
# The Milwaukee Police Department's Body-Worn Camera Program

## Evaluation Findings and Key Takeaways

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**This brief describes the results of the Urban Institute's evaluation of the Milwaukee Police Department's body-worn camera program. From October 2015 to December 2016, the Milwaukee Police Department (MPD) deployed body-worn cameras (BWCs) in a phased rollout to all of its roughly 1,100 patrol officers. Through a randomized controlled trial of 504 officers, the Urban Institute found that those who wore BWCs conducted fewer subject stops and were less likely to receive a complaint than officers that did not receive cameras. However, BWCs had no effect on whether officers engaged in use of force during the study period.**

As the police department for the largest city in Wisconsin—a city with a very diverse population—the MPD pursues partnerships with the community to reduce crime, fear, and disorder through several initiatives, including the use of data-driven policing. But challenges to improving police-community relations and public trust remain, especially in neighborhoods with high rates of poverty and violent crime. Police-community relations were particularly strained in 2014 after the high-profile shooting of Dontre Hamilton by an MPD officer.[1] The officer involved was fired but was not charged with a crime, which sparked a series of protests across the city. As a result, there was an outcry for MPD officers to be equipped with BWCs, including a petition on Change.org with 2,300 signatures and several proposals from Milwaukee aldermen and Mayor Tom Barrett.


*Officer with a collar-mounted body-worn camera. Photo provided by the Milwaukee Police Department.*

Under this increased scrutiny and political pressure, the MPD began developing its BWC policy and rollout plan in mid-2015. Between October 2015 and December 2016, the MPD equipped all patrol officers with the model of BWC seen above. These cameras are small devices that officers can mount on their head, collar, or shoulder and use to record audio and video of their interactions with community members. The cameras have a small buffering period that captures video of the 30 seconds immediately before the officer turns the camera on. No audio is captured during the buffering period.

The BWCs were meant to increase transparency and accountability within the MPD by providing better accounts of officer-community interactions and behaviors. The MPD also hoped BWCs would enhance the collection of evidence. The MPD partnered with researchers from the Urban Institute to develop a rigorous evaluation of the department's use of this technology. This partnership was supported by funding from the US Department of Justice through the Bureau of Justice Assistance's Strategies for Policing Innovation program. Strategies for Policing Innovation also gave the MPD access to subject-matter experts who provided guidance on the BWC policies and rollout.

# Body-Worn Camera Rollout and Evaluation

With input from Urban, the MPD completed a four-phased deployment of BWCs to support Urban's evaluation (table 1). Phase 1 included a pilot program in late 2015 involving roughly 15 percent of MPD officers. In phase 2, Urban worked with the MPD to initiate a randomized controlled trial (RCT) in which 252 officers were randomly assigned a BWC (the "treatment group") and 252 officers continued their work without BWCs (the "control group"). An additional 16 officers who were not part of the RCT were also given BWCs in phase 2. In phase 3, 238 officers who were not part of the RCT were equipped with BWCs. Finally, phase 4 distributed BWCs to the 252 control group officers and an additional 171 officers not involved in the RCT. It is worth mentioning that the MPD delayed the final deployment of

cameras from September 2016 to December 2016 at the request of the Strategies for Policing Innovation program and the Urban research team to ensure that there would be sufficient follow-up time to collect data from the officers involved in the RCT.

As part of our RCT, we analyzed differences between the treatment and control groups on several outcomes related to officer behavior, including arrests, traffic stops, subject stops, citizen complaints, and use of force. We used difference-in-differences (DiD) estimations for these analyses. This approach allowed us to control for the differences and changes between the two groups during the preintervention period (the nine months before March 21, 2016) and postintervention period (the nine months after March 21, 2016). More information about this approach and the balancing diagnostics of the RCT, as well as the regression coefficients from the DiD estimations, is presented in the appendix.

