



Training Advisory Council Report

Patterns in Portland Police Bureau Force Data Summary Reports

July 8, 2020



Table of Contents

1.	TAC Participants	3
2.	High Level Summary.....	3
3.	Recommendations	4
4.	Introduction	5
5.	Methodology.....	5
6.	General 2019 Use of Force Patterns	6
7.	2019 Use of Force Patterns in Regard to Race	13
8.	Analysis of Force Experienced by the Black Community	17
9.	The Effect of Disparities in Force and Custodies on Communities....	24
10.	Use of Deadly Force.....	27
11.	Officer Data and the Repeated Use of Force	29
12.	Analysis of Central Precinct Force Interactions	32
13.	Glossary of Reported Force Types	37
14.	References.....	39
15.	Appendix	40

PATTERNS IN PPB FORCE DATA SUMMARY REPORTS

July 8, 2020

1. TAC Participants

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2. High Level Summary

This report was prepared by the Training Advisory Council, it is an analysis of Portland Police Bureau Force Data Summary reports for 2019 intended to ascertain the existence of any patterns or trends that may be of interest to the Training Advisory Council in the carrying out of its work advising the bureau.

The main findings of this report include:

- Data comparisons suggest that several types of force have dropped dramatically over the past decade, with several types dropping 75% or more; including Control Holds With Injury, Strikes/Kicks, Aerosol Restraint, CEW, and Pointing of Firearm. (Part 6)
- Subjects reported to be Transient accounted for half of all subjects who experienced force in 2019. It should be noted that Transient includes individuals who refused to give an address to police. (Part 6)
- Men and women receive the same amount of force relative to custodies, but men tend to receive higher levels of force and are more likely to be reported to be armed even though their rate of actually being armed is similar to women. (Part 6)
- Black subjects experience force at a rate of 44.8 events per 1,000 custodies, significantly higher than the rate of 30.6 events per 1,000 custodies experienced by White subjects. (Part 7)
- Resisted Handcuffing and Control Against Resistance are the force types with the most significant disparities between Black subjects and White subjects. (Part 7)
- This is the first year since data has been collected where the Black group experienced the force type Pointing of Firearm at similar rates as the White group. In previous years the Black group experienced significantly higher levels of this type of force. (Part 7)
- Black subjects who are between the ages of 20-29 are more likely to experience force than their White counterparts. Black subjects are more likely to experience force involving 3 or more officers. These officers are more likely to have been involved in only one force event in 2019. (Part 8)
- The Black community has a custody rate of 140.6 per 1,000 population, significantly higher than the White population's rate of 34.0 per 1,000 population. Anecdotal data suggests that relative socio-economic factors, biases of the general population, and police biases all play a role. (Part 9)
- The disparity in custody rates significantly amplifies the disparity in uses of force per custody for the Black community compared to the White population. The disparity in custody rates is the main driver in disparities in force relative to population. (Part 9)

- The racial disparity in custody rates results in similar disparities throughout the justice system. (Part 9)
- Perceptions of these disparities are enhanced by the small size and relative connectiveness of the Black community. (Part 9)
- The use of deadly force has remained steady over the past decade despite the significant drop in other types of force over the same time period. (Part 10)
- While deadly force incidents per custody are similar for the White and Black groups, the disparity in custodies per population significantly increases the likelihood of a Black individual being involved in a deadly force incident compared to a White individual. (Part 10)
- In 2019, most officers in the bureau who were involved in force interactions were involved in 5 or fewer interactions. (Part 11)
- Officer data shows that in 2019, a small group of 23 officers were responsible for 18% of all force interactions. Looking at just Central Precinct, 13 officers were responsible for 26% of all force interactions in the Central Precinct. (Part 11)
- A review of EIS thresholds regarding force suggests that thresholds are either set too broadly or insufficient to detect issues regarding individuals with unusually high numbers of force interactions. (Part 11)
- Central Precinct data suggests the 13 officers responsible for 26% of precinct force interactions tend to be newer officers who work during the day. Subjects of force by these officers are more likely to be women and/or transient compared to force interactions involving other officers in the precinct. (Part 12)

3. Recommendations

The following recommendations regarding data collection and utilization are being made with regards to this report:

- The PPB needs to include information regarding categories of officer initiated calls in addition to its data regarding citizen initiated (dispatched) calls. (Section 6)
- The Use of Force raw data should include whether a use of force incident was the result of an officer-initiated call or a citizen-initiated call. This data was available until sometime after July of 2019, but has since been removed. (Section 6)
- Further data regarding those reporting as transient needs to be collected, notably whether or not a subject refused to provide their address. (Section 6)
- Use of deadly force data should include perceptions of secondary attributes; such as a subject being perceived as undergoing a mental health crisis, reported as transient, and perceived as being under the influence of drugs/alcohol; similar to reporting for other uses of force. (Section 10)
- The EIS's Shift Force Ratio needs to be modified to either use the median ratio of the shift or the average of the shift not including the data for the officer being compared to the shift. (Section 11)
- The EIS needs to include a threshold which can identify when multiple officers in a shift are utilizing large amounts of force. Numerous officers utilizing large amounts of force can skew the Shift Force Ratio so that such activity may go unnoticed. (Section 11)
- The EIS's Force Ratio and Force Count thresholds need to be re-examined. The current thresholds are above the bureau wide average for each measurement by a factor of nearly 7 and 6 respectively. (Section 11)

4. Introduction

The purpose of this report is to identify patterns in the Portland Police Bureau (PPB) Force Summary Reports deemed by the Training Advisory Council (TAC) to be of interest and/or concern. The purpose of this report is to not speculate on the causes or reasons for these areas of interest, but to only bring them to the attention of the PPB and the public so that they may be explored more fully.

Created in 2012 by city resolution 36912, the TAC is a citizens' group with the mission of providing ongoing advice to the Chief of Police and the PPB Training Division in order to continuously improve training standards, practices, and outcomes through the examination of training philosophy, content, delivery, tactics, policy, equipment, and facilities.

In addition, as according to Section 86 of the Settlement Agreement between the City of Portland and the Department of Justice, the TAC is tasked with identifying and reporting to the Chief of Police any patterns in the Portland Police Bureau's use of force.

The TAC would like to take this opportunity to recognize that interactions between the police and community members involve both parties, both of whom play a role in events which result in the use of force. However, as the trained professionals in these situations, granted powers and responsibilities by their position, the greater onus regarding the avoidance of the use of force lies with the members of the Portland Police Bureau.

It is strongly recommended that before reviewing this report, the TAC report entitled "Overview of Police Work in Portland" be reviewed to provide needed context. This report can be found here: <https://www.portlandoregon.gov/police/article/731481>

5. Methodology

This report uses summarized raw data from the PPB Use of Force open data website: <https://www.portlandoregon.gov/police/76875>, as well as data from other PPB sources, other official data sources, and the TAC's 2018 Patterns in the Use of Force report (see References section for links to data sources). Some data pre-dates 2018, to which it should be noted that use of force comparisons to pre-2018 data is limited due to the addition of new types of force in Quarter 3 of 2017. Instances where this becomes a specific issue are detailed in the relevant parts of this report.

Statistical testing to identify significant differences between portions of the dataset was carried out using a Z-Score test with a 95% confidence interval and a two tailed hypothesis. The Z-Score was used to calculate a P-Value, which if under 0.05, indicates that one proportion was statistically different from the other. In layman terms, the Z-Score statistically highlights when the differences between two groups cannot be explained by random chance, indicating a statistically significant pattern over time. The Z-Score is utilized because it allows for the comparison of two separate populations, taking into account differences in sample size. Further information on Z-Scores can be seen at: <https://www.khanacademy.org/math/ap-statistics/two-sample-inference/two-sample-z-test-proportions/v/hypothesis-test-for-difference-in-proportions>.

Regarding the use of statistics, such as the Z-Score, in measuring statistical significance, it must be noted that it is important to not view data purely in regards to simple comparisons of relative percentages or ratios. Other factors, such as the relative number of datapoints for each population, must be taken into account, hence why we use statistics.

Important Note:

Statistical analysis of this type is only meant to highlight areas where significant differences in relative numbers exist. It is not meant to identify the actual cause of such differences existing. It is only meant to highlight areas that need to be looked further into. The data being analyzed is made up of thousands of individual reports, each containing unique narratives and tens of thousands of individual data points, each possibly relevant to gaining a better understanding of complex situations. Making assumptions based solely upon the statistical analysis of summarized data is not a valid form of in-depth analysis.

Furthermore, it should be noted, that the examination of any individual factors thought to affect the application of the use of force is at best incomplete, due to similar measurements of those factors not being available for incidents where force does not occur.

6. General 2019 Use of Force Patterns

The following information in this section is a general analysis of areas of interest within the 2019 Use of Force data and prior year Force Data Summary reports when deemed as needed to provide further context. The following is not meant to represent a full analysis of the data, but rather an examination of certain areas of interest. A full analysis by the TAC is not possible due to volunteer nature of this report's preparation.

Use of Force Over Time:

The PPB has publicly available summaries and data regarding its use of force back to 2015. While unfortunately it is not possible to compare overall force over this period of time, due to a significant increase in the types of forces reported in Quarter 3 of 2017, overall the report does show a significant drop in several types of force over the past five years; including dramatic drops in Pointing of Firearm and Control Holds With Injury, as well as significant drops in the use of CEW and Aerosol Restraint. (Table 1).

It is well worth noting that this decline over the past five years is part of a broader decline in PPB use of force over the past decade. Though not directly comparable due to differences in how the data was collected, use of force analysis from 2008 (see References section) suggests that over the past ten years Control Holds With Injury have declined 97%, Strikes/Kicks 78%, Aerosol Restraint 86%, CEW 87%, and Pointing of Firearm 93%.

Overall force use remains a relatively small part of overall police work, accounting for 3.4% of custodies and 0.2% of calls for service.

Community vs. Officer Initiated Calls for Service

Citizen initiated calls are those that citizens call into dispatch. Officer initiated calls are incidents where an officer takes action based upon independent observations or information obtained from locations other than dispatch.

A review of calls that resulted in the use of force show that in most years (with the exception of 2015) there has been no statistical difference between uses of force resulting from calls initiated by citizens and those initiated by officers. (Table 2)

Table 1: Portland Police Bureau Data Over Time

Portland Police Bureau Data Over Time					
	2015	2016	2017	2018	2019
Total Calls	380,738	344,879	351,910	360,001	363,447
Citizen Initiated Calls	249,722	247,343	251,404	260,822	261,070
Officer Initiated Calls	131,016	97,536	100,506	99,179	102,377
Total Crimes Reported	N/A	57,788	60,471	61,251	59,917
Person Crimes	N/A	8,244	8,897	9,575	9,930
Property Crimes	N/A	46,985	49,118	49,027	47,443
Society Crimes	N/A	2,559	2,456	2,649	2,544
Custodies	27,291	24,304	22,857	24,396	23,504
Subjects of Force (1)	775 (1)	755 (1)	793 (1)	930	803
Holds With Injury	27	19	13	1	2
Takedown - Old (2)	310	303			
Takedown - New				175	236
Controlled Takedown				126	94
Strikes / Kicks	90	67	49	38	62
Impact Weapon - Old (2)	12	6			
Impact Weapon - Strike				0	1
Less Lethal				16	11
Baton-Nonstrike				3	2
Maximum Restraint (3)	29				
Aerosol Restraint	29	23	18	18	12
CEW	72	94	58	40	52
K-9 Bite	16	12	10	26	17
Pointing of Firearm	390	359	326	153	76
Resisted Handcuffing				362	356
Hobble Restraint				26	42
Controlled Against Resistance				448	427
PIT				19	12
Vehicle Ramming				1	2
Box-in				49	32
(1) Total not comparable year to year due to further types of force being added midway in 2017.					
(2) Definitions changed when new types of force added in Quarter 3 of 2017					
(3) Removed from usage in early 2015					

Table 2: Comparison of citizen initiated and officer initiated calls resulting in force

Comparison of Force from Citizen Initiated & Officer Initiated Calls					
	2015	2016	2017	2018	2019
Citizen Initiated Calls	249,722	247,343	251,404	260,822	261,070
Officer Initiated Calls	131,016	97,536	100,506	99,179	102,377
Citizen Initiated Calls Resulting in Force	513	488	511	662	560
Officer Initiated Calls Resulting in Force	174	196	198	226	213
% Citizen Initiated Calls Resulting in Force	0.21%	0.20%	0.20%	0.25%	0.21%
% Officer Initiated Calls Resulting in Force	0.13%	0.20%	0.20%	0.23%	0.21%
Z-Score	5.0161	-0.2173	0.3738	1.4019	0.3795
P-Value	0.00001	0.82588	0.71138	0.16152	0.70394
*Highlighted indicates statistical significance at 95% confidence interval					

Categories of Calls Resulting in Force

Police activity is driven by calls for service. These calls can either be dispatched (citizen initiated), largely through the 911 service or via police non-emergency contact options; and self-initiated, which are actions taken by officers based upon independent observation and information obtained from locations other than dispatch, following up on previous calls, and as directed by superiors. Overall, dispatched calls are more common, accounting for 72% of the calls for service in 2019.

Calls are divided into call categories based upon the nature of the call. These call categories are then further divided into call types which include additional information such as a more detailed description of the situation, whether the situation is active or cold, call priority level, and whether or not a weapon has been reported. Call categories are also combined into call groups. At times, the category and type assigned to a call can change as more information is added, resulting in each call being assigned an initial and final category and type. Use of force data utilizes initial call type given this is most likely to affect how an officer perceives a situation.

Unfortunately, significant analysis regarding the use of force in 2019 regarding call origin and call category cannot be done because use of force data no longer includes call of origin information (removed from the dataset sometime between July 2018 and June 2019) and the bureau only provides overall call category information for dispatched calls, not officer initiated calls.

