STATISTICAL TRANSPARENCY OF POLICING (STOP)

FIRST ANNUAL LEGISLATIVE REPORT (2018-2019)

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BACKGROUND
HB 2355

- **HB 2355** (2017) required law enforcement to report on all discretionary traffic and pedestrian stops.

STOP Data Elements	
Agency Name	Gender
Stop Date/Time	Reason for the Stop
Location & County†	Outcome of Stop
Type of Stop (Traffic/Ped)	Search (Y/N)
Residential Zip Code†	Search Reason
Race/Ethnicity	Search Findings
Age	Was an Arrest Made?

OREGON STOP PROGRAM

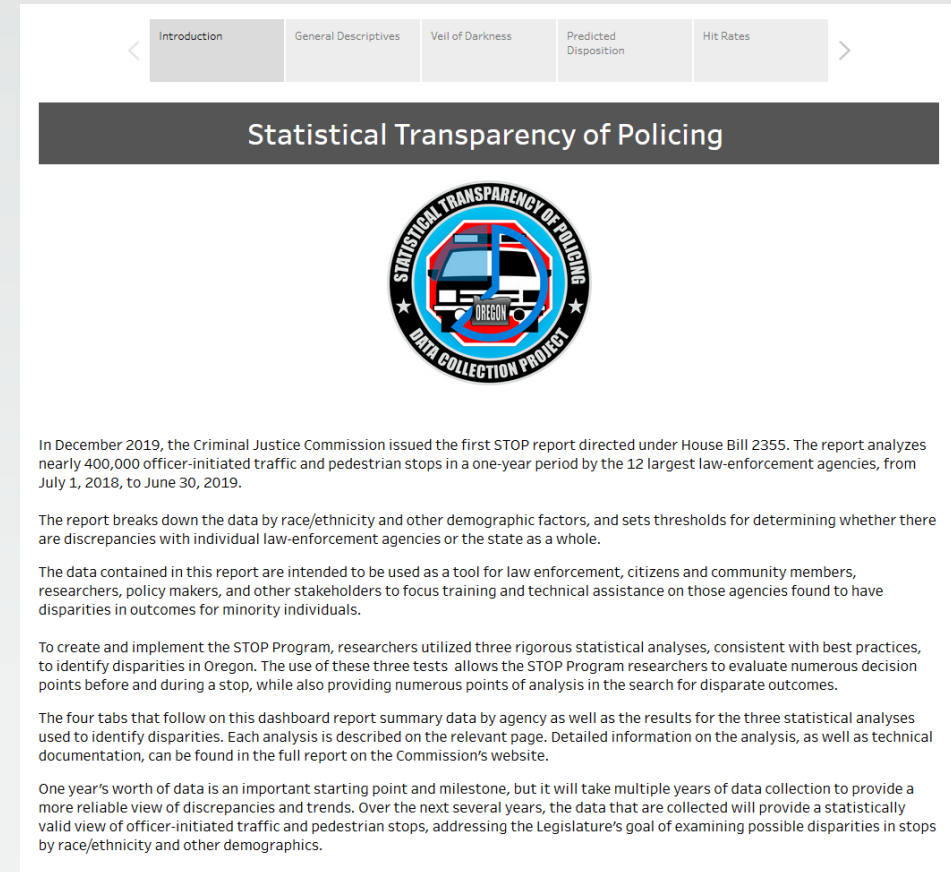FIRST ANNUAL REPORT (1 DECEMBER 2019)

FIRST ANNUAL STOP REPORT
GOALS AND DESIGN

Goals:

- To analyze STOP data following best practices, which includes the use of statistical techniques that avoid the use of benchmarks
- To provide results in an accessible manner via the report and the accompanying data dashboards
- To conduct analyses that will provide actionable information to agencies, stakeholders, and DPSST

| Introduction | General Descriptives | Veil of Darkness | Predicted Disposition | Hit Rates |

Statistical Transparency of Policing

In December 2019, the Criminal Justice Commission issued the first STOP report directed under House Bill 2355. The report analyzes nearly 400,000 officer-initiated traffic and pedestrian stops in a one-year period by the 12 largest law-enforcement agencies, from July 1, 2018, to June 30, 2019.

