Eighth Report of the Independent Monitor

Evaluation of NYPD Body Worn Camera Implementation in NYCHA Housing Developments

Peter L. Zimroth

July 27, 2018

Floyd, et al. v. City of New York
Ligon, et al. v. City of New York, et al.
Davis, et al. v. City of New York, et al.

MONITOR TEAM

Peter L. Zimroth
Monitor

Richard Jerome
Deputy Monitor

Anthony A. Braga

Cassandra Chandler

Jennifer Eberhardt

Demosthenes Long

John MacDonald

James McCabe

Jane Perlov

James Yates

Monitor's Eighth Report

I.   Introduction

In August 2016, the monitor filed its Third Report: Interim Briefing on Body-Worn Camera Pilot Program. That report described the research design for a randomized control trial of body-worn cameras (BWCs) in the New York City Police Department (NYPD), to be implemented pursuant to the requirements of the amended remedial order in *Floyd v. City of New York*, 959 F. Supp. 2d 668 (S.D.N.Y. 2013) (Remedial Order at *Floyd* Dkt. No. 372, Amended Remedial Order at *Floyd* Dkt. No. 522)

In June 2017, the monitor filed its Sixth Report, The NYPD's Body-Worn Camera Pilot: Research and Evaluation Plan. That report described the monitor's research and evaluation design for the BWC pilot, providing details about how the camera and control precincts were selected and matched and how the results of the camera experiment would be judged. The NYPD launched the BWC pilot program in April 2017 and by November 2017 the pilot was fully implemented, with approximately 1,200 officers in 20 precincts wearing cameras for a one-year period. Those 20 precincts were matched with 20 precincts where officers were not wearing cameras. The goal of the pilot program is to assess the costs and benefits of deploying cameras and whether deployment results in reducing unconstitutional stops and frisks.

Officers in NYPD's Housing Bureau patrolling NYCHA public housing developments in Police Service Areas (PSA) were not included in the randomized control trial. This Eighth Report describes the monitor's research plan for evaluating BWCs for Housing Bureau officers. The report explains the rationale and design for the evaluation as well as its limitations. This report includes technical language describing the PSA BWC quasi-experiment. It is important to

include the technical details of the research design so that outside experts can examine the design and, if they wish, run their own analyses with data to be made available at a later date.

II.   Randomized Control Trial of Body Worn Cameras

The remedial opinion in *Floyd v. City of New York* and *Ligon* v. *City of New York* noted the potential benefits of outfitting NYPD officers with body-worn cameras. These potential benefits included the creation of objective records of stop-and-frisk encounters, encouraging lawful and respectful police-citizen interaction when both parties know exchanges are recorded, alleviating mistrust between the NYPD and the public, and offering a way to substantiate whether NYPD officers are wrongly or rightly accused of misconduct. The court order required the federal monitor to establish procedures for the review of stop recordings by supervisors and senior managers, the preservation of stop recordings, and the measurement of effectiveness of BWCs in reducing unconstitutional stops and frisks. The court order also mandated the NYPD to work with the federal monitor to conduct a one-year pilot BWC program to determine whether the benefits of the cameras outweigh their financial, administrative, and other costs and whether the program should be expanded or terminated.

The federal monitor team developed a cluster-randomized controlled trial to evaluate the implementation of BWCs in the Patrol Services Bureau (PSB).[1] Briefly, 40 NYPD precincts with the highest number of Civilian Complaint Review Board (CCRB) complaints were matched into 20 similar pairs based on policing, crime, and neighborhood characteristics. All NYPD patrol officers working in the third platoon (3 PM – 11 AM shift) and anti-crime unit assignments in these 20 matched pairs were eligible to participate in the cluster randomized

---

[1] The Patrol Services Bureau is the bureau in the NYPD that includes patrol officers and other NYPD members assigned to the 77 precincts in New York City. The Housing Bureau is the bureau within the Department that includes patrol officers and other NYPD members who work in the nine PSAs in New York City. The details of the cluster-randomized controlled trial design are available at http://nypdmonitor.org/wp-content/uploads/2017/10/2017-06-29-MonitorsSixthReport.pdf (accessed 2/25/2018).

experiment. One precinct of each matched precinct pair was randomly designated the treatment precinct and assigned BWCs for a one-year study time period. The other precinct in the matched pair was designated the control precinct and did not receive cameras. The implementation of the BWC cluster randomized experiment began on April 24, 2017 in the 34 Precinct. The remaining treatment precincts received the BWC technology in a staggered manner with the final treatment precinct, Precinct 121, receiving BWCs on November 14, 2017.

