operation and of more than \$1.9 million in its fifth year of operation.

# EVALUATION OF THE PHILADELPHIA POLICE SCHOOL DIVERSION PROGRAM:

## AN ALTERNATIVE TO ARREST POLICING STRATEGY



JUVENILE  
JUSTICE  
RESEARCH &  
REFORM LAB ■

**EXECUTIVE SUMMARY**

DECEMBER 2021

FOR MORE INFORMATION, CONTACT:  
DR. NAOMI GOLDSTEIN AND THE JUVENILE JUSTICE RESEARCH & REFORM LAB AT  
[NEG23@DREXEL.EDU](mailto:NEG23@DREXEL.EDU)

This resource was prepared by the author(s) using Federal funds provided by the U.S. Department of Justice. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

# THE PHILADELPHIA POLICE SCHOOL DIVERSION PROGRAM

Designed to dismantle the school-to-prison pipeline, the Diversion Program was developed via collaboration among the Philadelphia Police Department (PPD), School District of Philadelphia (SDP), Philadelphia Department of Human Services (DHS), and other city agencies. Implemented across all city schools in 2014, this innovative policing strategy diverts—in lieu of arrest—students with no delinquency history who commit one of several specified offenses in schools and, based on identified needs, offers voluntary, community-based prevention services to diverted youth and their families.

## THE DIVERSION PROCESS:



### BEHAVIORAL INCIDENT OCCURS IN SCHOOL

A school staff member (e.g., teacher, principal, school safety officer) may call police to report the incident. School personnel retain the authority to enact school-based discipline (e.g., suspension, referral for expulsion).



### POLICE DETERMINE OFFENSE ELIGIBILITY FOR DIVERSION

Responding PPD officer identifies whether the reported incident meets diversion eligibility criteria based on a pre-determined list of low-level offenses, such as disorderly conduct, possession of a non-firearm weapon, and trespassing.



### DIVERSION INTAKE CENTER REVIEWS DELINQUENCY HISTORY

PPD officer calls the Diversion Intake Center to determine whether a given youth has any prior adjudications or open court cases which would disqualify them from diversion.



### DEPARTMENT OF HUMAN SERVICES HOME VISIT

A DHS social worker conducts a preliminary home visit to evaluate the family's and youth's strengths and needs and offers a referral to Intensive Preventive Services (IPS).

# DEMOGRAPHICS OF EXAMINED YOUTH

To evaluate the impact of the Philadelphia Police School Diversion Program, we compared diverted youth outcomes to those of comparable youth arrested in schools the year before Diversion Program implementation.

## DIVERTED YOUTH

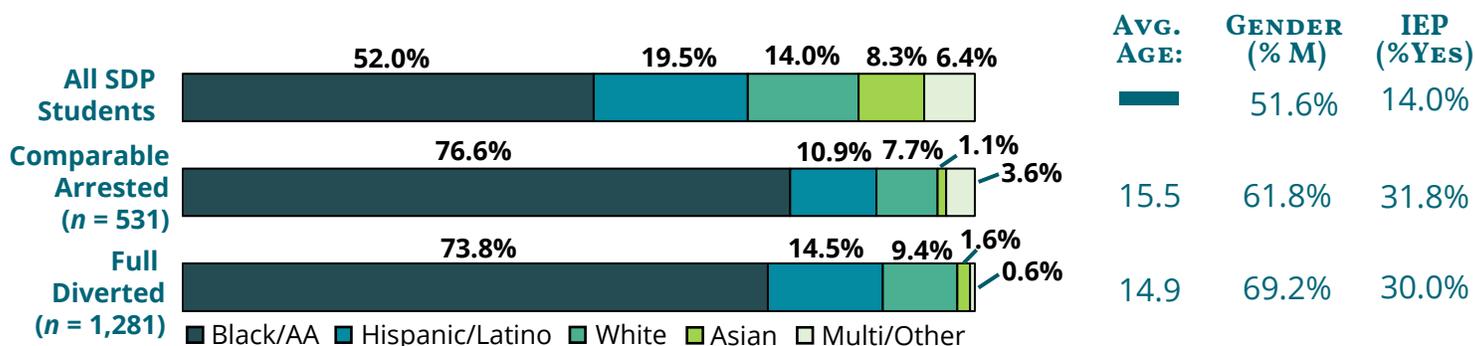
Youth in the full diverted sample were diverted from arrest through the Philadelphia Police School Diversion Program for a school-based incident during the 2014-2015, 2015-2016, or 2016-2017 school year ( $n = 1,281$ ).

## IDENTIFYING THE COMPARABLE ARRESTED SAMPLE

Youth in the comparable arrested sample included all students arrested in schools during the 2013-2014 school year (i.e., the year before the Diversion Program began) who were at least 10 years old, who committed a diversion-eligible offense, and who did not have an open case or prior adjudication ( $n = 531$ ).



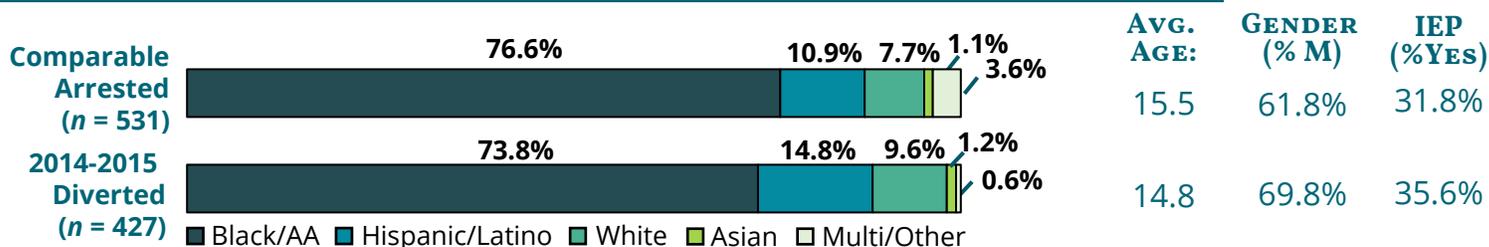
## SAMPLES FOR 1- AND 2-YEAR FOLLOW-UP ANALYSES



Compared to the broader SDP population, Black youth and male youth were overrepresented among arrested and diverted youth.

Additionally, 30% of diverted youth and 33% of comparable arrested youth had a history of child welfare involvement at the time of their school-based incident.

## SAMPLES FOR 4- AND 5-YEAR FOLLOW-UP ANALYSES

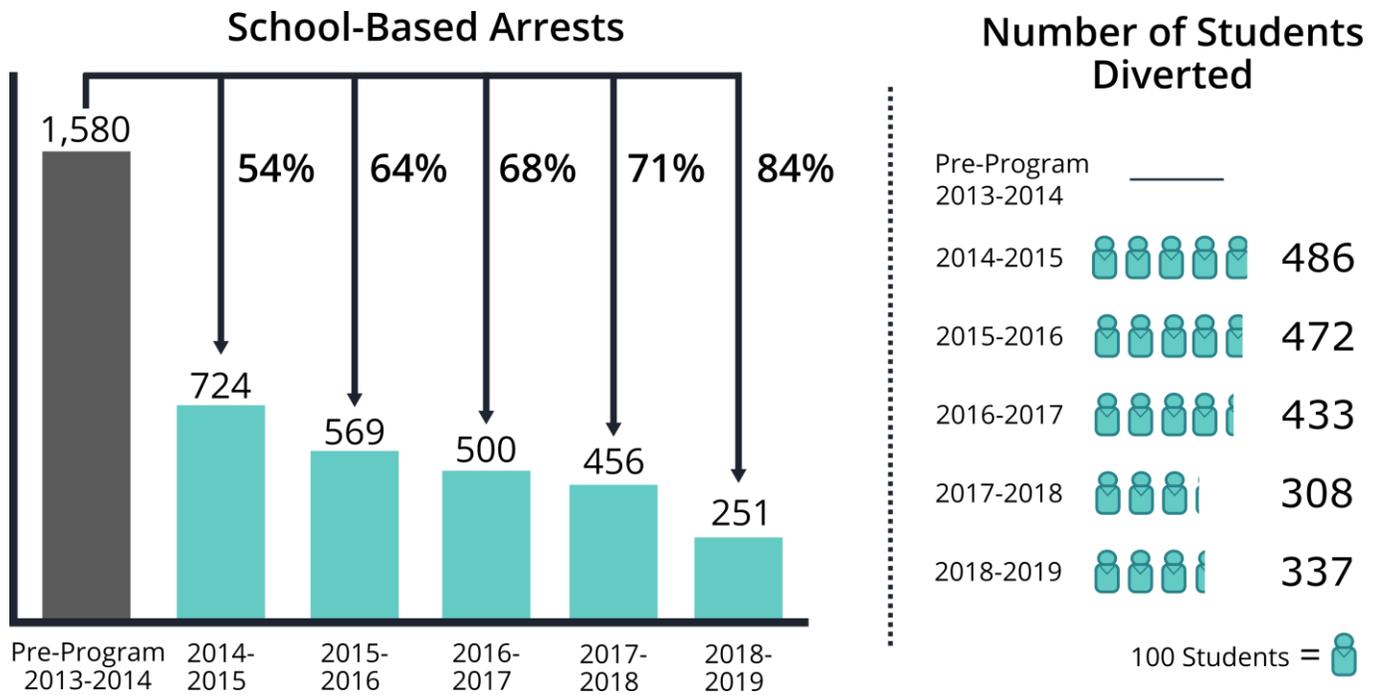


At the time of this study, 4- to 5-year follow-up data were only available for the first cohort of diverted youth (i.e. those diverted during the 2014-2015 school year).

# REDUCED ARRESTS

REDUCED # OF SCHOOL-BASED ARRESTS BY **84%** FROM THE YEAR

BEFORE PROGRAM IMPLEMENTATION TO YEAR 5 OF PROGRAM OPERATION



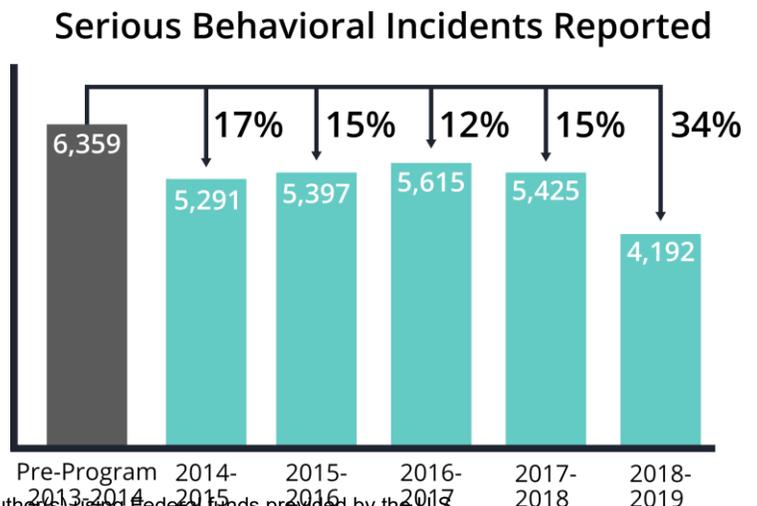
From the year before program implementation to year 5 of the program, the number of school based arrests **decreased by 84%**. Notably, the number of school-based arrests for possession of non-firearm weapons, marijuana possession, and disorderly conduct **decreased by more than 90%**.

## WHILE MAINTAINING SCHOOL SAFETY

**34%** REDUCTION IN ANNUAL # OF REPORTED SERIOUS BEHAVIORAL INCIDENTS

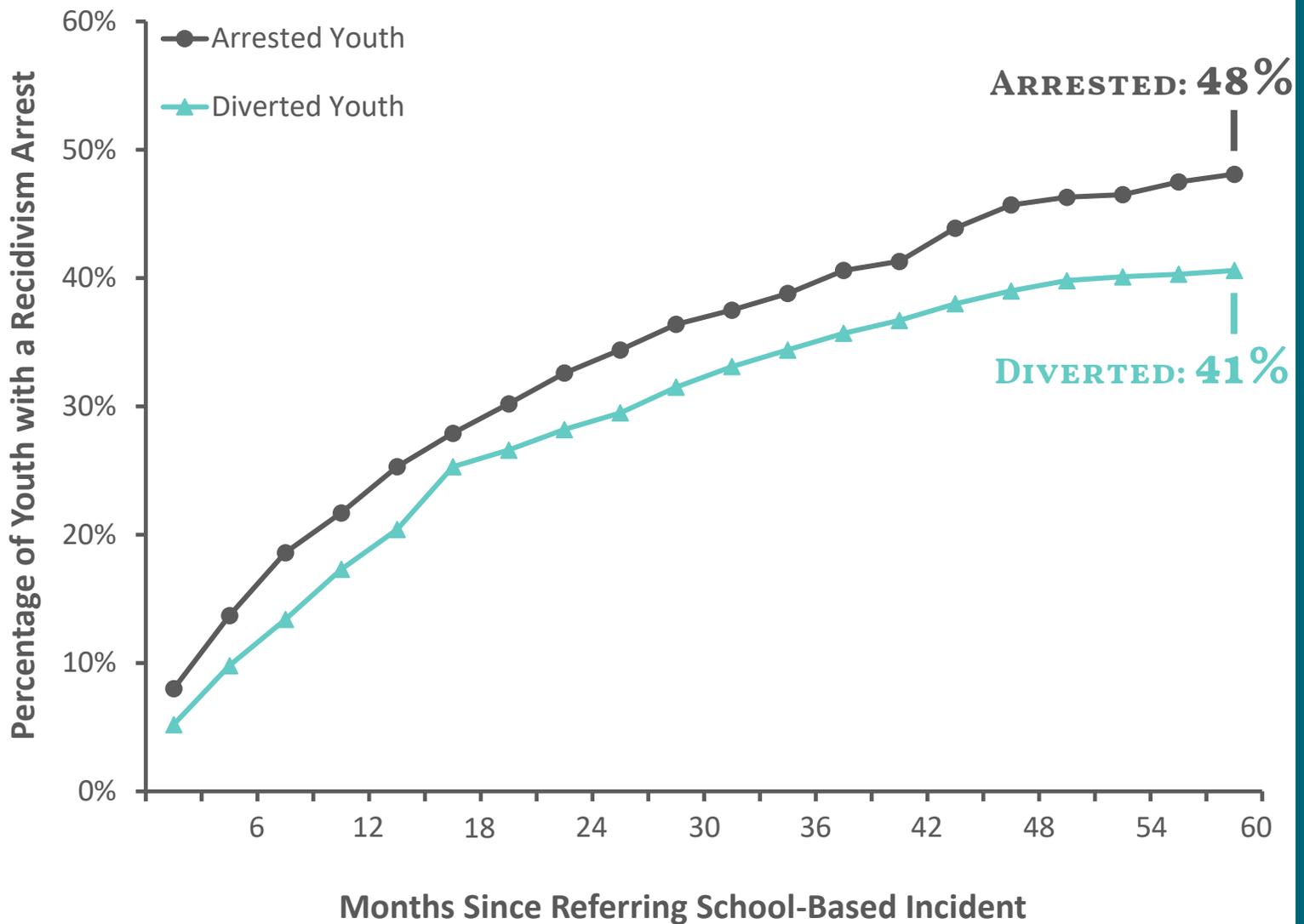
The annual number of **serious behavioral incidents** reported in schools declined 34% from the year before program implementation to the program's fifth year of operation.

This finding suggests that even as arrests decreased, school safety was not compromised.



# REDUCED FUTURE JUSTICE SYSTEM CONTACT

## REDUCED RECIDIVISM ARRESTS AMONG DIVERTED YOUTH



**Diverted youth were significantly less likely to have a recidivism arrest** than comparable arrested youth 5 years after their referring school-based incident (40.6% vs. 48.1%, respectively).

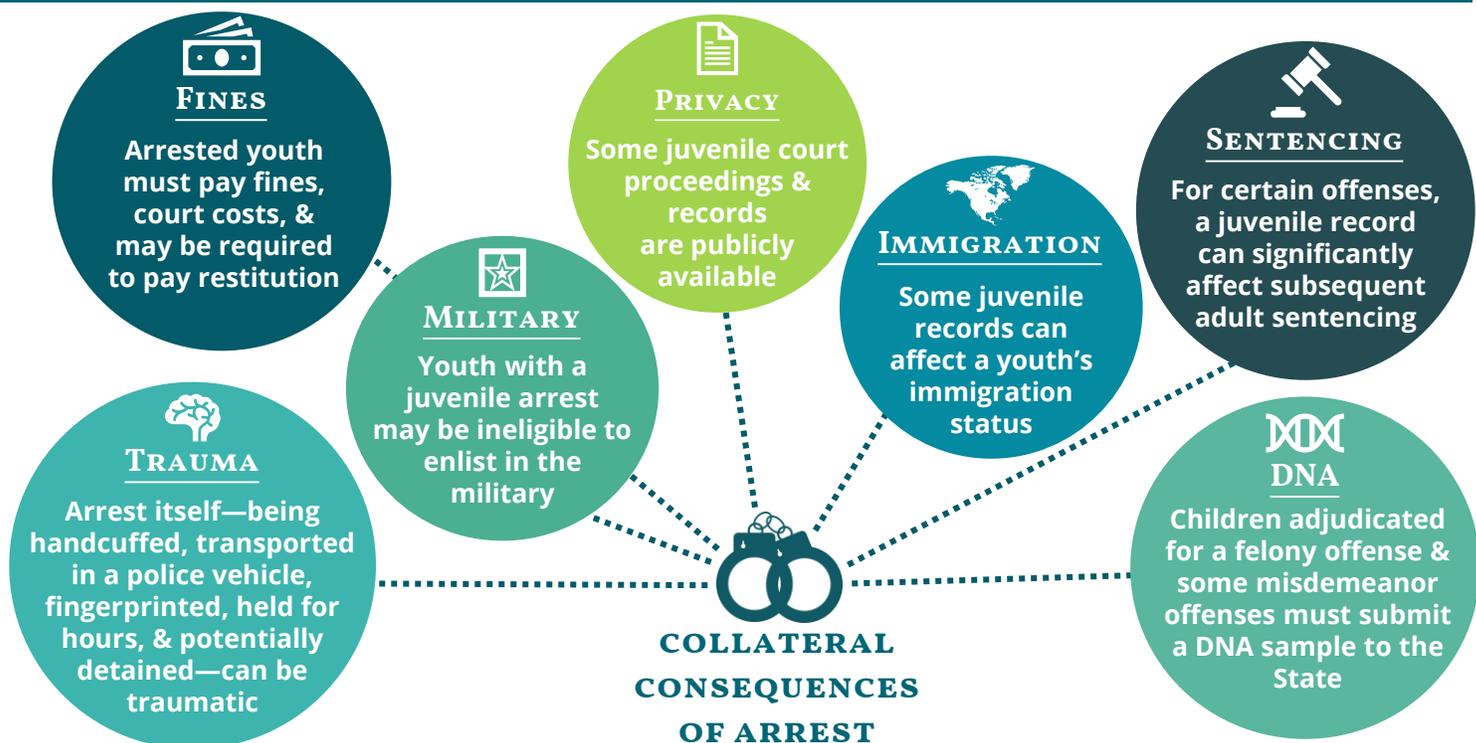
**ARRESTED YOUTH WERE 1.4 TIMES MORE LIKELY THAN DIVERTED YOUTH TO HAVE A RECIDIVISM ARREST IN THE FIVE YEARS FOLLOWING THEIR SCHOOL-BASED INCIDENT\***

\* This finding was generated while accounting for youth characteristics (i.e., age, race/ethnicity, gender) and offense type.

This resource was prepared by the author(s) using Federal funds provided by the U.S. Department of Justice. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

# PREVENTED COLLATERAL CONSEQUENCES

A PRIMARY GOAL OF THE DIVERSION PROGRAM WAS TO SPARE YOUTH THE TRAUMA OF ARREST AND ITS COLLATERAL CONSEQUENCES.