The report breaks down the data by race/ethnicity and other demographic factors, and sets thresholds for determining whether there are discrepancies with individual law-enforcement agencies or the state as a whole.

The data contained in this report are intended to be used as a tool for law enforcement, citizens and community members, researchers, policy makers, and other stakeholders to focus training and technical assistance on those agencies found to have disparities in outcomes for minority individuals.

To create and implement the STOP Program, researchers utilized three rigorous statistical analyses, consistent with best practices, to identify disparities in Oregon. The use of these three tests allows the STOP Program researchers to evaluate numerous decision points before and during a stop, while also providing numerous points of analysis in the search for disparate outcomes.

The four tabs that follow on this dashboard report summary data by agency as well as the results for the three statistical analyses used to identify disparities. Each analysis is described on the relevant page. Detailed information on the analysis, as well as technical documentation, can be found in the full report on the Commission's website.

One year's worth of data is an important starting point and milestone, but it will take multiple years of data collection to provide a more reliable view of discrepancies and trends. Over the next several years, the data that are collected will provide a statistically valid view of officer-initiated traffic and pedestrian stops, addressing the Legislature's goal of examining possible disparities in stops by race/ethnicity and other demographics.

STOP Program Dashboard can be found at www.oregon.gov/cjc

ANALYSES OF OREGON STOP DATA
STANDARDS AND METHODOLOGICAL THRESHOLDS

Sample Size

- To conduct analyses, a sufficient number of data points are required.
  - Insufficient number of observations to analyze Asian/PI, Native American, and Middle Eastern stops at the agency level.
  - Some Tier 1 agencies had insufficient data points to run Black and/or Hispanic analyses as well.
  - In future years, data will be combined.

Threshold for Statistical Significance[a]

- Results must be statistically significant at the 95% confidence level.

- Further investigation by the STOP Program and DPSST is warranted when an agency has statistically significant disparities in 2 of the 3 tests.

Sample Size Thresholds for Conducting Statistical Analyses	
Statistical Test	**Sample Size Threshold**
Veil of Darkness	Minimum of 100 observations for an individual racial/ethnic group
Predicted Disposition	Minimum of 100 observations for an individual racial/ethnic group
Hit-Rate	Minimum 30 observations per racial/ethnic group analyzed; no cell with less than 5 observations

Veil of Darkness Model

- Compares stops made in the daylight to stops made in darkness.
    - To ensure that similar driving populations are examined, only stops made during the morning and evening are included in the models.
    - Controls for day of the week, season, and time of day are included as well.
- If stops are being made in a race-neutral manner, stop rates should be almost identical and the model results for daylight/darkness should not be statistically significant.

Distribution of Stops by Time & Day

Veil of Darkness Model

- **Reading the Results**: an odds ratio above 1.0 indicates that a minority group was stopped more often in the daylight, which indicates a possible disparity.
- No statistically significant disparities above 1.0 were found in the VOD models.

Analysis Limited to DST Window

Logistic Regression of Minority Status on Daylight for All Tier 1 Agencies

Sample	Asian/PI	Black	Hispanic	Middle Eastern	Native Am.
Tier 1 Agencies	1.05	0.96	0.93	0.89	0.86
Tier 1 Agencies (no OSP)	0.95	0.90	0.90	1.02	0.81

ANALYSES OF OREGON STOP DATA
THE INITIAL DECISION TO STOP AN INDIVIDUAL

Veil of Darkness Model

- **Reading the Results**: an odds ratio above 1.0 indicates that a minority group was stopped more often in the daylight, which indicates a possible disparity.

- No statistically significant disparities above 1.0 were found in the VOD models.