NYPD Housing Bureau officers working in the nine PSAs were scheduled to receive BWCs as part of a citywide rollout plan launched after the implementation of the PSB cluster randomized controlled trial. Given the small number of PSAs and the complexities associated with citywide BWC implementation, it was not possible to design a randomized experimental evaluation of the placement of BWCs on NYPD PSA officers. As detailed in Section V below, the federal monitor team will be using two separate quasi-experimental designs to evaluate BWC impacts on the provision of police services at the PSA command level and the individual officer level. Quasi-experimental designs seek to approximate characteristics of a true experiment without the benefit of random allocation of units to treatment and control conditions.[2] As such, quasi-experiments do not have the same high degree of internal validity as randomized controlled trials. Nonetheless, well-designed quasi-experiments can sometimes produce results that are of similar quality to randomized controlled trials.[3]

III.   **NYPD Provision of Policing Services to NYCHA Housing Developments**

Figure 1 presents the NYPD organizational chart for the provision of policing services to NYCHA housing developments by Patrol Borough, PSA, and Precinct.   The NYPD is responsible for providing policing services to residents in NYCHA housing developments in 58
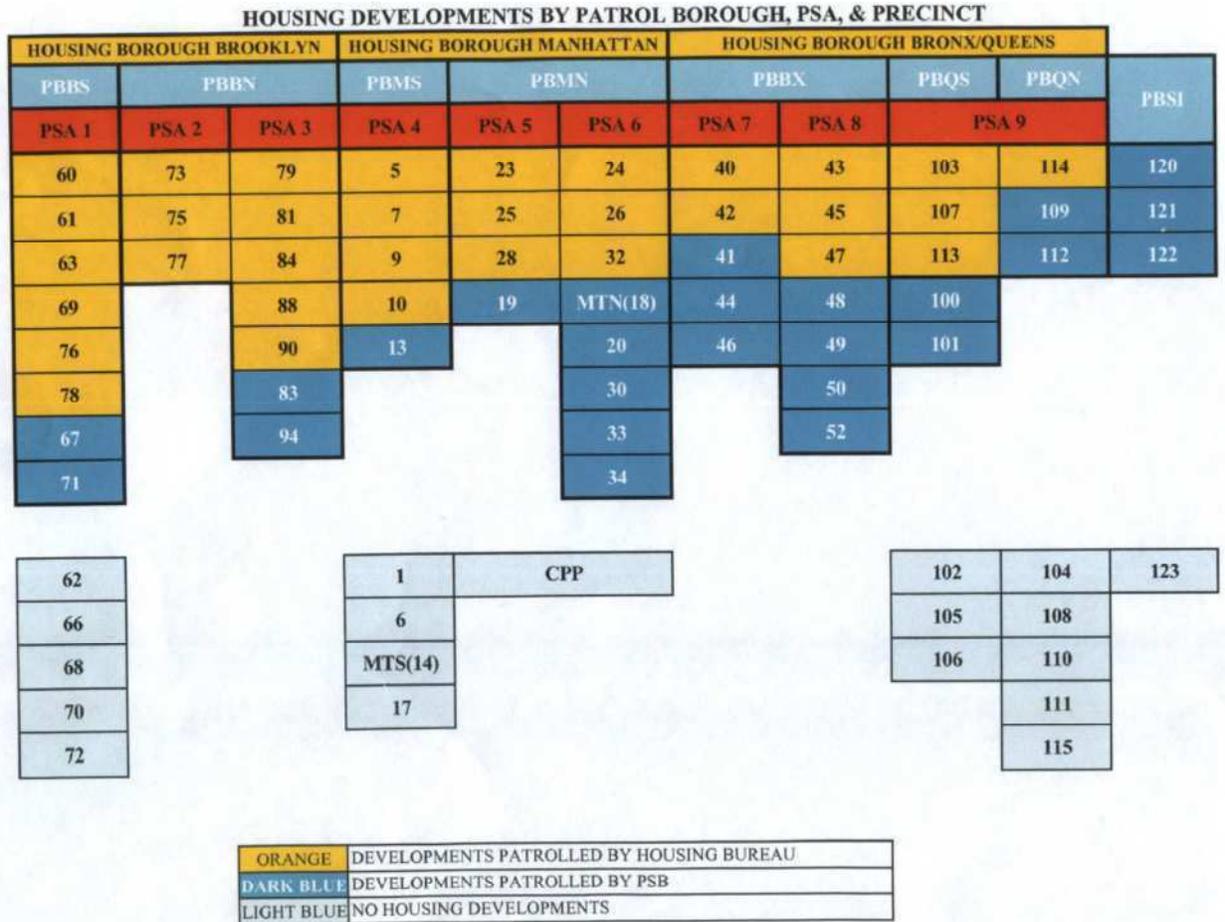
---

[2] Campbell, Donald and Julian Stanley. 1966. *Experimental and Quasi-Experimental Designs for Research.* Chicago: Rand McNally.
[3] Lipsey, M., & Wilson, D. (1993). *Practical Meta-Analysis*. Thousand Oaks, CA: Sage Publications.

Precincts (75.3% of 77 total precincts).   There are 19 precincts without NYCHA housing developments (24.7% of 77 total precincts).   In the 58 Precincts with NYCHA housing developments, the NYPD Housing Bureau provides policing services to housing developments in 33 Precincts (56.9% of 58) while the remaining 25 Precincts are served by the PSB.