The TAC's 2018 report regarding the use of force does include some analysis in this area, since more data was being made available at that time.

Types of Force Applied to Subjects Total and to Those Exhibiting Certain Attributes

The PPB collects data regarding subjects of the use of force based upon an officer's perception prior to the force event taking place. In addition to subjects' gender and race, discussed in their own sections in this document, these attributes include a subject being reported to be armed, a subject being perceived to be armed, a subject being perceived to be undergoing a mental health crisis, and a subject being perceived as under the influence of drugs and/or alcohol.

In addition to the perceived subject attributes, data is also collected afterwards on whether or not the subject is transient. However, it should be noted that in this case transient includes not only the houseless or temporarily housed community, but also anyone who refuses to divulge their address to the officers. As a result, data regarding the transient attribute may be inflated above what it would be if it was just used to measure members of the houseless community.

In order to ascertain possible differences in force used based upon the presence of each attribute, the relative share of the number of subjects experiencing each type of force, relative to the number of subjects experiencing any type of force, was compared for subjects exhibiting the attribute and not exhibiting the attribute. The results can be seen in Table 3 below, while further data used for the analysis and the Z-Score and P-Values can be found in the Appendix in Tables A1, A2, and A3.

Overall Force Usage

According to the data, in 2019 a total of 796 subjects experienced some type of force, down 14% compared to 2018. The most common types of force experienced by subjects in 2019 were Control Against Resistance (54% of subjects experienced this type of force), Resisted Handcuffing (46%), Takedown (30%), Controlled Takedown (12%), Pointing of Firearm (10%).

This is similar to 2018, with the exception of Pointing of Firearm declining due to reduced usage and Takedown increasing.

Subjects Reported to be Armed

In 2019, 248 subjects who experienced force were reported to be armed, down 12%, and 126 were actually armed, down 19%. Of the subjects experiencing force, 31% are reported to be armed when officers are dispatched to the scene. However, only 16% are actually armed, suggesting that 49% of reports of a subject being armed are incorrect. This is consistent with findings in 2018. This is concerning given that officers are more likely to utilize more intensive types of force based upon whether or not they believe a subject to be armed.

Subjects who were reported to be armed experienced statistically significant higher levels of Holds With Injury, Impact Weapon – Strike, Less Lethal, Baton – Nonstrike, CEW, and Pointing of Firearm compared to those not reported to be armed. They experienced significantly lower levels of Takedown, Resisted Handcuffing, and Controlled Against Resistance. This result highlights officers' utilization of types of force which maintain a relatively safe distance when interacting with subjects believed to be armed.

Subjects Perceived to be Undergoing a Mental Health Crisis

In 2019, 131 subjects perceived to be undergoing a mental health crisis experienced some type of force, a 6% increase compared to 2018. The data shows that 16% of the subjects who experienced force in 2019 were perceived to be in a mental health crisis, a proportion that has remained largely unchanged over the past five years. The most common types of force utilized were Controlled Against Resistance (72%), Resisted Handcuffing (42%), Takedown (20%), and Controlled Takedown (15%).

Subjects perceived to be undergoing a mental health crisis experienced statistically significant higher levels of Controlled Against Resistance; and significantly lower levels of Takedown, Strikes/Kicks, and Pointing of Firearm. Significant drops in the usage of certain force types have been noted over the past five years; notably a 100% drop in Holds With Injury, Strikes/Kicks 94%, Less Lethal 70%, Aerosol Restraint 86%, CEW 47%, and Pointing of Firearm 80%.

Subjects Reported to be Transient

In 2019, 417 subjects reported to be transient experienced some type of force, a 9% drop compared to last 2018. In total, 52% of subjects experiencing force were reported to be transient, in line with findings regarding custodies, though it should be noted that with both reported force and custodies transient includes those refusing to report their home address. The exact effect of this factor is not known. The proportion of subjects experiencing force reported to be transient has grown considerably from five years ago when it was 38%. The most common types of force utilized were Controlled Against Resistance (51%), Resisted Handcuffing (47%), Takedown (33%), and Controlled Takedown (12%).

Subjects reported to be transient experienced statistically significant higher levels of Takedown compared those not reported to be transient. Despite increases in the proportion of subjects experiencing being force reported to be transient, significant drops in the usage of certain types of force have been noted over the past five years. These include a 90% drop in Holds With Injuries, Less Lethal 80%, Aerosol Restraint 57%, and Pointing of Firearm 70%. Strikes/Kicks had risen over the previous four years, but dropped back to levels seen five years ago in 2019.

Subjects Perceived to be Under the Influence of Drugs/Alcohol

In 2019, 353 subjects perceived to be under the influence of drugs/alcohol experienced some type of force, a 22% decrease compared to 2018. In total, 44% of subjects experiencing force were perceived to be under the influence of drugs/alcohol, up slightly from five years ago when it was 40%. The most common types of force utilized were Controlled Against Resistance (65%), Resisted Handcuffing (50%), Takedown (24%), and Controlled Takedown (16%).

Subjects perceived to be under the influence of drugs/alcohol experienced statistically significant higher levels of Controlled Takedown, Aerosol Restraint, Resisted Handcuffing, and Controlled Against Resistance; and significantly lower levels of Takedown and Pointing of Firearm. Significant drops in the usage of certain types of force have been noted; including Holds With Injury (94%), Strikes/Kicks (56%), Less Lethal (78%), and Pointing of Firearm (83%).

Table 3: 2019 subjects of force identified by attribute

2019 Subjects of Force Identified by Attribute							
	Overall Subjects	No Attributes	Reported Armed	Actually Armed	Mental Crisis	Transient (1)	Drugs/Alcohol
Total Subjects of Force	796	106	248	126	131	412	353
Holds With Injury	2	0	2	1	0	1	1
Takedown	238	40	54	27	26	137	83
Controlled Takedown	94	7	31	15	19	50	56
Strikes/Kicks	59	8	12	6	1	37	23
Impact Weapon - strike	2	0	2	1	0	2	1
Less Lethal	11	0	11	7	3	5	6
Baton-Nonstrike	2	0	2	2	0	1	2
Aerosol Restraint	12	2	4	2	1	6	9
CEW	52	3	31	18	8	30	29
K9 Bite	17	3	8	3	1	11	4
Pointing of Firearm	76	6	59	28	5	34	17
Resisted Handcuffing	355	42	97	54	55	193	178
Hobble Restraint	42	2	12	10	7	25	28
Controlled Against Resistance	427	47	109	56	94	212	229
PIT	12	5	4	0	0	4	0
Vehicle Ramming	2	0	2	0	0	1	0
Box-in	32	7	8	1	0	14	9
Rate of each use of force per secondary attribute statistically compared to the attribute not being present.							
Yellow indicates use of force statistically higher with presence of attribute than without it.							
Orange indicates use of force statistically lower with presence of attribute than without it.							
(1) Transient includes members of the houseless community and subjects who refuse to provide an address.							

It should be noted that many subjects exhibit multiple attributes during an incident, which can undoubtedly affect the above analysis shown in Table 3. For each attribute, the majority of subjects exhibiting that attribute also attribute one or more additional attributes. For instance, nearly a third of subjects reported to be transient or perceived to be under the influence of drugs/alcohol are reported to be armed and over 40% of those perceived to be undergoing a mental health crisis are reported to be armed. Nearly half of subjects perceived to be undergoing a mental health crisis are also perceived to be under the influence of drugs/alcohol. (Table 4)

Table 4: Presence of second attribute with an attribute group

Presence of Second Attribute Within an Attribute Group						
	No Others	Reported Armed	Armed	Mental Crisis	Transient	Drugs/Alcohol
Reported Armed	21%		51%	22%	50%	46%
Armed	16%	100%		26%	50%	52%
Mental Crisis	18%	41%	25%		39%	47%
Transient	39%	30%	15%	12%		41%
Drugs/Alcohol	31%	33%	19%	18%	48%	

Use of Force and Gender

Data comparing subjects of use of force to custody rates were statistically tested to identify whether or not any statistically significant differences existed based upon gender. Custody rates were utilized since the majority (over 80%) of uses of force involve people taken into custody, providing a benchmark to account for differing levels of interaction with the police. The data for these tests can be seen in Table 5 below.

In 2019, 593 Males experienced some type of force, down 17% compared to 2018, and 202 Females experienced some type of force, down 6%. A calculated 3.4% of Males taken into custody experienced some type of force, a drop of 13%, and 3.4% of Females taken into custody experienced some type of force, a drop of 4%.

Table 5: Subjects of force compared by gender

Subjects of Force Comparison by Gender				
	Male	Female	Z-Score	P-Value
Custodies	17,526	5,938		
Subjects of Force	593	202	-0.067	0.944
Holds With Injury	2	0	0.823	0.412
Takedown	200	38	3.331	0.001
Controlled Takedown	77	17	1.614	0.107
Strikes / Kicks	52	7	2.378	0.017
Impact Weapon - strike	2	0	0.823	0.412
Less Lethal	10	1	1.237	0.215
Baton-Nonstrike	2	0	0.823	0.412
Aerosol Restraint	11	1	1.353	0.177
CEW	47	5	2.606	0.009
K-9 Bite	16	1	1.843	0.066
Pointing of Firearm	73	3	4.290	0.000
Resisted Handcuffing	245	109	-2.391	0.017
Hobble Restraint	33	9	0.579	0.562
Controlled Against Resistance	295	131	-2.608	0.009
PIT	9	3	0.025	0.984
Vehicle Ramming	2	0	0.823	0.412
Box-in	27	5	1.261	0.208
Yellow indicates force used statistically higher on males				
Orange indicates force used statistically higher on females				

Analysis shows that there is no statistical difference between the overall rate of use of force compared to the custody rate between genders. However, further analysis shows that there are significant differences for individual use of force types. For example, Males are statistically more likely to experience Takedown, Strikes/Kicks, CEW, and Pointing of Firearm compared to

Females; while Females are statistically more likely to experience Resisted Handcuffing and Controlled Against Resistance.

Looking over the past five years reveals that these differences in the types of force used dependent upon gender have been statistically significant for as long as data is available, with the exception of Females and Resisted Handcuffing which is new this year. (Table 6)

Table 6: Subjects of force comparison by gender over time

Subjects of Force Comparison by Gender Over Time					
	2015	2016	2017	2018	2019
Male Custody	20,464	18,368	15,945	18,313	17,526
Female Custody	6,704	5,896	5,579	6,037	5,938
Takedown					
Male	N/A	N/A	N/A	151	200
Female	N/A	N/A	N/A	24	36
Z-Score	N/A	N/A	N/A	3.406	3.331
P-Value	N/A	N/A	N/A	0.001	0.001
Strikes/Kicks					
Male	84	61	47	35	52
Female	6	6	2	3	7
Z-Score	3.970	2.933	3.281	2.414	2.378
P-Value	0.000	0.003	0.001	0.016	0.017
CEW					
Male	71	90	53	37	47
Female	1	4	5	3	5
Z-Score	4.589	4.540	3.011	2.535	2.606
P-Value	0.000	0.000	0.003	0.011	0.009
Pointing of Firearm					
Male	358	306	284	140	73
Female	32	51	42	13	3
Z-Score	7.600	4.444	5.413	4.683	4.290
P-Value	0.000	0.000	0.000	0.000	0.000
Resisted Handcuffing					
Male	N/A	N/A	N/A	259	244
Female	N/A	N/A	N/A	103	111
Z-Score	N/A	N/A	N/A	-1.625	-2.603
P-Value	N/A	N/A	N/A	0.105	0.009
Control Against Resistance					
Male	N/A	N/A	N/A	317	293
Female	N/A	N/A	N/A	131	133
Z-Score	N/A	N/A	N/A	-2.201	-2.833
P-Value	N/A	N/A	N/A	0.028	0.005
Yellow indicates force used statistically higher on males					
Orange indicates force used statistically higher on females					

Looking at gender differences in the perception/reporting of secondary attributes shows that Males are statistically more likely to be reported as armed even though there is not a statistical difference based on gender regarding actually being armed. This is concerning given that as shown by earlier data (Table 3), the types of force utilized by the PPB is influenced by reports of a subject being armed. This effect is further worsened by the fact that Males are also statistically less likely to be perceived as undergoing a mental health crisis. The combination of these two factors likely plays a role in the higher and more severe usages of force on Males compared to Females. (Table 7)

Table 7: Attributes of subjects of force compared by gender

Attributes of Subject of Force Comparison by Gender				
	Male	Female	Z-Score	P-Value
Subjects of Force	593	202		
Reported Armed	202	46	2.992	0.003
Armed	99	27	1.119	0.263
Mental Crisis	75	56	-4.988	0.000
Transient (1)	312	100	0.764	0.447
Drugs/Alcohol	256	96	-1.076	0.280
Yellow indicates attribute statistically more common for males.				
Orange indicates attribute statistically more common for females.				
(1) Transient includes subjects who refused to provide an address.				

7. 2019 Use of Force Patterns in Regard to Race

The following information in this section is an analysis of areas of interest regarding race within the 2019 Use of Force data and prior year Force Data Summary reports when deemed as needed to provide further context. The following is not meant to represent a full analysis of the data, but rather an examination of certain areas of interest. A full analysis by the TAC is not possible due to volunteer nature of this report's preparation.

Comparison of Total Force and Force Type Used per Subject of Force

Analysis comparing use of force rates to custody rates was carried out to identify if any racial group received a statistically significant higher proportion of overall force or specific types of force compared to the White group in 2019. Custody rates were utilized since the majority (over 80%) of uses of force involve people taken into custody, providing a benchmark to account for differing levels of interaction with the police. Further analysis regarding the effects of differing custody rates are addressed in their own section. Use of force data and the results of the analysis can be seen in Table 8 below. Z-Scores and P-Values for the analysis can be seen in the Appendix in Tables A4 and A5.