Not only did program implementation eliminate school-based arrests for the referring incident, but in the five years following that referring incident, **the majority of diverted (59%) youth did not go on to experience a future arrest.**

## % ARRESTED AT THE TIME OF THE ORIGINAL SCHOOL INCIDENT



## % WITH A RECIDIVISM ARREST WITHIN 5 YEARS OF THE SCHOOL INCIDENT



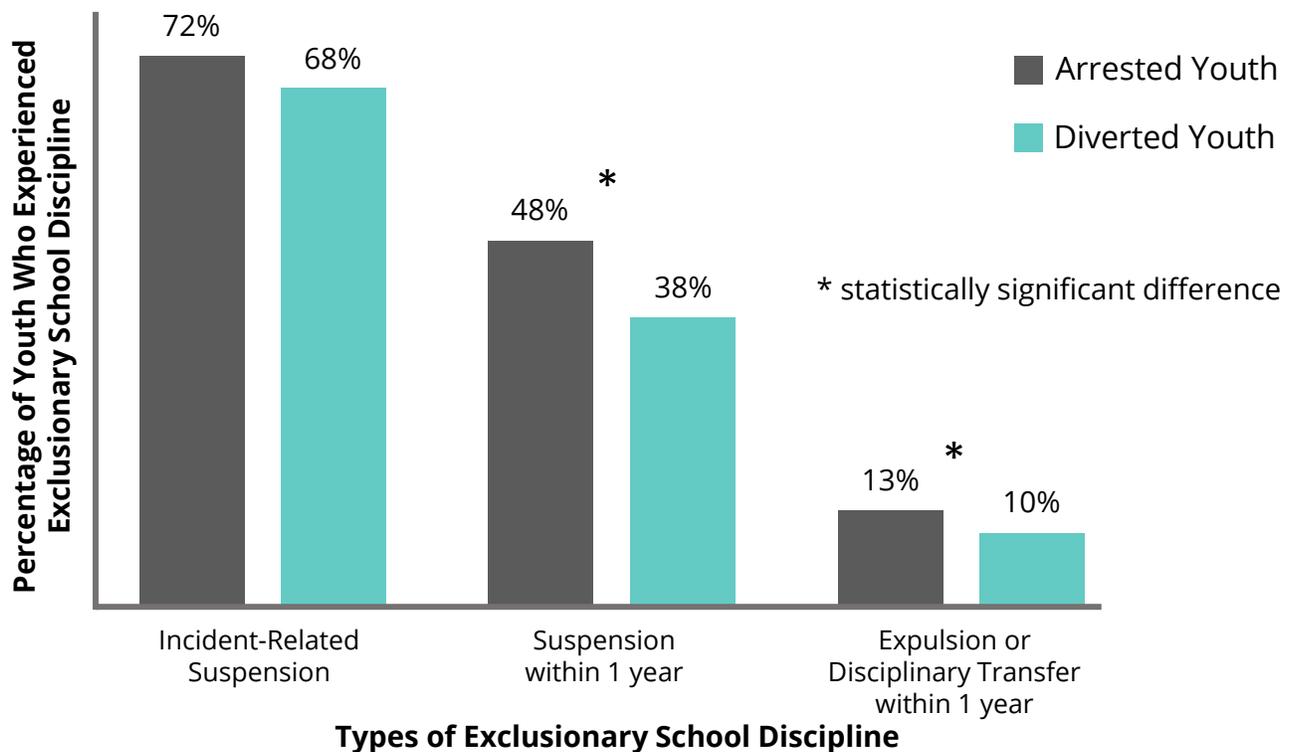
**100%** OF YOUTH ARRESTED IN SCHOOLS IN THE PRE-DIVERSION PROGRAM PERIOD CARRIED THE EFFECTS OF SCHOOL-BASED ARREST INTO THE FUTURE, WHILE **59%** OF DIVERTED YOUTH NEVER EXPERIENCED AN ARREST—NOT AT

**THE TIME OF THE SCHOOL INCIDENT NOR IN THE FOLLOWING 5 YEARS.**

This resource was prepared by the author(s) using Federal funds provided by the U.S. Department of Justice. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

# AIMED TO KEEP KIDS IN SCHOOL

## DIVERTED YOUTH WERE LESS LIKELY TO EXPERIENCE EXCLUSIONARY SCHOOL DISCIPLINE IN THE YEAR FOLLOWING THEIR REFERRING INCIDENT



Diverted and arrested youth did not differ significantly in likelihood of suspension for their referring school-based incident. However, after controlling for youth characteristics and suspension history, arrested youth were **1.6 times** more likely than diverted youth to be suspended in the year following a referring incident and **1.6 times** more likely to be referred for expulsion or disciplinary transfer in the year following their referring incident.

## HOWEVER, THE LONG-TERM PICTURE IS MORE COMPLEX

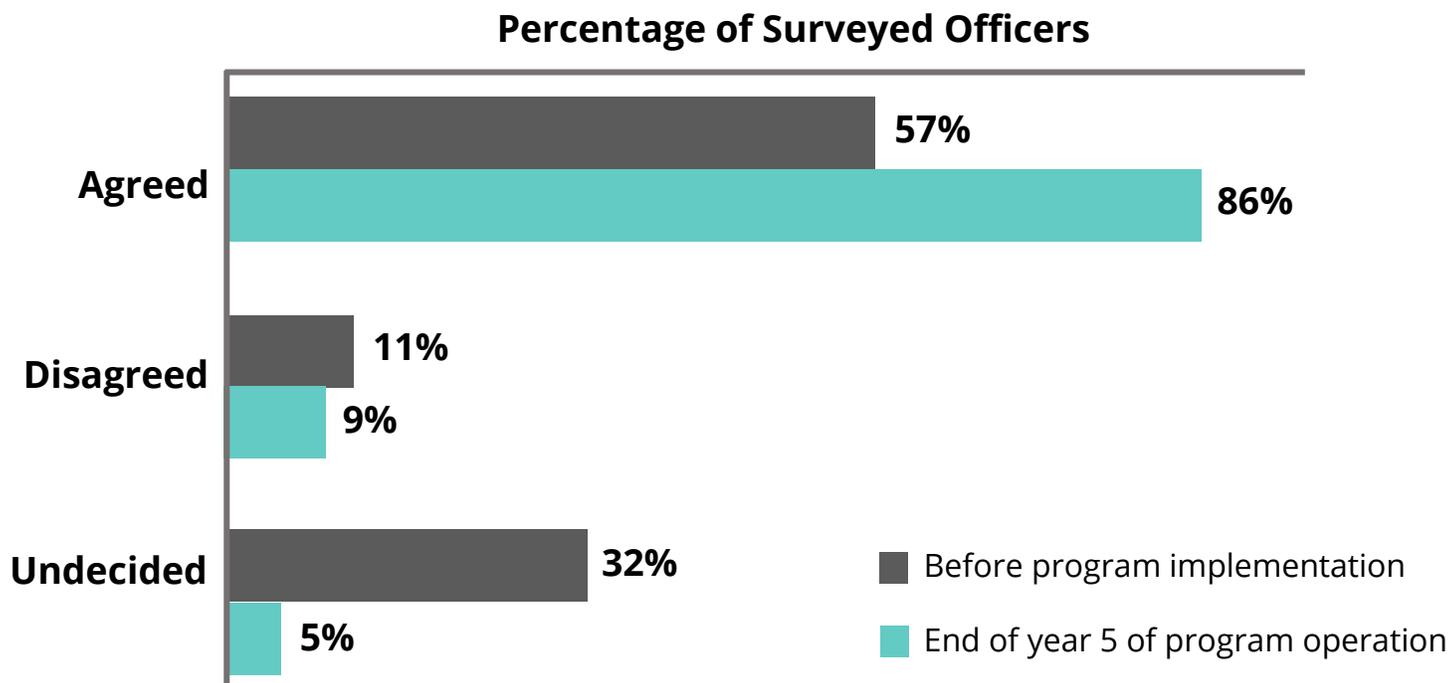
When examining outcomes four years after a referring incident for the *first cohort of diverted youth* (i.e., diverted in the 2014-2015 school year), we observed mixed findings related to school discipline and academic achievement.

Although likelihood of suspension in the four years following a referring incident appeared to differ significantly between diverted and comparable arrested youth, **this difference was not statistically significant** once we accounted for other important youth characteristics and suspension history, implying that factors other than diversion or arrest were driving the difference.

Additionally, diverted and comparable arrested youth demonstrated **no significant differences** in school dropout or on-time graduation in the four-year follow-up.

# POLICE SUPPORT FOR DIVERSION PROGRAM GREW OVER TIME

BY YEAR 5 **86%** OF OFFICERS AGREED WITH THE PROGRAM



Surveyed officers reported that the Diversion Program **improved their relationships with students**; they also reported the program **improved school safety** (e.g., reduced the number of youth carrying weapons into school).

## IN OFFICERS' OWN WORDS, POSITIVES OF THE DIVERSION PROGRAM INCLUDE:



# PRODUCED NET FINANCIAL BENEFITS FOR STAKEHOLDERS

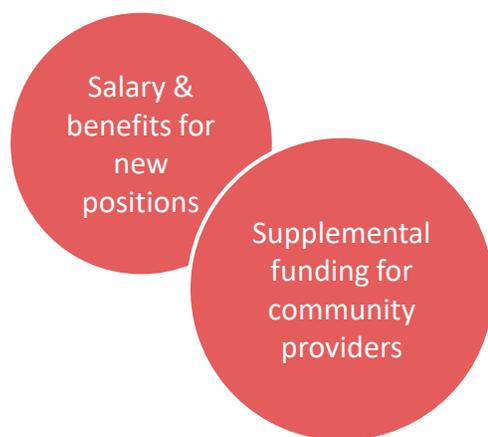
## REDUCED DIRECT AND INDIRECT COSTS BY \$1.6 MILLION TO \$1.9 MILLION ANNUALLY

With partners from the Vera Institute of Justice, we conducted a cost-benefit analysis based on data from the first year (2014-2015) and fifth year (2018-2019) of the Diversion Program to capture both “start-up” and “mature” program costs.

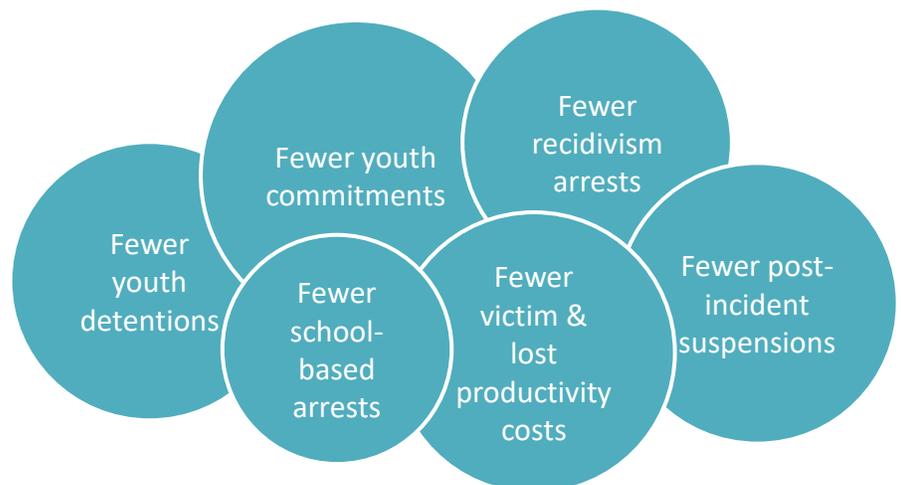
Program implementation increased some costs (e.g., salary, benefits, service provider contracts) to the Philadelphia Police Department and the Department of Human Services. The School District of Philadelphia reported no additional costs related to the Diversion Program. All costs were outweighed by considerable cost-savings from fewer school-based arrests, associated youth detentions and commitments, and recidivism arrests, as well as fewer costs to victims and lost productivity costs associated with recidivism arrests.

Compared to the year before program implementation, the Diversion Program produced more than **\$1.6 million in net annual savings** in 2014-2015 and more than **\$1.9 million in net annual savings** in 2018-2019.

### PROGRAM COSTS TO AGENCIES:



### PROGRAM-RELATED COST SAVINGS:



**2014-2015**

**2018-2019**

**COSTS TO AGENCIES:**

**\$748,667**

**\$706,398**

**COST SAVINGS:**

**\$2,352,112**

**\$2,636,112**

**NET TOTAL SAVINGS:**

**\$1,603,445**

**\$1,929,714**

\*All values are adjusted to 2019 dollars. This resource was prepared by the author(s) using Federal funds provided by the U.S. Department of Justice. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

# TAKEAWAYS AFTER 5 YEARS

The Philadelphia Police School Diversion Program **disrupted the school-to-prison pipeline**, substantially reducing school-based arrests *without* compromising school safety.

- In the Diversion Program's first five years, **2,036 students** were spared the traumatic experience of an arrest and its many negative collateral consequences.
- Arrested youth were **1.4 times more likely** than diverted youth to have a subsequent arrest in the five years following their school-based incident.
- Arrested youth were **1.6 times more likely** than diverted youth to be suspended from school in the year after their examined school-based incident.
- **86%** of school police officers reported strong agreement with the Diversion Program, and officers reported observing the program's benefits to school safety.
- Program implementation **saved stakeholders** between **\$1.6 million and \$1.9 million annually** compared to prior school-based arrest practices.

## CONSIDERATIONS & FUTURE DIRECTIONS

The Diversion Program reflects a **change in police policy**, creating automatic diversion in lieu of arrest for all eligible youth. This change resulted in clear reductions in school-based arrests.

However, school staff maintained discretion for responding to youth incidents (e.g., with exclusionary discipline). We saw **few differences in long-term school related outcomes** between youth diverted in the program's first year (i.e., 2014-2015) and comparable youth arrested in the previous year. This finding may suggest a need for more structure in school personnel decision making, which could similarly improve school outcomes for diverted youth.

Recently, the School District of Philadelphia has been working to address this issue with targeted reforms; results of these efforts may be reflected in future long-term analysis of additional diverted cohorts.

Implementing school-based diversion produced **no negative outcomes** and resulted in several important positive outcomes: an **84% reduction** in the annual number of school-based arrests, a significant **decrease in likelihood of recidivism arrest**, and connection of youth with **voluntary community-based intensive prevention services**.

## AUTHORS

Naomi E. Goldstein  
Amanda NeMoyer  
Rena Kreimer  
TuQuynh Le  
Angela Pollard  
Alexei Taylor  
Nivedita Anjaria  
Chris Mai  
Fengqing Zhang

## SPECIAL THANKS TO...

### Philadelphia Police Department

- Former Commissioner Charles Ramsey
- Former Commissioner Richard Ross, Jr.
- Commissioner Danielle M. Outlaw
- Research & Analysis Director Kevin Thomas
- Analyst Manager George Kikuchi
- Diversion Liaison Officer La'Tonya Bey
- Diversion Liaison Officer Vicente Ramirez

### School District of Philadelphia

- Chief of School Safety Kevin Bethel
- Superintendent William R. Hite, Jr.
- Chief of Student Support Services Karyn T. Lynch
- Deputy Chief Rachel Holzman
- Former Deputy Chief Jody Greenblatt
- Research, Policy, & Practice Director Theodore Wills
- Research, Policy, & Practice Director Ebru Erdem

### Philadelphia Department of Human Services

- Former Commissioner Anne Marie Ambrose
- Deputy Mayor Vanessa Garrett Harley
- Former Commissioner Jessica Shapiro
- Commissioner Kimberly Ali
- Former Deputy Mayor Cynthia Figueroa
- Director of Court & Community Services David Bruce
- Program Administrator Damon Trent

CONTACT DR. NAOMI GOLDSTEIN AND THE JUVENILE JUSTICE RESEARCH & REFORM LAB AT: [NEG23@DREXEL.EDU](mailto:NEG23@DREXEL.EDU)

## PROGRAM PARTNERS

Juvenile Justice Division  
Department of Human Services  
City of Philadelphia

Philadelphia Police Department

School District of Philadelphia

## RESEARCH PARTNERS

Juvenile Justice Research and Reform Lab  
Department of Psychological and Brain Sciences  
Drexel University

Vera Institute of Justice

## SUPPORTING AGENCIES

Defender Association of Philadelphia

Philadelphia Court of Common Pleas  
Family Court in the First Judicial District

Philadelphia District Attorney's Office

Office of Grants  
City of Philadelphia

Office of Public Safety  
City of Philadelphia

This project was supported by Award #2017-CK-BX-0001, awarded by the National Institute of Justice, Office of Justice Programs, U.S. Department of Justice. The opinions, findings, and conclusions or recommendations expressed in this report are those of the authors and do not necessarily reflect those of the Department of Justice.



This resource was prepared by the author(s) using federal funds provided by the U.S. Department of Justice. Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

REPORT DATE: DECEMBER 2021

## Background

Prior to the 1990s, few schools in the United States had school police officer (SPO) programs (Brown, 2006). Over the past three decades, school policing has been the fastest growing field in law enforcement (Beger, 2002; Hirschfield, 2008; National Association of School Resource Officers [NASRO], n.d.), with full-time school policing programs expanding into an estimated 58% of schools nationwide (Connery, 2020). Several factors have given rise to school policing programs, including the widespread adoption of zero-tolerance policies in policing and in schools (Brown, 2006; Skiba & Knesting, 2001), a series of highly publicized incidents of school violence (Borum et al., 2010), federal mandates threatening school funding (Lindle, 2008), and expanded funding for school-based security measures (Heitzeg, 2009).

These policies and events have created, perpetuated, and exacerbated the practice of removing students from school through harsh disciplinary practices and justice system referrals—a process that has become known as the *school-to-prison pipeline*. Specifically, underperforming, behaviorally challenging, and excessively truant students became targets of exclusionary practices through zero-tolerance policing, with SPOs used as instruments of easy—and often permanent—removal from school (Hirschfield, 2008). As school funding for academic support began to dwindle, funding for school security measures and personnel ballooned (Addington, 2009). As a result, SPOs, security cameras, and metal detectors became commonplace fixtures in schools (Brown, 2006; Schildkraut & Grogan, 2019), and schools became the *largest referral source* to the juvenile justice system (Krezmien et al., 2010).

The presence of police officers in schools has changed the educational landscape by increasing the likelihood of youth coming into contact with the juvenile justice system as a result of a school conduct violation (Lintott, 2004; Na & Gottfredson, 2011). The institution of police

in schools coincided with a sharp spike in the number of school-based arrests, and schools with a full-time police officer have significantly greater numbers of school-based arrests, even after controlling for the demographic make-up of the school community and number of student behavioral incidents (Finn & Servoss, 2015). In the 2015–2016 school year, U.S. schools referred nearly 300,000 students to police, and more than 52,000 students were arrested for school-related incidents (U.S. Department of Education, 2018; U.S. Department of Education, 2019). These referrals and arrests were primarily in response to minor infractions, such as disorderly conduct—*not* in response to students endangering school safety (Bahena et al., 2012). Furthermore, there is little empirical evidence that zero-tolerance policies or the presence of SPOs provide their intended safety and deterrence functions (e.g., Henry et al., 2021; Skiba, 2014; Watts & Erevelles, 2004). In fact, research suggests that removing students for minor infractions does not improve school safety (Losen & Skiba, 2010), and the presence of school security officers and other visible security measures increases students’ perceptions of the prevalence of violence in their schools (Astor et al., 2002; Perumean-Chaney & Sutton, 2013). Additionally, students may view SPOs as an oppositional, occupying force to be avoided, heightening negative attitudes toward police (Jackson, 2002; Preiss et al., 2016).

The criminalization of normal adolescent misbehavior and referral of students to the justice system contribute to an array of short-term negative consequences and long-term collateral consequences (e.g., Dennis, 2017; Reyes, 2006). As a direct result of arrest, youth experience the traumatic impacts of the arrest and booking process, removal from school (Heitzeg, 2009), adjudication proceedings, and potential juvenile justice placement (Hagan & Dinovitzer, 1999; Models for Change Juvenile Diversion Workgroup, 2011). School administrators also typically impose disciplinary sanctions on students arrested in school—

including suspension and expulsion/disciplinary transfer<sup>1</sup>— interrupting schooling and increasing risk of truancy and drop out (Monahan et al., 2014; Skiba & Knesting, 2001). The collateral consequences accompanying justice system involvement are even further reaching, potentially limiting youths’ abilities to become contributing members of society because of reduced educational opportunities (Hatt, 2011), difficulty obtaining employment (Henning, 2004; Simpson & Holthe, 2018), adverse psychological effects (Dennis, 2017), loss of social capital (Finzen, 2005), ineligibility for military service (Shepherd, 2000; Simpson & Holthe, 2018), and loss of public assistance/housing (Dennis, 2017; Simpson & Holthe, 2018; Wheelock, 2005). With long-term restrictions of opportunities, recidivism rates are high (Gowen et al., 2011), intensifying negative consequences for the individual young person and placing added burdens on the community at large, the justice system, and the taxpayers that support the justice system.