Figure 1.

HOUSING DEVELOPMENTS BY PATROL BOROUGH, PSA, & PRECINCT

HOUSING BOROUGH BROOKLYN			HOUSING BOROUGH MANHATTAN			HOUSING BOROUGH BRONX/QUEENS				
PBBS	PBBN		PBMS	PBMN		PBBX		PBQS	PBQN	PBSI
PSA 1	PSA 2	PSA 3	PSA 4	PSA 5	PSA 6	PSA 7	PSA 8	PSA 9		
60	73	79	5	23	24	40	43	103	114	120
61	75	81	7	25	26	42	45	107	109	121
63	77	84	9	28	32	41	47	113	112	122
69		88	10	19	MTN(18)	44	48	100		
76		90	13		20	46	49	101		
78		83			30		50			
67		94			33		52			
71					34					

62		1	CPP			102	104	123	
66		6				105	108		
68		MTS(14)				106	110		
70		17					111		
72							115		

ORANGE	DEVELOPMENTS PATROLLED BY HOUSING BUREAU
DARK BLUE	DEVELOPMENTS PATROLLED BY PSB
LIGHT BLUE	NO HOUSING DEVELOPMENTS

Source: New York City Police Department

There are 343 NYCHA housing developments[4] spread throughout New York City's five boroughs, covering 3.794 total square miles of land area (Table 1). The NYPD Housing Bureau

---

[4] Following the structure of the data file provided to the monitor team by the NYPD (12/27/2017), the development counts were based on unique Tenant Data System (TDS) numbers that NYCHA uses to distinguish tenant applications to specific housing developments. As such, these counts included housing developments with related

provides policing services to residents in 258 NYCHA housing developments (75% of 343) in 33 precincts through nine PSAs in four boroughs: Brooklyn, Bronx, Manhattan, and Queens. This includes some 333,977 residents in 149,684 apartments. The NYPD PSB provides policing services to residents in 85 NYCHA housing developments (25% of 343) in 25 precincts in the five boroughs (including the Staten Island Housing Unit). This includes some 59,401 residents in 28,385 apartments.

The 85 NYCHA housing developments that receive policing services from the PSB through 25 precincts are part of the cluster randomized controlled trial evaluating the implementation of BWCs on patrol officers. Since the NYPD Housing Bureau does not provide patrol services through the PSAs in these precincts, these 85 housing developments will not be included in the PSA evaluation plan.

Table 1. Developments, Buildings, Land Areas, Total Apartments, and Total Residents by PSA

	Total Developments	Total Buildings	Land Area (sq. mi.)	Total Apartments	Total Residents
PSA 1	20	35	.483	17,219	36,764
PSA 2	43	92	.458	19,537	43,906
PSA 3	28	56	.379	19,420	45,186
PSA 4	32	46	.227	16,399	35,243
PSA 5	29	49	.257	17,176	37,834
PSA 6	26	52	.183	13,953	29,185
PSA 7	49	75	.307	20,128	49,248
PSA 8	19	35	.445	14,133	31,278
PSA 9	12	27	.334	11,719	25,333
PSA total	258	467	3.073	149,684	333,977
PSB total	85	158	.721	28,385	59,401
NYPD total	343	625	3.794	178,069	393,378

---

names as distinct developments. For instance, in PSA 6, the Douglass I (TDS 082), Douglass II (TDS 582), and Douglass Addition (TDS 148) represented three distinct housing developments in Table 1 rather than being aggregated as one larger housing development that shared the "Douglass" name attribution. We supplemented the NYPD data with the "NYCHA Data Development Book File," publicly available at https://data.cityofnewyork.us/Housing-Development/NYCHA-Development-Data-Book/evjd-dqpz (downloaded 12/28/2017).

Table 2 presents summary data for the mean number of NYPD officers assigned, mean number of 911 emergency calls for service dispatched, mean number of major crime complaints (murder, rape, robbery, felony assault, burglary, grand larceny, and grand larceny auto), mean number of arrests (including arrests for felonies, misdemeanors, violations, and infractions), mean number of arrests where force was used by the officer(s) making the arrest(s), and mean number of stop reports in the nine PSAs between 2015 and 2017. There are notable variations in these six measures across the nine PSAs. For instance, PSA 6 had the smallest mean number of officers assigned (158.3) while PSA 2 had the largest number of officers assigned (328.0).