To help identify possible data aberrations resulting from the small number of samples, multi-year analysis was also carried out for groups found to have numerous statistically significant differences between them and the White group. The period analyzed was limited by data availability to the period of 2015 through 2019. Due to significant changes being made in how force data was collected measured in Quarter 3 of 2017, individual force type analysis could only be carried for Strikes/Kicks, Aerosol Restraint, and Pointing of Firearm for that year.

Analysis was also carried out to examine whether or not the application of reported and perceived secondary attributes (reported to be armed, perceived to be experiencing a mental health crisis, etc.) differed based upon race. The portion of subjects in each group reported or perceived to be exhibiting each attribute was compared to the White group. The results of the analysis can be seen in Table 9, with Z-Scores and P-Values available in the Appendix Tables A6 and A7.

Table 8: 2019 custody rates and force used per subject by type of force

2019 Force Used Per Subject by Race							
	Total	White	Black	Hispanic	Nat Am	Asian	Unknown
Custodies	23,504	15,338	5,175	1,673	490	673	155
Subjects of Force	796	470	232	64	13	14	3
Holds With Injury	2	2	0	0	0	0	0
Takedown	238	145	62	24	4	2	1
Controlled Takedown	94	62	27	3	0	1	1
Strikes / Kicks	59	34	16	8	1	0	0
Impact Weapon - Strike	2	1	1	0	0	0	0
Less Lethal	11	4	6	0	1	0	0
Baton-Nonstrike	2	2	0	0	0	0	0
Aerosol Restraint	12	7	3	2	0	0	0
CEW	52	31	16	4	0	1	0
K-9 Bite	17	15	2	0	0	0	0
Pointing of Firearm	76	44	21	8	0	3	0
Resisted Handcuffing	355	198	118	26	6	5	2
Hobble Restraint	42	17	21	2	1	0	1
Controlled Against Resistance	427	238	136	33	8	9	3
PIT	12	8	3	1	0	0	0
Vehicle Ramming	2	2	0	0	0	0	0
Box-in	32	22	6	3	1	0	0
Types of force do not add up to Subjects of Force due to multiple types of force being used on the same subject.							
Statistical analysis carried out on force per custody rates of each group compared to the White group.							
Yellow indicates that a group experienced a statistically higher rate of that type of force per custody.							

Table 9: Attributes of subjects of force by race compared to White group

Attributes of Subject of Force Comparison by Race					
	White	Black	Hispanic	Nat Am	Asian
Subjects of Force	470	232	64	13	14
Reported Armed	154	70	14	5	4
Armed	83	30	6	3	3
Mental Crisis	80	38	7	4	2
Transient (1)	264	120	18	5	5
Drugs/Alcohol	214	92	34	5	5
Yellow indicates attribute statistically more common for other group.					
Orange indicates attribute statistically more common for White group.					
(1) Transient includes subjects who refused to provide an address.					

Use of Force on Members of the Black Community

Review of the analysis shows a statistically significant difference between the overall rate of force experienced by subjects perceived to be in the Black group compared to those perceived to be in the White group, consistent with the findings of the TAC's 2018 report. Members of the Black group experienced force at a rate of 44.8 subjects per 1,000 custodies, 46% higher than the White group rate of 30.6 subjects per 1,000 custodies. It is as well notable that though overall use of force has declined, as well as the number of people experiencing force, it has declined at a higher rate for the White group, resulting in the force rate for the Black group compared to the White group expanding from the difference of 37% seen in 2018.

Breaking down the data by specific force types shows that the Black group receives a statistically significant higher rate of force for Less Lethal, Resisted Handcuffing, Hobble Restraint, and Controlled Against Resistance. Resisted Handcuffing (51% of subjects) and

Controlled Against Resistance (59% of subjects) are the types of force most commonly experienced by Black subjects, similar to patterns seen with White subjects.

Looking at the data over time shows that Black subjects taken into custody have experienced a statistically higher level of force compared to White subjects for the past five years. Historically this has largely been driven by Pointing of Firearm. However, in 2019 there was no statistically significant difference for that force type, largely due to overall decline in the usage of that force type. Since their introduction as force types in Quarter 3 of 2017, Resisted Handcuffing and Controlled Against Resistance have consistently been applied at a statistically higher level to Black subjects compared to White subjects. This data can be seen below in Table 10, with further data in Appendix Tables A8, A9, and A10.

Examining the data regarding the presence of secondary attributes shows that subjects who experience force who are perceived to be Black are reported to be armed, actually armed, perceived to be undergoing a mental health crisis, reported to be transient, and perceived to be under the influence of drugs/alcohol at the same rates as subjects perceived to be White. This is a change from 2018, when the Black group was statistically less likely to be perceived as under the influence of drugs/alcohol and perceived as undergoing a mental health crisis than the White group.

Table 10: Multi-year analysis for overall force for Black group

Multi-Year Analysis for Overall Force for Black Group					
	2015	2016	2017	2018	2019
Custody	5,740	5,004	4,842	5,548	5,175
Subjects of Force	211	227	222	259	232
Holds With Injury	7	8	5	0	0
Takedown - Old (1)	75	72			
Takedown - New				41	62
Controlled Takedown				38	27
Strikes / Kicks	18	14	7	6	16
Impact Weapon - Old (1)	1	1			
Impact Weapon - Strike				0	1
Less Lethal				2	6
Baton-Nonstrike				0	0
Maximum Restraint (2)	1				
Aerosol Restraint	5	7	4	2	3
CEW	16	24	16	11	16
K-9 Bite	4	1	0	5	2
Pointing of Firearm	122	125	105	51	21
Resisted Handcuffing				116	118
Hobble Restraint				5	21
Controlled Against Resistance				119	136
PIT				9	3
Vehicle Ramming				0	0
Box-in				17	6
(1) Definitions changed when new types of force added in Quarter 3 of 2017					
(2) Removed from usage in early 2015					
Yellow indicates Black group experienced a statistically higher rate of force					

Use of Force on Members of the Hispanic Community

Review of the analysis does not show a statistically significant difference between the overall rate of force experienced by subjects perceived to be in the Hispanic group compared to those

perceived to be in the White group, breaking the trend seen over the past two years when there was a statistical difference in overall force use. In 2019, 64 subjects perceived to be Hispanic experienced a use of force, down 21% compared to the previous year. However, it should be noted that if the rate of use of force experienced by the Hispanic group rose 5% while the use of force experienced by the White group remained stable, then there would likely be a statistically significant difference. This indicates that force experienced by the Hispanic group should remain closely monitored.

Breaking down the data by specific force types shows that the Hispanic group receives a statistically significant higher rate of force for Strikes/Kicks, with 13% of subjects experiencing force experiencing this specific force type. There is no other force type that is statistically different than the White group, though Takedowns specifically should remain closely monitored.

Looking at the data over time shows that disparities between the use of force experienced by those perceived to be Hispanic and those perceived to be White has declined from the significant levels noted in 2017 and 2018. Furthermore, no specific trend can be seen for any specific type of force utilized, suggesting the possible existence of data aberrations related to the small size of the dataset. Rather, it appears that in 2017 and 2018, statistically significant differences in the overall dataset are the result of the combination of small not statistically significant differences for all types of force rather than large differences for specific types of force. This data can be found in Table 11, with further data in Appendix Tables A8, A11, and A12.

Table 11: Multi-year analysis for overall force for Hispanic group

Multi-Year Analysis for Overall Force for Hispanic Group					
	2015	2016	2017	2018	2019
Custody	1,911	1,797	1,698	1,829	1,673
Subjects of Force	56	58	81	83	64
Holds With Injury	0	2	0	0	0
Takedown - Old (1)	23	31			
Takedown - New				17	24
Controlled Takedown				14	3
Strikes / Kicks	5	10	7	5	8
Impact Weapon - Old (1)	1	2			
Impact Weapon - Strike				0	0
Less Lethal				3	0
Baton-Nonstrike				0	0
Maximum Restraint (2)	1				
Aerosol Restraint	1	1	3	3	2
CEW	4	4	7	2	4
K-9 Bite	0	1	3	3	0
Pointing of Firearm	30	23	30	14	8
Resisted Handcuffing				30	26
Hobble Restraint				2	2
Controlled Against Resistance				40	33
PIT				3	1
Vehicle Ramming				0	0
Box-in				4	3
(1) Definitions changed when new types of force added in Quarter 3 of 2017					
(2) Removed from usage in early 2015					
Yellow indicates Hispanic group experienced a statistically higher rate of force					

Examining the data regarding the presence of secondary attributes shows that subjects who experience force who are perceived to be Hispanic are reported to be armed, actually armed, perceived to be undergoing a mental health crisis, and perceived to be under the influence of drugs/alcohol at the same rates as subjects perceived to be White. However, subjects perceived to be Hispanic are less likely to be reported as Transient than the White group, which matches last findings in 2018. However, there is a change from 2018 in that previously the Hispanic group was also statistically more likely to be armed.

Use of Force on Members of Other Communities

Review of the analysis does not show a statistically significant difference between the overall rate of force experienced by subjects perceived to be Native American or Asian compared to those perceived to be White. This is consistent with the findings of the TAC's 2018 report. Furthermore, analysis shows no significant difference over the five years data is available.

Regarding specific force types, subjects perceived to be Native American were statistically more likely to experience Less Lethal than subjects perceived to be White, but this is likely a data aberration due to the very small dataset. Only 13 subjects perceived to be Native American experienced force in 2019. This is supported by a review of previous years which shows no consistent statistical significance over time for any type of force.

Similarly, subjects perceived to be Asian had no force type which they were statistically more likely to experience than those perceived to be White. Though in 2018, they were shown to have statistically higher rates of Strikes/Kicks and Aerosol Restraint, these appear to be data aberrations related to the small dataset. Only 14 subjects perceived to be Asian experienced force in 2019. This is supported by the analysis of 2019 and previous years, which shows no consistent statistical significance over time for any type of force.

Neither the Native American or Asian group showed any statistically significant difference compared to the White group regarding secondary attributes.

8. Analysis of Force Experienced by the Black Community

Given the results of examining use of force data related to race, specifically statistically significant differences between subjects perceived as Black and subjects perceived as White, it was decided to do a more in-depth analysis to identify other statistically significant differences between the uses of force experienced by these two groups. This analysis includes further data on the subjects experiencing force, as well as data related to the officers carrying out the force. It's hoped that this analysis can help identify possible avenues for rectifying this unfortunate situation.

Age of Subject at Time of Use of Force

The analysis of the age of subjects experiencing force shows some differences between those perceived by officers to be Black and those perceived to be White. Black subjects between the ages of 20 and 29 are statistically more likely to experience a use of force compared to White subjects in the same age group. However, Black subjects between the ages of 30 and 39 and 50 and older are less likely to experience a use of force compared to White subjects in the same age groups. (Table 12)

Table 12: Age of subject experiencing at least one use of force

2019 Use of Force Age of Subject						
	#		%		Statistics	
	White	Black	White	Black	Z-Score	P-Value
Subjects of Force	470	232				
Age 19 and younger	20	15	4%	6%	1.266	0.204
Age 20-29	159	120	34%	52%	4.557	0.000
Age 30-39	168	59	36%	25%	-2.748	0.006
Age 40-49	75	29	16%	13%	-1.213	0.226
Age 50 and older	43	9	9%	4%	-2.508	0.012
Unknown	5	0	1%	0%	-1.577	0.114
Yellow indicates attribute statistically more common for other group.						
Orange indicates attribute statistically more common for White group.						

Subject Initial Resistance at Time of Use of Force

Data collected by the Portland Police Bureau regarding the use of force includes the level of resistance being exhibited by the subject prior to each application of force, as perceived by the officer applying the force. There are three levels of resistance; including Passive, Active, and Aggressive. In many cases there are multiple officers applying force to a subject, at times during different moments in an encounter. To measure initial resistance, the analysis only examined the level of resistance prior to the first utilization of force.

Analysis of the data shows no statistical difference between the Black group and White group with regards to the initial resistance of subjects prior to receiving force. For both groups, the majority of individuals receiving force were described as Active, with a smaller subset described as Aggressive, and the smallest subset described as Passive. This fits with the finding that Controlled Against Resistance and Resisted Handcuffing are the main types of force utilized for both groups, given that a more aggressive level of resistance would most likely result in a higher level of force used. (Table 13)

Table 13: Initial resistance of subject prior to use of force

2019 Initial Resistance of Subject Prior to Use of Force						
	#		%		Statistics	
	White	Black	White	Black	Z-Score	P-Value
Subjects of Force	470	232				
Passive	12	9	3%	4%	0.970	0.332
Active	328	160	70%	69%	-0.223	0.826
Aggressive	130	63	28%	27%	-0.141	0.889
Yellow indicates attribute statistically more common for other group.						
Orange indicates attribute statistically more common for White group.						

Attributes of Subjects Experiencing Use of Force

Though analysis concerning possible differences in secondary attributes based upon race were explored in the previous section, further analysis was done, specifically with regards to subjects being armed, including the types of weapons in which subjects were armed. The analysis showed no statistical difference between the Black group and White group for any type of weapon. In addition, the analysis showed no difference in whether or not subjects were reported to be armed or were actually armed.