The impact of zero-tolerance policies and SPOs on the school-to-prison pipeline has gained national attention, resulting in calls to reform existing school-based arrest practices that send an overwhelming number of students into the juvenile justice system for normative adolescent misbehavior (e.g., Jordan, 2015). Importantly, police departments are in a unique position to dismantle the school-to-prison pipeline through changes in policies and procedures. For example, school-based, pre-arrest diversion programming offers particular promise as a police-led strategy to stem the flow of students through the school-to-prison pipeline—such programs spare youth the negative experience of arrest and its collateral consequences and allow youth to remain in school where disciplinary decisions are left to educators, not legal authorities (Rosiak, 2015).

---

<sup>1</sup> Disciplinary transfer refers to a student’s mandated removal from their current school and enrollment in another school within the district in response to an identified incident or patterns of incidents. This option is ordered following a hearing and often in lieu of expulsion.

## **Dismantling the School-to-Prison Pipeline with a New Policing Strategy**

A Philadelphia Police Department (PPD) review of 10 years' worth of arrest and incident data revealed that Philadelphia schools were the city's largest referral source of youth for arrest from 2003-2013 (K. Bethel, personal communication, April 2, 2019). In response, PPD leadership sought to develop an alternative-to-arrest program that would offer resources and benefits similar to those of *post-arrest* diversion programs, but at an earlier stage in processing. Recognizing that arresting students for low-level delinquent acts committed on school property was not in the best interest of the child or the community, the PPD and School District of Philadelphia (SDP) agreed that such incidents should be addressed by school administrators and supportive service providers—that consensus became the foundational framework for the Philadelphia Police School Diversion Program (“Diversion Program”).

The pre-arrest, school-based Diversion Program, implemented city-wide in 2014, prohibits arrest for any youth 10 years or older with no previous adjudication history who committed a specified summary or misdemeanor offense (e.g., disorderly conduct, marijuana possession) on school grounds. Specifically, when school personnel—which includes principals, teachers, school climate staff, school safety staff, or others employed by the district—call the police department to report an incident involving a student, PPD school beat officers arrive at the school and work with PPD Diversion Liaison Officers at a remote location to determine whether the student in question is eligible for diversion based on the objective program criteria. All eligible students are automatically diverted in lieu of arrest, thereby remaining in school. Subsequently, diverted youth and their families participate in a home visit with a Philadelphia Department of Human Services (DHS) social worker, who conducts a needs-based screening and offers appropriate referrals to voluntary, free, community-based services. Importantly, students

face no consequences—including arrest, suspension, or expulsion—if they decline service participation. Please see Goldstein et al., 2019 for a detailed program description.

### **Summary of the Project**

Diversion Program administrators aimed to develop a program that could serve as a model for other U.S. jurisdictions seeking alternative policing strategies specifically designed for school contexts. However, widespread replication likely relies on a rich understanding of the long-term impacts of the Diversion Program for several key stakeholders: youth, school communities, school officers, and taxpayers. Thus, the current project investigated several long-term outcomes in the five years following Diversion Program implementation: 1) crime reduction and minimization of collateral consequences for youth, 2) safety improvements for school communities, 3) enhanced school police officer beliefs and experiences, and (4) return on investment (ROI) for taxpayers.

### **Major Goals and Objectives**

First, we investigated the individual, *youth-level* impacts of the Diversion Program, regarding both justice involvement (i.e., recidivism arrest) and associated collateral consequences (e.g., school outcomes, child welfare involvement). Second, our project sought to assess *school community-level* impacts of the Diversion Program, specifically related to reducing delinquent behavior and arrests in schools. Third, we examined how *school police officers'* views on school policing strategies changed following Diversion Program implementation. And, fourth, we considered the *economic* impacts of the Diversion Program over the course of its first five years of operation. Our research questions and hypotheses are presented below, in Table 1.

*Table 1. Research Questions and Hypotheses*

<p><i>Research Question 1: Does the Diversion Program reduce recidivism?</i></p> <ul style="list-style-type: none"> <li>• <u>Hypothesis 1.1</u>: Diverted youth will have lower five-year recidivism in schools or in the community than will youth who were arrested in the year prior to diversion.</li> <li>• <u>Hypothesis 1.2</u>: When youth do recidivate, diverted youth will have a longer time to recidivism than will youth arrested in the year prior to diversion.</li> </ul>
<p><i>Research Question 2: Does the Diversion Program reduce the collateral consequences associated with juvenile justice system involvement?</i></p> <ul style="list-style-type: none"> <li>• <u>Hypothesis 2.1</u>: At five years post-incident, diverted youth will have fewer and less severe school disciplinary sanctions than will youth arrested in the year prior to diversion.</li> <li>• <u>Hypothesis 2.2</u>: At five years post-incident, diverted youth will demonstrate greater academic success than will youth arrested in the year prior to diversion.</li> <li>• <u>Hypothesis 2.3</u>: At five years post-incident, diverted youth will have less frequent and less severe involvement with the child welfare system than will youth arrested in the year prior to diversion.</li> </ul>
<p><i>Research Question 3: Does the Diversion Program improve school community safety?</i></p> <ul style="list-style-type: none"> <li>• <u>Hypothesis 3.1</u>: During each of the Diversion Program’s first five years, at least 50% fewer students will be arrested for school-based offenses than in the year prior to program implementation.</li> <li>• <u>Hypothesis 3.2</u>: During each of the Diversion Program’s first five years, at least 15% fewer serious school-based behavioral incidents will be reported to the police annually by SDP schools than were reported in the year prior to program implementation.</li> </ul>
<p><i>Research Question 4: With implementation of the Diversion Program in lieu of arrest, do SPOs’ beliefs about and experiences with school policing change over time?</i></p> <ul style="list-style-type: none"> <li>• <u>Hypothesis 4.1</u>: From pre-diversion implementation through the first five years of the Diversion Program, SPOs will exhibit changes in beliefs about the appropriateness and frequency of arrest in schools and the types of behaviors for which students are arrested.</li> <li>• <u>Hypothesis 4.2</u>: From pre-diversion implementation through the first five years of the Diversion Program, SPOs will exhibit changes in beliefs about their roles as school officers and their relationships with the school community (e.g., students, teachers, administrators).</li> <li>• <u>Hypothesis 4.3</u>: From pre-diversion implementation through the first five years of the Diversion Program, SPOs will exhibit changes in beliefs about their effectiveness in schools and their impact on school safety.</li> </ul>

*Research Question 5:* What is the ROI of the Diversion Program in lieu of previous school-based arrest practices?

- Hypothesis 5: Compared to previous school-based arrest practices, the Diversion Program will have a higher ROI in cost savings to taxpayers.

### **Research Design**

To accomplish the identified goals and objectives, our evaluation consisted of three approaches: 1) analysis of individual youth and school community outcomes using administrative records from three Philadelphia agencies (i.e., the PPD, SDP, and DHS); 2) administration of annual school police officer surveys to evaluate changes in officer beliefs and experiences related to school policing; and 3) cost-benefit analysis (CBA) of the Diversion Program compared to previous school-based arrest practices to estimate the program's ROI.

Of note, the Diversion Program was implemented city-wide in a single day and, therefore, we could not conduct a randomized controlled trial (RCT) to investigate youth and school outcomes. Instead, we used a rigorous, quasi-experimental research design to compare long-term outcomes between diverted youth and a sample of youth arrested in the year before Diversion Program implementation (i.e., 2013-2014) who would have been eligible for diversion if it had been available at the time (i.e., quasi-control sample). Additionally, we examined annual, system-level descriptive data related to school safety to track changes from the year before Diversion Program implementation through its fifth year of operation. We surveyed school police officers annually, starting just before Diversion Program implementation, to track changes over time in their beliefs about and experiences with school policing strategies (i.e., the previous arrest-oriented policing strategy and the alternative-to-arrest Diversion Program strategy). Finally, we estimated the economic impacts, as relevant to taxpayers, by conducting a cost-benefit analysis in conjunction with the Vera Institute of Justice.

## Methods

### *Evaluating Recidivism & Collateral Consequence Outcomes*

We partnered with the PPD, SDP, and DHS to extract and merge electronic, deidentified data from the administrative records of 2,302 Philadelphia public school students. These students were either arrested in school during the 2013-2014 school year (i.e., the year before the Diversion Program began) or diverted through the Philadelphia Police School Diversion Program for a school-based incident during the 2014-2015, 2015-2016, or 2016-2017 school years.

**Samples.** Once the Diversion Program went into effect in 2014, all students who committed designated summary or misdemeanor delinquent acts on Philadelphia school grounds, were at least 10 years of age (i.e., minimum age of arrest in Pennsylvania), and had no previous delinquency adjudications or open court cases were automatically diverted from school-based arrest. We examined data for all public school students diverted from school-based arrest through the Diversion Program between September 2014 and June 2017 ( $n = 1,281$ ).<sup>2</sup> These students were largely male (69%) and between ages 10 and 22 ( $M = 14.82$ ,  $SD = 2.17$ ) at the time of diversion. Most were Black (74%); additional racial/ethnic groups represented included: Hispanic (14%), White (9%), and any other race/ethnicity or more than one race/ethnicity (2%).<sup>3</sup>

To investigate moderate-term program outcomes (i.e., 1-2 years), we used our full diverted sample (i.e., students diverted from school-based arrested in the program's first three years). Subsequently, for analysis of long-term outcomes (i.e., 4-5 years), we narrowed the quasi-experimental diverted sample to include only those students for whom sufficient time had

---

<sup>2</sup> Youth in charter, parochial, and private schools can also be diverted in lieu of arrest through the Diversion Program; however, the SDP could not access and provide us with data for those students. As a result, our sample represents a subgroup of the 1,391 youths diverted across Philadelphia schools in the first three years of the Diversion Program.

<sup>3</sup> Of note, the administrative data we acquired from the PPD included race and ethnicity as a single, mutually exclusive variable.

elapsed since their school-based diversion. As a result, the quasi-experimental diverted sample for long-term analyses consisted only of those students diverted through the program between September 2014 and June 2015 ( $n = 427$ ). Youth in the quasi-experimental diverted sample for long-term analyses were primarily male (70%) and were between 10 and 22 years of age ( $M = 14.96$ ,  $SD = 2.14$ ) at the time of diversion. Most were Black (74%); additional racial/ethnic groups represented included: Hispanic (15%), White (10%), and any other race/ethnicity (2%).

We also acquired administrative data for all students with SDP-accessible data who were arrested in Philadelphia schools during the 2013-2014 school year ( $n = 1,021$ ).<sup>4</sup> Then, to create more equivalent groups for comparison, we limited our quasi-control arrested sample to include only students who *would have been* eligible for the Diversion Program if it were in place at the time of their arrest. Thus, criteria for the quasi-control arrested sample mirrored that of the diverted sample (i.e., incident type, age, and no previous adjudication or open case). Our final quasi-control sample consisted of 531 students, was largely male (62%), and included students 10 through 19 years old ( $M = 15.50$ ,  $SD = 1.82$ ) at the time of their school-based arrest. Most quasi-control arrested youth were Black (77%); additional racial/ethnic groups represented included: Hispanic (11%), White (7%), and any other race/ethnicity (5%). Descriptively, the quasi-control sample was somewhat older and comprised of fewer males and more Black youth than the full diverted sample. See the *Method of Analysis* section of this report for our chosen approach to address these sample differences (i.e., through propensity score matching).

**Measures.** Data related to program objectives were routinely collected by three participating agencies (i.e., PPD, SDP, and DHS) and shared with the research team on a regular

---

<sup>4</sup> As with the quasi-experimental diverted sample, we could not acquire school data for students arrested in charter, parochial, or private schools. Thus, our arrested youth data includes a subgroup of the 1,580 students arrested in Philadelphia schools during the 2013-2014 school year.

basis. Police data included information from the Diversion Program intake database (e.g., demographics, diversion date, type of incident leading to diversion) for all diverted youth and from arrest records (e.g., demographics, arrest date, type of incident leading to arrest) for all arrested youth included in the study samples. Additionally, on at least an annual basis, the PPD Office of Research and Analysis shared information about subsequent police contact—namely, arrest and processing in the juvenile and adult systems—for all diverted and arrested students for up to five years.

The SDP Office of Research and Evaluation extracted and shared school-related data for all diverted and arrested youth from their comprehensive database of all SDP students. School-related data included information related to youths' academic performance, grade progression, formal discipline (e.g., suspension, expulsion/disciplinary transfer), school enrollment, and school departure (e.g., graduation, dropout). The SDP provided these data annually for all youth arrested in 2013-2014 and for all youth diverted from 2014-2015 through 2018-2019. Finally, the DHS Division of Performance Management and Technology provided information about child welfare involvement for all diverted and arrested youth; these data included youths' histories of child welfare services, whether they were removed from their homes through DHS, and the dates of all DHS services provided, including out-of-home placements.

### ***Evaluating School Community Outcomes***

As part of routine practice, the PPD maintains an accounting of the annual number of school-based arrests in Philadelphia, which it shared with the research team. Additionally, the SDP Office of School Safety records all student-related serious behavioral incidents (e.g., theft, vandalism, assault) reported by each SDP public school in the city. The SDP shared these aggregated data with the research team, along with the aggregate number of out-of-school

suspensions, expulsions, and disciplinary transfers that occurred in its public schools each academic year during the study period.

Importantly, all data for individual, youth-level and school community-level outcomes were drawn directly from agency records, eliminating issues of participant attrition or response bias and maximizing real-world applicability to policy and practice.

### ***Procedures***

Data licensing agreements were fully executed between Drexel University and the PPD, SDP, and DHS, authorizing data sharing between each of these agencies and the research team. We worked closely with designated liaisons from each agency to facilitate the transfer of deidentified individual data that could be matched across systems through a unique ID number generated by the SDP for this study. Once deidentified, data were digitally transferred to researchers via encrypted file-share portals. Youth demographic information (e.g., gender, race/ethnicity) and birthdate (month and year only) were obtained from each agency and cross checked to verify accuracy of ID assignment prior to merging data across systems. We clarified any inconsistencies with our partner agencies, providing an opportunity for them to reexamine cases and correct errors. After data merging, we processed and coded data, when applicable, to prepare for analyses. Additionally, designated liaisons from the PPD's Office of Research and Analysis and SPD's Office of Research and Evaluation prepared and transferred aggregate data related to school community outcomes to the research team at scheduled intervals. The Drexel University Institutional Review Board (IRB) reviewed all study procedures and approved human subjects research components; this project was conducted in accordance with university IRB regulations.

### ***Evaluating SPO Outcomes***

One week before the Diversion Program was implemented across Philadelphia, PPD school police officers completed a 2.5-hour training. This training session consisted of a theoretical overview of the program, a summary of new diversion/arrest policies and procedures, and instruction on adolescent decision making and methods of promoting positive youth behaviors. Participating officers completed a survey immediately before and after the training session regarding their knowledge of procedures, perceptions of the Diversion Program and anticipated challenges to program implementation. We continued to survey officers on an annual basis to track changes in beliefs about and experiences with the Diversion Program from baseline (i.e., before Diversion Program training) through five years of program operation. For the current study, we utilized select survey items (i.e., those aligning with study hypotheses) and compared officers' responses to these items on the first survey administered immediately before the training in May 2014 (baseline survey) and responses to these items on the survey administered at the end of year five of Diversion Program operation, in June 2019 (year 5 survey).

**Participants and Measures.** After removing respondents from each administration point who did not respond to more than 5% of items, we examined a total of 110 survey responses from PPD school police officers at baseline and at year 5. Sixty-three responses were from officers who attended the introductory Diversion Program training session in May 2014 and completed each relevant question on the baseline survey. Additionally, 47 officers fully completed the year 5 survey, with an overlap of 7 officers completing both iterations. Surveys included scale-based and open response questions; we identified the most project-relevant survey questions from the baseline survey and the year 5 survey. See Table 2 for these questions.

Table 2. Grant-Relevant Items from SPO Surveys at Baseline and Year 5.

Hypothesis	Baseline Survey Item	Responses	Year 5 Survey Item	Responses
Hypothesis 4.1: From pre-diversion implementation to the end of the first five years of the Diversion Program, SPOs will exhibit changes in beliefs about the appropriateness and frequency of arrest in schools and the types of behaviors for which students are arrested.	To what extent do you agree with the new school-based police diversion program?	1 = Strongly disagree to 5 = Strongly agree	To what extent do you agree with the school-based police diversion program?	1 = Strongly disagree to 5 = Strongly agree
	To what extent do you agree with the types of behaviors for which you are expected to arrest students?	1 = Strongly disagree to 5 = Strongly agree	To what extent do you agree with the types of behaviors for which you are expected to arrest students?	1 = Strongly disagree to 5 = Strongly agree
Hypothesis 4.2: From pre-diversion implementation to the end of the first five years of the Diversion Program, SPOs will exhibit changes in beliefs about their roles as school officers and their relationships with the school community (e.g., students, teachers, administrators).	Under <u>existing</u> school-based policies, how would you characterize your relationships with: Students Teachers Administrators	1 = Very negative to 5 = Very positive	...[H]ow is the Philadelphia Police School Diversion Program affecting your relationships with: Students Teachers Administrators	1 = Makes things much worse to 5 = Makes things much better
	To what extent do you believe that having positive relationships with students is key to your job effectiveness?	1 = Very unimportant to 5 = Very important	To what extent do you believe that having positive relationships with students is key to your job effectiveness?	1 = Very unimportant to 5 = Very important
Hypothesis 4.3: From pre-diversion implementation to the end of the first five years of the Diversion Program, SPOs will exhibit changes in beliefs about their effectiveness in schools and their impact on school safety.	In your opinion, what are the effects of existing school-based policies on: school safety aggressive behaviors in school carrying weapons in school presence of drugs in school general behavior problems in school	1 = Make things much worse to 5 = Make things much better	In your opinion, how is the Philadelphia Police School Diversion Program affecting: school safety aggressive behaviors in school carrying weapons in school presence of drugs in school general behavior problems in school	1 = Makes things much worse to 5 = Makes things much better

**Procedures.** After creating unique identifiers for each officer so that survey responses could be matched across years of administration, research team members provided survey materials marked with those identifiers to the PPD headquarters for distribution to district offices and, subsequently, to SPOs. Officers were notified that survey completion was voluntary and were asked to complete the enclosed survey, add no identifying information to the form or envelope, and return the completed survey in a sealed envelope to the research team. Trained research assistants processed returned survey forms, entered written responses into a digital database, and securely filed all physical copies. Procedures were approved by the Drexel IRB.

### ***Evaluating Economic Outcomes***

Using City of Philadelphia budget documents, agency administrative records, and correspondence with agency leaders, our partners at the Vera Institute of Justice (Vera) assessed the taxpayer-supported costs incurred by the PPD, SDP, and DHS to implement and operate the Diversion Program. Example costs included salaries and benefits for newly hired staff and increased payments to organizations providing community-based services for diverted youth and their families. Additionally, Vera calculated benefits (i.e., cost savings) of the program based on descriptive findings from moderate-term analyses conducted as part of the current study related to school-based arrests, recidivism arrests, and exclusionary discipline (Goldstein, Kreimer, et al., 2021; Goldstein, NeMoyer, et al., 2021). Vera also combined these outcome data with estimates of the costs of youth arrests, youth detention, crime victimization, and students dropping out of school. Whenever possible, such estimates were drawn from Philadelphia sources; however, when local estimates were unavailable, Vera relied on sources from other jurisdictions.

### **Analytical and Data Analysis Techniques**

## ***Recidivism & Collateral Consequence Outcome Analyses***

We compared community safety-related recidivism outcomes (i.e., likelihood of recidivism arrest, time to recidivism arrest, number of recidivism arrests) and outcomes related to collateral consequences of police contact (i.e., school discipline, academic achievement, and child welfare involvement) between diverted youth and comparable youth arrested in the year before Diversion Program implementation (i.e., quasi-control arrested youth). Where appropriate—namely, for all outcomes except academic achievement—we first examined *moderate-term* outcomes (i.e., 1–2-year follow-up period) that allowed us to include three cohorts of diverted youth in the quasi-experimental sample: students diverted in the 2014-2015, 2015-2016, and 2016-2017 school years. We then conducted similar analyses to examine *long-term* outcomes (i.e., 4–5-year follow-up period), for which we limited our quasi-experimental sample to include the only cohort of diverted youth—those diverted in the 2014-2015 school year—for whom sufficient follow-up data were available.