Agency	Black	Hispanic	Combined Sample
Beaverton PD	0.90	1.19	1.10
Clackamas Co SO	1.34	1.12	1.18
Eugene PD	0.58	1.18	0.83
Gresham PD	0.77	0.62	0.70
Hillsboro PD	1.02	0.87	0.89
Marion Co SO	N/A	0.82	0.92
Medford PD	N/A	0.78	0.64
Multnomah Co SO	0.93	1.00	0.97
Oregon State Police	1.04	0.95	0.96
Portland PB	0.86	0.77	0.83*
Salem PD	N/A	1.18	1.22
Washington Co SO	0.89	0.82	0.84

Propensity Score Matching

- Ideally, we would like to approximate a random control trial.
- Propensity score matching analysis mimics important aspects of an RCT in cases where random assignment is not possible.
- In effect, you are able to balance your data so you can test for race-based differences.
- For the following analyses, we test for differences across race in:
  - Citations
  - Searches
  - Arrests
  - Any non-warning outcome (i.e., citation, search, or arrest)

List of Variables Used for Matching	
Age	Gender
Agency	Holiday
Citation Type	Stop Type
Daylight	Daily Stop Volume
Day of the Week	Time of Stop

Propensity Score Matching

- **Reading the Results**:
  - Only statistically significant results are shown
  - If there is a gap between our predicted and the actual outcomes for a given racial group, then there is evidence of a disparity.

Agency	Race	Citation	
		Actual	**Predicted**
All Tier 1 Agencies	Black	--	--
	Hispanic	43.0%	37.4%
	Asian/PI	--	--
	Middle E.	--	--
	Native Am.	--	--
All Tier 1 Agencies (no OSP)	Black	--	--
	Hispanic	40.7%	37.3%
	Asian/PI	--	--
	Middle E.	--	--
	Native Am.	--	--

The actual citation percentage in the STOP data for Hispanics

The citation percentage we'd expect if our stopped Hispanics were White.

ANALYSES OF OREGON STOP DATA
POST STOP OUTCOMES: SEARCHES, ARRESTS, CITATIONS

Agency	Race	Citation Actual	Citation Predicted	Search Actual	Search Predicted	Arrest Actual	Arrest Predicted	Citation, Search, or Arrest Actual	Citation, Search, or Arrest Predicted
Beaverton	Black	--	--	--	--	--	--	--	--
	Hispanic	--	--	7.0%	5.0%	6.5%	5.0%	39.6%	36.8%
Clackamas	Black	--	--	--	--	--	--	--	--
	Hispanic	--	--	--	--	--	--	--	--
Eugene	Black	--	--	--	--	--	--	--	--
	Hispanic	--	--	--	--	--	--	--	--
Gresham	Black	--	--	--	--	--	--	--	--
	Hispanic	--	--	--	--	--	--	--	--
Hillsboro	Black	--	--	--	--	--	--	--	--
	Hispanic	27.6%	20.2%	--	--	--	--	30.1%	22.4%
Marion	Black	--	--	--	--	--	--	--	--
	Hispanic	85.9%	83.4%	--	--	--	--	86.2%	83.7%

ANALYSES OF OREGON STOP DATA
POST STOP OUTCOMES: SEARCHES, ARRESTS, CITATIONS

Agency	Race	Citation		Search		Arrest		Citation, Search, or Arrest	
		Actual	Predicted	Actual	Predicted	Actual	Predicted	Actual	Predicted
Medford	Black	--	--	--	--	--	--	--	--
	Hispanic	--	--	--	--	--	--	--	--
Multnomah	Black	24.6%	20.1%	--	--	--	--	27.6%	23.3%
	Hispanic	--	--	--	--	--	--	--	--
OSP	Black	45.4%	38.1%	--	--	--	--	47.1%	39.8%
	Hispanic	45.6%	37.7%	--	--	--	--	47.1%	39.2%
Portland	Black	--	--	11.0%	4.8%	7.4%	5.5%	--	--
	Hispanic	--	--	5.9%	4.4%	--	--	--	--
Salem	Black	--	--	--	--	--	--	--	--
	Hispanic	54.3%	46.5%	--	--	--	--	54.7%	49.3%
Washington	Black	--	--	--	--	--	--	--	--
	Hispanic	32.1%	28.0%	--	--	4.7%	3.7%	35.7%	31.0%

Outcome/Hit Rate Test

- Successful searches should be equal across different races if the decision to search is based on race neutral factors.