A review of the data shows that few subjects are actually armed with firearms. For both groups, subjects armed with firearms (whether actual, implied, or replicas) account for no more than

16% of armed subjects and 3% or less of subjects experiencing force. It is much more common for subjects to be armed with sharp or stabbing objects, blunt objects, or needles/bodily fluids. Another area of interest is the Other Type of Weapon category. Items in this category include vehicles, bear mace, fire, gasoline, a metal clasp on a rope, a dab torch, pens, and throwing or threatening to throw water on officers. (Table 14)

Table 14: Attributes of subjects experiencing force

2019 Subjects of Use of Force Attributes						
	#		%		Statistics	
	White	Black	White	Black	Z-Score	P-Value
Subjects of Force	470	232				
Subjects Armed						
Armed or Reported to be Armed	154	70	33%	30%	-0.694	0.490
Reported to be Armed but Not	71	40	15%	17%	0.729	0.465
Confirmed Armed	83	30	18%	13%	-1.604	0.110
Firearm - Actual, Implied, Replica	13	4	3%	2%	-0.845	0.401
Blunt Object	20	8	4%	3%	-0.514	0.610
Knife/Sharp/Stabbing Object	25	8	5%	3%	-1.102	0.271
Needle/Bodily Fluid	23	9	5%	4%	-0.606	0.542
Other Type of Weapon	10	2	2%	1%	-1.217	0.222
Other Subject Attributes						
Perceived Mental Health Crisis	80	38	17%	16%	-0.214	0.834
Perceived Influence of Drugs/Alcohol	214	92	46%	40%	-1.477	0.139
Transient (1)	264	120	56%	52%	-1.113	0.267
Yellow indicates attribute statistically more common for other group.						
Orange indicates attribute statistically more common for White group.						
(1) Transient includes subjects who refused to provide an address.						

Disposition/Custody of Subjects Following the Use of Force

Analysis of the data shows no statistical difference between those perceived to be Black and those perceived to be White with regards to their disposition/custody following a use of force. The relative proportions hold steady for all categories for both groups. (Table 15)

Table 15: Disposition/Custody of subjects following the use of force

2019 Disposition/Custody of Subject After Use of Force						
	#		%		Statistics	
	White	Black	White	Black	Z-Score	P-Value
Subjects of Force	470	232				
Arrests	359	182	76%	78%	0.612	0.542
Arrest-Cited	1	0	0%	0%	-0.703	0.484
Arrest-Felony	107	58	23%	25%	0.657	0.509
Arrest-Misdemeanor	137	69	29%	30%	0.162	0.873
Arrest-Other Agency	9	1	2%	0%	-1.561	0.119
Arrest-Warrant	105	54	22%	23%	0.279	0.779
Non-Arrests	111	50	24%	22%	-0.123	0.542
Cite and Release	15	7	3%	3%	-0.125	0.904
Detained and Released	12	5	3%	2%	-0.323	0.749
Detox	3	1	1%	0%	-0.343	0.728
Escaped	1	1	0%	0%	0.510	0.610
Release to Medical	80	36	17%	16%	-0.505	0.617
Yellow indicates attribute statistically more common for other group.						
Orange indicates attribute statistically more common for White group.						

Table 17: Subjects of use of force call origins, groups, and categories

2019 Subjects of Use of Force Call Origins and Categories						
	#		%		Statistics	
	White	Black	White	Black	Z-Score	P-Value
Origin of Call Resulting in Force (2018) (1)	534	258				
Self-Initiated (1)	140	66	26%	26%	-0.191	0.849
Dispatched (1)	394	192	74%	74%	0.191	0.849
Group of Call Resulting in Force (2019)	470	232				
Assist	42	20	9%	9%	-0.139	0.889
Civil	36	12	8%	5%	-1.228	0.219
Crime	85	40	18%	17%	-0.275	0.787
Disorder	256	131	54%	56%	0.501	0.617
Traffic	31	16	7%	7%	0.150	0.881
Other	20	13	4%	6%	0.794	0.430
Category of Call Resulting in Force (2019)	470	232				
Area/Premise Check	13	13	3%	6%	1.873	0.061
Assault	13	7	3%	3%	0.188	0.849
Assist	27	13	6%	6%	-0.076	0.936
Behavioral Health	35	12	7%	5%	-1.134	0.258
Collision	13	2	3%	1%	-1.641	0.101
Disturbance	72	46	15%	20%	1.503	0.134
Stolen Vehicle	18	4	4%	2%	-1.506	0.130
Subject Stop	36	11	8%	5%	-1.455	0.144
Suspicious	38	8	8%	3%	-2.335	0.019
Theft	10	6	2%	3%	0.383	0.704
Threat	8	3	2%	1%	-0.411	0.682
Traffic Stop	14	12	3%	5%	1.448	0.147
TriMet	5	9	1%	4%	2.510	0.012
Unwanted Person	45	27	10%	12%	0.848	0.395
Vandalism	10	4	2%	2%	-0.360	0.719
Warrant	15	7	3%	3%	-0.125	0.904
Welfare Check	42	13	9%	6%	-1.546	0.121
Other	56	35	12%	15%	1.177	0.238
Yellow indicates attribute statistically more common for other group.						
Orange indicates attribute statistically more common for White group.						
(1) Origin of calls resulting in force not available for 2019, showing 2018 data for reference.						

Call Origins, Groups, and Categories Resulting in Force

As discussed in an earlier section, detailed comparisons of use of force based upon call origin cannot be done due to this data no longer being included in the use of force dataset. However, looking at the data which was available in 2018, shows no statistically significant difference for White subjects and Black subjects dependent upon whether the call was citizen initiated (dispatched) or officer initiated. For both groups, 74% of subjects who experienced force in 2018 did so as a result of a dispatched call, while 26% experienced force as a result of officer-initiated calls. (Table 17)

Regarding call groups, data was available for 2019. Analysis of this data did not show any statistically significant difference between the call groups resulting in uses of force experienced by White subjects and Black subjects. For both groups, over half of the initial calls resulting in force were disorder calls, with initial calls regarding crime accounting for only 17% to 18%. However, it should be noted that initial call groups and categories do not account for whether or not an officer finds a crime being committed upon arrival at the scene. (Table 17)

Regarding call categories, data was available for 2019. Analysis of this data for the most part did not show any statistically significant difference between the call categories resulting in uses of force experienced by White subjects and Black subjects. However, there were two exceptions. The analysis did find subjects perceived to be Black were statistically more likely to experience force for the TriMet initial call category, and statistically less likely to experience force for the Suspicious category, which includes reporting of suspicious subjects, vehicles, and circumstances. (Table 17)

It is worth mentioning that this analysis could be more in-depth if further information was made available to aid in better understanding possible differences in subjects experiencing all calls, not just those involving force. While it is understood that collecting subject data for all calls is likely not going to happen given available resources, other easier to manage datasets could be utilized, such as the number of custodies resulting from each call category for each race group.

Number of Officers Applying Force Per Subject

In the majority of cases, more than one officer is usually involved in each use of force. This is part of police policy to both lessen the likelihood of injury to subjects and officers, and to also help alleviate a reliance on more severe types of force. The result of these policies has been a decrease in Control Holds With Injury, Stikes/Kicks, Aerosol Restraint, CEW, and Pointing of Firearm.

The analysis of the number of officers involved for each subject receiving force shows that subjects perceived to be Black are statistically more likely to be subjected to force involving three or more officers than subjects perceived to be White, and statistically less likely to be subjected to force involving two or fewer officers. Dividing the dataset further, shows that specifically Black subjects are statistically more likely to be subjected to force involving three officers and four officers, and less likely to be subjected to force involving only one officer compared to the White group. (Table 18)

Table 18: Officers involved applying force to each subject

2019 Officers Involved Applying Force to Each Subject						
	#		%		Statistics	
	White	Black	White	Black	Z-Score	P-Value
Subjects of Force	470	232				
1 officer applying force	176	61	37%	26%	-2.940	0.003
2 officers applying force	182	77	39%	33%	-1.429	0.153
3 officers applying force	64	48	14%	21%	2.407	0.016
4 officers applying force	29	29	6%	13%	2.866	0.004
5 officers applying force	12	10	3%	4%	1.257	0.208
6 or more officers applying force	7	7	1%	3%	1.362	0.174
1-2 officers applying force	358	138	76%	59%	-4.568	0.000
3 or more officer applying force	112	94	24%	41%	4.568	0.000
Yellow indicates attribute statistically more common for other group.						
Orange indicates attribute statistically more common for White group.						

Individuals Experiencing Multiple Force Events

Due to the current nature of police work and other types of services offered within the city, it is not uncommon for police to have multiple interactions with an individual, including multiple force events over the course of a year. Regarding use of force data, the measure "Subjects of Force" does not take into account these repeat events involving a single individual, instead measuring each event independently in order to allow needed analysis to take place. However, it is

recognized that the existence of individuals involved in multiple force events may skew the dataset. To account for this, a second measurement, called “Individuals Experiencing Force”, measures the number of individuals who experienced force in 2019, counting each individual once regardless of how many force events they were involved in.

Analysis shows that over 80% of subjects of force in 2019 were individuals who experienced only one force event throughout the year. Less than 6% were individuals who experienced three or more force events. Comparing this data for the Black group and White group shows no statistically significant differences between the two related to individuals experiencing multiple force events in 2019. The results of this analysis suggests that differences between the Black group and White group are not influenced by multiple interactions with individuals. (Table 19)

Table 19: Individuals experiencing multiple force events in 2019

Individuals Experiencing Multiple Force Events in 2019						
	#		%		Statistics	
	White	Black	White	Black	Z-Score	P-Value
Subjects of Force Events (1)	470	232				
Experienced 1 force event	384	191	82%	82%	0.203	0.841
Experienced 2 force events	56	28	12%	12%	0.059	0.952
Experienced 3 or more force events	30	13	6%	6%	-0.405	0.682
Individuals Experiencing Force (2)	421	207				
Experienced 1 force event	384	191	91%	92%	0.449	0.653
Experienced 2 force events	28	14	7%	7%	0.053	0.960
Experienced 3 or more force events	9	2	2%	1%	-1.052	0.294
Yellow indicates attribute statistically more common for other group.						
Orange indicates attribute statistically more common for White group.						
(1) Subjects of force does not take into account individuals who were involved in multiple force events.						
(2) Individuals experiencing force counts individuals who were involved in force events at least once in 2019.						

Precinct or Department of Officers Utilizing Force

As exhibited in Table 18, uses of force involving members of the Black community are statistically more likely to involve a greater number of police. The following analysis explores the characteristics of the officers involved in uses of force involving Black subjects and White subjects.

Table 20: Precinct or department of officers utilizing force

2019 Use of Force Officer Precinct and Department						
	#		%		Statistics	
	White	Black	White	Black	Z-Score	P-Value
Officers Who Used Force	384	306				
Officer Precinct						
Central Precinct	139	117	36%	30%	0.550	0.582
East Precinct	124	97	32%	25%	-0.166	0.865
North Precinct	94	60	24%	16%	-1.527	0.126
Other Departments	51	49	13%	13%	1.013	0.313
Yellow indicates attribute statistically more common for other group.						
Orange indicates attribute statistically more common for White group.						
Individual precincts and department do not add to total because of transfers during year.						

Regarding the precinct or department which the officer is assigned at the time the force event occurred, no statistically significant differences were found. This indicates that precinct or

department are not relevant factors affecting differences in the amount of force experienced by the groups. (Table 20)

Tenure of Officers Utilizing Force

Regarding the tenure of officers at the time force events occurred, no statistically significant differences were found when comparing those involved in utilizing a use of force against Black subjects versus those utilizing a use of force against White subjects. This indicates that officer tenure is not a relevant factor affecting differences in the amount of force experienced by the Black and White groups. (Table 21)

Table 21: Use of force officer tenure data

2019 Use of Force Officer Tenure Data						
	#		%		Statistics	
	White	Black	White	Black	Z-Score	P-Value
Officers Who Used Force	384	306				
0-3 years	116	95	30%	31%	0.237	0.810
4-6 years	37	26	10%	8%	-0.516	0.603
7-9 years	39	38	10%	12%	0.938	0.347
0-9 years	192	159	50%	52%	0.512	0.610
10-19 years	136	99	35%	32%	-0.844	0.401
20+ years	56	48	15%	16%	0.402	0.689
Yellow indicates attribute statistically more common for other group.						
Orange indicates attribute statistically more common for White group.						

Officers Involved in Multiple Force Events

Analysis shows several differences between officers utilizing force against Black subjects and White subjects with regards to the number of force events the officer was involved involving the same group in 2019. Officers utilizing force against Black subjects were statistically more likely to be involved in only one force event involving Black subjects in 2019 compared to the White group, and statistically less likely to be involved in multiple force events involving Black subjects compared to the White group. (Table 22)

Table 22: Officers involved in multiple use of force events in 2019

2019 Officers Involved in Multiple Use of Force Events						
	#		%		Statistics	
	White	Black	White	Black	Z-Score	P-Value
Officers Who Used Force	384	306				
Officers involved in 1 event	150	161	39%	53%	3.554	0.000
Officers involved in 2 events	95	83	25%	27%	0.711	0.478
Officers involved in 3 events	58	28	15%	9%	-2.352	0.019
Officers involved in 4 events	34	15	9%	5%	-2.008	0.444
Officers involved in 5 events	17	13	4%	4%	-0.114	0.912
Officers involved in 6 events	15	2	4%	1%	-2.738	0.006
Officers involved in 7 events	7	2	2%	1%	-1.345	0.180
Officers involved in 8 events	0	1	0%	0%	1.121	0.263
Officers involved in 9 events	1	1	0%	0%	0.161	0.873
Officers involved in 10 or more	7	0	2%	0%	-2.374	0.018
Yellow indicates attribute statistically more common for other group.						
Orange indicates attribute statistically more common for White group.						