**Community Safety-related Recidivism Analyses.** To identify differences in recidivism from baseline to post-Diversion Program implementation, we first used chi-square tests to compare binary recidivism outcomes (i.e., was the youth arrested, no/yes) between the diverted youth sample and the quasi-control arrested youth sample at three-month timepoints from months 3 through 60 (e.g., month 3, 6, 9, etc.) following their school-based diversion or arrest. Of note, we chose to examine recidivism at three-month time points throughout our five-year follow up period to provide ongoing, time-specific information about patterns of reoffending to identify when youth may be at highest risk of recidivism. Such information could inform the development and implementation of time-specific recidivism prevention efforts to further enhance community safety.

We then conducted a Cox proportional-hazards regression to determine whether we observed differences in time to recidivism between the diverted youth sample and the quasi-control arrested youth sample. We also examined between-sample differences in *number* of arrests per youth at three-month time points following the initial school-based referral to police using Tweedie compound Poisson general linear models to account for exact zeros in the number of arrests (Zhang, 2013). Next, we utilized propensity score matching to create more equivalent samples by removing between-group differences in demographic characteristics and incident type for the diverted and quasi-control arrested samples. This technique, which we executed using an R program to match cases based on a 1:1 nearest neighbor ratio (Ho et al., 2007; R Core Team, 2019), has frequently been used to simulate characteristics of an RCT design in scenarios where RCTs are not feasible (Austin, 2011). After generating these matched samples, we conducted the same series of analyses used to compare the diverted youth sample to the quasi-control arrested youth sample.

**School Discipline Analyses.** First, we investigated *moderate-term* school discipline outcomes by examining a one-year follow-up period with three cohorts of diverted youth (i.e., youth diverted in the 2014-2015, 2015-2016, and 2016-2017 school years) and a matched sample of youth arrested in the 2013-2014 school year. Second, we investigated *long-term* school discipline outcomes by examining a four-year follow-up period with the one cohort of diverted youth for whom a sufficient amount of time had passed (i.e., youth diverted in the 2014-2015 school year).<sup>5</sup> All school discipline analyses were performed with the samples of diverted and arrested youth generated through propensity score matching, with between-sample equivalence

---

<sup>5</sup> We limited our diverted youth sample to just one cohort for long-term analyses because including youth diverted in 2015-2016 would have meant our long-term follow-up period of four years extended to 2019-2020, during which the schools transitioned to remote learning because of the COVID-19 pandemic.

established with the following variables: gender (male, female), race/ethnicity (Black, others), age at referring incident, incident type (marijuana possession, others), and total number of suspensions in the year prior to the referring incident (0, 1, 2 or more). Additionally, youth were included in school discipline analyses only if they were enrolled in a public school for at least 75% of the days in a given analysis period (e.g., one year or four years following their initial referral to police).

To account for the hierarchical structure of our data (i.e., youth nested within schools), we used mixed-effects logistic regression (Bates et al., 2011; Gibbons et al., 2010; Kwok et al., 2008) to examine the effect of diversion or arrest on each of three school disciplinary outcomes (i.e., incident-related suspension, post-incident suspension, and post-incident referral for expulsion or disciplinary transfer). “Incident-related” describes a suspension that occurred in response to a student’s initial police-referred incident, “post-incident” describes a suspension or referral for school removal for a new incident that occurred during the given follow-up period (i.e., one year or four years). We then added all the covariates used to create the matched samples to the model to determine whether any of these variables predicted school disciplinary outcomes.

**Academic Achievement Analyses.** We examined long-term academic achievement over the course of four years following a school-based diversion or arrest. To do so, we compared rates of school dropout and on-time graduation (i.e., graduated within four years of entering 9<sup>th</sup> grade) between youth diverted in the 2014-2015 school year and comparable youth arrested for similar offenses in the 2013-2014 school year. We initially used mixed effects logistic regression models to nest youth within schools; however, in one instance, the model failed to converge, creating the need to use logistic regression without nesting. In addition to comparing diverted

youth to quasi-control arrested youth, we used propensity score matching to generate more equivalent groups based on gender, race/ethnicity, age at incident, and IEP status. We then compared school dropout and on-time graduation outcomes between the two matched samples using mixed effects logistic regression analyses.

**Child Welfare Analyses.** We conducted a series of logistic regression analyses to compare diverted and quasi-control arrested youth outcomes related to child welfare involvement at two time points (i.e., moderate-term and long-term). First, we compared the larger quasi-experimental sample containing three cohorts of diverted youth to the quasi-control arrested youth sample, seeking to identify group differences in receipt of child welfare services (no, yes) in the year following a referring school-based incident. In doing so, we controlled for youth demographics (i.e., age at incident, gender, race) and prior child welfare service involvement. Second, we examined whether diverted and quasi-control arrested youth demonstrated differences in the likelihood of child welfare *placement* in the year following their school-based incident, while controlling for demographic characteristics and prior child welfare placement. Third and fourth, we examined long-term child welfare outcomes for our smaller quasi-experimental sample—consisting of one diverted youth cohort—and our quasi-control arrested sample using the same analyses as above, but with a five-year follow-up period.

### ***School Community Outcome Analyses***

To evaluate school community-level outcomes, we generated descriptive statistics for and exploratory graphing of each of the identified metrics (e.g., number of school-based arrests, number of school-based incidents). Because—at most—six observations were available for these system-level measures, formal tests of statistical significance were not appropriate. We also compared annual changes from baseline in each of these metrics to target benchmarks identified

during Diversion Program development. For example, Diversion Program leadership set a goal of reducing the annual number of school-based arrests by 50% in the first three years of program implementation and to maintain or surpass this reduction long term. Additionally, Diversion Program leadership sought to reduce the annual number of serious behavioral incidents (i.e., school-based incidents involving students that were reported to school district safety officers, excluding accidents and illness; School District of Philadelphia, 2021) reported in Philadelphia schools by 15% in the first three years of program operation and to maintain or surpass this reduction over time. Program stakeholders theorized that with fewer school-based arrests, students and staff would feel safer in their schools, school staff and administrators would find alternative methods of managing student behaviors, and school climate would improve, resulting in fewer serious behavioral incidents (Goldstein et al., 2019). At the very least, program stakeholders prioritized a reduction in school-based arrests *without an increase* in serious behavioral incidents in school.

### ***SPO Outcome Analyses***

Based on the characteristics of the data generated by our baseline and year 5 SPO surveys, we conducted two-sample independent *t*-tests (and Mann–Whitney tests when data were skewed) to assess whether SPOs’ beliefs about and experiences with school policing changed over time. Our full sample ( $n = 110$ ) contained a mixture of paired and independent samples, as 6.4% ( $n = 7$ ) of officers responded in both survey waves. Response data for four of the 11 items of interest (i.e., agreement with the program, effect of the program on school safety, effect of the program on officer relationships with students, importance of positive relationships with students for officer job effectiveness) had non-normal distributions. By utilizing the more conservative

approach of an independent samples test compared to a paired samples test for all respondents, we decreased our likelihood of type I error.

### ***Economic Outcome Analyses***

To conduct the CBA, Vera utilized a bottom-up approach to delineate costs from the perspective of various stakeholders (Henrichson & Rinaldi, 2014). Vera calculated the taxpayer-supported costs of the Diversion Program using administrative documents and information from each agency in addition to city budget data. Then, to calculate the benefits associated with program impacts, including recidivism and school disciplinary sanctions, Vera relied upon extant literature documenting the costs of crime, criminal justice processing, and academic outcomes to translate current evaluation findings into estimates of monetary savings. The CBA focused on evaluation outcomes comparing youth diverted through the Diversion Program in the first (2014-2015) and fifth (2018-2019) years of operation to youth in the quasi-control arrested sample (i.e., arrested in 2013-2014). Vera combined these outcome data with local and national estimates of the costs of youth arrests, youth detention, crime victim impacts, and school dropout. All financial costs and benefits were adjusted to reflect September 2018-August 2019 costs using the Consumer Price Index from the Bureau of Labor Statistics (U.S. Bureau of Labor Statistics, n.d.).

### **Expected Applicability of Research**

At the core of many juvenile justice reforms is the theory that arresting youth does not create safer communities within or outside schools—instead, arrest triggers numerous collateral consequences, putting youth on long-term negative trajectories toward school dropout, unemployment, future offending, and long-term instability. Using a quasi-experimental design, this evaluation examined whether the new policing strategy of diverting youth from arrest to

voluntary services for specified summary and misdemeanor offenses is associated with better outcomes than the previous policing strategy of arresting youth in schools for these acts.

The evaluation also used survey methodology to gauge the new strategy's impact on SPOs' beliefs about and experiences with school policing strategies. Findings from this component of the evaluation can inform future practices (e.g., officer training) aimed at maximizing officer effectiveness in schools and enhancing police-community relations. Finally, the CBA provides useful information to counties considering replication, as such characteristics of a novel initiative are critical to establishing buy-in from stakeholders (e.g., legislators, police and school leadership). Understanding the costs of the program, as well as monetary benefits, will allow Philadelphia and other jurisdictions to expand or alter the Diversion Program to maximize possible cost-savings. Although the goals of this project emphasized evaluation of Diversion Program impacts, these findings could stimulate more widespread efforts to develop a variety of alternative school-policing strategies.

### **Participants and Other Collaborating Organizations**

The research team that carried out this evaluation was led by Naomi Goldstein, Ph.D., Professor of Psychology, Co-Director of the JD/PhD Program in Law and Psychology, and Director of the Juvenile Justice Research and Reform Lab at Drexel University. The interdisciplinary JJR&R Lab at Drexel University works to promote best practices in the juvenile justice system by more closely aligning juvenile justice policies and procedures with adolescents' developmental capacities. For more than 20 years, the JJR&R Lab has conducted innovative research and partnered with public agencies and non-profits to enact real-world, large-scale, systemic changes within and for the juvenile justice system that produce more just and equitable outcomes for youth and communities. Other JJR&R Lab and/or Drexel-affiliated team members

included Fengqing Zhang, Ph.D., Amanda NeMoyer, J.D., Ph.D., Rena Kreimer, M.S.W., TuQuynh Le, M.S., Angela Pollard, M.S., Alexei Taylor, B.A., Nivedita Anjaria, B.A., and Siying Guo, Ph.D. Additionally, Kevin Bethel, M.S. contributed to this project during his time with the Philadelphia Police Department, during his time as a Stoneleigh Fellow and Senior Policy Advisor for the JJR&R Lab, and while in his current role at the School District of Philadelphia. Chris Mai, M.P.P. and Christian Henrichson, M.P.P. from Vera Institute of Justice also contributed to the research team by leading the cost-benefit analysis component of the evaluation. Collaborating organizations included the Philadelphia Police Department, School District of Philadelphia, and the Philadelphia Department of Human Services.

### **Changes in Approach from Original Design**

Although we initially proposed to examine school-based and community-based recidivism separately, the PPD arrest data did not consistently or reliably indicate whether a given incident occurred on school grounds. As a result, we were unable to distinguish between these two forms of recidivism and chose instead to examine recidivism arrests, regardless of location, as the community safety outcome of interest. Additionally, to examine SPO survey responses before and after Diversion Program implementation, we had anticipated using growth curve and multilevel modeling techniques to plot survey data at multiple time points and estimate change trajectories. However, PPD school officer personnel changes made it less useful conceptually and infeasible methodologically to incorporate repeated measures data into our analyses. Instead, we chose to compare survey responses at baseline and in the most recent year for which survey data were available, as this technique would not limit us to including only those officers who served as SPOs for multiple years between 2014 and 2019. Finally, although we proposed looking only at long-term follow-up periods (i.e., five years) for each of our outcomes

of interest, we enhanced the design of our evaluation by also investigating differences between diverted and arrested youth after a *moderate-term* follow-up period (i.e., one or two years). Doing so allowed us to provide useful information for a greater number of diverted students and provide estimates of the Diversion Program's impacts across two potentially meaningful timeframes.

## **Outcomes**

### **Activities and Accomplishments**

The project team completed all planned activities as described, with several notable accomplishments delineated below.

To investigate outcomes related to community safety and youth collateral consequences, we facilitated the transfer of de-identified arrest, school discipline, academic achievement, and child welfare data; processed and coded these data; merged the data collected from all three agency sources to create a comprehensive database with police, school, and child welfare data for all youth in our diverted and arrested samples; and conducted the analyses described in this report. We investigated overall outcomes related to school community safety in Philadelphia by examining aggregate school-based arrest data and aggregate school incident data. We also collected, verified, merged, and analyzed survey data from PPD school police officers on an annual basis regarding their beliefs about the Diversion Program and their roles in schools. Finally, we worked with collaborators at the Vera Institute of Justice to conduct a cost-benefit analysis to estimate the financial cost savings that resulted from use of the Diversion Program policing strategy in lieu of previous school-based arrest practices.

In the course of this evaluation, we also completed several other critical administrative research activities. We established and renewed as required Data Licensing Agreements with the

PPD, SDP, and DHS; created and submitted detailed quarterly financial and semi-annual project progress reports to NIJ on the status of the evaluation, methodological and implementation issues, progress toward goals, and other issues relevant to the project's completion; created and submitted this final report documenting the project and highlighting key findings to NIJ; and transferred program evaluation data to the National Archive of Criminal Justice Data with associated files and documentation as allowed by executed Data Licensing Agreements.

Regarding deliverables and dissemination, study findings are reported in five academic manuscripts: three of which have been published, one which is currently under peer review, and one of which is in preparation. Additionally, the research team has presented findings from this study in three academic conference presentations, with an additional three presentations under peer review for a 2022 conference. We also prepared and disseminated research findings to policing and juvenile justice stakeholders and other practitioners by conducting regular progress meetings with project partners and authoring and disseminating research findings in practitioner-friendly research briefs and nine presentations. See the Artifacts section of this report for more detail about these accomplishments.

## **Results and Findings**

### ***Research Question 1: Does the Diversion Program Reduce Recidivism?***

We examined outcomes related to likelihood of recidivism arrest, time to recidivism arrest, and number of recidivism arrests among diverted and arrested youth in the two years (i.e., moderate-term) and five years (i.e., long-term) following their referring school-based incident. For moderate-term analyses, our quasi-experimental diverted sample included the first three cohorts of diverted youth (i.e., 2014-2015, 2015-2016, 2016-2017). Given the longer follow-up period of five years, the quasi-experimental sample for *long-term* analyses was limited to the one

cohort of diverted youth for whom five years had passed since their initial incident (i.e., the 2014-2015 diverted cohort).

**Moderate-Term Recidivism Results.** Findings from the current evaluation related to youths' recidivism arrests during a moderate-term follow-up period (i.e., 2 years) were recently published (Goldstein, Kreimer et al., 2021).<sup>6</sup> Descriptively, 27% of youth diverted in the first three years of the Diversion Program were arrested within two years following their referring school-based incident, compared to 32% of youth in the quasi-control arrested sample, and the difference in likelihood of recidivism arrest within two years differed significantly,  $\chi^2 = 3.96$ ,  $df = 1$ ,  $p = .046$ . Similarly, diverted youth spent a significantly longer time with no recidivism arrests in that two-year period than youth in the quasi-control sample (diverted youth:  $M = 301.79$  days,  $SD = 199.84$ ; arrested youth:  $M = 274.72$  days;  $SD = 203.60$ ), hazard ratio = 0.81, 95% CI [0.67, 0.98],  $z = -2.21$ ,  $p = .027$ . Finally, though there was no significant between-group difference in average number of recidivism arrests within two years of a referring school-based incident,  $B = -0.19$ ,  $p = .074$ ,  $d = -0.09$ , 95% CI: [-0.19, 0.01], diverted youth had a smaller average number of recidivism arrests during the moderate-term follow-up period (diverted youth:  $M = 0.46$ ,  $SD = 0.98$ , range = 0–9; quasi-control arrested youth:  $M = 0.56$ ,  $SD = 1.11$ , range = 0–10). Please see Goldstein, Kreimer, and colleagues (2021) for figures associated with these reported findings.

After generating more equivalent samples through propensity score matching, we conducted additional analyses to compare matched diverted and arrested youth on the same three outcomes related to recidivism arrest. We observed no significant between-group differences in

---

<sup>6</sup> Of note, the Philadelphia Police Department and School District of Philadelphia provided additional data after Diversion Program publications cited in this document were released or in press. These updates led to minor data refinements. As a result, numbers presented in this report may differ slightly from those values reported in previous or in press publications.

likelihood of recidivism arrest in the two years following their referring school-based incident,  $\chi^2 = 1.15$ ,  $df = 1$ ,  $p = .283$ . Neither did we observe a significant difference in time to recidivism between the matched samples (hazard ratio = 1.13, 95% CI [0.91, 1.42],  $z = 1.11$ ,  $p = .269$ ), nor did we observe significant differences in number of recidivism arrests during the two-year follow-up period,  $B = 0.07$ ,  $p = .594$ ,  $d = 0.03$ , 95% CI: [-0.09, 0.15]. Please see Goldstein, Kreimer, and colleagues (2021) for figures associated with these reported findings.

**Long-Term Recidivism Results.** Within five years of their referring school-based incident, 40% of youth diverted during the 2014-2015 school year were arrested, compared with 47% of comparable youth arrested in the 2013-2014 school year. To examine impact of the Diversion Program on community safety, we calculated the total number of recidivism arrests for each group. Altogether, the 427 youths diverted in 2014-2015 incurred a total of 483 recidivism arrests during the long-term follow-up period (i.e., 113 arrests per 100 diverted youth), compared to the 638 total recidivism arrests among 531 quasi-control arrested youth during the five-year follow up period (i.e., 120 arrests per 100 arrested youth).

Chi-square analysis did not reveal a significant difference in likelihood of long-term recidivism arrest,  $\chi^2 = 3.77$ ,  $df = 1$ ,  $p = .052$ . However, diverted youth did demonstrate a longer period of time before incurring a recidivism arrest than youth in the quasi-control sample (diverted youth:  $M = 563.74$  days,  $SD = 451.48$ ; quasi-control arrested youth:  $M = 558.11$  days,  $SD = 476.47$ ; hazard ratio = 0.82, 95% CI: [0.67, 1.00],  $z = -1.99$ ,  $p = .047$ ). Finally, though there was no significant between-group difference in average number of recidivism arrests within five years of a referring school-based incident,  $B = -0.06$ ,  $p = .581$ ,  $d = -0.04$ , 95% CI: [-0.16, 0.09], diverted youth had a smaller average number of recidivism arrests during the long-term follow-

up period (diverted youth:  $M = 1.13$ ,  $SD = 2.00$ , range = 0–16; quasi-control arrested youth:  $M = 1.20$ ,  $SD = 1.93$ , range = 0–12).

In addition to examining differences between diverted and arrested youth in likelihood of arrest and in average number of arrests at the five-year point, we also examined these outcomes at three-month intervals within the long-term follow-up period to better understand recidivism patterns over time. Chi-square analyses comparing recidivism arrest (no, yes) between diverted and quasi-control arrested youth at each three-month interval revealed that youth in the diverted sample were significantly less likely than youth in the quasi-control sample to have experienced a recidivism arrest at 9 months. Although diverted youths' recidivism rates were lower at all time points examined, we did not observe significant differences at the remaining time points examined. Detailed statistics are presented in Appendix A. Finally, we used Tweedie compound Poisson general linear models to compare youths' average number of arrests between samples at each three-month interval. Results identified significant between-group differences at 3, 6, 9, 12, 15, and 21 months; we did not observe significant differences at the remaining time points examined. See Appendix B for detailed statistics.

After generating more equivalent diverted and arrested samples through propensity score matching, we observed that diverted youth were less likely than matched arrested youth to be arrested in the five years following their referring school-based incident,  $\chi^2 = 4.10$ ,  $df = 1$ ,  $p = .043$ . We also observed that diverted youth spent a longer time without a recidivism arrest after a school-based incident, compared to matched arrested youth, hazard ratio = 0.80, 95% CI: [0.65, 0.99],  $z = -2.02$ ,  $p = .043$ ). However, we did not observe significant between-group differences in average number of arrests for the matched samples,  $B = -0.10$ ,  $p = .397$ ,  $d = -0.06$ , 95% CI: [-0.21, 0.08].