Table 2. NYPD Officer Staffing and Work Activities in Nine PSAs, 2015 – 2017[5]

	Mean Officers	Mean 911 Calls	Mean Major Crimes	Mean Arrests	Mean Arrests w/force	Mean SQF reports
PSA 1	246.3	29,280.3	512.0	1,790.7	8.3	241.7
PSA 2	328.0	17,979.3	696.0	2,350.7	65.0	121.7
PSA 3	262.0	22,117.0	638.7	2,089.3	53.7	124.3
PSA 4	166.3	12,284.0	388.0	1,759.7	22.0	204.7
PSA 5	245.7	21,489.3	567.7	3,125.0	51.3	204.3
PSA 6	158.3	14,743.0	432.3	1,497.0	15.3	153.0
PSA 7	241.3	22,109.7	677.3	3,651.7	43.7	313.7
PSA 8	193.0	16,803.7	605.0	2,046.0	27.3	178.7
PSA 9	217.3	21,037.7	284.3	1,264.0	16.3	65.7
PSA total	2058.3	177,844.0	4,801.3	19,574.0	333.0	1,607.7

Table 3 presents descriptive characteristics and CCRB complaint histories of 1,916 NYPD patrol officers assigned to the PSA commands as of December 31, 2017. The vast majority of NYPD patrol officers held the police officer rank (88.7%), while a much smaller share held the sergeant rank (11.3%). NYPD patrol officers in the PSA commands were primarily male (81.9%), had an average age of 33.6 years, and averaged 6.8 years on the job.

---

[5] The NYPD provided the aggregate PSA data and individual PSA patrol officer data to the monitor team (on 3/27/2018 and 4/24/2018, respectively).

6

PSA patrol officers were racially diverse: 36.2% were Hispanic, 34.3% were white, 19.2% were black, and 10.3% were Asian/Pacific Islander.   PSA patrol officers rarely generated CCRB complaints.   Indeed, some 51% of PSA patrol officers had not generated a single CCRB complaint over the course of their career as of December 31, 2017.   PSA patrol officers generated, on average, .175 CCRB complaints per year on the job (or less than one complaint every five years).

Table 3. Descriptive Characteristics and CCRB Complaint History of NYPD Patrol Officers Assigned to PSA Commands (December 31, 2017 snapshot), N = 1,916

Officers Assigned		Number	Percent
	PSA 1	236	12.3
	PSA 2	311	16.2
	PSA 3	243	12.7
	PSA 4	150	7.8
	PSA 5	215	11.2
	PSA 6	147	7.7
	PSA 7	218	11.4
	PSA 8	178	9.3
	PSA 9	218	11.4
Rank			
	Police Officer	1,700	88.7
	Sergeant	216	11.3
Gender			
	Male	1,569	81.9
	Female	347	18.1
Race			
	Hispanic	693	36.2
	White	658	34.3
	Black	367	19.2
	Asian / Pacific Islander	198	10.3
Age			
	Mean	33.6	
	Standard deviation	6.8	
	Range	21 – 59	
Years on job			
	Mean	6.8	
	Standard deviation	5.5	
	Range	<1 – 31	

CCRB complaint rate

Mean		.175
Standard deviation		.273
Range		0 – 3.2
No complaints	978	51.0
One or more complaints	938	49.0

IV.   Timing of the Body-Worn Camera Treament in PSAs

The NYPD placed BWCs on patrol officers working the third platoon (3 PM – 11 PM shift) and anti-crime units in 20 treatment precincts[6] during their "Phase 1" implementation to satisfy the requirements of the randomized experimental evaluation. Phase 1 implementation started on April 24, 2017 and ended November 14, 2017. During the "Phase 2" implementation, the NYPD will place BWCs on all officers (including the first and second platoons) in the remaining commands. Officers in the 20 control precincts matched to the 20 treatment precincts will not receive BWCs until at least one full year after the implementation of BWCs in the treatment precinct within their matched pairs. Phase 2 implementation started the week of December 4, 2017 and will continue through the week of December 30, 2018.

NYPD Housing Bureau officers in the nine PSAs will be equipped with BWCs over the course of a nearly 11-month time period (Table 4). The PSA implementation began the week of February 12, 2018 (PSA 8) and will end the week of December 16, 2018 (PSA 9). The implementation date of BWCs in each PSA represents the initiation of the **direct** treatment on officers within each of these Housing Bureau commands. As shown in Figure 1, PSA officers deliver policing services to housing developments within precincts. As such, NYPD Housing Bureau officers can also receive **indirect** treatment via their presence within a precinct that has

---

[6] These 20 treatment precincts are the 13, 18 (MTN), 25, 30, 34, 42, 43, 44, 47, 48, 60, 63, 67, 71, 72, 79, 102, 105, 115, and 120.

8

already adopted BWCs on its officers as part of the Phase 1 and 2 implementations.   The presence of precinct officers with BWCs at calls for service in housing developments (e.g., providing back-up to PSA officers) may influence PSA officer and citizen behavior during these encounters.   The evaluation plan needs to consider both direct and indirect effects of BWCs on selected outcomes.