9. The Effect of Disparities in Force and Custodies on Communities

As discussed in Section 7 of this report, Black subjects taken into custody are statistically more likely to experience a use of force compared to White subjects taken into custody. Though the overall use of force has dropped significantly over the past five years for all demographic groups, this disparity between White and Black subjects has remained. In 2019, Black subjects taken into custody experienced 44.8 force events per 1,000 custodies, significantly higher than the 30.6 force events per 1,000 custodies experienced by White subjects. (Table 23)

When comparing the rate of force utilized against two different groups, the comparison is made against relative custodies rather than relative populations because different groups have different levels of interactions with the police. Custodies are one of the few consistent datasets available for the measurement of these interactions. When comparing differences in uses of force to custodies, the only factors involved are directly related to the subjects and officers involved in use of force events. The same cannot be said when comparing use of force rates to relative populations; a measurement that not only includes factors related to the subjects and officers involved in use of force events, but also numerous outside factors; such as relative poverty rates, the biases of people calling the police, and the collective consequences of systematic societal biases. For this reason, the use of force to custody comparison is the correct one to use when trying to identify possible biases, implicit or otherwise, in police utilization of force.

With that being said, it is still important to understand how disparities in the relative number of interactions with the police negatively affect the Black community and their perceptions of the police. Comparing custodies to relative populations shows that in 2019, the Black community experienced 140.6 custodies per 1,000 population, over four times higher than the 34.0 custodies per 1,000 population experienced by the White population. This dynamic is not unique to Portland, but is a noted nationwide phenomenon and has been the subject of many studies over time. While most studies tend to agree that socio-economic status, biases of the general public, biases within the justice system, and biases of the police all play a role in custody disparities, competing findings abound regarding to what level. (Table 23)

Table 23: Comparison of Portland demographics, custodies, and use force by race

Comparison of Portland Demographics, Custodies, and Use of Force by Race						
	City Demo.	Police Custodies	Police Use of Force	Force per 1000 Cust.	Cust. per 1000 popul.	Force per 1000 popul.
Total	639,387	23,504	796	33.9	36.8	1.2
White	70.5%	65.3%	59.0%	30.6	34.0	1.0
Black	5.8%	22.0%	29.1%	44.8	140.6	6.3
Hispanic	9.3%	7.1%	8.0%	38.3	28.0	1.1
Native American	0.7%	2.1%	1.6%	26.5	102.6	2.7
Asian	8.1%	2.9%	1.8%	20.8	13.1	0.3
Undetermined	N/A	0.7%	0.4%	N/A	N/A	N/A
Data for relative comparisons only, datasets are not compatible for direct statistical comparison.						
Demographic data from 2014-18 US Census Bureau American Community Survey (ACS).						
Custodies and Use of Force data from 2019 Force Data Summary reports.						
Hispanic includes ACS Hispanic ethnic data for the White, Other Race, and Two or More Races race categories.						
White includes ACS non-Hispanic ethnic data for the White race category.						
Black includes ACS total ethnic data for the Black race category.						
Native American includes ACS total ethnic data for the Native American race category.						
Asian includes ACS total ethnic data for the Asian race category.						
Demo. % do not add up to 100% due to non-Hispanic Other Race and Two or More Races data not being included.						

Socio-economic disparities based upon race are well documented, with members of the Black community in Multnomah County making up a larger share of the population living in poverty and the houseless community compared to their share of the general population. Additionally, members of the Black community have the lowest median income by a significant margin compared to other racial/ethnic groups. The continuation this disparity over time is widely recognized to be related to historical and present-day systemic racism connected to not only the justice system, but also regarding access to education, healthcare, housing, and capital. The relationship between crime and poverty, and therefore police interactions and poverty, is well documented. Therefore, it stands to reason that groups experiencing greater rates of poverty are more likely to have more interactions with the police. (Table 24)

Less well quantitatively documented, fairly well qualitatively documented via news reports and other sources, is the role of biases, implicit and otherwise, of the general public regarding disparities in police interactions. Citizen-initiated (dispatched) calls account for 72% of the calls the PPB responded to in 2019, suggesting when the general population decides to call for police aid plays a significant role in who interacts with the police and the resulting disparities. Furthermore, given that pattern in dispatched calls play a role in how police are deployed across the city, it likely also affects patterns in officer-initiated calls, though data for officer-initiated calls is not available.

Also quantitatively difficult to measure is the role of biases, implicit or otherwise, of the officers responding to calls, most notably in the tone of these interactions and how often they lead to custodies. Officers are given a significant level of latitude in deciding how to handle the situations in which they find themselves, meaning that their biases can have a significant effect on outcomes. Unfortunately, discerning the level of this bias is difficult due to the lack of a reliable and consistent benchmark with which to compare outcomes. Both stops data and use of force data have in the past been utilized as proxy measures for officer bias, with disparities based on race noted for both. However, both of these proxies have issues similar to comparing custody rates to share of the general population.

Beyond the racial biases of the general public and individual officers, it is worth noting how socio-economic disparities undoubtedly amplify the level of overall biases faced by the Black community. For example, the houseless community and people living in poverty also face many difficulties due to biases held against them. Since the Black community accounts for a disproportionate share of both groups, a greater share of Black individuals face multiple avenues of bias, which can exponentially build upon each other. It is notable that 50% of those taken into custody by the PPB are reported to be transient, though this includes individuals who refuse to give an address or for whom one cannot be ascertained, and that reports indicate dispatched calls regarding houseless individuals have risen over time.

Several other factors are often mentioned in relation to disparities in custody rates. However, these are largely believed to be negligible given data patterns. For instance, police interact not only with individuals living within the City of Portland, but also with individuals commuting into the city for work and leisure, which arguably could make direct comparisons of custodies to relative populations invalid. However, it is notable that the demographics of the surrounding areas, those commuting into the city for work, and those visiting the city as tourists, suggests that taking this factor into account would increase the disparity in Black custodies, not lessen it. Another factor not taken into account are individuals who are taken into custody on multiple occasions throughout the year. However, there is nothing to suggest significant differences based upon race for these individuals.

Understanding the causes of disparities in custody rates based upon race is important, given that it is the starting point for similar disparities seen throughout each step of the justice system.

These disparities; and the resulting loss of time, money, resources, and status; have a negative effect on existing socio-economic disparities, which in turn have a negative effect on custody disparities and justice system disparities, helping create a self-perpetuating cycle that continues to this day.

Table 24: Local data related to custodies, crime, and income

Local Data Related to Custodies, Crime, and Income				
Race/Ethnicity	PDX Police Custodies	Multnomah Co. PIT Count	Multn. Co. Median Income	PDX Violent Crime Victims
White	65.3%	58.8%	70,402	66.3%
Black	22.0%	16.2%	31,286	16.4%
Hispanic	7.1%	10.2%	47,908	9.3%
Native American	2.1%	10.2%	41,835	1.4%
Asian	2.9%	1.4%	62,191	4.3%
Other/Unknown	0.7%	3.2%	N/A	2.2%
PDX Violent Crime Victims based upon violent crime victimization rate.				
Multnomah County Point in Time (PIT) houseless count from 2017.				
Multnomah County median household income from 2013-17 US Census Bureau ACS.				
Portland accounts for 80% of Multnomah County's Population.				
Demographic data from 2013-17 US Census Bureau American Community Survey (ACS).				

Table 25: Multnomah County 2019 Safety+Justice Challenge legal system demographics

2019 Multnomah County Safety and Justice Challenge Legal System Demographics						
	Total	White	Black	Hispanic	Nat. Am.	Asian
Adult Population (18+)	658,979	74.0%	5.8%	10.0%	0.9%	9.3%
Cases Referred to DA's Office	20,095	62.4%	24.1%	10.2%	0.7%	2.6%
Cases Accepted for Prosecution	12,429	62.3%	23.5%	10.6%	0.7%	2.8%
Total Cases Arraigned	12,082	62.2%	23.7%	10.5%	0.7%	2.8%
Number of Cases Convicted	4,075	63.6%	22.9%	10.5%	0.7%	2.3%
Cases Sentenced to Prison	256	62.5%	25.4%	10.5%	0.0%	1.6%
Cases Sentenced to Jail	1,122	61.1%	25.1%	10.6%	0.8%	2.3%
Cases Sentenced to Probation	1,322	65.1%	20.4%	11.3%	0.5%	2.7%
Cases Sentenced to Conditional Discharge	483	69.6%	19.9%	7.5%	1.4%	1.7%
Cases Sentenced to Monetary Judgment	658	61.7%	24.6%	10.5%	0.9%	2.3%
https://www.documentcloud.org/documents/6559824-Multnomah-R-E-D-Analysis-2019-Final-November-19.html						
Further Data can be seen in the Appendix Tables A13 and A14						

The disparity in custodies per population for the Black community compared to the White population significantly amplifies existing disparities in the use of force. Though overall rates of force utilized on members of both groups is relatively low, members of the Black group are more likely to experience force, with a rate of 6.3 uses of force per 1,000 population for the Black community compared to 1.0 uses of force per 1,000 population for the White population. However, the disparity in custodies per population is a much larger driver of this than the disparity in uses of force per custody. Even if the rates of uses of force per custody for Black subjects was even to the rate for White subjects, the Black community would still experience force at a rate of 4.3 uses of force per 1,000 population, much higher than the rate for the White population. (Table 23)

The effects of these disparities experienced by the Black community, especially with regards to perceptions of trust in the police, are further amplified by the factors involving the small size and more insular nature of the Black community in Portland. People identifying as Black make up less than 6% of Portland's population, and decades of systemic racism have made the city's

Black population much more interconnected than the city's White population, even when controlling for factors such as relative income. As a result, an individual identifying as Black is more likely to have had direct or secondary contact with an individual who also identifies as Black and has been taken into custody and/or been a subject of the use of force compared to an individual who identifies as White. A similar dynamic can be seen with the houseless community.

It should be noted that a similar dynamic as discussed above exists for the Native American population in Portland, though to a less degree. Such dynamics likely also exist for other populations, such as the houseless community, but a lack of data makes such analysis not available at this time.

It should be noted that over the past two years the PPB has made moves to lessen the influence of police bias; such as training related to procedural justice, emotional intelligence, and officer wellness. However, more work is needed and success cannot be claimed until differences become no longer statistically significant. (Table 25)

10. Use of Deadly Force

Over the past decade, a total of 48 subjects have experienced the utilization of the deadly use of force via firearms by Portland police officers. Of this total, 15 were injured and 26 were killed. Despite significant reductions in the overall use of force by the PPB, including Pointing of Firearm, in most years there are still between 4 to 6 deadly force incidents in Portland, with 6 occurring each of the past three years. The size of the dataset does not allow for statistical comparison, but data is presented in Tables 26 and 27.

It should be that noted, that as is with all use of force incidents, group data cannot speak to the individual details of each event, but rather only larger patterns that may suggest needed changes in policy. Details on individual deadly force events can be found in the PPB's Officer Involved Shootings database.

Members of the Black community account for 21% of the deadly use of force incidents over the past ten years. This is in line with disparities in custody rates explored earlier in this report, which would suggest the deadly force disparity is related very closely with disparities in custodies and the factors resulting in said disparities, as detailed in Section 9. This hypothesis is supported when comparing the ten-year average of deadly force incidents by race to those same groups' relative rates of custodies and population in the City of Portland. When comparing the ten-year average of deadly force incidents by race to custodies for each group, with custodies being a good measure for relative levels of police interaction, the Black group is shown to have a rate of 0.19 deadly force incidents per 1,000 custodies, actually below the rate of 0.24 deadly force incidents per 1,000 custodies for the White group. However, to overall uses of force, the higher rate of Black subject interactions with police, as measured by the custody rate, results in members of the Black community being much more likely to be the subject of a deadly force incident than a member of the White population. The Black community has a rate of 0.027 deadly force incidents per 1,000 population, over three times higher than the White population rate of 0.008 deadly force incidents per 1,000 population. In a similar fashion to disparities in use of force and custodies, as discussed in Section 9, the effects of this disparity on perceptions are enhanced by the relatively small size and more connected nature of Portland's Black community.

Table 26: Subjects experiencing use of deadly force

Portland Subjects of Police Deadly Force Use				
	Five Year 2015-2019	Ten Year 2010-2019	Ten Year (2010-19)	
			White	Black
Subjects of Deadly Force	26	48	37	10
Race				
White	21	37		
Black	5	10		
Hispanic	0	1		
Gender				
Male	24	46	35	10
Female	2	2	2	0
Armed				
Blunt Object	0	1	1	0
Firearm-Replica	5	9	7	2
Handgun	4	9	5	4
Knife/Cutting Instrument	12	16	14	2
Rifle	2	5	5	0
Shotgun	0	1	0	0
Unarmed	2	5	3	2
Undisclosed	1	2	2	0
Deadly Force Result				
Fatal Injury	14	26	19	6
Injury	8	15	12	3
None	3	7	6	1
Precinct Occurred				
Central	10	20	18	2
East	12	19	15	4
North	4	9	4	4

Unfortunately, due to data not being kept, the data cannot be divided by pertinent secondary attributes, such as if the subject was perceived as undergoing a mental health crisis at the time or whether or not the subject was reported to be transient. Given that both of these groups are of special interest to the community, such data should be recorded.

Other trends noted in the data include that previously calls for service pertaining to the call type Disorder were a major source of deadly force use. However, this has declined significantly over the past five years compared to the previous five years, shrinking from 59% of all events in 2010 through 2014, to 4% of events between 2015 and 2019. Another trend is that fewer subjects are armed with firearms or firearm-replicas, representing 59% of events between 2010 and 2014 and only 42% between 2015 and 2019, with knives/cutting instruments rising from being present in 18% of events to 46%.