TABLE 1

**Milwaukee Police Department Body-Worn Camera Deployment**

| Phase | Description | Number of body-worn cameras distributed | Districts targeted | Month of deployment |
|---|---|---|---|---|
| 1 | Pilot demonstration | 182 | 2, 5, NTF | October 2015 |
| 2 | RCT treatment group officers | 252 treatment group officers + 16 non-RCT officers | 1, 2, 3, 4, 6, 7 | March 2016 |
| 3 | Officers not involved in the RCT | 238 | 1, 2, 3, 4, 5, 6, 7 | June 2016 |
| 4 | RCT control group officers | 252 control group officers + 171 non-RCT officers | 1, 2, 3, 4, 5, 6, 7, NTF, others | December 2016 |

**Source:** Urban Institute.

**Note:** RCT = randomized controlled trial; NTF = Neighborhood Task Force.

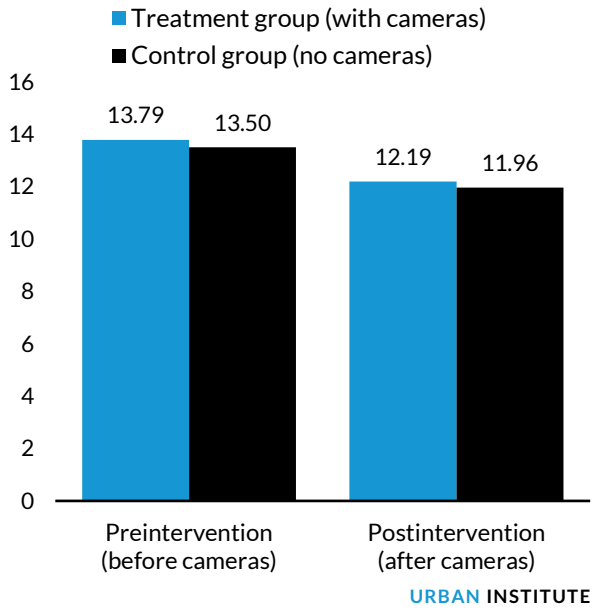
# Main Findings

The following results are specific to Urban's RCT, which was conducted between March 21 and December 20, 2016.

Figure 1 shows the changes in the average number of arrests per officer from the preintervention period to the postintervention period for the treatment and control groups. Treatment group officers (those wearing BWCs) and control group officers had a similar average number of arrests during the preintervention period (13.79 and 13.50). However, both groups experienced a similar decline in the average number of arrests between the pre- and postintervention periods. The DiD estimations presented in the appendix tell a similar story: there was a significant drop in overall arrests across both groups, but equipping officers with BWCs did not affect how many arrests officers made.

FIGURE 1

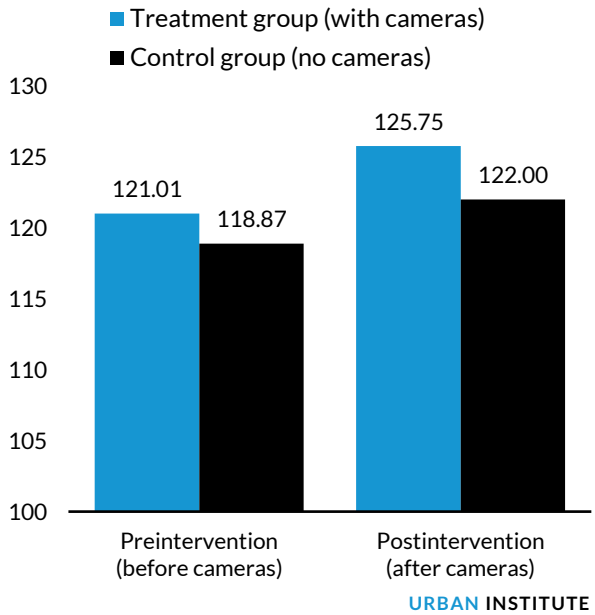
**Average Number of Arrests**




As detailed in figure 2, MPD officers on the whole conducted slightly more traffic stops in the nine months following implementation of the BWC program compared with the nine months previous. However, there was no significant difference between treatment group officers and control group officers.