Table 4. Implementation of Direct and Indirect Treatment in PSAs

PSA	Precinct	Direct Treatment	Indirect Treatment
1	60	Phase 2 - week of 6/18/2018 (PSA)	Phase 1 - 6/7/2017, Phase 2 - 9/24/2018 (Pct)
1	61	Phase 2 - week of 6/18/2018 (PSA)	Phase 2 - 4/16/2018 (Pct)
1	63	Phase 2 - week of 6/18/2018 (PSA	Phase 1 - 9/13/2017, Phase 2 - 7/19/2018 (Pct)
1	69	Phase 2 - week of 6/18/2018 (PSA)	Phase 2 - 7/15/2018 (Pct)
1	76	Phase 2 - week of 6/18/2018 (PSA)	Phase 2 - 7/15/2018 (Pct)
1	78	Phase 2 - week of 6/18/2018 (PSA)	Phase 2 - 8/26/2018 (Pct)
2	73	Phase 2 - week of 10/21/2018 (PSA)	Phase 2 - 10/14/2018 (Pct)
2	75	Phase 2 - week of 10/21/2018 (PSA)	Phase 2 - 1/22/2018 (Pct)
2	77	Phase 2 - week of 10/21/2018 (PSA)	Phase 2 - 9/24/2018 (Pct)
3	79	Phase 2 - week of 3/5/2018 (PSA)	Phase 1 - 8/8/2017, Phase 2 - 5/29/2018 (Pct)
3	81	Phase 2 - week of 3/5/2018 (PSA)	Phase 2 - 9/17/2018 (Pct)
3	84	Phase 2 - week of 3/5/2018 (PSA)	Phase 1 - 5/1/2018 (Pct)
3	88	Phase 2 - week of 3/5/2018 (PSA)	Phase 2 - 3/5/2018 (Pct)
3	90	Phase 2 - week of 3/5/2018 (PSA)	Phase 2 - 3/12/2018 (Pct)
4	5	Phase 2 - week of 4/9/2018 (PSA)	Phase 2 - 8/26/2018 (Pct)
4	7	Phase 2 - week of 4/9/2018 (PSA)	Phase 2 - 7/8/2018 (Pct)
4	9	Phase 2 - week of 4/9/2018 (PSA)	Phase 2 - 6/11/2018 (Pct)
4	10	Phase 2 - week of 4/9/2018 (PSA)	Phase 2 - 8/19/2018 (Pct)
5	23	Phase 2 - week of 12/2/2018 (PSA)	Phase 2 - 12/4/2017 (Pct)
5	25	Phase 2 - week of 12/2/2018 (PSA)	Phase 1 - 8/24/2017, Phase 2 - 7/22/2018 (Pct)
5	28	Phase 2 - week of 12/2/2018 (PSA)	Phase 2 - 10/7/2018 (Pct)
6	24	Phase 2 - week of 8/19/2018 (PSA)	Phase 2 - 6/4/2018 (Pct)
6	26	Phase 2 - week of 8/19/2018 (PSA)	Phase 2 - 4/16/2018 (Pct)
6	32	Phase 2 - week of 8/19/2018 (PSA)	Phase 2 - 11/18/2018 (Pct)
7	40	Phase 2 - week of 7/1/2018 (PSA)	Phase 2 - 1/8/2018 (Pct)
7	42	Phase 2 - week of 7/1/2018 (PSA)	Phase 1 - 7/17/2017, Phase 2 - 5/1/2018 (Pct)
8	43	Phase 2 - week of 2/12/2018 (PSA)	Phase 1 - 8/28/2017, Phase 2 - 4/9/2018 (Pct)
8	45	Phase 2 - week of 2/12/2018 (PSA)	Phase 2 - 2/22/2018 (Pct)
8	47	Phase 2 - week of 2/12/2018 (PSA)	Phase 1 - 7/24/2017, Phase 2 - 4/16/2018 (Pct)
9	103	Phase 2 - week of 12/16/2018 (PSA)	Phase 2 - 1/15/2018 (Pct)
9	107	Phase 2 - week of 12/16/2018 (PSA)	Phase 2 - 5/15/2018 (Pct)
9	113	Phase 2 - week of 12/16/2018 (PSA)	Phase 2 - 11/25/2018 (Pct)
9	114	Phase 2 - week of 12/16/2018 (PSA)	Phase 2 - 10/28/2018 (Pct)

V.   Quasi-Experimental Designs to Estimate BWC Impacts

The implementation of the BWC treatment for PSAs faciliates the use of a non-randomized cluster stepped-wedge evaluation design.[7] Figure 2 illustrates the basic structure of a stepped-wedge design where all clusters eventually move from the no-treatment control group to the treatment group.[8] In the PSA BWC evaluation, the design will include a pre-intervention period in which no PSA commands ("clusters" of officers) are exposed to the BWC treatment. Subsequently, at regular intervals (the "steps"), one PSA command will cross from the no-treatment control group to the BWC intervention group under evaluation. This process will continue until all nine PSAs have crossed over to be exposed to the BWC intervention. At the end of the study, there will be a period when all PSA commands are exposed to the BWC intervention. Data collection will continue throughout the evaluation, so that each PSA will contribute observations under both control and treatment periods.