Table 27: Call categories resulting in subjects experiencing deadly force

Portland Subjects of Police Deadly Force Use				
	Five Year 2015-2019	Ten Year 2010-2019	Ten Year (2010-19)	
			White	Black
Subjects of Deadly Force	26	48	37	10
Initial Call Category				
Agency Assist / Warrant	2	3	3	0
Assault	2	2	2	0
Behavioral Health	3	5	5	0
Burglary	2	2	2	0
Disorder	1	13	10	3
Disturbance	4	4	4	0
Robbery	2	3	1	2
Shooting	1	1	0	1
Shots Fired	1	3	3	0
Stabbing	1	1	1	0
Stolen Vehicle	1	1	1	0
Subject Stop	2	3	2	0
Suspicious	1	1	1	0
Traffic Stop	1	4	2	2
TriMet	1	1	0	1
Unwanted Person	1	1	0	1

11. Officer Data and the Repeated Use of Force

Aside from the valuable data that the PPB's use of force database provides concerning subjects of the use of force, it can also be utilized to better understand the involvement of officers in force events. As discussed in earlier sections, most use of force events involve multiple officers. However, measuring via force events does not indicate how often individual officers are involved in multiple events. To differentiate from force events, this report uses the terminology force interaction to indicate individual officers' involvement in force events. For example, if 3 officers are involved in a single force event, this would count as 3 force interactions. Using this measurement, it is possible to get a better understanding of how officers are utilizing force, though it should be mentioned that this measure does not take into account officers who applied no force over the course of the year.

Officer Interaction Data

In 2019, 484 individual officers were involved in 1,735 force interactions for an average of 3.6 interactions per officer. Over half of these officers were involved in 3 incidents of force or less. However, 23 were involved in 11 incidents or more, including 2 officers who were involved in 22 incidents each. These 23 officers accounted for 18% of all force interactions and had an average rate of interactions per officer 330% higher than those with 10 or fewer interactions. (Table 28)

Table 28: Officers involved in multiple force incidents

Officers Involved in Multiple Force Interactions in 2019				
# of Interactions	Officers	Officer %	Interactions	Interactions %
>20	2	0%	44	3%
16-20	3	1%	49	3%
11-15	18	4%	214	12%
6-10	69	14%	493	28%
<6	392	81%	935	54%
5	35	7%	175	10%
4	61	13%	244	14%
3	66	14%	198	11%
2	88	18%	176	10%
1	142	29%	142	8%
Total	484		1,735	
Interactions measure individual officers' involvement in force events.				
If 3 officers are involved in a single force event, that is 3 interactions.				
Each interaction has at least one FDCR, but multiples are not accounted for.				

Dividing the data further by precinct reveals that a limited number of officers being involved in a large number of force interactions is not spread evenly across the bureau. In 2019, Central Precinct had a total of 170 officers involved in a total of 726 force interactions, with an average of 4.3 interactions per officer. Of this total, 13 officers were involved in 11 force interactions or more, accounting for 26% of all Central Precinct interactions. Central Precinct is an outlier, with all other precincts showing officers with 11 or more incidents accounting for less than the overall bureau average. (Table 29)

It should be noted that this does not necessarily indicate an issue. There may be logical reasons why Central Precinct has such a concentration of officers involved in 11 or more force interactions compared other precincts. Dependent upon shift and patrol district, some officers may be repeatedly put into situations which require a use of force. It should also be noted that given all uses of force are reviewed, it can be assumed that at least as reported, all force interactions were within PPB policy. However, it is worth mentioning that though every force interaction can be within policy, repeated interactions can indicate issues not readily identifiable by reviewing individual FDCR's; such as poor usage of interpersonal skills, conflict resolution, and de-escalation strategies.

Employee Information System Shortcomings Regarding Force

The bureau does track individual officers' involvement in use of force events via its Employee Information System (EIS), which is designed to automatically flag and notify the bureau if the criteria for certain thresholds is met. With regards to the use of force, these include:

- Shift Force Ratio: a sworn member's force ratio is greater than or equal to three times their shift's average ratio in the preceding six months.
- Force Ratio: a sworn member's force ratio is greater than or equal to 20% of their arrests in the preceding six months.
- Force Count: a sworn member uses force three or more times in the preceding thirty days.

However, this system is not perfect. For example, with regards to the Shift Force Ratio threshold, utilizing the average for everyone on the shift means that a large number of force interactions by a single officer can skew the average to the point that their higher number of interactions will be within the threshold despite being much higher than that of other officer's on

the same shift. Furthermore, this threshold does not take into account the clustering effect, wherein individuals tend to normalize their behavior based upon the behavior of their peers and those they see as mentors. In a case such as this, multiple officers may have a higher number of force interactions, raising the average significantly and guaranteeing that none will ever reach the Shift Force Ratio threshold. Better measures would be comparing an officer's force ratio to an average of their shift that does not include their data, or utilizing a median of the data rather than an average. However, neither of these changes would identify an issue of clustering, suggesting that a separate threshold is needed to identify when multiple officers on a shift are utilizing a large amount of force.

Table 29: Officers involved in multiple force incidents by precinct

Officers Involved in Multiple Force Interactions by Precinct in 2019				
# of Interactions	Officers	Officer %	Interactions	Interactions %
Central Precinct				
>20	2	1%	44	6%
16-20	2	1%	32	4%
11-15	9	5%	112	15%
6-10	29	17%	219	30%
<6	128	75%	319	44%
Total	170		726	
East Precinct				
>20	0	0%	0	0%
16-20	1	1%	17	3%
11-15	5	3%	58	11%
6-10	26	17%	177	32%
<6	117	79%	294	54%
Total	149		546	
North Precinct				
>20	0	0%	0	0%
16-20	0	0%	0	0%
11-15	0	0%	0	0%
6-10	9	8%	61	21%
<6	108	92%	227	79%
Total	117		288	
Other Departments				
>20	0	0%	0	0%
16-20	0	0%	0	0%
11-15	1	1%	11	6%
6-10	3	3%	24	14%
<6	93	96%	137	80%
Total	97		172	
Interactions measure individual officers' involvement in force events.				
If 3 officers are involved in a single force event, that is 3 interactions.				
Each interaction has at least one FDCR, but multiples are not accounted for.				

Similarly, regarding the Force Ratio, the threshold of each officer's force ratio being equal to or greater than 20% of their arrests is likely too high given that in 2019 the overall bureau's average force ratio was only 3.4%, meaning the threshold is nearly 500% above the bureau wide average. Regarding the Force Count threshold, though it does limit officers to 2 force interactions or less per month, it still allows 24 force interactions per year. Given that the average officer who utilizes force was involved in 3.1 force interactions this year, this puts the threshold nearly 675% above the average.

12. Analysis of Central Precinct Force Interactions

Given the high concentration of officers involved in a large number of force interactions at Central Precinct, it was decided to do an in-depth analysis of data for this precinct comparing the 13 officers with 11 or more interactions in 2019 to officers with 10 or less to see if any patterns emerged. This section is meant to be an example of ways the use of force data can be utilized to investigate and help understand issues involving officer's utilization of force.

Subject Attributes of Force Interactions

Analysis comparing the force interactions of officers who involved in more than 10 force interactions and officers involved in 10 or less, shows no statistically significant difference between officers involved in more than 10 force interactions and officers involved in 10 or less with regards to race and the initial resistance of subjects prior to force being utilized. However, the data does show that officers involved in a larger number of force interactions are statistically more likely to have force interactions with women and those reported to be transient. As a reminder, Transient includes subjects who refused to provide an address. (Table 30)

Table 30: Comparison of attributes of officer force interactions for Central Precinct

2019 Comparison of Attributes of Officer Force Interactions for Central Precinct						
	Interactions per Officer		Percentage		Statistics	
	0-10	>10	0-10	>10	Z-Score	P-Value
Officers	157	13				
Interactions	538	188				
Gender						
Male	427	135	79%	72%	-2.134	0.033
Female	111	53	21%	28%	2.134	0.033
Race						
White	284	103	53%	55%	0.473	0.638
Black	187	75	35%	40%	1.262	0.208
Hispanic	16	1	3%	1%	-1.906	0.056
Native American	13	1	2%	1%	-1.617	0.105
Asian	16	1	3%	1%	-1.906	0.056
Unknown	6	1	1%	1%	-0.705	0.484
Attributes						
Armed	157	58	29%	31%	0.432	0.667
Mental Crisis	103	39	19%	21%	0.476	0.631
Transient (1)	311	129	58%	69%	2.611	0.009
Drugs/Alcohol	296	98	55%	52%	-0.685	0.497
Initial Resistance						
Aggressive	122	45	23%	24%	0.353	0.726
Active	397	134	74%	71%	-0.670	0.503
Passive	18	9	3%	5%	0.899	0.368
Yellow indicates attribute statistically more common for officers with more than 10 interactions.						
Orange indicates attribute statistically more common for officers with 10 or less interactions.						
Interactions measure individual officers' involvement in force events.						
If 3 officers are involved in a single force event, that is 3 interactions.						
Each interaction has at least one FDCR, but multiples are not accounted for.						
(1) Transient includes subjects who refused to provide an address.						

Force Types Utilized During Force Interactions

With regards to force types utilized, analysis shows that officers at Central Precinct involved in more than 10 force interactions are statistically more likely to utilize Takedowns and Impact Weapon – Strike, and statistically less likely to utilize Controlled Against Resistance compared to officers involved in 10 or fewer force interactions. (Table 31)

Table 31: Comparison of force types utilized in officer force interactions for Central Precinct

2019 Comparison of Force Types Utilized in Officer Force Interactions for Central Precinct						
	Interactions per Officer		Percentage		Statistics	
	0-10	>10	0-10	>10	Z-Score	P-Value
Officers	157	13				
Cases	538	188				
Holds With Injury	1	0	0%	0%	-0.592	0.555
Takedown	91	46	17%	24%	2.279	0.023
Controlled Takedown	72	24	13%	13%	-0.215	0.834
Strikes / Kicks	14	9	3%	5%	1.473	0.142
Impact Weapon - Strike	0	2	0%	1%	2.396	0.016
Less Lethal	5	1	1%	1%	-0.518	0.603
Baton-Nonstrike	0	1	0%	1%	1.693	0.091
Aerosol Restraint	5	1	1%	1%	-0.518	0.603
CEW	16	8	3%	4%	0.846	0.395
K-9 Bite	0	0	0%	0%	N/A	N/A
Pointing of Firearm	20	11	4%	6%	1.246	0.211
Resisted Handcuffing	219	87	41%	46%	1.332	0.184
Hobble Restraint	24	7	4%	4%	-0.431	0.667
Controlled Against Resistance	324	93	60%	49%	-2.567	0.010
PIT	2	1	0%	1%	0.295	0.772
Vehicle Ramming	0	0	0%	0%	N/A	N/A
Box-in	12	4	2%	2%	-0.083	0.936
Yellow indicates attribute statistically more common for officers with more than 10 interactions.						
Orange indicates attribute statistically more common for officers with 10 or less interactions.						
Interactions measure individual officers' involvement in force events.						
If 3 officers are involved in a single force event, that is 3 interactions.						
Each interaction has at least one FDCR, but multiples are not accounted for.						
(1) Transient includes subjects who refused to provide an address.						

Force Types Utilized During Force Interactions

With regards to day of the week, analysis shows that officers at Central Precinct involved in more than 10 force interactions are statistically less likely to be involved in force interactions on Wednesdays compared to officers involved in 10 or fewer force interactions.

With regards to time of day, analysis shows that officers at Central Precinct involved in more than 10 force interactions are statistically more likely to be involved in force interactions between 1200-1759 hours and statistically less likely to be involved in force interactions between 1800 and 0559 hours compared to officers involved in 10 or fewer force interactions. (Table 32)

Table 32: Comparison of officer data for officer force interactions for Central Precinct

2019 Comparison of Officer Data for Officer Force Interactions for Central Precinct						
	Interactions per Officer		Percentage		Statistics	
	0-10	>10	0-10	>10	Z-Score	P-Value
Officers	157	13				
Cases	538	188				
Day of Week						
Sunday	59	26	11%	14%	1.051	0.294
Monday	76	31	14%	16%	0.787	0.430
Tuesday	90	26	17%	14%	-0.934	0.352
Wednesday	73	15	14%	8%	-2.022	0.043
Thursday	71	25	13%	13%	0.035	0.968
Friday	102	38	19%	20%	0.375	0.704
Saturday	67	27	12%	14%	0.671	0.503
Time of Day						
0000-0559	67	8	12%	4%	-3.179	0.001
0600-1159	149	60	28%	32%	1.100	0.271
1200-1759	156	88	29%	47%	4.451	0.000
1800-2359	166	32	31%	17%	-3.666	0.000
Tenure						
0-5 years	228	127	42%	68%	5.944	0.000
6-10 years	138	27	26%	14%	-3.180	0.001
11+ years	194	34	36%	18%	-4.571	0.000
Yellow indicates attribute statistically more common for officers with more than 10 interactions.						
Orange indicates attribute statistically more common for officers with 10 or less interactions.						
Interactions measure individual officers' involvement in force events.						
If 3 officers are involved in a single force event, that is 3 interactions.						
Each interaction has at least one FDCR, but multiples are not accounted for.						
(1) Transient includes subjects who refused to provide an address.						