FIGURE 2

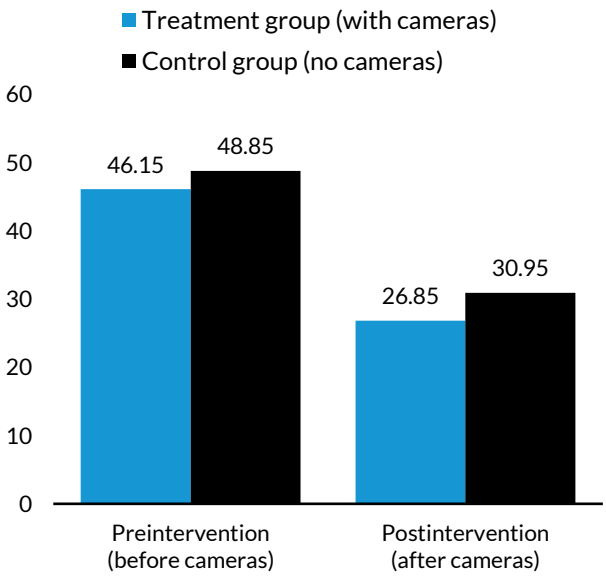
**Average Number of Traffic Stops**



As another measure of officer activity, figure 3 depicts the changes in subject stops by officers in the treatment and control groups. Subject stops are when an officer temporarily detains a person for questioning, investigation, and so on. Although officers in both groups conducted fewer subject stops on average after implementation of the BWC program, this drop was greater in the treatment group (46.15 stops compared with 26.85) than in the control group (48.85 stops compared with 30.95). This difference was statistically significant in the DiD estimations, indicating that BWC-equipped officers conducted approximately 8 percent fewer subject stops than officers without BWCs.

FIGURE 3

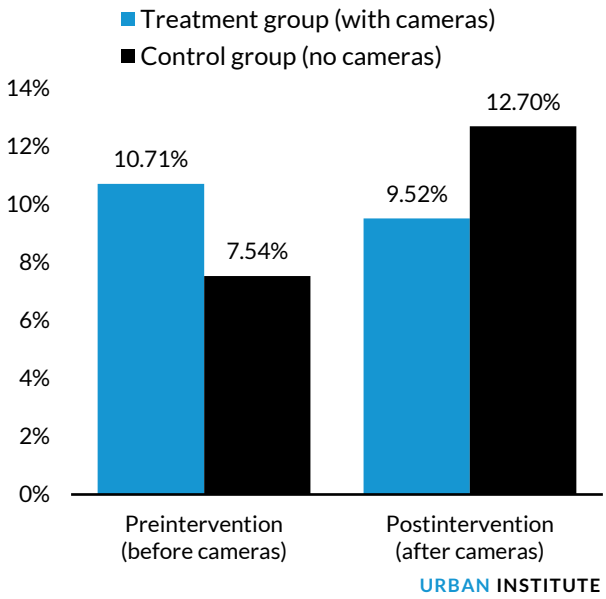
**Average Number of Subject Stops**




Community members may file a complaint against an MPD officer for several reasons, including issues regarding the officer's competence, integrity, or behavior during their encounter. To assess how BWCs may have affected complaints, we compared the share of officers in both groups who had at least one complaint lodged against them in the pre- or postintervention period (figure 4). We found that a greater share of officers assigned to the treatment group had at least one complaint against them in the nine months before implementation of the BWC program (10.71 percent) compared with officers in the control group (7.54 percent). However, after BWCs were deployed, these trends reversed. In the nine months after the program, fewer officers equipped with BWCs had a complaint against them than officers without BWCs (9.52 percent compared with 12.7 percent). The DiD estimations confirm that wearing a BWC reduced an officer's odds of receiving a complaint by more than 50 percent, though this difference only approached statistical significance.

FIGURE 4

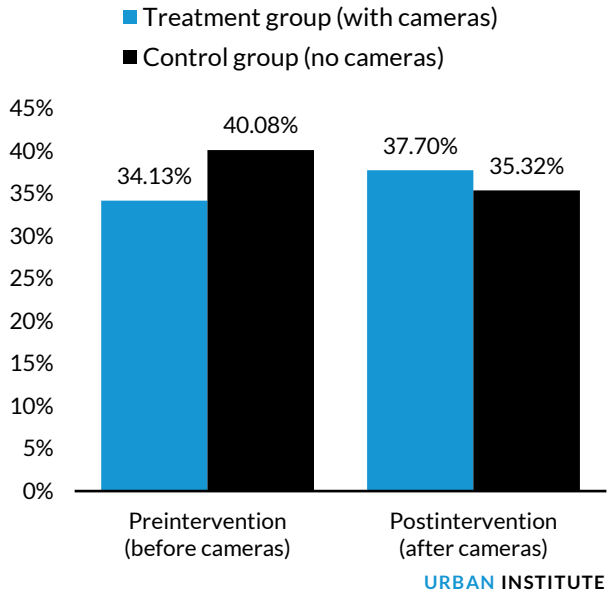
**Share of Officers with One or More Complaint**