The evaluation will rely on the timing of BWC treatment in PSAs and will control for differences between areas that are fixed during the study interval, such as size of housing developments and surrounding neighborhood poverty. Two complementary quasi-experimental analyses will be used to estimate the impact of the placement of BWCs on NYPD officers assigned to PSAs on selected outcome measures. The first analysis estimates BWC impacts at the PSA command level by using panel regression models to analyze direct effects associated with the implementation of BWCs in PSAs and indirect effects associated with the adoption of PSAs in surrounding precincts. The second analysis also uses panel regression models to estimate BWC impacts at the PSA officer level by exploiting the natural variation in the

---

[7] Hu, Y., & Hoover, D.R. (2018). "Non-Randomized and Randomized Stepped-Wedge Designs Using an Orthogonal Least Squares Framework." *Statistical Methods in Medical Research*, 27 (4): 1202 – 1218.

[8] Figure 2 was adapted from Hemming, K. et al. (2015). "The Stepped Wedge Cluster Randomized Trial: Rationale, Design, Analysis, and Reporting." *British Medical Journal* (Clinical Research ed.), 350: h391.

implementation of BWCs in PSAs over time.   We use CCRB complaints as an exemplar

outcome measure in the description of our quasi-experimental designs below in subsections V.A

and V.B.[9]   The full range of outcome measures to be analyzed in the BWC PSA evaluation is

described in the final section.

Figure 2.

Cluster exposed to intervention   Cluster unexposed to intervention (control)
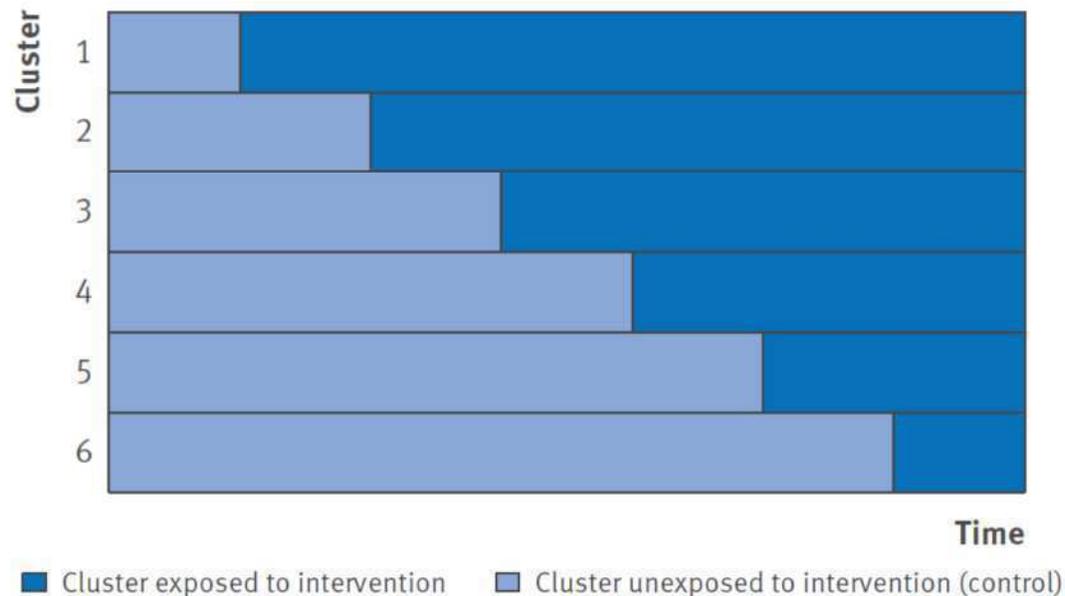
A.   PSA Command-Level Analysis

Quasi-experimental   interrupted   time   series   analysis,   involving   before   and   after

measurements for a particular dependent variable, represents a common type of evaluation

research found in criminology and criminal justice.   One of the intended purposes for doing this

type of quasi-experimental research is to capture longer time periods and a sufficient number of

---

[9] CCRB complaints are rare events and, as such, count regression models will be used to estimate the impact of the treatment. See Berk, R. and MacDonald, J. 2008. "Overdispersion and Poisson Regression." *Journal of Quantitative Criminology*, 24 (3): 269 – 284.   The models described below serve as examples to illustrate the logic of our analytical approach.   We will adjust the analyses as appropriate given the distributions of the various outcome variables (e.g., we may use ordinary least squares panel regressions for normally distributed outcome measures or we may decide to change monthly counts to quarterly counts if zero counts prove to be extensive in the officer data).

different events to control for various threats to validity and reliability.[10] The established before-treatment trend allows evaluators to predict what might have happened without the intervention. The difference between what actually happened after the intervention and the predicted outcome based on the before-treatment trend helps to determine the actual treatment effect. However, the estimation of BWC impacts will be limited by the absence of a no-treatment control group to account for confounding factors not specified in the models below.