Initial Call Categories Resulting in Force Interactions

With regards to initial call categories, analysis shows that officers at Central Precinct involved in more than 10 force interactions are statistically more likely to be involved in force interactions involving the initial call category Unwanted Person and less likely to be involved in force interactions involving the call category Welfare Check compared to officers involved in 10 or fewer force interactions. (Table 33)

Table 33: Comparison of call categories for officer force interactions for Central Precinct

2019 Comparison of Call Categories for Officer Force Interactions for Central Precinct						
	Interactions per Officer		Percentage		Statistics	
	0-10	>10	0-10	>10	Z-Score	P-Value
Officers	157	13				
Cases	538	188				
Category of Call Resulting in Force						
Area/Premise Check	29	9	5%	5%	-0.320	0.749
Assault	24	6	4%	3%	-0.753	0.453
Assist	28	6	5%	3%	-1.125	0.263
Behavioral Health	34	10	6%	5%	-0.495	0.624
Collision	7	0	1%	0%	-1.572	0.116
Disturbance	93	30	17%	16%	-0.418	0.674
Stolen Vehicle	3	4	1%	2%	1.896	0.057
Subject Stop	30	10	6%	5%	-0.133	0.897
Suspicious	26	13	5%	7%	1.090	0.276
Theft	9	3	2%	2%	-0.071	0.944
Threat	11	6	2%	3%	0.895	0.368
Traffic Stop	6	1	1%	1%	-0.705	0.484
TriMet	14	5	3%	3%	0.042	0.968
Unwanted Person	68	36	13%	19%	2.193	0.029
Vandalism	6	3	1%	2%	0.513	0.610
Warrant	16	3	3%	2%	-1.019	0.308
Welfare Check	74	15	14%	8%	-2.079	0.038
Other	60	28	11%	15%	1.353	0.177
Yellow indicates attribute statistically more common for officers with more than 10 interactions.						
Orange indicates attribute statistically more common for officers with 10 or less interactions.						
Interactions measure individual officers' involvement in force events.						
If 3 officers are involved in a single force event, that is 3 interactions.						
Each interaction has at least one FDCR, but multiples are not accounted for.						
(1) Transient includes subjects who refused to provide an address.						

Custody/Disposition Following Force Interaction

With regards to subject custody/disposition following force, analysis shows no statistically significant differences between that officers at Central Precinct involved in more than 10 force interactions and officers involved in 10 or fewer force interactions. (Table 34)

Table 34: Comparison of disposition/custodies for officer force interactions for Central Precinct

2019 Comparison of Custodies/Disposition for Officer Force Interactions for Central Precinct						
	Interactions per Officer		Percentage		Statistics	
	0-10	>10	0-10	>10	Z-Score	P-Value
Officers	157	13				
Cases	538	188				
Arrests	378	143	70%	76%	1.522	0.129
Arrest-Cited	0	1	0%	1%	-0.592	0.555
Arrest-Felony	125	54	23%	29%	1.503	0.134
Arrest-Misdemeanor	166	60	31%	32%	0.270	0.787
Arrest-Other Agency	1	1	0%	1%	0.779	0.435
Arrest-Warrant	86	27	16%	14%	-0.529	0.596
Non-Arrests	159	45	30%	24%	-1.475	0.139
Cite and Release	27	11	5%	6%	0.441	0.660
Detained and Released	10	1	2%	1%	-1.282	0.201
Detox	12	1	2%	1%	-1.512	0.131
Escaped	0	0	0%	0%	N/A	N/A
Release to Medical	110	32	20%	17%	-1.019	0.308
Yellow indicates attribute statistically more common for officers with more than 10 interactions.						
Orange indicates attribute statistically more common for officers with 10 or less interactions.						
Interactions measure individual officers' involvement in force events.						
If 3 officers are involved in a single force event, that is 3 interactions.						
Each interaction has at least one FDCR, but multiples are not accounted for.						
(1) Transient includes subjects who refused to provide an address.						

13. Glossary of Reported Force Types

Aerosol Restraint

An aerosol restraint event occurs when a member uses pepper spray on a person.

Baton – Non-Striking

Non-striking use of the baton includes the use of the baton as a pry tool.

Boxing In

Boxing-in is a coordinated tactic of positioning police vehicles around a subject's vehicle to stop or prevent the start of a pursuit. When a members performs box-in, the driver of the vehicle is considered the subject of the force event.

CEW

A Conducted Electrical Weapon (CEW) event occurs when a member deploys the CEW to a subject in a probe or drive stun mode. CEW uses are counted whether they were effective applications or not.

Control Holds With Injury

A control hold with injury event occurs when a member applies physical control to a person and an injury results. The physical control may not have caused the injury, but an FDCR will be completed and force investigation will occur.

Control Against Resistance

Control against resistance refers to a member's use of physical contact to restrain a struggling individual.

Controlled Takedown

A controlled takedown is defined as a takedown performed in a completely controlled manner where there is minimal resistance and no injury.

Hobble

A hobble restraint is used to control a subject beyond the capability of handcuffs. It is used to secure a combative subject's legs together to prevent kicking. A hobble may also be used on the upper arms and legs of a subject, if the subject has demonstrated the intent to slip their handcuffs to the front.

Impact Weapon

Uses of a baton are considered a use of an impact weapon. A baton impact weapon event occurs when an officer strikes a subject with a baton.

K-9 Bite

A K-9 bite occurs when a K-9 is deployed and delivers a bite to a subject.

Less Lethal

Less Lethal includes the usage of less lethal impact munitions fired by a weapon especially designed for that purpose. An event occurs any time a less lethal munition is fired at a subject, whether the subject is truck or not.

Maximum Restraint

Maximum restraint was discontinued as an approved use of force in April 2015. Maximum restraint involved securing a person's hands behind their back, legs secured together, and the

legs and hands connected together behind the back of the subject with the subject's legs flexed at the knees.

PIT Maneuver

The pursuit intervention technique (PIT) maneuver event occurs when an officer in a vehicle utilizes the maneuver to stop a subject in a vehicle. When a member performs PIT maneuver, the driver of the vehicle is considered the subject of the force event.

Pointing of Firearm

A pointing of a firearm event occurs when a member points a firearm at a subject. This includes handguns, shotguns, and rifles. This does not include pointing a CEW or less lethal launcher at the subject.

Resisted Handcuffing

Resisted handcuffing is handcuffing that occurs while a subject is resisting, this includes a subject tensing up, or any resistance that requires a member to push the subject's hands together for handcuffing.

Strikes/Kicks

Strikes/kicks events occur when a member uses their hands, elbow, knee, or feet to strike a subject as an application of force. These are different events from strikes with a baton, which are captured in the "Impact Weapon" category.

Takedown

A takedown occurs when a member moves a subject from an upright position to the ground by applying some amount of force. It is not a takedown if the subject goes to the ground under their own power.

Vehicle Ramming

A vehicle ramming event occurs when a member rams a subject's vehicle with their own. When a member performs vehicle ramming, the driver of the vehicle is considered the subject of the force event.

14. References

PPB Use of Force Data:

<https://www.portlandoregon.gov/police/62708>

<https://www.portlandoregon.gov/police/76875>

TAC 2018 Patterns in the Use of Force Report:

<https://www.portlandoregon.gov/police/article/738715>

TAC Website:

<https://www.portlandoregon.gov/police/61449>

PPB Use of Force Report Follow-up 2009:

<https://www.portlandoregon.gov/ipr/article/254600>

PPB Dispatched (Citizen Initiated) Calls Data:

<https://www.portlandoregon.gov/police/76454>

PPB Officer Involved Shootings Data:

<https://www.portlandoregon.gov/police/76940>

PPB Stops Data

<https://www.portlandoregon.gov/police/65520>

PPB Use of Force Directive:

<https://www.portlandoregon.gov/police/article/751998>

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<https://www.portlandoregon.gov/police/article/731768>

U.S. Census Bureau ACS Survey Data:

<https://www.census.gov/acs/www/data/data-tables-and-tools/data-profiles/>

Multnomah County 2019 Report on Poverty

<https://multco.us/dchs/2019-poverty-multnomah-county-report>

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https://en.wikipedia.org/wiki/Race_and_crime

15. Appendix

Table A1: 2019 subjects of force identified by lack of an attribute

2019 Subjects of Force Identified by Lack of an Attribute							
	Overall Subjects	No Attributes	Reported Armed	Actually Armed	Mental Crisis	Transient (1)	Drugs/ Alcohol
Total Subjects of Force	796	690	548	670	665	384	443
Holds With Injury	2	2	0	1	2	1	1
Takedown	238	198	184	211	212	101	155
Controlled Takedown	94	87	63	79	75	44	38
Strikes/Kicks	59	51	47	53	58	22	36
Impact Weapon - strike	2	2	0	1	2	0	1
Less Lethal	11	11	0	4	8	6	5
Baton-Nonstrike	2	2	0	0	2	1	0
Aerosol Restraint	12	10	8	10	11	6	3
CEW	52	49	21	34	44	22	23
K9 Bite	17	14	9	14	16	6	13
Pointing of Firearm	76	70	17	48	71	42	59
Resisted Handcuffing	355	313	258	301	300	162	177
Hobble Restraint	42	40	30	32	35	17	14
Controlled Against Resistance	427	380	318	371	333	215	198
PIT	12	7	8	12	12	8	12
Vehicle Ramming	2	2	0	2	2	1	2
Box-in	32	25	24	31	32	18	23
Rate of each use of force per secondary attribute statistically compared to the attribute not being present.							
Yellow indicates use of force statistically higher with presence of attribute than without it.							
Orange indicates use of force statistically lower with presence of attribute than without it.							
(1) Transient includes members of the houseless community and subjects who refuse to provide an address.							

Table A2: Z-Scores presence of attribute versus the attribute not being present

Z-Score: 2019 Presence of Attribute vs. the Attribute Not Being Present							
	Overall Subjects	No Attributes	Reported Armed	Actually Armed	Mental Crisis	Transient (1)	Drugs/ Alcohol
Holds With Injury		-0.555	2.105	1.326	-0.629	-0.050	0.161
Takedown		1.893	-3.369	-2.264	-2.750	2.140	-3.513
Controlled Takedown		-1.784	0.406	0.036	1.046	0.296	3.165
Strikes/Kicks		0.057	-1.864	-1.238	-3.178	1.750	-0.862
Impact Weapon - strike		-0.555	2.105	1.326	-0.629	1.367	0.161
Less Lethal		-1.309	4.965	4.374	0.974	-0.421	0.686
Baton-Nonstrike		-0.555	2.105	3.265	-0.629	-0.050	1.586
Aerosol Restraint		0.344	0.164	0.080	-0.765	-0.123	2.154
CEW		-1.657	4.584	3.839	-0.216	0.886	1.715
K9 Bite		0.531	1.431	0.208	-1.189	1.080	-1.747
Pointing of Firearm		-1.463	9.919	5.277	-2.442	-1.288	-4.055
Resisted Handcuffing		-1.107	-2.094	-0.429	-0.658	1.321	2.952
Hobble Restraint		-1.677	-0.372	1.456	0.038	1.035	2.992
Controlled Against Resistance		-2.063	-3.689	-2.257	4.548	-1.282	5.671
PIT		2.913	0.164	-1.514	-1.549	-1.287	-3.116
Vehicle Ramming		-0.555	2.105	-0.614	-0.629	-0.050	-1.264
Box-in		1.455	-0.768	-2.010	-2.563	-0.925	-1.885
Rate of each use of force per secondary attribute statistically compared to the attribute not being present.							
Yellow indicates use of force statistically higher with presence of attribute than without it.							
Orange indicates use of force statistically lower with presence of attribute than without it.							
(1) Transient includes members of the houseless community and subjects who refuse to provide an address.							

Table A3: P-Value for presence of attributes versus the attribute not being present

P-Value: 2019 Presence of Attribute vs. the Attribute Not Being Present							
	Overall Subjects	No Attributes	Reported Armed	Actually Armed	Mental Crisis	Transient (1)	Drugs/ Alcohol
Holds With Injury		0.582	0.036	0.184	0.529	0.960	0.873
Takedown		0.059	0.001	0.024	0.006	0.032	0.000
Controlled Takedown		0.075	0.682	0.968	0.294	0.764	0.002
Strikes/Kicks		0.952	0.063	0.215	0.001	0.080	0.390
Impact Weapon - strike		0.582	0.036	0.184	0.529	0.171	0.873
Less Lethal		0.190	0.000	0.000	0.332	0.674	0.490
Baton-Nonstrike		0.582	0.036	0.001	0.529	0.960	0.112
Aerosol Restraint		0.728	0.873	0.936	0.447	0.904	0.032
CEW		0.097	0.000	0.000	0.826	0.373	0.087
K9 Bite		0.596	0.153	0.834	0.234	0.280	0.080
Pointing of Firearm		0.144	0.000	0.000	0.015	0.197	0.000
Resisted Handcuffing		0.267	0.037	0.667	0.509	0.187	0.003
Hobble Restraint		0.093	0.711	0.144	0.968	0.303	0.003
Controlled Against Resistance		0.039	0.000	0.024	0.000	0.201	0.000
PIT		0.004	0.873	0.131	0.121	0.197	0.002
Vehicle Ramming		0.582	0.036	0.542	0.529	0.960	0.208
Box-in		0.147	0.441	0.044	0.010	0.352	0.059
Rate of each use of force per secondary attribute statistically compared to the attribute not being present.							
Yellow indicates use of force statistically higher with presence of attribute than without it.							
Orange indicates use of force statistically lower with presence of attribute than without it.							
(1) Transient includes members of the houseless community and subjects who refuse to provide an address.							

Table A4: Z-Score comparison for force type per custody by race compared to White

Z-Score Race vs. White, 95% Confidence Interval, Two Tailed Hypthesis					
	Black	Hispanic	Nat Am	Asian	Unknown
Subjects of Force	4.855	1.695	-0.521	-1.459	-0.813
Holds With Injury	-0.822	-0.467	-0.253	-0.296	-0.142
Takedown	1.573	1.916	-0.291	-1.726	-0.142
Controlled Takedown	1.112	-1.416	-1.410	-1.037	0.469
Strikes / Kicks	1.104	2.008	-0.082	-1.223	-0.587
Impact Weapon - Strike	-0.581	-0.330	-0.179	-0.210	-0.101
Less Lethal	2.532	-0.661	2.183	-0.419	-0.201
Baton-Nonstrike	-0.822	-0.467	-0.253	-0.296	-0.142
Aerosol Restraint	0.348	1.248	-0.473	-0.554	-0.266
CEW	1.393	0.317	-0.996	-0.304	-0.560
K-9 Bite	-1.279	-1.280	-0.693	-0.812	-0.390
Pointing of Firearm	1.316	1.346	-1.187	0.746	-0.668
Resisted Handcuffing	4.997	0.897	-0.128	-1.244	-0.001
Hobble Restraint	4.267	0.101	0.603	-0.864	1.943
Controlled Against Resistance	5.004	1.305	0.143	-0.442	0.384
PIT	0.156	0.129	-0.506	-0.593	-0.284
Vehicle Ramming	-0.822	-0.467	-0.253	-0.296	-0.142
Box-in	-0.463	0.364	0.347	-0.983	-0.472
Highlighted areas mark 95% statistically significant compared to White group.					