As above with the quasi-control arrested sample, we compared matched diverted and arrested youths' likelihood of recidivism arrest and average number of recidivism arrests at three-month intervals during the long-term follow-up period. Chi-square analyses comparing recidivism arrest (no, yes) between diverted and matched arrested youth at each three-month interval revealed that youth in the diverted sample were significantly less likely than youth in the matched sample to have experienced a recidivism arrest at 60 months—the five-year mark (see Appendix C). Although diverted youths' recidivism rates were lower at all time points examined, we did not observe significant differences at any of the earlier three-month intervals. Detailed statistics are presented in Appendix D. Finally, we compared youths' average number of arrests between samples at each three-month interval. Results of Tweedie compound Poisson general linear models identified significant between-group differences at 6, 9, 12, and 15 months (see Appendix E); we did not observe significant differences at the remaining time points examined. See Appendix F for detailed statistics.

**Discussion of Recidivism Findings.** The Philadelphia Police Diversion Program serves as a straightforward change in policing policy and practice—since 2014, PPD officers no longer arrest youth who have no adjudication history for specified summary and misdemeanor offenses on school grounds. Though an additional component of the program provides opportunities for diverted youth and their families to be connected to needed services, those services are strictly voluntary, already existed, and available at no cost to any youth and family in the city. Thus, based on results of this evaluation—especially the 84% reduction in school-based arrests from pre-implementation to year 5 of Diversion Program operation with accompanying reductions in long-term recidivism—police departments in other jurisdictions might be interested in implementing similar changes to their policing strategies.

Like other policing strategies, a primary goal of the Diversion Program was to promote community safety and reduce future offending—in this instance, by changing previous school-based policing policies and practices and referring youth to voluntary services in lieu of arrest. Results of the current evaluation indicate that, over the course of five years following a referring school-based incident, significantly fewer diverted youth than matched arrested youth experienced a recidivism arrest, and diverted youth incurred 155 *fewer* total arrests than youth in the quasi-control arrested sample (i.e., 7 fewer per 100 youth). Although arrest is not a perfect proxy for offending behavior, the reduced rate of arrest for diverted youth suggests that these young people are not engaging in the types of serious crimes (e.g., assault against persons) that are more likely to result in police contact and arrest (Blumstein et al., 2010). Thus, empirical evidence suggests that Diversion Program implementation contributed to an improvement in community safety. Further, diverted youth also demonstrated a longer time to recidivism arrest than matched youth arrested in schools, thereby providing a longer period of safety for the community and, potentially, more time for youth to access and benefit from community-based services, resources, and interventions.

To add nuance to our examination of long-term recidivism arrest outcomes, we also compared likelihood of arrest and number of arrests between diverted and arrested youth at three-month intervals within a five-year follow-up period. Results suggested that although youths' *likelihood* of arrest did not demonstrate significant differences until the five-year mark, diverted youth demonstrated significantly *fewer* arrests than comparable arrested youth in the first 15 months following a referring school-based incident. These findings may indicate that diverted youth—who typically received three months of voluntary services—might benefit from additional social worker check-ins or prevention service booster sessions 12-15 months after

their school-based diversion. Such an addition to the program may provide diverted students with needed supports that could reduce their risk for future recidivism arrest and, therefore, further improve long-term community safety. Additionally, these differences in likelihood of long-term recidivism arrest underscore the powerful influence of diversion from arrest, particularly as youth transition to adulthood and seek full-time employment, a primary protective factor for future offending (e.g., Berg & Huebner, 2011). The role of pre-arrest diversion—and the associated avoidance of a juvenile justice record—in preventing a wide range of long-term negative collateral consequences (e.g., adult criminal justice involvement, employment, health outcomes) should be examined in future research.

***Research Question 2: Does the Diversion Program Reduce the Collateral Consequences Associated with Juvenile Justice System Involvement?***

As part of this evaluation, we investigated collateral consequences associated with justice system involvement in three domains: school discipline, academic achievement, and child welfare involvement.

**School Discipline Outcomes.** Findings from the current evaluation related to youths' school discipline experiences during a moderate-term follow-up period (i.e., 1 year) were in press at the time this report was written (Goldstein, NeMoyer et al., in press).<sup>7</sup> Descriptively, 68% of youth diverted in the first three years of the Diversion Program were suspended as a result of the incident that led to either diversion or arrest, compared to 72% of youth in the quasi-control arrested sample. Additionally, 38% of youth diverted in the first three years of program operation and 48% of quasi-control arrested youth were suspended for a new incident within one

---

<sup>7</sup> As noted above, the Philadelphia Police Department and School District of Philadelphia provided additional data after Diversion Program publications cited in this document were released or in press. These updates led to minor data refinements. As a result, numbers presented in this report may differ slightly from those values reported in previous or in press publications.

year of their initial referring incident (“post-incident suspension”). Ten percent of youth in the first three diversion cohorts and 13% of quasi-control arrested youth were referred for permanent school removal for a new incident within one year of their initial incident (“post-incident referral for permanent school removal”). Finally, for *long-term* school discipline outcomes, 52% of youth diverted in the first year of Diversion Program operation were suspended from school in the *four* years after their referring incident, compared to 55% of youth in the quasi-control arrested sample. All school discipline analyses focused on comparisons between matched diverted and arrested samples generated via propensity score matching to better account for potentially confounding variables.

***Incident-Related Suspension.*** A mixed-effects logistic regression analysis revealed no significant difference in the probability of an incident-related suspension between matched samples of diverted and arrested youth when examined without covariates included, OR = 0.83, 95% CI: [0.60, 1.15],  $p = .264$ , or with relevant covariates (i.e., age, gender, race/ethnicity, incident type, number of pre-incident suspensions) included, OR = 0.83, 95% CI: [0.60, 1.15],  $p = .259$ , in the model. We then conducted a cohort analysis among our matched diverted youth sample to determine whether youths’ diversion year was linked to their likelihood of an incident-related suspension; we did not observe a significant relationship,  $\chi^2 (df = 2) = 0.12, p = .941$ .

***Moderate-Term Post-Incident Suspension.*** Results from an initial mixed-effects logistic regression analysis with no covariates indicated that diverted youth were less likely than matched arrested youth to be suspended in the year following their referring school-based incident, OR = 0.67, 95% CI: [0.49, 0.91],  $p = .011$ . After incorporating relevant covariates (i.e., gender, race/ethnicity, age, incident type, number of pre-incident suspensions) into the model, we observed several significant relationships.

First, youths' age was significantly associated with likelihood of post-incident suspension, OR = 0.81, 95% CI: [0.74, 0.88],  $p < .001$ . The older youth were at the time of their school-based incident, the *less likely* they were to be suspended in the year following that incident. Second, we observed a significant link between race/ethnicity and post-incident suspension, OR = 1.84, 95% CI: [1.27, 2.68],  $p = .001$ . On average, Black youth were more likely to be suspended in the year following diversion or arrest. Third, a history of suspension in the year *prior* to diversion or arrest was also significantly associated with post-incident suspension. Youth without a suspension in the year before a referring incident were less likely than youth with at least two pre-incident suspensions to be suspended in the year following a school-based incident, OR = 2.74, 95% CI: [1.94, 3.88],  $p < .001$ . Notably, even when we incorporated relevant covariates into the analysis, we continued to observe a significant relationship between diversion/arrest and post-incident suspension, OR = 0.63, 95% CI: [0.46, 0.86],  $p = .004$ . We also conducted a cohort analysis among our matched diverted youth sample to examine whether youths' year of diversion was linked to their likelihood of post-incident suspension; we did not observe a significant relationship,  $\chi^2(df = 2) = 3.78, p = .151$ .

***Moderate-Term Post-Incident Referral for School Removal.*** An initial mixed-effects logistic regression analysis without covariates revealed no significant difference between the matched samples of diverted and arrested youth in the likelihood of being referred for expulsion or disciplinary transfer in the year following their referring incident, OR = 0.65, 95% CI [0.42, 1.01],  $p = .053$ . After incorporating relevant covariates (i.e., gender, race/ethnicity, age, incident type, number of pre-incident suspensions) into the model, we found that youth with two or more pre-incident suspensions had a higher likelihood of post-incident referral for school removal than youth with no pre-incident suspensions, OR = 2.15, 95% CI [1.29, 2.67],  $p = .004$ . No other

examined covariates demonstrated significant relationships with post-incident referral for permanent school removal. However, once these relevant covariates were incorporated into the analysis, we observed a significant relationship between diversion/arrest and post-incident referral for school removal, OR = 0.61, 95% CI [0.38, 0.95],  $p = .028$ . It is likely that controlling for the variance contributed by these covariates improved our capacity to detect the effect of diversion in lieu of school-based arrest. Results indicated that diverted youth were less likely than matched arrested youth to be referred for permanent school removal in the year following their referring incident.

Finally, we performed a cohort analysis to determine whether youths' diversion year influenced their likelihood of post-incident referral for school removal, and we observed a significant relationship,  $\chi^2 (df = 2) = 19.93, p < .001$ . Specifically, youth from the 2014-2015 and 2015-2016 diverted cohorts had a similar number of post-incident referrals for permanent school removal (i.e., 21 and 22 students per year, respectively), whereas only one student diverted in 2016-2017 was referred for permanent school-removal in the year following diversion.

See Goldstein, NeMoyer, and colleagues (in press) for figures and tables associated with these reported findings.

***Long-Term Post-Incident Suspension.*** Results of an initial mixed-effects logistic regression without covariates revealed significant between-group differences in the likelihood of long-term post-incident suspension, OR = 0.64, 95% CI: [0.42, 0.96],  $p = .034$ , with diverted youth significantly less likely than matched arrested youth to receive a suspension in the four years after a referring school-based incident. After relevant covariates (i.e., gender, race/ethnicity, age, incident type, number of pre-incident suspensions) were incorporated into the

model, we observed that youths' age at incident, race/ethnicity, and pre-incident suspension history were all significantly linked to long-term post-incident suspension.

Like with the moderate-term analyses, as youth grew older in age at the time of their school-based incident, they became *less* likely to be suspended in the four years after that incident, OR = 0.61, 95% CI: [0.52, 0.72],  $p < .001$ . Youths' race was also significantly linked to long-term post-incident suspension, as Black youth were, on average, more likely to be suspended during the four-year follow-up period, OR = 2.38, 95% CI: [1.38, 4.25],  $p < .001$ . Finally, pre-incident suspension history was also significantly linked to long-term post-incident suspension: youth with no suspensions in the year before a referring incident were less likely than both youth with one pre-incident suspension, OR = 2.84, 95% CI: [1.56, 5.26],  $p = .001$ , and youth with at least two pre-incident suspensions, OR = 3.81, 95% CI: [2.26, 6.54],  $p < .001$ , to be suspended during the four-year follow-up period. Of note, once relevant covariates were considered in the analysis, diversion/arrest was no longer significantly linked to likelihood of long-term post-incident suspension, OR = 0.67, 95% CI [0.42, 1.04],  $p = .078$ .

**Academic Achievement Outcomes.** To investigate potential links between diversion in lieu of school-based arrest and long-term academic achievement, we focused on two specific outcomes: school dropout and on-time graduation (i.e., graduating from school within 4 years of entering 9th grade). Additionally, we limited our analyses to the sole diverted youth cohort for whom four years' worth of follow-up school data were available (i.e., youth diverted in the 2014-2015 school year). One-third of these diverted youth dropped out of school during the four-year follow-up period, whereas 29% of youth in the quasi-control arrested sample did so. Further, 40% of youth in each sample graduated on time during the four-year period following their referring school-based incident.

**School Dropout.** Results of a mixed-effects logistic regression analysis demonstrated a significant difference in long-term probability of school dropout between diverted youth and youth in the quasi-control arrested sample, OR = 1.37, 95% CI: [1.00, 1.87],  $p = .047$ , with diverted youth more likely than arrested youth to leave school without graduating. However, after we used propensity score matching to generate more equivalent samples in terms of demographic characteristics and IEP status, another mixed-effects logistic regression analysis revealed *no* significant between-group differences in likelihood of school dropout during the four-year follow-up period, OR = 1.34, 95% CI: [0.96, 1.86],  $p = .084$ .

**On-Time Graduation.** Results of a logistic regression analysis revealed no significant differences in long-term probability of on-time graduation between diverted youth and youth in the quasi-control arrested sample, OR = 0.97, 95% CI: [0.73, 1.29],  $p = .838$ . We then used propensity score matching to generate more equivalent samples in terms of demographic characteristics and IEP status and conducted another logistic regression analysis with these matched diverted and arrested samples. Results did not suggest significant between-group differences in the likelihood of on-time graduation during the four-year follow-up period, OR = 1.04, 95% CI: [0.76, 1.44],  $p = .789$ .

**Child Welfare Outcomes.** We investigated diverted and arrested youths' child welfare involvement—namely, receipt of any child welfare services (no, yes) and receipt of child welfare *placement* services (no, yes)—in the year following their referring school-based incident (moderate-term) and in the five years following their referring school-based incident (long-term). Descriptively, 11% of diverted youth in the first three program cohorts received child welfare services in the year following their school-based incident, compared to 10% of quasi-control arrested youth; 6% of diverted youth were placed outside of the home through child welfare

services in the moderate-term follow-up period, compared to 5% of quasi-control arrested youth. Further, in the *long-term* follow-up period, 18% of each of the diverted and quasi-control arrested samples received child welfare services in the five years following their referring school-based incident; 11% of diverted youth and 10% of arrested youth were placed outside of the home through child welfare services in the same time period.

Retrospectively, 33% of quasi-control youth had received child welfare services at some point in their lives *before* their 2013-2014 school-based arrest (13% had been placed outside of the home through child welfare at some point before the examined arrest). Additionally, 30% of youth diverted in the first three Diversion Program cohorts had received child welfare services at some point *before* their school-based diversion (11% had been placed outside of the home through child welfare at some point before diversion), and 27% of youth diverted in the first year of Diversion Program operation (i.e., 2014-2015) had received child welfare services before diversion (9% had been placed outside of the home through child welfare at some point before diversion).

To compare diverted and arrested youths' child welfare outcomes, we conducted a logistic regression for each outcome (i.e., any services, placement services) over the course of each follow-up period (i.e., one year, five years), while controlling for demographic characteristics (i.e., gender, race, age) and child welfare involvement *prior* to diversion or arrest (i.e., previous services, previous placement respectively). Moderate-term analyses indicated no significant relationship between youths' diversion or arrest and either subsequent child welfare services, OR = 1.10, 95% CI: [0.77, 1.57],  $p = .604$ , or subsequent child welfare placement, OR = 1.43, 95% CI: [0.88, 2.33],  $p = .150$ , in the year following their referring school-based incident. Similarly, long-term analyses did not reveal significant relationships between

diversion/arrest and receipt of either subsequent child welfare services, OR = 0.96, 95% CI: [0.67, 1.38],  $p = .815$ , or subsequent child welfare placement, OR = 1.04, 95% CI: [0.66, 1.64],  $p = .851$ , in the five years following their referring school-based incident.

Perhaps unsurprisingly, previous child welfare involvement and younger age at the time of the referring incident each significantly increased the likelihood of any subsequent child welfare service and of any child welfare placement in both follow-up time periods. Additionally, in the long-term child welfare *placement* analysis, girls were more likely than boys to be placed in the five years following their referring school-based incident, regardless of diversion or arrest. See Appendix G for a table with detailed statistics associated with these findings.

**Discussion of Collateral Consequences Findings.** A substantial body of research has identified the many collateral consequences associated with arrest for young people, including restriction of opportunities for education, employment, military service, and housing, as well as general negative effects on individual well-being (Dennis, 2017; Simpson & Holthe, 2018). As a result, the development and implementation of pre-arrest diversion programs—like Philadelphia’s program under study—often stem from the desire to protect youth from the deleterious effects of an arrest and its aftermath. We hypothesized that, by diverting students in lieu of school-based arrest, these youth would benefit across life domains—including in school and family life—from a second chance to maintain a more normative trajectory through adolescence.

Comparing youth outcomes related to school discipline, academic achievement, and child welfare involvement between diverted and arrested youth produced findings that somewhat aligned with hypotheses. For example, although we did not observe significant differences in incident-related suspensions, diverted youth were significantly less likely than matched arrested

youth to be suspended in the 1 year and 4 years following their school-based incident. Given the well-established adverse outcomes associated with out-of-school suspensions—including removal from positive influences, reduced school engagement, poorer academic outcomes, and increased risk for delinquency and arrest (Ayoub et al., 2019; Monahan et al., 2014)—these findings are quite promising for the Diversion Program’s ability to keep youth in school over the course of moderate- and long-term follow-up periods. It may be that diverted youth are less likely than arrested youth to be labeled as “delinquents” or “troublemakers” and, therefore, less likely to respond to future misbehavior with exclusionary discipline (Bernburg & Krohn, 2003; Kirk & Sampson, 2013; Wolf & Kupchik, 2017).

In contrast to our hypotheses, we did not observe significant differences between matched diverted and arrested youth in school dropout or on-time graduation. This lack of significant findings may reflect an overall elevated risk for dropout and for not graduating on time across all examined youth, given their shared neighborhoods with concentrated disadvantage and similar challenges related to academic performance, behavioral health, family relationships, and delinquency (Gubbels et al., 2019; Pharris-Ciurej et al., 2012; Wodtke et al., 2011). As a result, diversion itself may not contribute to improvements in academic achievement. However, it may better serve as a potential indicator of youth who could benefit from additional support from school personnel to facilitate long-term school enrollment and on-time graduation.

Finally, we hypothesized that diverted youth would be less likely than arrested youth to have child welfare involvement and placement in the 1 year and 5 years following their school-based incident. However, no such significant relationship was observed. Diverted and arrested youth samples had similar rates of previous child welfare involvement and placement, each of which served as a significant predictor of *subsequent* involvement. Perhaps the strength of that

relationship overpowered any potential relationship between diversion and child welfare outcomes. Additionally, as noted with academic achievement outcomes, it may be that diverted and arrested youth share a similarly increased risk for child welfare involvement, such that diversion in lieu of school-based arrest would not play a powerfully protective role in this realm. Importantly, all diverted youth and their families receive a home visit from a DHS social worker, who then conducts a needs-based evaluation and offers referrals to community-based services, as appropriate. This component of the Diversion Program would seem to suggest that diversion already serves as an indicator of youth and/or families who could benefit from additional supports. Reducing child welfare involvement was not a goal of the Diversion Program, but the available services to diverted youth were designed to support families as well as youth. Voluntary DHS-sponsored services offered as part of the Diversion Program may serve to decrease family stress and enhance stability—though fall short of impacting child welfare involvement.

***Research Question 3: Does the Diversion Program Improve School Community Safety by Reducing Crime?***

In the 2013-2014 school year (i.e., the year before Diversion Program implementation), 1,580 school-based arrests occurred in Philadelphia. In the first year of Diversion Program operation, the school-based arrest rate declined by 54% and continued to trend downward over time. In the 2018-2019 school year—the Diversion Program’s fifth year of operation—there was an 84% reduction in school-based arrests from the year before implementation. See Goldstein, Kreimer, and colleagues (2021) for a figure depicting the annual number of Philadelphia school-based arrests by year.

Importantly, as the number of annual school-based arrests declined during the first five years of the Diversion Program, so did the number of serious behavioral incidents within SDP schools. Before program implementation, in the 2013-2014 academic year, there were 6,359 serious behavioral incidents in SDP schools. In contrast, 4,192 serious behavioral incidents occurred in the 2018-2019 school year, a 34% reduction.

**Discussion of School Community Safety Findings.** Safety within the school community serves as a paramount objective for Diversion Program stakeholders. Therefore, program leadership aimed to reduce the annual number of school-based arrests by 50% and to reduce the annual number of serious behavioral incidents in Philadelphia schools by 15% in the first three years of program operation. We predicted that these aims would be met, and in fact they were exceeded. Results from this evaluation provide an evidence base to suggest that a widespread policy of diversion in lieu of school-based arrest can dramatically reduce the number of young people entering the justice system *without* compromising school safety.

Extant research suggests that the use of overt school security techniques (e.g., school-based law enforcement, other visible security measures) increases the likelihood that students will perceive violence as highly prevalent at their schools (Astor et al., 2002). Further, such policies often result in students being removed from school for minor infractions, which does *not* appear to improve school safety (e.g., Losen & Skiba, 2010). Thus, by reducing the number of students that school police officers arrest and the number of disruptions to the school environment caused by such arrests, the Diversion Program's central policy change may also contribute to improvements in school climate and in the relationships between school-based law enforcement and the students they serve.

We must also acknowledge that, in addition to Diversion Program implementation, the SDP has recently made considerable efforts to enact preventative school safety programming (e.g., Positive Behavioral Interventions and Supports), particularly at the elementary school level. Over time, particularly in the later years of the evaluation, the effects of these initiatives may have influenced outcomes, as the students receiving those supports grew older and joined the middle and high school populations. Future research should investigate the impacts of these additional SDP efforts, both in general and as they interact with diversion through this program.