- If hit rates are consistently lower for one racial group, the target group is being searched more often than success rates would warrant.

- For example:
  - If searches of whites are successful 60% of the time, but searches of Hispanics are only successful in 10% of cases, then
  - The model would suggest that a different (and less successful) standard is being used when searching Hispanics.
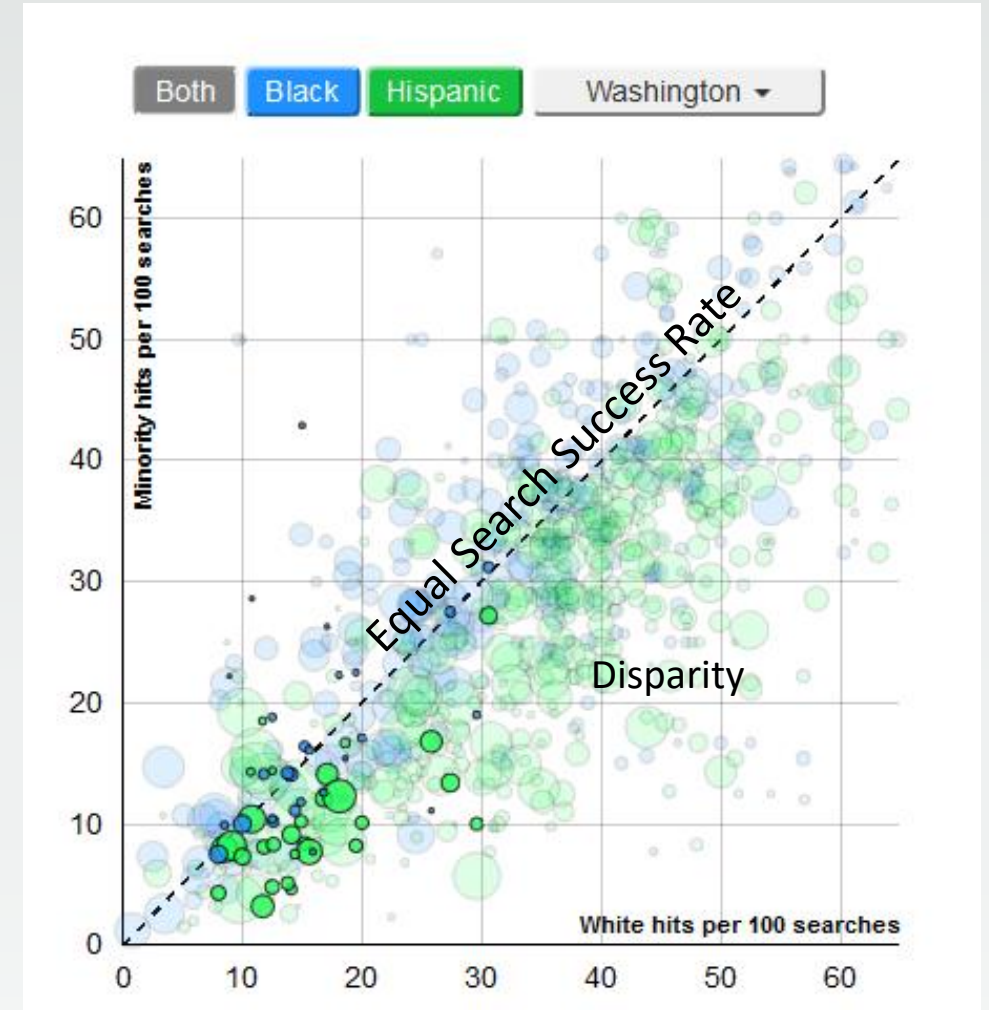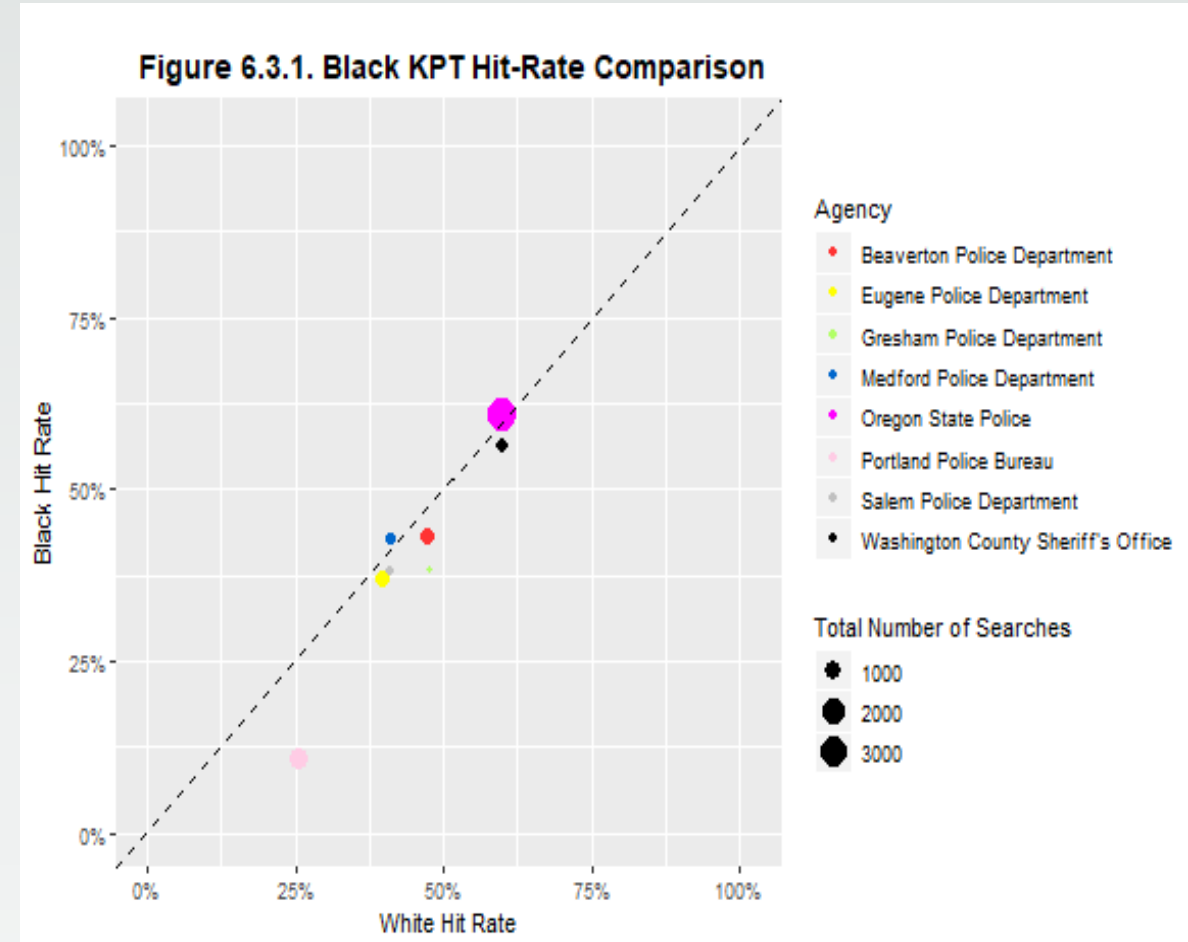
Outcome/Hit Rate Test

- For searches of Black individuals, most Tier 1 agencies are close to the line.
- Portland Police Bureau, however, was found to have a disparity.
  - Initial data analysis found that searches were successful for Blacks in 10.9% of cases, but were successful for Whites in 25.5% of cases.
  - Preliminary analyses of "corrected" data, however, shows that successful searches of Black individuals could be as high as 43.1%, while successful searches of Whites would be 50.5%.