Our final measure of officer behavior was use of force. We examined the share of officers who engaged in at least one use-of-force incident in the nine months before and after implementation of the BWC program (figure 5). The chart below shows a slight increase in the share of treatment group officers who engaged in use of force between the pre- and postintervention periods, compared with a slight decrease in the share of control group officers who did so. However, the results of the DiD analyses were not significant, indicating that BWCs had no impact on use-of-force incidents.

FIGURE 5

**Share of Officers Involved in One or More Use-of-Force Incident**



# Key Takeaways

There are several key takeaways from the findings presented above. First, **officers wearing BWCs conducted significantly fewer subject stops than officers without cameras.** However, patterns of arrests and traffics stops were similar across the two groups. This indicates that officers equipped with a BWC became more selective in who they approached and stopped during their patrol activities, but BWCs may have had no effect on whether officers stopped a vehicle or made an arrest.

The second takeaway from our study is that **BWCs appear to have reduced complaints against MPD officers**. However, it is not clear if complaints were reduced because BWCs had a "civilizing effect" during police-community interactions (White 2014) or because community members were more reluctant to lodge a complaint against an officer wearing a BWC. If it is the former, and BWCs lead to more peaceable police-community interactions, the MPD should explore ways to make BWCs even more noticeable to community members during public encounters. For example, the MPD could require its officers to tell people at the beginning of an interaction that they are recording audio and video (current departmental policy recommends, but does not mandate, that officers tell community members they are recording an encounter).

Finally, **BWCs had no effect on whether officers engaged in use of force.** Although this may be surprising to some, it is consistent with findings from other recent studies (Ariel et al. 2016a, 2016b; Yokum, Ravishankar, and Coppock 2017). Also, although BWCs did not reduce officers' use of force in our study, the MPD had experienced declines in the department's overall use of force in each year leading up to this study from 2013 to 2016 (Brandl 2017). Given this trend, our study may be documenting a preexisting increase in restraint regarding use of force. In other words, it is unlikely that the BWC program would significantly decrease use of force if officers were already following departmental policy and guidelines on appropriate use of force.

# Appendix. Randomized Controlled Trial Methodology

To randomly select the 504 officers who would be included in the study, the MPD and the research team conducted a stratified random sampling procedure, where the strata included the officer's race (non-Hispanic white or nonwhite) and shift (power, late, day, or early). The sample of officers from each district was matched to the proportion of officers that district represented in the department. For example, officers in district 1 represented 12 percent of the overall department, thus officers from district 1 made up 12 percent of the overall sample.

Officers from district 5 and the Neighborhood Task Force received body cameras during the first phase of deployment.[2] For the phase 2 rollout, Urban identified 854 officers assigned to district 1, 2, 3, 4, 6, or 7 who were active and eligible to receive a BWC. Reasons for ineligibility included promotions or transfers to limited-duty jobs or "desk jobs" (where a camera would not be needed) and planned family leave or other extended absence from the department during the study period. A randomly selected pool of 666 officers was identified as eligible for the study, and 504 were randomly assigned into the BWC-equipped treatment group or the business-as-usual control group (which was later given BWCs as part of phase 4). Additional cross-checks were conducted to confirm that all 504 officers were eligible for the study. A small handful of officers was identified as ineligible because of district reassignment after randomization but before being equipped with a BWC. These officers were replaced with similar officers from the remaining officers in the pool. The treatment group officers received their cameras around March 21, 2016, and the control group officers received their cameras around December 20, 2016, allowing for a nine-month study period.

Balance between groups on key officer characteristics was assessed using the Cohen's *d* effect-size statistics presented in table A.1. Balance was assessed between the treatment and control group officers from the experiment ($n$ = 504) and in comparison to the rest of the officers in the department, who were eligible to receive a BWC during phase 2 ($n$ = 854). Because the study period was nine months long, the month averages for the nine months before the March 2016 BWC implementation were aggregated for each officer. Outcomes reviewed are the number of arrests, number of proactive activities, number of citizen complaints, a dichotomous variable of officers with one or more citizen complaints, number of use-of-force incidents, and a dichotomous variable of officers with one or more use-of-force incidents. Imbalance would be exhibited by Cohen's *d* in excess of 0.20 and a $t$ in excess of 1.96. None of the tests found significant differences between the treatment and control groups, and only the difference in subject stops between the RCT group and the rest of the eligible officers was found significant. As such, we determined that these groupings were balanced in their composition.