***Research Question 4: With Implementation of the Diversion Program in Lieu of Arrest, Do SPOs' Beliefs About and Experiences with School Policing Change Over Time?***

Philadelphia school police officers were surveyed in May 2014, shortly before Diversion Program implementation, and in June 2019, after the program's fifth year of operation. Among other survey items, officers were asked about their agreement with the Diversion Program and the behaviors for which they were expected to arrest students; their relationships with students, teachers, and school administrators; and how the school policing strategies in place at the time of survey administration affected school safety. Officers' responses to each survey items included in the current study ranged from 1 (the most negative option) to 5 (the most positive option).

**Agreement with the Diversion Program.** Fifty-seven percent of SPOs responding to the pre-program baseline survey indicated they somewhat or strongly agreed with the Diversion Program, and 11% of SPOs reported that they somewhat or strongly disagreed with the new program (32% reported they were undecided). Five years later, 86% of SPOs responding to the survey endorsed somewhat or strongly agreeing with the Diversion Program and 9% of SPOs reported that they somewhat or strongly disagreed with the program (5% reported they were undecided). Results of a Mann-Whitney test revealed no significant difference in SPOs'

agreement with the program prior to its implementation ( $M = 3.79$ ,  $SD = 1.25$ ,  $Mdn = 4$ ) and after five years of operation ( $M = 4.11$ ,  $SD = 1.03$ ,  $Mdn = 4$ ),  $U = 1270.5$ ,  $p = .181$ ,  $r = -0.14$ , 95% CI: [-0.35, 0.08]). We did, however, observe an increase in SPOs' agreement with *arrestable school-based behaviors* from the pre-implementation survey ( $M = 2.96$ ,  $SD = 1.02$ ,  $Mdn = 3$ ) to the year 5 survey ( $M = 3.92$ ,  $SD = 0.89$ ,  $Mdn = 4$ ),  $t(91) = -5.18$ ,  $p < .001$ ,  $d = -1.01$ , 95% CI: [-1.41, -0.60].

**Beliefs about Relationships.** On average, officers prior to Diversion Program implementation characterized their relationships with school community members as neutral to positive, including students ( $M = 3.66$ ,  $SD = 0.76$ ,  $Mdn = 4$ ), teachers ( $M = 3.98$ ,  $SD = 0.85$ ,  $Mdn = 4$ ), and school administrators ( $M = 3.85$ ,  $SD = 0.88$ ,  $Mdn = 4$ ). After five years of program operation, officers were asked how the Diversion Program affected these relationships; officers generally viewed the program as improving their relationships with students ( $M = 4.00$ ,  $SD = 0.76$ ,  $Mdn = 4$ ), teachers ( $M = 3.71$ ,  $SD = 0.96$ ,  $Mdn = 4$ ), and administrators ( $M = 3.89$ ,  $SD = 0.97$ ,  $Mdn = 4$ ). Additionally, SPOs tended to view positive relationships with students as very important to their job effectiveness, both before Diversion Program implementation ( $M = 4.06$ ,  $SD = 1.21$ ,  $Mdn = 5$ ) and after five years of operation ( $M = 4.49$ ,  $SD = 1.01$ ,  $Mdn = 5$ ), with a significant increase in response average from pre-implementation to the end of the fifth year of program operation,  $U = 1152.5$ ,  $p = .022$ ,  $r = -0.22$ , 95% CI: [-0.40, 0.02].

**Beliefs about School Safety.** When asked about the effects of contemporaneous school-based policing policies, survey respondents reported no effect of pre-Diversion Program policies on school safety ( $M = 3.40$ ,  $SD = 0.88$ ,  $Mdn = 3$ ), aggressive behaviors in school ( $M = 3.28$ ,  $SD = 0.85$ ,  $Mdn = 3$ ), the carrying of weapons into school ( $M = 3.45$ ,  $SD = 0.93$ ,  $Mdn = 3$ ), the presence of drugs in school ( $M = 3.30$ ,  $SD = 0.91$ ,  $Mdn = 3$ ), or general student behavior

problems ( $M = 3.28$ ,  $SD = 0.85$ ,  $Mdn = 3$ ). After five years of Diversion Program implementation, SPOs indicated that the program made things a little better with regard to school safety ( $M = 3.71$ ,  $SD = 0.77$ ,  $Mdn = 4$ ), aggressive behaviors in school ( $M = 3.57$ ,  $SD = 0.69$ ,  $Mdn = 4$ ), the carrying of weapons into school ( $M = 3.89$ ,  $SD = 0.72$ ,  $Mdn = 4$ ), the presence of drugs in school ( $M = 3.57$ ,  $SD = 0.89$ ,  $Mdn = 4$ ), and general behavior problems in the school ( $M = 3.57$ ,  $SD = 0.71$ ,  $Mdn = 4$ ). When comparing responses to each of these items from baseline to year 5, we observed just one significant difference: an increase in the average rating of school policing/Diversion Program effects on youths' likelihood of carrying weapons into school from baseline to year 5,  $U = 1069.5$ ,  $p = .008$ ,  $r = -0.28$ , 95% CI [-0.47, -0.07]], reflecting their belief that the Diversion Program made things a bit safer.

**Discussion of SPO Findings.** When we examined SPO survey responses from just before Diversion Program implementation (i.e., baseline) and from the end of the program's fifth year of operation, we observed a considerable increase in the percentage of SPO survey respondents who endorsed somewhat or strong agreement with the program (i.e., an increase from 57% to 86%). Further, we observed a significant increase in SPO agreement with the types of behaviors for which they were expected to arrest students. These results suggest that buy-in for the Diversion Program among SPOs improved over time, particularly with regard to the now-smaller list of arrestable offenses within schools.

Additionally, on average, SPOs completing the survey in year 5 tended to report that the Diversion Program improved their relationships with various other members of the school community; they were also more likely than baseline survey respondents to view positive relationships with students as very important to their job effectiveness. It may be that Diversion Program implementation—which added the new task of connecting youth with a DHS social

worker rather than arresting them—helped SPOs re-evaluate their roles in schools (e.g., as mentors rather than simply law enforcement), reflect on students’ needs and challenges rather than just their behaviors, and recognize the benefits of building strong, positive relationships with students. Importantly, with SPOs arresting many fewer students each year, they may be less likely to develop adversarial relationships with students, allowing more opportunity to build positive relationships instead.

Officers responding to the year 5 survey largely indicated that the Diversion Program “made things a little better” with regard to various aspects of school safety (e.g., aggressive behaviors in school, drugs in school). This finding might suggest that officers are observing what has been established in previous literature and in the current evaluation—namely, that more arrests do not result in improved school safety, and that strategies for *reducing* arrest frequency can be implemented safely. Further, it may indicate that school police are receptive to alternative strategies for maintaining school safety, even if many are wary initially. Compared to responses on the baseline survey regarding the previous school policing strategies in place at the time, we observed a significant increase in SPOs’ year 5 ratings about the Diversion Program’s positive impact on youth carrying weapons into school. It is unclear why that one specific type of behavior would be substantially impacted by the Diversion Program—perhaps because it is the offense type for which there is greatest concern, the one that always requires reporting to police and arrest, and, therefore, the behavior to which officers are most attuned—and future research should explore the validity of that perceived relationship and the reasoning for the connection.

***Research Question 5: What is the ROI of the Diversion Program in Lieu of Previous School-Based Arrest Practices?***

To evaluate the Diversion Program’s return on investment, we conducted a cost-benefit analysis in partnership with colleagues at the Vera Institute of Justice. To do so, we examined direct costs to the agencies involved, as well as cost savings associated with observed reductions in school-based arrests, recidivism arrests, and post-incident suspensions compared to the year before program implementation. We examined these dollar values both during the program’s “startup” period (i.e., its first year of operation) and during a more mature stage of program operation (i.e., its fifth year in place).

**Costs to agencies.** As described in NeMoyer and colleagues (in preparation), the PPD created two new positions to manage Diversion Program intake procedures—these positions were filled by transferring officers from elsewhere and only one of those original positions was backfilled. Thus, costs to the PPD for the Diversion Program were largely limited to the salary and benefits of one PPD officer (estimated to be approximately \$106,398 per year). No other added costs were identified, as PPD school police officers continued to visit assigned schools and respond to reported incidents, whether with diversion or arrest. Given that the PPD directs the Diversion Program’s core component (i.e., school-based diversion) and DHS manages the follow-up home visits and service referrals for diverted youth, costs to the SDP appeared minimal.

Although the DHS Diversion Unit included (and continues to include) a staff of seven individuals, they were reassigned from other divisions within the agency and did not increase DHS staffing costs. Costs related to Diversion Program implementation reflected a \$100,000 increase in existing annual contracts with six community-based organizations in anticipation of more referrals from DHS following home visits for diverted youth. The total amount of these contracts remained the same for both examined years of program operation. Thus, we estimated

the total direct costs (i.e., sum of the direct costs of the three agencies) of the Diversion Program to be approximately \$750,105 (in 2019 dollars) in its first year and approximately \$706,398 in its fifth year of operation (i.e., 2018-2019).

**Cost Savings.** Calculations of cost savings were based on findings from the current evaluation demonstrating reductions in school-based arrests, recidivism arrests, and certain collateral consequences (i.e., school suspensions) for diverted youth compared to arrested youth following Diversion Program implementation. For example, the annual number of school-based arrests in Philadelphia went from 1,580 in the pre-implementation academic year to 724 in the program's first year of operation, and, finally, to 251 in its fifth year (Goldstein, Kreimer et al., 2021). Considering the expenditures associated with arrest, including transportation and booking, the marginal cost of one youth's arrest was estimated to be \$747 in 2010, converting to \$874 in 2018-2019 dollars (U.S. Bureau of Labor Statistics, n.d.). Thus, we estimated the annual cost savings from the school-based arrests prevented by the Diversion Program—compared to previous school-based policing practices—to be \$748,144 in 2014-2015 and \$1,161,546 in 2018-2019.

Further, by diverting youth in lieu of arrest, the Diversion Program also likely prevented youth from secure detention and juvenile justice facility commitment. Although data related to frequency of detention and commitment were not available for the current evaluation, prior research in Delaware found that more than one-third of examined school-based arrests resulted in adjudication and approximately 5% of adjudicated youth were committed to a juvenile justice facility as part of their disposition (Wolf, 2013). We assumed a similar rate in our sample—namely, that 1.85% of students arrested in schools would receive a post-adjudication commitment, estimating that, compared to the year before program implementation, 16 fewer

youth experienced facility commitment following a school-based arrest in the Diversion Program's first year and 24 fewer youth experienced facility commitment following a school-based arrest in the Diversion Program's fifth year. In 2014-2015, the average daily cost of housing one individual in post-adjudication facility for youth was estimated to be \$489, or \$525 in 2019 dollars; in 2017-2018 this average was estimated to be \$577, or \$588 in 2019 dollars (Legislative Budget and Finance Committee, 2018). We calculated the marginal costs of housing one young person in a post-adjudication facility for one day (i.e., 12% of the average daily cost; Pelletier et al., 2018) and multiplied it by the median stay length (i.e., 200 days) in Pennsylvania post-adjudication commitment facilities (Legislative Budget and Finance Committee, 2018). Thus, cost savings from fewer instances of post-adjudication commitment were an estimated \$201,600 in 2014-2015 and \$340,800 in 2018-2019 (in 2019 dollars).

Youth diverted from school-based arrest in the 2013-2014 school year experienced 97 recidivism arrests within the year following diversion, and youth diverted in 2018-2019 experienced 40 such arrests. In contrast, youth in the quasi-control arrested sample experienced 181 recidivism arrests within one year of their referring school-based incident. If youth in the diverted cohorts had the same rate of recidivism arrest as those in the quasi-control arrested sample, then youth diverted in 2014-2015 would have experienced an additional 49 arrests and youth diverted in 2018-2019 would have experienced an additional 65 arrests. Thus, compared to the year before Diversion Program implementation, we estimated that the Diversion Program *saved* approximately \$42,826 worth of costs via prevention of recidivism arrests among the 2014-2015 cohort and approximately \$56,810 worth of costs via prevention of recidivism arrests among the 2018-2019 cohort of diverted youth.

Then, based on the observed recidivism arrest rate for various offenses in the quasi-control sample, we calculated would have been the *expected* number of those offenses for youth diverted in the 2014-2015 and 2018-2019 academic years. We used the difference between expected and observed recidivism arrest rates for each offense type among diverted youth along with extant literature estimating the financial consequences (e.g., property damage, victim medical costs) of specific types of crime (McCollister et al., 2010) to generate an estimated cost savings from reducing the number of recidivism arrests for each type of offense. Summing these values produced a cost savings of \$1,364,149 for youth diverted in 2014-2015 and \$1,083,525 for youth diverted in 2018-2019.

Considering the agency costs and broader cost savings described above, we estimated that the Diversion Program ultimately produced a net financial benefit of \$1,603,618 in its first year of operation and \$1,897,669 in its fifth year of operation relative to the year before program implementation.

**Discussion of Cost Benefit Findings.** From an implementation science perspective, Diffusion of Innovation Theory (Rogers, 2003) posits that characteristics of an innovation affect the likelihood of its adoption in new settings. For example, stakeholders are often more likely to adopt new programming or initiatives that present relative advantages over existing practices (e.g., cost savings, efficiency). In fact, financial viability and cost savings are often prerequisites for political palatability and adoption of policy and practice reforms (Proctor et al., 2011; Purtle et al., 2018). Thus, the financial cost and savings information generated through the current evaluation may be *critical* to the diffusion of innovation and willingness of legislators, police departments, school districts, and other stakeholders to change policy and practice by replicating the Diversion Program in other jurisdictions (Raghavan, 2018).

Importantly, although our cost-benefit analysis estimated some costs to the agencies tasked with operating the Diversion Program (i.e., the PPD, DHS), simultaneous consideration of the financial benefits associated with a substantial reduction in school-based arrests, recidivism arrests, and their potential aftermath (e.g., facility detention, court supervision) indicated that, on the whole, the Diversion Program produced an annualized cost savings of nearly \$2 million. This analysis provides a *conservative* estimate, as additional savings (e.g., from reduced use of detention, reduced use of post-adjudication placement for recidivism offenses) and more distal financial benefits (e.g., income from increased employment opportunities) were not included in this model. Such findings, in combination with the positive impacts on youth and community safety, provide considerable promise of a policy strategy and program worth disseminating and replicating.

### ***Limitations***

In addition to producing several meaningful outcomes, we also recognize limitations to our Diversion Program evaluation. With regard to the design of the study, given the simultaneous implementation of the Diversion Program citywide, we were unable to conduct an RCT—typically the ideal study design for investigating the effectiveness of an intervention. Importantly, in this instance an RCT likely would have been inappropriate, as it would be unethical to assign youth or schools to “diversion” or “arrest” conditions. Additionally, although we planned to examine SPO survey responses over time using repeated measures analyses, personnel changes over the course of the evaluation prevented us from doing so. Further, we acknowledge that the Diversion Program operates within the context of one city, one police department, and one school district, potentially raising generalizability questions. However, the populations of Philadelphia and its school district share many commonalities with other major

cities and school districts in the United States, suggesting that findings from the current evaluation could reasonably be applied elsewhere.

We also recognize several limitations related to the data utilized in the current evaluation. For example, given that youth-related data were administrative in nature, we relied upon official records of arrest as a measure of recidivism. Ideally, we would have been able to capture youths' self-reports of offending behavior to more accurately assess recidivism among diverted and arrested youth. Similarly, available data were somewhat limited and did not include several potentially relevant variables (e.g., socioeconomic status, parental involvement in school, engagement in positive activities) that we would have liked to incorporate into analyses, whether as covariates or as part of propensity score matching. Additional data-related limitations include the dichotomous coding of race/ethnicity, which we did to preserve power for our analyses, and the inability to incorporate court data, which would have allowed us to consider whether youth were residing in the community or were confined in a detention or commitment facility during the examined follow-up periods. Including such data may have reduced variance and increased our ability to observe significant relationships. Importantly, though we acknowledge these data limitations, we also recognize that such administrative data is typically what is available to stakeholders seeking to perform similar baseline analyses when considering adoption of diversion programming and to examine program impacts following implementation in their own jurisdictions.

## **Artifacts**

### **Peer-Reviewed Publications**

1. Goldstein, N. E. S., NeMoyer, A., Le, T., Taylor, A., Guo, S., Pollard, A., Kreimer, R., & Zhang, Z. (in preparation). Long-term recidivism and school outcomes of the Philadelphia Police School Diversion Program.
2. NeMoyer, A., Mai, C., Kreimer, R., Le, T., Pollard, A., & Goldstein, N. E. S. (under review). Reducing agency and social costs by keeping kids in school and out of the justice system: A cost-benefit analysis of the Philadelphia Police School Diversion Program. Manuscript in preparation.
3. Goldstein, N. E. S., NeMoyer, A., Le, T., Guo, S., Cole, L. M., Pollard, A., Kreimer, R., & Zhang, Z. (2021). Keeping kids in school through pre-arrest diversion: School disciplinary outcomes of the Philadelphia Police School Diversion Program. *Law and Human Behavior, 45*(6), 497-511.
4. Goldstein, N. E. S., Kreimer, R., Guo, S., Le, T., Cole, L. M., NeMoyer, A., Burke, S., Kikuchi, G., Thomas, K., & Zhang, F. (2021). Preventing school-based arrest and recidivism through prearrest diversion: Outcomes of the Philadelphia police school diversion program. *Law and Human Behavior, 45*(2), 165-178.
5. Goldstein, N. E. S., Cole, L. M., Houck, M., Haney-Caron, E., Holliday, S. B., Kreimer, R., & Bethel, K. (2019). Dismantling the school-to-prison pipeline: The Philadelphia police school diversion program. *Children and Youth Services Review, 101*, 61-69.

#### **Peer-Reviewed Presentations at Academic Conferences**

1. Anjaria, N., NeMoyer, A., Le, T., Pollard, A., Taylor, A., DeYoung, L., Kreimer, R., Hornbaker, L., Zhang, F., & Goldstein, N. E. S. (March 2022). The interaction between race and offense type on school suspension among arrested youth. Paper to be presented at the annual conference of the *American Psychology-Law Society*.

2. DeYoung, L., NeMoyer, A., Le, T., Taylor, A., Pollard, A., Anjaria, N., Kreimer, R., Kina, F., Zhang, F., & Goldstein, N. E. S. (March 2022). Age of arrest and future offending: Moderate- and long-term recidivism among youth first arrested in schools. Paper to be presented at the annual conference of *the American Psychology-Law Society*.
3. Parker, L. E., NeMoyer, A., Le, T., Pollard, A., Taylor, A., Anjaria, N., Kreimer, R., Lildharrie, C., Eom, K., Gale-Bentz, E., & Goldstein, N. E. S. (March 2022). The roles of suspension and race in school dropout among arrested youth with and without IEPs. Paper to be presented at the annual conference of the *American Psychology-Law Society*.
4. Pollard, A., NeMoyer, A., Le, T., Kreimer, R., Guo, S., Taylor, A., Parker, L., & Goldstein, N. E. S. (March 2021). Disrupting youths' education: School transfer arrest and its impact on students' ongoing enrollment. Poster presented at the annual conference of the *American Psychology-Law Society*.
5. NeMoyer, A., Le, T., Kreimer, R., Guo, S., Oliver, M. K., Kina, F., Cole, L., & Goldstein, N. E. S. (March 2020). Keeping kids in school through pre-arrest diversion: School-related outcomes of the Philadelphia Police School Diversion Program. Paper presented at the annual conference of the *American Psychology-Law Society*, New Orleans, LA.
6. Goldstein, N. E. S., NeMoyer, A., Kreimer, R., Le, T., Guo, S., Cole, L., Jushchyshyn, J., & Zhang, Z. (March 2020). Preventing school-based arrest and recidivism through pre-arrest diversion: Outcomes of the Philadelphia Police School Diversion Program. Paper presented at the annual conference of the *American Psychology-Law Society*, New Orleans, LA.