Figure 6.3.1. Black KPT Hit-Rate Comparison

Outcome/Hit Rate Test

- For searches of Hispanic individuals, most Tier 1 agencies are close to the line, although there was more variation.

- No statistically significant disparities were found.

- Portland Police Bureau:
  - Original Data: White (25.5%), Hispanic (22.5%)
  - Preliminary "Corrected" Data: White (50.5%), Hispanic (47.2%)

Figure 6.3.2. Hispanic KPT Hit-Rate Comparison
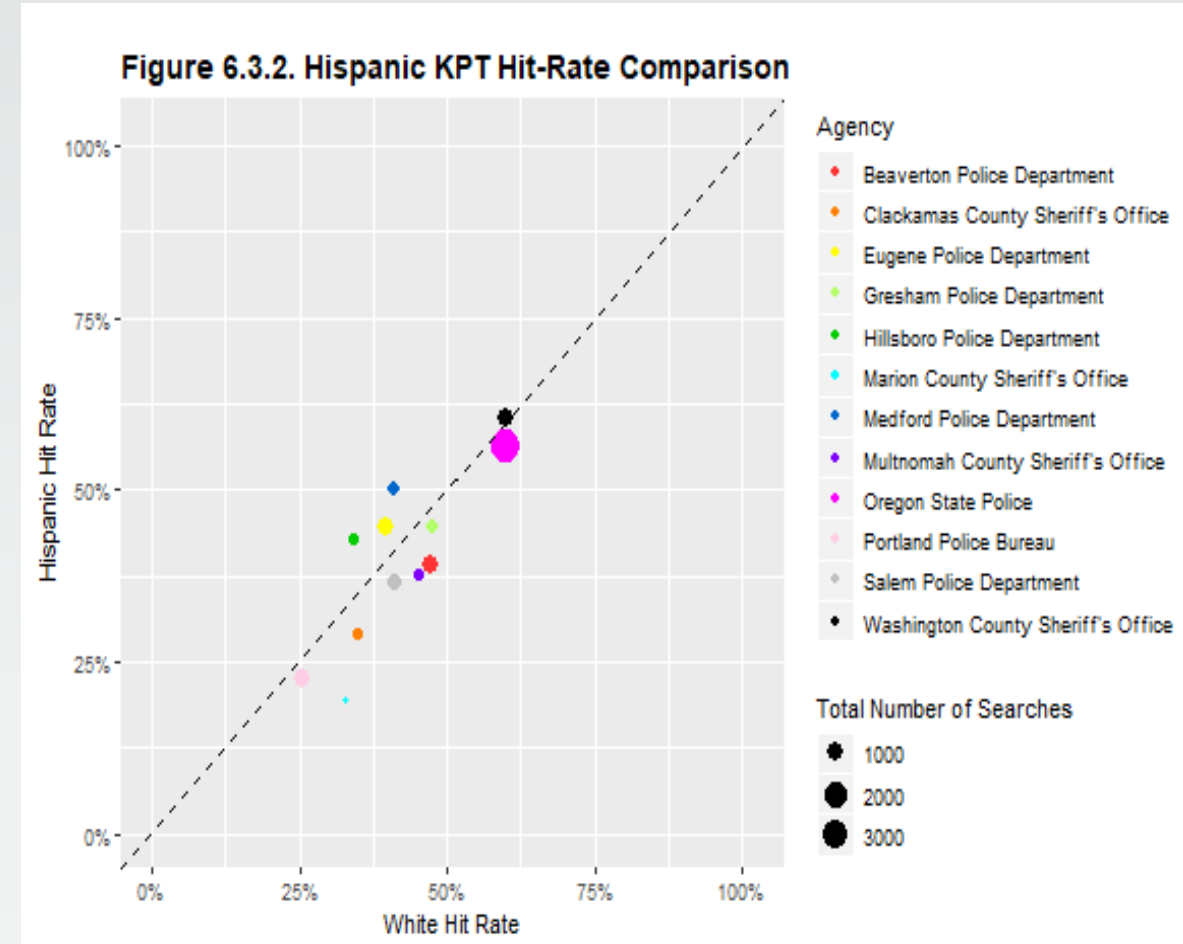