The units of analysis in this quasi-experimental evaluation are "PSA-months" over a four year period. Monthly counts of CCRB complaints will be collected for three pre-intervention years and one intervention year (N = 9 PSAs * 12 months * 4 years = 432 PSA-months). We will then use panel regression models to analyze the monthly change in complaint counts for each PSA command before and after the BWCs are adopted in the PSA command and in the surrounding precincts, controlling for other covariates. As such, a simplified version of the proposed panel regression model is as follows:

$$(1) \quad Y_{it} = \beta_0 + \beta_1 PSABWC_{it} + \beta_2 PrecinctBWC_{it} + \beta X_{it} + \alpha_i + \delta_t + \varepsilon_{it}$$

where $i = 1\dots 9$ PSA commands, with PSA i consisting of $t = 1, \dots, n_i$ monthly observations, and Y_{it} is the outcome variable indicating the monthly count of CCRB complaints in a specific PSA i during month-year t. The regressor *PSABWC* is a dummy variable identifying whether a PSA command adopted BWCs (1) or not (0), while *PrecinctBWC* is a dummy variable identifying whether a precinct that intersects or contains the PSA adopted BWCs (1) or not (0). The coefficients β_1 and β_2 are the estimates of direct and indirect BWC treatment, respectively, on CCRB complaints. The model will also control for factors that change each month within PSAs that may be correlated with CCRB complaints, such as calls for service and crime, and β

---

[10] Shadish, W., Cook, T., & Campbell, D. (1979). *Experimental and quasi-experimental designs for generalized causal inference*. Boston: Houghton Mifflin Company.

represents the vector of estimates of these attributes (X_{it}). Fixed effects for PSA (α_i) and year-month (δ_t) are included to control for common trends to all PSAs in a given month-year and unmeasured differences between PSAs that are stable over the four-year time period. Robust standard errors clustered by PSA-month-year will be used to assure that estimates are robust to heteroscedasticity and unmeasured dependence at the PSA level over time.

B.   PSA Officer-Level Analysis

The units of analysis in this quasi-experimental evaluation are "officer-quarters" over a four year period. Quarterly counts of CCRB complaints will be collected for three pre-intervention years and one intervention year (N = ~2,000 PSA officers * 4 quarters * 4 years = 96,000 officer-months). We will then use panel regression models to analyze the quarterly change in complaint counts for each PSA officer before and after the BWCs are adopted in their respective PSA commands and in the surrounding precincts, controlling for other covariates. As such, a simplified version of the proposed panel regression model is as follows:

$$(2) \quad Y_{ijt} = \beta_0 + \beta_1 PSABWC_{ijt} + \beta_2 PrecinctBWC_{it} + \beta X_{it} + \mu_i + \alpha_j + \delta_t + \varepsilon_{it}$$

Where $i = 1\ldots n_i$ officers in $j=1\ldots9$ PSA commands, $t = 1, \ldots, n_t$ quarterly observations, and Y_{ijt} is the outcome variable indicating the count of CCRB complaints for an individual officer in a specific PSA i during quarter t. The regressor *PSABWC* is a dummy variable identifying whether a PSA command adopted BWCs (1) or not (0), while *PrecinctBWC* is a dummy variable identifying whether a precinct that intersects or contains the PSA adopted BWCs (1) or not (0). The coefficient β_1 and β_2 are the officer-specific effect of BWC and the indirect BWC treatment effect, respectively, on CCRB complaints. In this model β represents the vector of estimates representing the vector of covariates that change each quarter for each officer (X), such as shift and area assignment. Fixed effects for officer (μ_i), PSA (α_j), and year-quarter (δ_t) are included to

control for common trends to individual officers, PSAs, and time.   Robust standard errors clustered by officer-PSA-quarter-year will be used.

We recognize that officers assigned to the nine PSAs during the one-year intervention period may have had varying assignments and service times during the three-year pre-intervention period.   For instance, officers may have had previous assignments that make them more or less likely to use force in the execution of their duties or generate citizen complaints. Some officers may not have three full years of NYPD service before assignment to the PSAs. The NYPD will provide the monitor team with pre-PSA service length and assignment duty data so we can adjust our individual-level panel regression models (e.g., including pre-intervention averages for each officer) as appropriate to consider these varying pre-intervention experiences.

C.   Outcome Measures

The PSA quasi-experimental designs will measure the impact of BWCs on three sets of outcome measures: the civility of police-citizen interactions, police activity, and police lawfulness.   The data for the study's outcome measures will be available through official data systems of the NYPD and the CCRB.   As described above, the primary analyses of these outcomes will involve the collection of data from 36-month pre-implementation (pre-test) and 12-month implementation (post-test) time periods.