## **Other artifacts**

***Publications and Reports (Not Peer-Reviewed)***

1. Goldstein, N. E. (2021). *Philadelphia Police School Diversion Program: Outcomes Summary Years 1-5: Report.*

***Invited Presentations to Stakeholders and Other Practitioners***

1. Goldstein, N. E. S., Pollard, A., Le T., Kreimer, R., & NeMoyer, A. (September 2021). The Philadelphia Police School Diversion Program: Police, school, and human service outcomes. Executive Cabinet Meeting, Philadelphia Department of Human Services, Philadelphia (remote presentation).
2. Goldstein, N. E. S., NeMoyer, A., Kreimer, R., Le, T., Guo, S., & Zhang, Z. (February 2021). Dismantling the school-to-prison pipeline while enhancing school safety: The Philadelphia Police School Diversion Program. National Institution of Justice Conference on School Safety, Washington DC (remote workshop).
3. Goldstein, N. E. S., Kreimer, R., & Le, T. (November 2019). Developmentally informed juvenile justice reforms. Law Enforcement Juvenile Justice Institute, Philadelphia, PA.
4. Goldstein, N. E. S. (September 2019). Local, state, and national juvenile justice reforms. Presentation to the Board of Directors, Stoneleigh Foundation, Philadelphia, PA.
5. Kreimer, R., Le, T., & Goldstein, N. E. S., (April 2019). The Philadelphia Police School Diversion Program: Evaluation results and outcomes. Philadelphia Police Department, Philadelphia, PA.
6. Kreimer, R., Gale-Bentz, E., & Goldstein, N. E. S. (March 2019). Adolescent development: The basics. Professional development training for school officers, School District of Philadelphia, PA.

7. Bethel, K. (February 2019). Philadelphia Police School Diversion Program: Dismantling the school-to-prison pipeline. *Alameda County Juvenile Justice Forum*. Alameda, CA.  
[http://www.acgov.org/probation/documents/Diversion\\_KevinBethel1.4.19.pdf](http://www.acgov.org/probation/documents/Diversion_KevinBethel1.4.19.pdf)
8. Goldstein, N. E. S., Kreimer, R., Le, T., & Bethel, K. (November 2018). The Philadelphia Police School Diversion Program: Partners Meeting. Office of the Mayor, Philadelphia, PA.
9. Williams, M., Bethel, K., Farlow, T., Goldstein, N. E. S., & Listenbee, R. (October 2018). Transforming juvenile justice to improve youth outcomes in Philadelphia. Panel at the CHOP Policy Lab's 10<sup>th</sup> Anniversary Conference, Charting New Frontiers in Children's Health Policy and Practice, National Museum of American Jewish History, Philadelphia, PA.
10. Goldstein, N. E. S., Kreimer, R., & Le, T. (October 2018). Dismantling the school-to-prison pipeline: The Philadelphia Police School Diversion Program. Law and Psychiatry Speaker Series, University of Massachusetts Medical School, Worcester, MA.

### ***Data Sets Generated***

- **Community Safety and Youth Collateral Consequences Dataset.** Administrative data were drawn from three agency sources: the Philadelphia Police Department (PPD), School District of Philadelphia (SDP), and Philadelphia Department of Human Services (DHS).
  - o PPD data included information about the school-based offense associated with youths' diversion or arrest, any recidivism arrest(s), and youths' demographic information

- SDP data included information about exclusionary discipline, school dropout and graduation, and demographic information
- DHS data included information about youths’ historic and ongoing child welfare involvement
- **PPD School Police Officer Surveys:** Data came from survey instruments developed in 2014 through a collaboration between Drexel University and the PPD, prior to awarding of any federal funding for this project. For this grant-funded project, our research team utilized those select survey items that aligned with the grant hypotheses from the pre-implementation baseline and post-year 5 survey waves.
- **Cost-Benefit Analysis:** To assess the costs and benefits associated with program evaluation school and community safety outcomes, data included local budget information when available; the analysis relied upon state and national estimates of costs when such data were unavailable.

***Additional Dissemination Activities***

- Research team members shared PBS Newshour coverage of the Diversion Program (Thompson & Saltzman, 2018) and its short-term outcomes via social media and the JJR&R lab website
- Additionally, information about the Diversion Program and this evaluation were discussed in local and national media outlets, including:
  - A Second Chance, Inc. (2021, January 26). Philadelphia youth diversion program works to dismantle the school-to-prison pipeline. *A Second Chance, Inc. Kinship Care Blog*. <https://www.asecondchance-kinship.com/philadelphia-youth-diversion-program-works-to-dismantle-the-school-to-prison-pipeline/>

- Mezzacappa, D. (2018, December 9). With police diversion, student arrests plummet. *Chalkbeat Philadelphia*.  
<https://philadelphia.chalkbeat.org/2018/12/9/22186293/with-police-diversion-student-arrests-plummet>
- Tarazona, Z. (2020, June 17). Arrested development: How Philly stopped locking up students. *YR Media*. <https://yr.media/news/arrested-development-how-philly-stopped-locking-up-students/>

## References

- Addington, L. A. (2009). Cops and cameras public school security as a policy response to Columbine. *American Behavioral Scientist*, 52(10), 1426-1446. doi: 10.1177/0002764209332556
- Astor, R. A., Benbenishty, R., Zeira, A., & Vinokur, A. (2002). School climate, observed risky behaviors, and victimization as predictors of high school students' fear and judgments of school violence as a problem. *Health Education & Behavior*, 29(6), 716-736. doi: 10.1177/109019802237940
- Austin, P. C. (2011). An introduction to propensity score methods for reducing the effects of confounding in observational studies. *Multivariate Behavioral Research*, 46, 399-424. doi: 10.1080/00273171.2011.568786
- Ayoub, L. H., Jensen, E., Sandwick, T., Kralstein, D., Hahn, J. W., & White, E. (2019). School discipline, safety, and climate: A comprehensive study in New York City. *Center for Court Innovation*. <https://www.ojp.gov/pdffiles1/nij/grants/254578.pdf>
- Bahena, S., Cooc, N., Currie-Rubin, R., Kuttner, P., & Ng, M. (2012). *Disrupting the School-to-Prison Pipeline*. Harvard Education Press.
- Bates, D., Maechler, M., & Bolker, B. (2011). lme4: linear mixed-effects models. R package, version 0.999375-42. <http://CRAN.R-project.org/package=lme4>
- Beger, R. R. (2002). Expansion of police power in public schools and the vanishing rights of students. *Social Justice*, 29(1/2 (87-88)), 119-130.
- Berg, M. T., & Heubner, B. M. (2011). Re-entry and the ties that bind: An examination of social ties, employment, and recidivism. *Justice Quarterly*, 28(2), 382-410. doi: 10.1080/07418825.2010.498383

- Bernburg, J. G. & Krohn, M. D. (2003). Labeling, life changes, and adult crime: The direct and indirect effects of official intervention in adolescence on crime in early adulthood. *Criminology*, *41*(4), 1287-1318.
- Blumstein, A., Cohen, J., Piquero, A. R., & Visher, C. A. (2010). Linking the crime and arrest processes to measure variations in individual arrest risk per crime (Q). *Journal of Quantitative Criminology*, *26*, 533-548. doi: 10.1007/s10940-010-9121-7
- Borum, R., Cornell, D. G., Modzeleski, W., & Jimerson, S. R. (2010). What can be done about school shootings? A review of the evidence. *Educational Researcher*, *39*(1), 27-37. doi: 10.3102/0013189X09357620
- Brown, B. (2006). Understanding and assessing school police officers: A conceptual and methodological comment. *Journal of Criminal Justice*, *34*(6), 591-604. doi: 10.1016/j.jcrimjus.2006.09.013
- Connery, C. (2020). *The prevalence and the price of police in schools*. UConn Center for Education Policy Analysis. [https://cepa.uconn.edu/wp-content/uploads/sites/399/2020/10/Issue-Brief-CEPA\\_C-Connery.pdf](https://cepa.uconn.edu/wp-content/uploads/sites/399/2020/10/Issue-Brief-CEPA_C-Connery.pdf)
- Dennis, A. L. (2017). Decriminalizing childhood. *Fordham Urban Law Journal*, *45*(1), 1-44.
- Finn, J. D. & Servoss, T. J. (2015). Misbehavior, suspensions, and security measures in high school: racial/ethnic and gender differences. *Journal of Applied Research on Children: Informing Policy for Children at Risk*, *5*(2), 11.
- Finzen, M. E. (2005). Systems of oppression: The collateral consequences of incarceration and their effects on Black communities. *Georgetown Journal on Poverty Law & Policy*, *12*, 299-324.

- Gibbons, R. D., Hedeker, D., & DuToit, S. (2010). Advances in analysis of longitudinal data. *Annual Review of Clinical Psychology, 6*, 79–107. doi: 10.1146/annurev.clinpsy.032408.153550
- Goldstein, N. E. S., Cole, L. M., Houck, M., Haney-Caron, E., Brooks Holliday, S., Kreimer, R., & Bethel, K. (2019). Dismantling the school-to-prison pipeline: The Philadelphia police school diversion program. *Children and Youth Services Review, 101*, 61-69. doi: 10.1016/j.chilyouth.2019.03.022
- Goldstein, N. E. S., Kreimer, R., Guo, S., Le, T., Cole, L. M., NeMoyer, A., Burke, S., Kikuchi, G., Thomas, K. & Zhang, F. (2021). Preventing school-based arrest and recidivism through pre-arrest diversion: The Philadelphia Police School Diversion Program. *Law and Human Behavior, 45*(2), 165-178. doi: 10.1037/lhb0000440
- Goldstein, N. E. S., NeMoyer, A., Le, T., Guo, S., Cole, L. M., Pollard, A., Kreimer, I., & Zhang, F. (2021). Keeping kids in school through pre-arrest diversion: School disciplinary outcomes of the Philadelphia Police School Diversion Program. *Law and Human Behavior, 45*(6), 497–511. doi: 10.1037/lhb0000453
- Gowen, C., Thureau, L., & Wood, M. (2011). ABA's approach to juvenile justice reform: Education, eviction, and employment: The collateral consequences of juvenile adjudication. *Duke Forum for Law & Social Change, 3*, 187-203.
- Gubbels, J., van der Put, C.E. & Assink, M. (2019). Risk factors for school absenteeism and dropout: A meta-analytic review. *Journal of Youth Adolescence, 48*, 1637–1667. doi: 10.1007/s10964-019-01072-5
- Hagan, J. & Dinovitzer, R. (1999). Collateral consequences of imprisonment for children, communities, and prisoners. *Crime and Justice, 1999*, 121-162.

- Hatt, B. (2011). Still I rise: Youth caught between the worlds of schools and prisons. *The Urban Review*, 43(4), 476. doi: 10.1007/s11256-011-0185-y
- Heitzeg, N. A. (2009). Education or incarceration: Zero tolerance policies and the school to prison pipeline. *Forum on Public Policy Online*. 2009(2), 21. (ERIC Document Reproduction Service No. EJ870076).
- Henrichson, C. & Rinaldi, J. (2014). Cost-benefit analysis and justice policy toolkit. Vera Institute of Justice. <https://bja.ojp.gov/sites/g/files/xyckuh186/files/Publications/Vera-cba-justice-policy-toolkit.pdf>
- Henry, K-A. K., Catagnus, R. M., Griffith, A. K., Garcia, Y. A. (2021). Ending the school-to-prison pipeline: Perception and experience with zero-tolerance policies and interventions to address racial inequality. *Behavior Analysis in Practice*. Advance online publication. doi: 10.1007/s40617-021-00634-z
- Hirschfield, P. J. (2008). Preparing for prison? The criminalization of school discipline in the USA. *Theoretical Criminology*, 12(1), 79-101. doi: 10.1177/1362480607085795
- Ho, D., Imai, K., King, G., & Stuart, E. (2007). Matching as nonparametric preprocessing for reducing model dependence in parametric causal inference. *Political Analysis* 15, 199-236. doi: 10.1093/pan/impl013
- Jackson, A. (2002). Police-school resource officers' and students' perception of the police and offending. *Policing: An International Journal of Police Strategies & Management*, 25(3), 631-650.
- Jordan, H. (2015). *Beyond zero tolerance: Discipline and policing in Pennsylvania public schools*. American Civil Liberties Union of Pennsylvania.

[https://www.aclupa.org/files/6914/3144/0044/2-16-2015\\_FINAL\\_64204\\_ACLU\\_ONLINE.pdf](https://www.aclupa.org/files/6914/3144/0044/2-16-2015_FINAL_64204_ACLU_ONLINE.pdf)

Kirk, D. S. & Sampson, R. J. (2013). Juvenile arrest and collateral educational damage in the transition to adulthood. *Sociology of Education*, 86(1), 36-62. doi: 10.1177/0038040712448862

Krezmien, M. P., Leone, P. E., Zablocki, M. S., & Wells, C. S. (2010). Juvenile court referrals and the public schools: Nature and extent of the practice in five states. *Journal of Contemporary Criminal Justice*. 26(3), 273-293. doi: 10.1177/1043986210368642

Kwok, O. M., Underhill, A. T., Berry, J. W., Luo, W., Elliott, T. R., & Yoon, M. (2008). Analyzing longitudinal data with multilevel models: An example with individuals living with lower extremity intra-articular fractures. *Rehabilitation Psychology*, 53(3), 370–386. doi: 10.1037/a0012765

Legislative Budget and Finance Committee. (2018). *A fiscal and operational review of the YDC/YFC system*. The Pennsylvania General Assembly. <http://lbfc.legis.state.pa.us/Resources/Documents/Reports/636.pdf>

Lindle, J. C. (2008). School safety: Real or imagined fear? *Educational Policy*, 22(1), 28-44. doi: 10.1177/0895904807311295

Lintott, J. (2004). Teaching and learning in the face of school violence. *Georgetown Journal on Poverty Law & Policy*, 11, 553-580.

Losen, D. J. & Skiba, R. J. (2010). *Suspended education: Urban middle schools in crisis*. UCLA: The Civil Rights Project. <https://escholarship.org/uc/item/8fh0s5dv>

Models for Change Juvenile Diversion Workgroup. (2011). *Juvenile Diversion Guidebook*. Models for Change.

- Monahan, K. C., VanDerhei, S., Bechtold, J., & Cauffman, E. (2014). From the school yard to the squad car: School discipline, truancy, and arrest. *Journal of Youth and Adolescence*, 43(7), 1110-1122. doi: 10.1007/s10964-014-0103-1
- Na, C. & Gottfredson, D. C. (2011). Police officers in schools: Effects on school crime and the processing of offending behaviors, *Justice Quarterly*, doi: 10.1080/07418825.2011.615754
- National Association of School Resource Officers. (n.d.). *About NASRO*.  
<https://www.nasro.org/main/about-nasro/>
- Pelletier, E., Peterson, B., & King, R. (2018). *The Prison Population Forecaster: Methodology and appendixes*. Urban Institute. [https://apps.urban.org/features/prison-population-forecaster/prison\\_population\\_forecaster-methodology.pdf](https://apps.urban.org/features/prison-population-forecaster/prison_population_forecaster-methodology.pdf)
- Perumean-Chaney, S. E. & Sutton, L. M. (2013). Students and perceived school safety: The impact of school security measures. *American Journal of Criminal Justice*, 38, 570–588. doi: 10.1007/s12103-012-9182-2
- Pharris-Ciurej, N., Hirschman, C., & Willhoft, J. (2012). The 9th grade shock and the high school dropout crisis. *Social Science Research*, 41(3), 709–730. doi: 10.1016/j.ssresearch.2011.11.014
- Preiss, D. R., Arum, R., Edelman, L. B., Morrill, C., & Tyson, K. (2016). The more you talk, the worse it is: Student perceptions of law and authority in schools. *Social Currents*, 3(3), 234–255. <https://doi.org/10.1177/2329496515616813>
- Proctor, E., Proctor, E., Silmere, H., Silmere, H., Raghavan, R., Raghavan, R., Hovmand, P., Hovmand, P., Aarons, G., Aarons, G., Bunger, A., Bunger, A., Griffey, R., Griffey, R., Hensley, M., & Hensley, M. (2011). Outcomes for implementation research: Conceptual

- distinctions, measurement challenges, and research agenda. *Administration and Policy in Mental Health and Mental Health Services Research*, 38(2), 65-76. doi: 10.1007/s10488-010-0319-7
- Purtle, J., Lê-Scherban, F., Wang, X., Shattuck, P. T., Proctor, E. K., & Brownson, R. C. (2018). Audience segmentation to disseminate behavioral health evidence to legislators: An empirical clustering analysis. *Implementation Science*, 13(1), 121. doi: 10.1186/s13012-018-0816-8
- R Core Team (2019). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing. <http://www.r-project.org/>
- Raghavan, R. (2018). The role of economic evaluation in dissemination and implementation research. In R.C. Brownson, G. A. Colditz, & E. K. Proctor (Eds.), *Dissemination and implementation research in health: Translating science to practice* (pp. 89-106). Oxford University Press.
- Reyes, A. (2006). The criminalization of student discipline programs and adolescent behavior. *Journal of Civil Rights and Economic Development*, 21(1), 73-110.
- Rogers, E. M. (2003). *Diffusion of Innovations* (Fifth ed.). Free Press.
- Rosiak, J. (2015). How SROs can divert students from the justice system. *Community Policing Dispatch: The e-Newsletter of the COPS Office*, 8(5).  
[https://cops.usdoj.gov/html/dispatch/05-2015/sros\\_and\\_students.asp](https://cops.usdoj.gov/html/dispatch/05-2015/sros_and_students.asp)
- Schildkraut, J., & Grogan, K. (2019). *Are metal detectors effective at making schools safer?* (pp. 1–5). San Francisco, CA: WestEd.

- School District of Philadelphia. (2021, December 22). *School performance*. SDP District Performance Office. [https://www.philasd.org/performance/programsservices/open-data/school-performance/#serious\\_incidents](https://www.philasd.org/performance/programsservices/open-data/school-performance/#serious_incidents)
- Shepherd Jr., R. E. (2000). Collateral consequences of juvenile proceedings: Part II. *Criminal Justice*, 15(3), 41-42, 48.
- Simpson, H., & Holthe, S. (2018). Collateral consequences of juvenile court involvement. *Clearinghouse Review*, 2018(4), 1-7.
- Skiba, R. J. (2014). The failure of zero tolerance. *Reclaiming Children and Youth*, 22(4), 27-33.
- Skiba, R. J. & Knesting, K. (2001). Zero tolerance, zero evidence: An analysis of school disciplinary practice. *New Directions for Youth Development*, 92, 17-43. doi: 10.1002/yd.23320019204
- Thompson, M. & Saltzman, M. (2018, June 23). *Philadelphia reverses course on 'zero tolerance' discipline in schools*. PBS Newshour. <https://www.pbs.org/newshour/show/philadelphia-reverses-course-on-zero-tolerance-discipline-in-schools>
- U.S. Bureau of Labor Statistics. (n.d.). *CPI inflation calculator*. [https://www.bls.gov/data/inflation\\_calculator.htm](https://www.bls.gov/data/inflation_calculator.htm)
- U.S. Department of Education (2018). Civil Rights Data Collection (CRDC) for the 2015-16 school year. [Data file]. <https://www2.ed.gov/about/offices/list/ocr/docs/crdc-2015-16.html>
- U.S. Department of Education. (2019). *2015-16 Civil rights data collection: School climate and safety*. U.S. Department of Education Office for Civil Rights. <https://www2.ed.gov/about/offices/list/ocr/docs/school-climate-and-safety.pdf>

- Watts, I. E. & Erevelles, N. (2004). These deadly times: Reconceptualizing school violence by using critical race theory and disability studies. *American Educational Research Journal*, 41(2), 271-299.
- Wheelock, D. (2005). Collateral consequences and racial inequality: Felon status restrictions as a system of disadvantage. *Journal of Contemporary Criminal Justice*, 21(1), 82-90.
- Wodtke, G. T., Harding, D. J., & Elwert, F. (2011). Neighborhood effects in temporal perspective. *American Sociological Review*, 76(5), 713–736. doi: 10.1177/0003122411420816
- Wolf, K. C. (2013). Booking students: An analysis of school arrests and court outcomes. *Northwestern Journal of Law & Social Policy*, 9(1), 58-87.
- Wolf, K. C. & Kupchik, A. (2017). School suspensions and adverse experiences in adulthood. *Justice Quarterly*, 34(3), 407-430. doi: 10.1080/07418825.2016.1168475
- Zhang, Y. (2013). Likelihood-based and Bayesian methods for Tweedie compound Poisson linear mixed models. *Statistics and Computing*, 23, 743-757. doi: 10.1007/s11222-012-9343-7

## Appendix A

### *Chi-Square Results Comparing Proportions of Diverted Youth and Quasi-Control Arrested*

#### *Youth with a Recidivism Arrest at 3-Month Intervals*

	Diverted Youth ( <i>n</i> = 427)	Quasi-Control ( <i>n</i> = 531)	Between-Group Comparisons			
	<i>n</i> (%)	<i>n</i> (%)	$\chi^2$	<i>p</i> -value	<i>d</i>	95% CI
3 Months	20 (4.7%)	42 (7.9%)	3.55	.059	0.12	[-0.00, 0.25]
6 Months	41 (9.6%)	68 (12.8%)	2.10	.147	0.09	[-0.03, 0.22]
9 Months	56 (13.1%)	98 (18.5%)	4.62	.032	0.14	[0.01, 0.27]
12 Months	74 (17.3%)	116 (21.8%)	2.76	.097	0.11	[-0.02, 0.23]
15 Months	87 (20.4%)	132 (24.9%)	2.45	.118	0.10	[-0.03, 0.23]
18 Months	106 (24.8%)	143 (26.9%)	0.44	.506	0.04	[-0.08, 0.17]
21 Months	111 (26.0%)	156 (29.4%)	1.18	.276	0.07	[-0.06, 0.20]
24 Months	117 (27.4%)	168 (31.6%)	1.84	.175	0.09	[-0.04, 0.21]
27 Months	123 (28.8%)	176 (33.1%)	1.88	.170	0.09	[-0.04, 0.22]
30 Months	132 (30.9%)	184 (34.7%)	1.33	.248	0.07	[-0.05, 0.20]
33 Months	138 (32.3%)	191 (36.0%)	1.24	.265	0.07	[-0.05, 0.20]
36 Months	143 (33.5%)	200 (37.7%)	1.62	.203	0.08	[-0.04, 0.21]
39 Months	148 (34.7%)	211 (39.7%)	2.39	.122	0.10	[-0.03, 0.23]
42 Months	154 (36.1%)	216 (40.7%)	1.93	.164	0.09	[-0.04, 0.22]
45 Months	159 (37.2%)	228 (42.9%)	2.96	.085	0.11	[-0.02, 0.24]
48 Months	163 (38.2%)	236 (44.4%)	3.58	.059	0.12	[-0.00, 0.25]
51 Months	167 (39.1%)	238 (44.8%)	2.93	.087	0.11	[-0.02, 0.24]
54 Months	168 (39.3%)	240 (45.2%)	3.08	.079	0.11	[-0.01, 0.24]
57 Months	170 (39.8%)	244 (46.0%)	3.39	.066	0.12	[-0.01, 0.25]
60 Months	171 (40.0%)	247 (46.5%)	3.77	.052	0.13	[-0.00, 0.25]

*Note.* For all chi-square analyses, *df* = 1.