ANALYSES OF OREGON STOP DATA
POST STOP OUTCOMES: COMPARING OREGON SEARCHES TO OTHER JURISDICTIONS
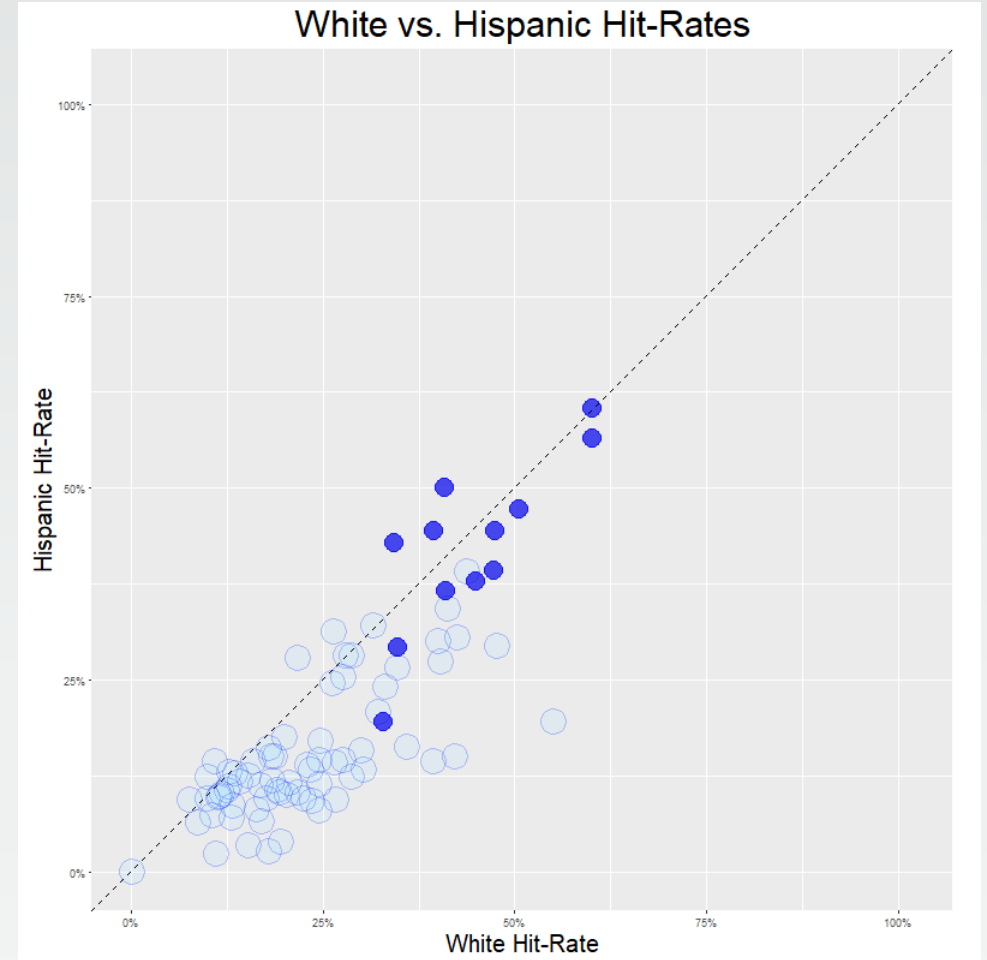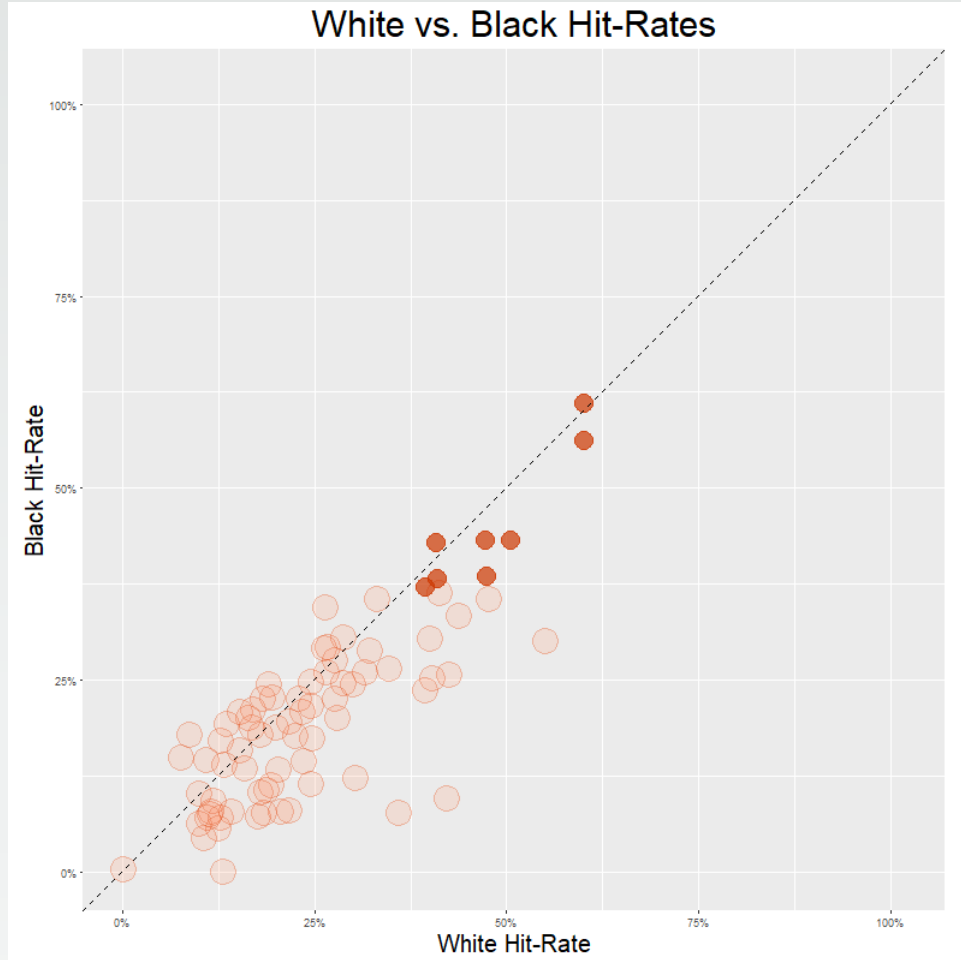
NOTE: Portland Police Bureau's "Corrected" data was used to construct this figure.

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CONCLUSION & NEXT STEPS

CONCLUSION
KEY TAKEAWAYS AND NEXT STEPS

- Overall, only one agency met the predefined threshold for further analysis and assistance from DPSST.

- All agencies with even a single identified disparity, however, have expressed a willingness to work with CJC to explore the reasons behind their disparities.

- One particularly promising follow up will be working with agencies to explore new and additional data.

		Citation		
	Race/Ethnicity	Actual	Predicted	Δ
	Black	45.4%	38.1%*	7.3
Baseline Analysis	Hispanic	45.6%	37.7%*	7.9
	Black or Hispanic	45.6%	37.8%*	7.8