1.   Impact of BWCs on the Civility of Police-Citizen Interactions

The available research suggests that putting BWCs on officers will improve the civility of police-citizen interactions by deterring undesirable behaviors (i.e., not wanting to be recorded on video doing something inappropriate or illegal) and stimulating desirable behaviors (i.e.,

remembering to treat others with respect).[11]   Pre-test and post-test data will be collected and

analyzed for the following "civility/de-escalation" outcomes:

- CCRB complaints
- Officer arrests with force reports
- Officer injury reports
- Resisting arrest data
- Disorderly Conduct and Obstructing Government Administration arrests and summonses

Specific variables in these datasets will be analyzed to determine whether BWCs influence the

types of CCRB complaints, the types of force (hand strike, baton, etc.), and other relevant

subcategories for treatment officers and control officers over the course of the study time period.

2.   Impact of BWCs on Police Activity

Some observers have suggested that BWCs might cause officers to be less active or more

reluctant to initiate contacts with citizens, instead focusing most of their time on dispatched

calls.[12]   Police officers in treatment and comparison groups will be compared over pre-test and

post-test time periods to determine whether BWCs impact their policing activity.   Police activity

metrics will include:

- Monthly number of responses to citizen calls for service (data available by unit only rather than by individual officer)
- Monthly number of officer-initiated calls (data available by unit only rather than by individual officer)
- Monthly number of complaints by citizens of crime (61 reports)
- Monthly number of domestic incident reports
- Monthly number of arrests
- Monthly number of summons

---

[11] Barak Ariel, William Farrar, and Alex Sutherland. 2015. The effect of police body-worn cameras on use of force and citizens' complaints against the police: A randomized controlled trial. *Journal of Quantitative Criminology*, 31: 509–535.

[12] For instance, one recent evaluation suggests BWC officers are more likely to initiate encounters and issue citations than their non-BWC counterparts. Justin Ready and Jacob Young. 2015. The impact of on-officer video cameras on police–citizen contacts: findings from a controlled experiment in Mesa, AZ. *Journal of Experimental Criminology*, 11: 445–458. Another randomized controlled trial found increases in arrests and citations for BWC treatment officers relative to non-BWC control officers. Anthony A. Braga, William H. Sousa, James R. Coldren, and Denise Rodriguez. 2018. The effects of body worn cameras on police activity and police-citizen encounters: A randomized controlled trial. *Journal of Criminal Law and Criminology*, 108: 511–538.

- Monthly number of SQF reports
- Monthly number of interior patrols (data available at PSA levels only)

The data will be analyzed to determine whether the monthly number of activity events changes over time. The monitor team will also examine whether the BWCs influence the likelihood of an arrest or summons in situations where a crime complaint report has been made, comparing treatment officers to control officers.

3.   Impact of BWCs on Police Lawfulness

Stop reports provide an opportunity to examine whether BWCs impact the lawfulness of police interactions with citizens. The monitor team will be auditing stop reports to ensure NYPD compliance with the Constitution and provisions of the *Floyd.*, *Ligon*, and *Davis* orders. The monitor team will use cluster random sampling techniques to select stop reports each quarter to ensure a representative sample of stop reports from the annual citywide population of stop reports.

In order to assess the impact of BWCs on police lawfulness in the PSAs, it will be essential to include stop reports prepared in the PSAs during one-year pre-intervention and one-year intervention periods. The monitor team will select random samples of 300 pre-intervention-period and 300 intervention-period stop reports that are representative of overall PSA stop reports during these two periods. The monitor team will analyze the results of reviews of PSA stop reports completed in pre-intervention and intervention periods to determine whether BWCs influence the justifications provided for the stops, frisks, and searches of subjects in these interactions (examining potential Fourth Amendment issues).

The monitor team will also use stop report data to examine patterns in the racial composition of stopped subjects to determine whether the presence of BWCs influences the share of minority residents stopped by officers in the PSAs during the intervention period

relative to the pre-intervention period (examining potential Fourteenth Amendment issues). We will examine other subject characteristics, such as gender, age, and stop justification. Our BWC impact analyses will build upon models and methods used in prior research appraising racial disparities in NYPD stop reports in PSAs and immediately surrounding neighborhoods.[13]

With respect to trespass enforcement, the monitor team will be examining trespass enforcement in the PSAs during the pre-intervention and intervention periods. This examination will depend in part on the availability of data in a readily available format. Accounting for this caveat, the monitor team is planning to look at the percentage of trespass arrests for which there was a completed Trespass Crimes Fact Sheet; counts of declined prosecutions for trespass arrests; trespass arrests identified by QAD as starting as a stop, but for which a stop report was not completed; trespass arrest reports identified by QAD as not containing prima facie evidence of probable cause; and reports of stops for trespass in TAP and NYCHA buildings. The monitor team will also analyze the results of QAD audits of police-initiated enforcement arrests to determine whether there are any differences in the number of unrecorded stops in the PSAs during the pre-intervention and intervention periods.

---

[13] See Jeffrey Fagan, Garth Davies, and Adam Carlis. 2012. Race and selective enforcement in public housing. *Journal of Empirical Legal Studies*, 9: 697-728.