TABLE A.1

**Group Balance Diagnostics**

| | Treatment versus Control (*n* = 504) | | | | RCT Group versus Department (*n* = 854) | | | |
|---|---|---|---|---|---|---|---|---|
| | Treatment group | Control group | | | RCT group | Other officers | | |
| | Mean (SD) | Mean (SD) | *t* | *d* | Mean (SD) | Mean (SD) | *t* | *d* |
| Arrests | 13.79 (11.53) | 13.49 (13.16) | -0.27 | -.02 | 13.64 (12.36) | 12.42 (13.80) | -1.36 | -.09 |
| Traffic stops | 121.01 (120.40) | 118.87 (121.42) | -0.20 | -.02 | 119.94 (120.80) | 126.93 (157.55) | 0.73 | .05 |
| Subject stops | 46.15 (53.05) | 48.85 (56.19) | 0.56 | .05 | 47.50 (54.61) | 56.77 (73.75) | 2.11* | .15 |
| Complaints (one or more) | 0.11 (0.31) | 0.08 (0.26) | -1.23 | -.11 | 0.09 (0.29) | 0.11 (0.31) | 0.70 | .05 |
| Use-of-force incidents (one or more) | 0.34 (0.48) | 0.40 (0.49) | 1.38 | .12 | 0.37 (0.48) | 0.37 (0.48) | 0.01 | .00 |

**Source:** Authors' calculations.

**Notes:** RCT = randomized controlled trial; SD = standard deviation.

* $p < .05$; ** $p < .01$; *** $p < .001$

## Difference-in-Differences

We used difference-in-differences (DiD) to estimate the difference between a treatment officer's postintervention and preintervention outcomes, relative to the same difference for the control officers in the experiment. As we were dealing with both counts (aggregated to the nine-month period) and dichotomous outcome variables, we used Poisson and logistic regression models for the DiD analysis. The models we used included a regressor *group*, which was a dummy variable identifying whether an individual officer was in the treatment group (1) or not (0). The regressor *period* was included as a dummy variable for whether the total count of the outcome per officer was during the intervention period (1) or the preintervention period (0). The product of the group dummy with the period dummy, represented by a third regressor coefficient, was the DiD estimate of the effect of BWCs on the outcome. We used the POISSON and LOGISTIC commands in Stata 15.1 to provide incidence rate ratios and odds ratios of the DiD described above. Table A.2 presents the incidence rate ratios and odds ratios for the group, period, and group x period predictors for each model.

TABLE A.2

**Difference-in-Differences Results**

| | Incident Rate Ratios | | | Odds Ratios | |
|---|---|---|---|---|---|
| | Arrests | Traffic stops | Subject stops | Citizen complaints | Use-of-force incidents |
| Group | 1.02 | 1.02** | 0.94*** | 1.47 | 0.77 |
| Period | 0.89*** | 1.03* | 0.63*** | 1.78† | 0.82 |
| Group x period | 1.00 | 1.01 | 0.92*** | 0.49† | 1.43 |
| Constant | 13.50*** | 118.87*** | 48.85*** | 0.08*** | 0.67** |
| $Chi^2$ | 49.63*** | 51.24*** | 2399.10*** | 3.92** | 2.26** |

**Source:** Authors' calculations.

† $p < .10$, * $p < .05$; ** $p < .01$; *** $p < .001$

# Notes

[1] The Milwaukee Journal Sentinel outlined the history of fatal interactions with Milwaukee police in a 2014 article. "Dontre Hamilton case repeats pattern of deaths, calls for reform," *Milwaukee Journal Sentinel*, December 22, 2014, http://archive.jsonline.com/news/crime/dontre-hamilton-historical-timeline-286608781.html/.

[2] Neighborhood Task Force officers operate outside of district boundaries and are directed to patrol areas with high crime rates.

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