Table A5: P-Value comparison for force type per custody by race compared to White

P-Value Race vs. White, 95% Confidence Interval, Two Tailed Hypthesis					
	Black	Hispanic	Nat Am	Asian	Unknown
Subjects of Force	0.000	0.089	0.603	0.144	0.418
Holds With Injury	0.412	0.638	0.803	0.764	0.889
Takedown	0.116	0.055	0.772	0.084	0.889
Controlled Takedown	0.267	0.156	0.159	0.298	0.638
Strikes / Kicks	0.271	0.044	0.936	0.222	0.555
Impact Weapon - Strike	0.562	0.741	0.857	0.834	0.920
Less Lethal	0.011	0.509	0.029	0.674	0.841
Baton-Nonstrike	0.412	0.638	0.803	0.764	0.889
Aerosol Restraint	0.726	0.211	0.638	0.582	0.787
CEW	0.165	0.749	0.317	0.764	0.575
K-9 Bite	0.201	0.201	0.490	0.418	0.697
Pointing of Firearm	0.187	0.177	0.234	0.453	0.503
Resisted Handcuffing	0.000	0.368	0.897	0.215	1.000
Hobble Restraint	0.000	0.920	0.549	0.390	0.052
Controlled Against Resistance	0.000	0.190	0.889	0.660	0.704
PIT	0.873	0.897	0.610	0.555	0.779
Vehicle Ramming	0.412	0.638	0.803	0.764	0.889
Box-in	0.646	0.719	0.726	0.327	0.638
Highlighted areas mark 95% statistically significant compared to White group.					

Table A6: Z-Scores for attributes of subjects of force comparison by race

Z-Scores for Attributes of Subject of Force Comparison by Race				
	Black	Hispanic	Nat Am	Asian
Reported Armed	-0.694	-1.760	0.431	-0.330
Armed	-1.604	-1.668	0.504	0.364
Mental Crisis	-0.214	-1.236	1.290	-0.269
Transient (1)	-1.113	-4.216	-1.268	-1.518
Drugs/Alcohol	-1.477	1.143	-0.505	-0.727
Yellow indicates attribute statistically more common for other group.				
Orange indicates attribute statistically more common for White group.				
(1) Transient includes subjects who refused to provide an address.				

Table A7: P-Values for attributes of subjects of force comparison by race

P-Values for Attributes of Subject of Force Comparison by Race				
	Black	Hispanic	Nat Am	Asian
Reported Armed	0.490	0.078	0.667	0.741
Armed	0.110	0.095	0.617	0.719
Mental Crisis	0.834	0.215	0.197	0.787
Transient (1)	0.267	0.000	0.204	0.129
Drugs/Alcohol	0.139	0.254	0.610	0.465
Yellow indicates attribute statistically more common for other group.				
Orange indicates attribute statistically more common for White group.				
(1) Transient includes subjects who refused to provide an address.				

Table A8: Multi-year data for force experienced by White group

Multi-Year Analysis for Overall Force for White Group					
	2015	2016	2017	2018	2019
Custody	18,152	16,157	15,060	15,677	15,338
Subjects of Force	467	440	446	536	470
Holds With Injury	19	9	7	1	2
Takedown - Old (1)	196	188			
Takedown - New				110	145
Controlled Takedown				68	62
Strikes / Kicks	61	40	33	22	34
Impact Weapon - Old (1)	9	2			
Impact Weapon - Strike				0	1
Less Lethal				10	4
Baton-Nonstrike				3	2
Maximum Restraint (2)	4				
Aerosol Restraint	16	20	11	7	7
CEW	48	63	33	24	31
K-9 Bite	11	10	6	17	15
Pointing of Firearm	223	196	166	83	44
Resisted Handcuffing				196	198
Hobble Restraint				19	17
Controlled Against Resistance				266	238
PIT				7	8
Vehicle Ramming				1	2
Box-in				27	22
(1) Definitions changed when new types of force added in Quarter 3 of 2017					
(2) Removed from usage in early 2015					

Table A9: Z-Score for multi-year analyst of force experienced by Black group

Multi-Year Analysis for Overall Force for Black Group Z-Score					
	2015	2016	2017	2018	2019
Subjects of Force	4.388	6.414	5.456	4.212	4.855
Holds With Injury	0.346	2.273	1.400	-0.595	-0.822
Takedown - Old (1)	1.415	1.545			
Takedown - New				0.284	1.573
Controlled Takedown				2.281	1.112
Strikes / Kicks	-0.258	0.395	-1.008	-5.676	1.104
Impact Weapon - Old (1)	-1.038	0.395			
Impact Weapon - Strike				N/A	-0.581
Less Lethal				-0.747	2.532
Baton-Nonstrike				-1.031	-0.822
Maximum Restraint (2)	-0.211				
Aerosol Restraint	-0.023	0.279	0.211	-0.268	0.348
CEW	0.183	0.866	1.360	0.713	1.393
K-9 Bite	0.240	-1.137	-1.389	-0.364	-1.279
Pointing of Firearm	4.965	6.589	5.674	3.151	1.316
Resisted Handcuffing				4.471	4.997
Hobble Restraint				-0.592	4.267
Controlled Against Resistance				2.150	5.004
PIT				2.742	0.156
Vehicle Ramming				-0.595	-0.822
Box-in				1.889	-0.463
(1) Definitions changed when new types of force added in Quarter 3 of 2017					
(2) Removed from usage in early 2015					
Yellow indicates Black group experienced a statistically higher rate of force					

Table A10: P-Value for multi-year analysis of force experienced by Black group

Multi-Year Analysis for Overall Force for Black Group P-Values					
	2015	2016	2017	2018	2019
Subjects of Force	0.000	0.000	0.000	0.000	0.000
Holds With Injury	0.726	0.023	0.162	0.555	0.412
Takedown - Old (1)	0.159	0.124			
Takedown - New				0.779	0.116
Controlled Takedown				0.023	0.267
Strikes / Kicks	0.795	0.697	0.313	0.569	0.271
Impact Weapon - Old (1)	0.298	0.697			
Impact Weapon - Strike				N/A	0.562
Less Lethal				0.453	0.011
Baton-Nonstrike				0.303	0.412
Maximum Restraint (2)	0.834				
Aerosol Restraint	0.984	0.779	0.834	0.787	0.726
CEW	0.857	0.384	0.174	0.478	0.165
K-9 Bite	0.810	0.254	0.165	0.719	0.201
Pointing of Firearm	0.000	0.000	0.000	0.002	0.187
Resisted Handcuffing				0.000	0.000
Hobble Restraint				0.555	0.000
Controlled Against Resistance				0.032	0.000
PIT				0.006	0.873
Vehicle Ramming				0.555	0.412
Box-in				0.059	0.646
(1) Definitions changed when new types of force added in Quarter 3 of 2017					
(2) Removed from usage in early 2015					
Yellow indicates Black group experienced a statistically higher rate of force					

Table A11: Z-Score for multi-year analyst of force experienced by Hispanic group

Multi-Year Analysis for Overall Force for Hispanic Group Z-Score					
	2015	2016	2017	2018	2019
Subjects of Force	0.9334	1.2350	4.0487	2.4521	1.6954
Holds With Injury	-1.415	0.9035	-0.8886	-0.3416	-0.4671
Takedown - Old (1)	0.4954	2.0571			
Takedown - New				1.0864	1.9157
Controlled Takedown				1.9660	-1.4158
Strikes / Kicks	-0.5403	2.3573	1.546	1.3721	2.0075
Impact Weapon - Old (1)	0.0512	2.6653			
Impact Weapon - Strike				N/A	-0.3303
Less Lethal				1.4892	-0.6606
Baton-Nonstrike				-0.5917	-0.4671
Maximum Restraint (2)	0.7980				
Aerosol Restraint	-0.5118	-0.1935	1.4012	2.0219	1.2483
CEW	-0.4508	-1.1036	1.5460	-0.4597	0.3170
K-9 Bite	-1.0764	-0.1015	2.3072	0.6659	-1.2797
Pointing of Firearm	1.2720	0.2448	2.4145	1.2867	1.346
Resisted Handcuffing				1.3982	0.8967
Hobble Restraint				-0.1385	0.1013
Controlled Against Resistance				1.5139	1.3053
PIT				2.0219	0.1286
Vehicle Ramming				-0.3416	-0.4671
Box-in				0.4473	0.3638
(1) Definitions changed when new types of force added in Quarter 3 of 2017					
(2) Removed from usage in early 2015					
Yellow indicates Hispanic group experienced a statistically higher rate of force					

Table A12: P-Value for multi-year analyst of force experienced by Hispanic group

Multi-Year Analysis for Overall Force for Hispanic Group P-Values					
	2015	2016	2017	2018	2019
Subjects of Force	0.35238	0.21870	0.00001	0.01428	0.08914
Holds With Injury	0.15854	0.36812	0.37346	0.72786	0.63836
Takedown - Old (1)	0.61708	0.03940			
Takedown - New				0.27572	0.05486
Controlled Takedown				0.04884	0.15560
Strikes / Kicks	0.58920	0.01828	0.12114	0.17068	0.04444
Impact Weapon - Old (1)	0.96012	0.00758			
Impact Weapon - Strike				N/A	0.7414
Less Lethal				0.13622	0.50926
Baton-Nonstrike				0.55520	0.63836
Maximum Restraint (2)	0.42372				
Aerosol Restraint	0.61006	0.84930	0.16152	0.43380	0.2113
CEW	0.65272	0.27134	0.12114	0.64552	0.74896
K-9 Bite	0.28014	0.92034	0.02088	0.50286	0.20054
Pointing of Firearm	0.20408	0.81034	0.01596	0.19706	0.17702
Resisted Handcuffing				0.16152	0.36812
Hobble Restraint				0.88866	0.92034
Controlled Against Resistance				0.13104	0.18352
PIT				0.04338	0.89656
Vehicle Ramming				0.72786	0.63836
Box-in				0.65272	0.71884
(1) Definitions changed when new types of force added in Quarter 3 of 2017					
(2) Removed from usage in early 2015					
Yellow indicates Hispanic group experienced a statistically higher rate of force					

Table A13: Multnomah County 2019 Safety+Justice Challenge legal system demo. (extended)

2019 Multnomah County Safety and Justice Challenge Legal System Demographics						
	Total	White	Black	Hispanic	Nat. Am.	Asian
Adult Population (18+)	658,979	74.0%	5.8%	10.0%	0.9%	9.3%
Number of Jail Bookings	26,819	63.1%	22.8%	9.3%	1.9%	2.9%
Misdemeanor Bookings	13,836	62.7%	22.5%	9.5%	2.0%	3.2%
Felony Bookings	12,983	63.4%	23.2%	9.0%	1.9%	2.5%
Cases Referred to DA's Office	20,095	62.4%	24.1%	10.2%	0.7%	2.6%
Arrest Warrant	2,077	63.3%	24.8%	8.9%	0.4%	2.6%
Citation in Lieu of Arrest	2,303	68.4%	18.0%	10.0%	1.0%	2.6%
Direct Present	1,811	60.4%	25.8%	11.4%	0.3%	2.1%
Fugitive	242	69.0%	23.6%	5.8%	0.4%	1.2%
Probable Cause	13,662	61.4%	24.8%	10.3%	0.8%	2.7%
Cases Accepted for Prosecution	12,429	62.3%	23.5%	10.6%	0.7%	2.8%
Court Appointed Counsel	9,625	61.2%	24.9%	10.3%	0.8%	2.8%
Private Counsel	724	75.7%	9.3%	11.3%	0.1%	3.6%
Pre-Trial Releases	18,136	68.7%	19.2%	7.9%	1.7%	2.5%
Released on own Recognizance	11,267	65.5%	21.4%	8.7%	1.7%	2.6%
Bail	1,214	56.6%	22.4%	16.1%	1.3%	3.5%
Pre-Trial Supervision	3,092	62.0%	23.3%	10.2%	1.9%	2.6%
Total Cases Arraigned	12,082	62.2%	23.7%	10.5%	0.7%	2.8%
Cases Diverted	3,227	67.0%	19.8%	9.8%	0.7%	2.6%
Cases with Disposition	7,122	61.7%	24.4%	10.7%	0.8%	2.5%
Cases Convicted	4,075	63.6%	22.9%	10.5%	0.7%	2.3%
Cases Sentenced to Prison	256	62.5%	25.4%	10.5%	0.0%	1.6%
Cases Sentenced to Jail	1,122	61.1%	25.1%	10.6%	0.8%	2.3%
Cases Sentenced to Probation	1,322	65.1%	20.4%	11.3%	0.5%	2.7%
Cases Sentenced to Conditional Discharge	483	69.6%	19.9%	7.5%	1.4%	1.7%
Cases Sentenced to Monetary Judgment	658	61.7%	24.6%	10.5%	0.9%	2.3%
Individuals on Probation	7,799	67.9%	19.3%	8.2%	1.7%	2.8%
Violation of Probation Resulting in Jail Stay	1,363	62.4%	25.2%	7.0%	3.6%	1.8%
Technical Violaton	1,042	64.9%	22.6%	7.7%	3.2%	1.7%
New Arrest/Conviction	321	54.5%	33.6%	5.0%	5.0%	1.9%
https://www.documentcloud.org/documents/6559824-Multnomah-R-E-D-Analysis-2019-Final-November-19.html						