## Appendix B

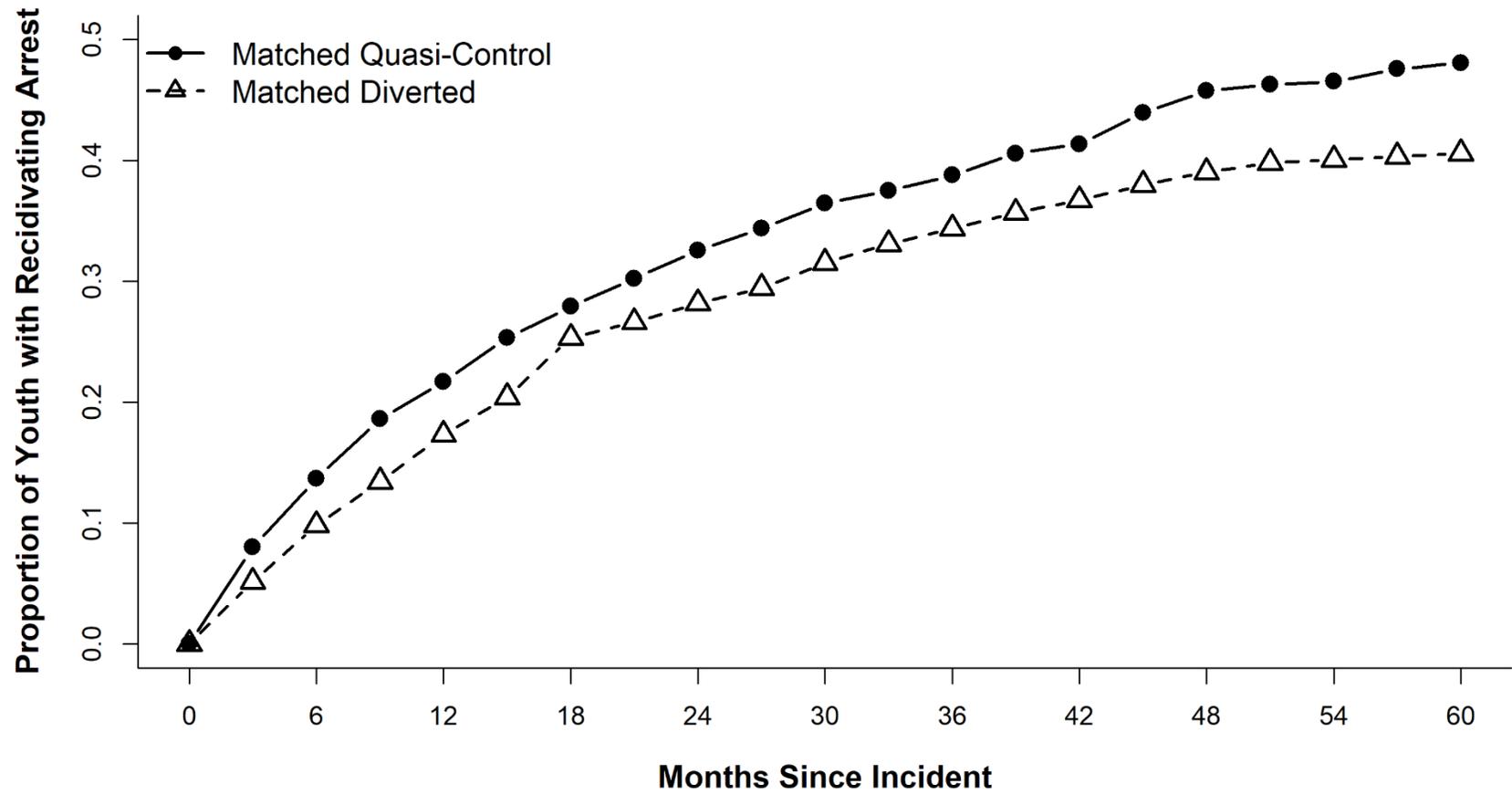
### *Tweedie Compound Poisson Results Examining Number of Recidivism Arrests Between Diverted*

#### *Youth and Quasi-Control Youth at 3-Month Intervals*

	Diverted Youth ( <i>n</i> = 427)	Quasi-Control ( <i>n</i> = 531)	Between-Group Comparisons				
	<i>M</i>	<i>M</i>	Estimate	SE	<i>p</i> -value	<i>d</i>	95% CI
3 Months	0.05	0.10	-0.70	0.36	.0498	-0.12	[-0.25, 0.00]
6 Months	0.11	0.18	-0.52	0.24	.030	-0.14	[-0.27, -0.01]
9 Months	0.16	0.28	-0.56	0.19	.004	-0.19	[-0.31, -0.06]
12 Months	0.23	0.34	-0.36	0.17	.030	-0.14	[-0.27, -0.01]
15 Months	0.28	0.40	-0.36	0.15	.019	-0.15	[-0.28, -0.02]
18 Months	0.35	0.45	-0.24	0.14	.084	-0.11	[-0.24, 0.02]
21 Months	0.39	0.51	-0.27	0.14	.049	-0.13	[-0.25, 0.00]
24 Months	0.44	0.56	-0.23	0.13	.074	-0.12	[-0.24, 0.01]
27 Months	0.48	0.61	-0.25	0.13	.051	-0.13	[-0.25, 0.00]
30 Months	0.54	0.66	-0.20	0.12	.097	-0.11	[-0.24, 0.02]
33 Months	0.58	0.73	-0.22	0.12	.070	-0.12	[-0.24, 0.01]
36 Months	0.64	0.78	-0.19	0.12	.095	-0.11	[-0.24, 0.02]
39 Months	0.69	0.84	-0.20	0.11	.074	-0.12	[-0.24, 0.01]
42 Months	0.76	0.89	-0.16	0.11	.160	-0.09	[-0.22, 0.04]
45 Months	0.83	0.97	-0.16	0.11	.155	-0.09	[-0.22, 0.04]
48 Months	0.87	1.02	-0.17	0.11	.128	-0.10	[-0.23, 0.03]
51 Months	0.92	1.06	-0.14	0.11	.192	-0.08	[-0.21, 0.04]
54 Months	0.98	1.11	-0.13	0.11	.248	-0.08	[-0.20, 0.05]
57 Months	1.06	1.15	-0.09	0.11	.418	-0.05	[-0.18, 0.07]
60 Months	1.13	1.20	-0.06	0.11	.581	-0.04	[-0.16, 0.09]

## Appendix C

*Proportion of Matched Diverted and Arrested Youth with a Recidivism Arrest at 3-Month Intervals*



## Appendix D

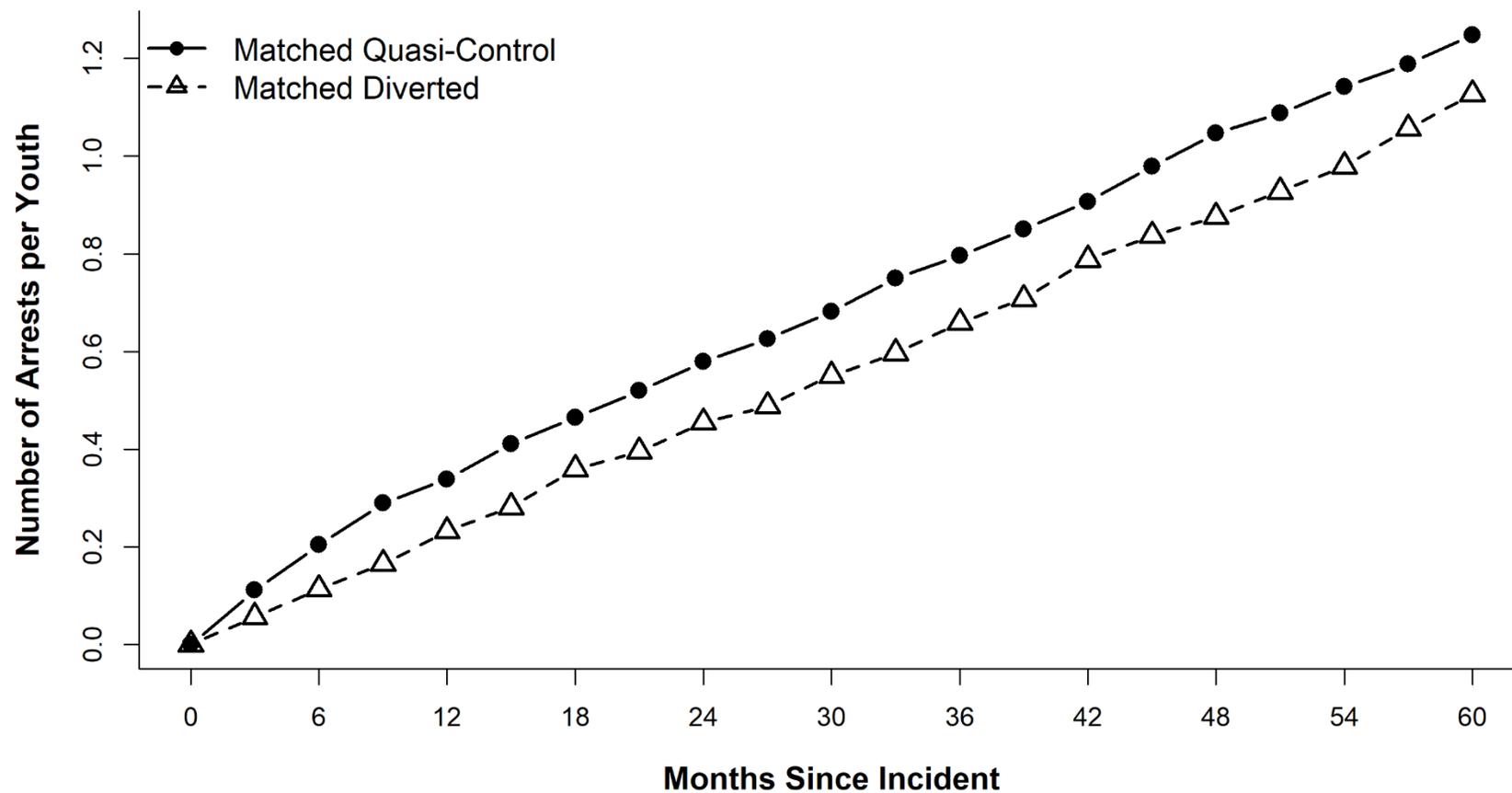
### *Chi-Square Results Comparing Proportions of Matched Diverted and Arrested Youth with a Recidivism Arrest at 3-Month Intervals*

	Diverted Youth ( <i>n</i> = 374)	Arrested Youth ( <i>n</i> = 374)	$\chi^2$	<i>p</i> -value	<i>d</i>	95% CI
	<i>n</i> (%)	<i>n</i> (%)				
3 Months	20 (5.2%)	31 (8.0%)	2.10	.147	0.10	[-0.04, 0.25]
6 Months	38 (9.8%)	53 (13.7%)	2.44	.118	0.11	[-0.03, 0.25]
9 Months	52 (13.4%)	72 (18.6%)	3.47	.062	0.13	[-0.01, 0.28]
12 Months	67 (17.3%)	84 (21.7%)	2.11	.147	0.10	[-0.04, 0.25]
15 Months	79 (20.4%)	98 (25.3%)	2.37	.123	0.11	[-0.03, 0.25]
18 Months	98 (25.3%)	108 (27.9%)	0.54	.464	0.05	[-0.09, 0.19]
21 Months	103 (26.6%)	117 (30.2%)	1.07	.300	0.07	[-0.07, 0.22]
24 Months	109 (28.2%)	126 (32.6%)	1.56	.211	0.09	[-0.05, 0.23]
27 Months	114 (29.5%)	133 (34.4%)	1.93	.165	0.10	[-0.04, 0.24]
30 Months	122 (31.5%)	141 (36.4%)	1.87	.172	0.10	[-0.04, 0.24]
33 Months	128 (33.1%)	145 (37.5%)	1.45	.229	0.09	[-0.05, 0.23]
36 Months	133 (34.4%)	150 (38.8%)	1.43	.232	0.09	[-0.06, 0.23]
39 Months	138 (35.7%)	157 (40.6%)	1.77	.183	0.10	[-0.05, 0.24]
42 Months	142 (36.7%)	160 (41.3%)	1.57	.210	0.09	[-0.05, 0.23]
45 Months	147 (38.0%)	170 (43.9%)	2.59	.108	0.12	[-0.03, 0.26]
48 Months	151 (39.0%)	177 (45.7%)	3.30	.069	0.13	[-0.01, 0.27]
51 Months	154 (39.8%)	179 (46.3%)	3.04	.081	0.13	[-0.02, 0.27]
54 Months	155 (40.1%)	180 (46.5%)	3.03	.082	0.13	[-0.02, 0.27]
57 Months	156 (40.3%)	184 (47.5%)	3.82	.051	0.14	[-0.00, 0.28]
60 Months	157 (40.6%)	186 (48.1%)	4.10	.043	0.15	[0.00, 0.29]

*Note.* For all chi-square analyses, *df* = 1.

## Appendix E

*Average Number of Recidivism Arrests for Matched Diverted and Arrested Youth at 3-Month Intervals*



## Appendix F

### *Tweedie Compound Poisson Results Comparing Matched Diverted and Arrested Youth on*

### *Number of Recidivism Arrests at 3-Month Intervals*

	Diverted Youth ( <i>n</i> = 427)	Quasi-Control ( <i>n</i> = 531)	Between-Group Comparisons				
	<i>M</i>	<i>M</i>	Estimate	SE	<i>p</i> -value	<i>d</i>	95% CI
3 Months	0.06	0.11	-0.67	0.38	.079	-0.12	[-0.26, 0.02]
6 Months	0.11	0.20	-0.59	0.26	.023	-0.16	[-0.30, -0.02]
9 Months	0.17	0.29	-0.56	0.21	.008	-0.19	[-0.33, -0.04]
12 Months	0.23	0.34	-0.38	0.18	.040	-0.15	[-0.29, -0.00]
15 Months	0.28	0.41	-0.38	0.16	.022	-0.16	[-0.30, -0.02]
18 Months	0.36	0.47	-0.26	0.15	.086	-0.12	[-0.26, 0.02]
21 Months	0.40	0.52	-0.27	0.14	.059	-0.13	[-0.28, 0.01]
24 Months	0.45	0.58	-0.24	0.14	.083	-0.12	[-0.26, 0.02]
27 Months	0.49	0.63	-0.25	0.14	.068	-0.13	[-0.27, 0.01]
30 Months	0.55	0.68	-0.21	0.13	.102	-0.12	[-0.26, 0.02]
33 Months	0.60	0.75	-0.23	0.13	.077	-0.13	[-0.27, 0.01]
36 Months	0.66	0.80	-0.19	0.13	.133	-0.11	[-0.25, 0.03]
39 Months	0.71	0.85	-0.18	0.12	.136	-0.11	[-0.25, 0.03]
42 Months	0.79	0.91	-0.14	0.12	.248	-0.08	[-0.22, 0.06]
45 Months	0.84	0.98	-0.16	0.12	.190	-0.09	[-0.24, 0.05]
48 Months	0.88	1.05	-0.18	0.12	.132	-0.11	[-0.25, 0.03]
51 Months	0.93	1.09	-0.16	0.12	.179	-0.10	[-0.24, 0.04]
54 Months	0.98	1.14	-0.15	0.12	.197	-0.09	[-0.23, 0.05]
57 Months	1.06	1.19	-0.12	0.12	.320	-0.07	[-0.21, 0.07]
60 Months	1.13	1.25	-0.10	0.12	.396	-0.06	[-0.20, 0.08]

## Appendix G

### Detailed Statistics from Child Welfare Outcome Analyses

<b>Moderate-Term Analyses</b>					
<i>Outcome: Child Welfare Services</i>					
	<i>B</i>	<i>SE</i>	<i>p</i>	<b>OR</b>	<b>95% CI</b>
Diverted	0.09	0.18	.604	1.10	[0.77, 1.57]
Age at incident	-0.15	0.04	< .001	0.87	[0.80, 0.93]
Female	0.19	0.17	.248	1.22	[0.87, 1.69]
Black	-0.31	0.19	.089	0.73	[0.51, 1.05]
Prior child welfare services	1.79	0.17	< .001	6.00	[4.33, 8.33]
<i>Outcome: Child Welfare Placement</i>					
	<i>B</i>	<i>SE</i>	<i>p</i>	<b>OR</b>	<b>95% CI</b>
Diverted	0.36	0.25	.150	1.43	[0.88, 2.33]
Age at incident	-0.12	0.05	.017	0.89	[0.81, 0.98]
Female	0.27	0.22	.213	1.32	[0.86, 2.02]
Black	-0.32	0.24	.187	0.73	[0.45, 1.17]
Prior child welfare services	2.31	0.22	< .001	10.04	[6.57, 15.35]
<b>Long-Term Analyses</b>					
<i>Outcome: Child Welfare Services</i>					
	<i>B</i>	<i>SE</i>	<i>p</i>	<b>OR</b>	<b>95% CI</b>
Diverted	-0.04	0.19	.815	0.96	[0.67, 1.38]
Age at incident	-0.31	0.05	< .001	0.73	[0.67, 0.80]
Female	0.24	0.19	.209	1.27	[0.88, 1.83]
Black	-0.33	0.21	.122	0.72	[0.48, 1.09]
Prior child welfare services	1.59	0.19	< .001	4.92	[3.42, 7.10]
<i>Outcome: Child Welfare Placement</i>					
	<i>B</i>	<i>SE</i>	<i>p</i>	<b>OR</b>	<b>95% CI</b>
Diverted	0.04	0.23	.851	1.04	[0.66, 1.64]
Age at incident	-0.28	0.06	< .001	0.76	[0.68, 0.84]
Female	0.46	0.23	.045	1.59	[1.01, 2.50]
Black	-0.23	0.26	.378	0.79	[0.47, 1.33]
Prior child welfare services	1.96	0.26	< .001	7.08	[4.24, 11.84]