



Dive into Data

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Housing as a Human Right: An Asset-Based Approach to Housing Justice

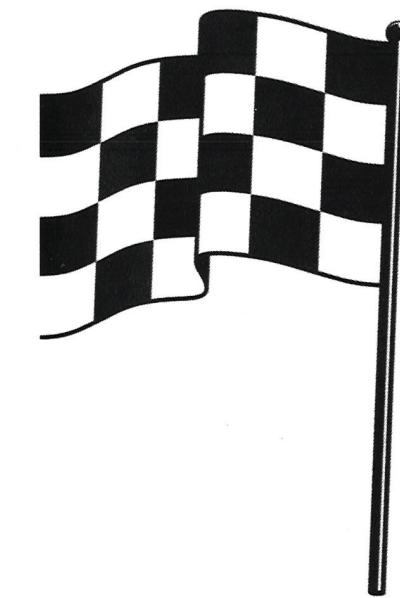
October 3, 2023



Using data is like planning a pizza party...

DIVE INTO DATA

Humanizing the Data



PRINGLE'S
PITSTOPSM

"Serving the Homeless
of the Greater Newark
Metro Area"

by Theresa Pringle

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Humanizing the Data

How to center the voices of people with lived experience in the data process

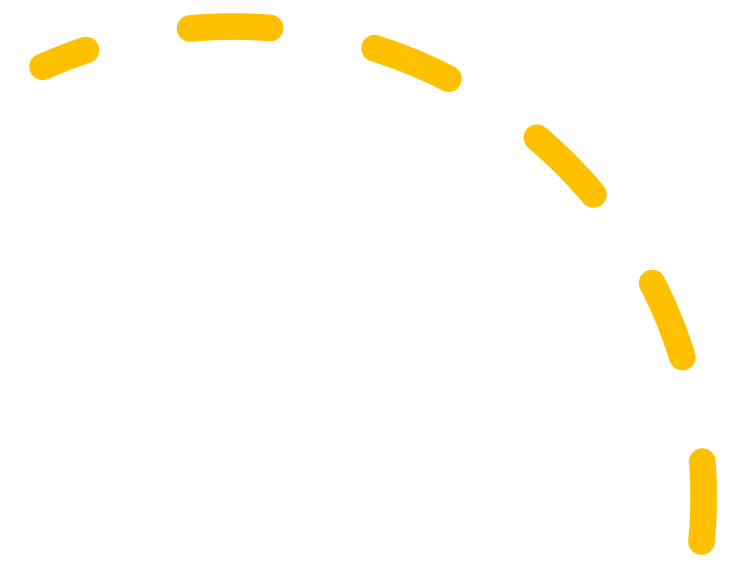
- Key example: 2023 Point-in-Time Survey



STEP 1

Restructuring of the Survey

- People with lived experience (who served as focus group participants receiving case management and other services) provide a key role in restructuring of the PIT survey because:
 - Motivational interviewing can have a more positive outcome by the way we address individuals and the barriers and challenges they experienced during the survey
 - Resolving barriers and challenges so that individuals and families transition into housing alleviates occurrences of residual homelessness



Ideally providers that engaged individuals for PIT surveys will go back to initiate services based on those surveys







STEP 2

Strengthening our Outreach and Engagement

- Gather better data
- Reflect a more realistic comprehensive picture of the needs of those experiencing homelessness (which is to be reflected in the data collection)
- Foster more cooperation between agencies decreasing the events of traumatizing and re-traumatizing those experiencing homelessness by recounting their story over and over again

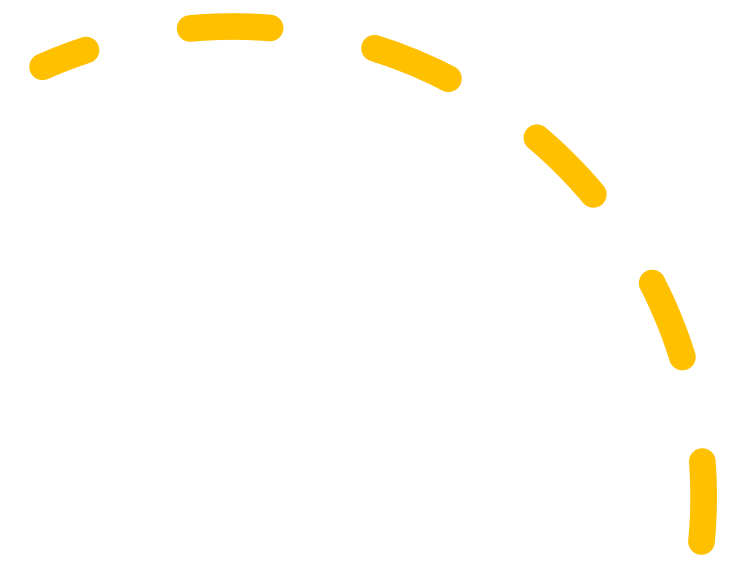


Ideally the PIT surveys within your communities can lessen the whole subject of trauma to those experiencing homelessness if we go back and actually extend ourselves into effective service delivery





STEP 3



Bringing PWLE and Data together

- Bring those with lived experience into the actual learning and training of the HMIS data process for those who are working in the field or serving in strong advocacy work



Hopeful Desired Outcomes

*person centered motivational interviewing
+ inclusion of trauma informed approaches*

= better data, policies, practices, and programs

- How so?
 - Turn what you see working to more consistent levels
 - Turn weaker areas to strengths based on the data that you have
 - Realign policy to meet the needs of the community

Questions or Comments?

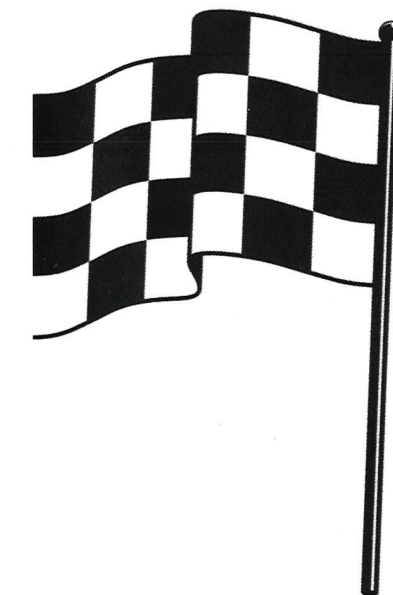
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**PRINGLE'S
PITSTOPSM**

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of the Greater Newark
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The Importance of Data Quality

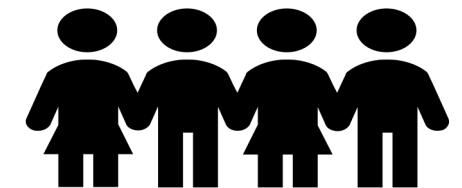
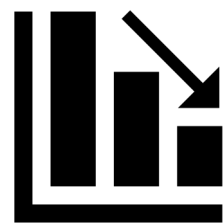
What is Data Quality and Why is it Important?

NJ HMIS October 2023



What is Data Quality?

Data quality is the accuracy and reliability of the information used to inform an organization or community. High quality data is essential for making informed decisions and conducting meaningful analysis.

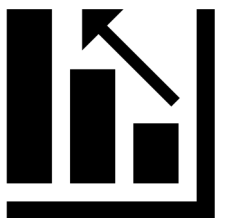




Why is Data Quality Important?

Data Quality is important because it directly affects information that is used for decision making and performance measurement.

Poor data quality can lead to false assumptions and strategies.



Good Data =

Accuracy

Completeness

Consistency

Timeliness

Training



❖ Accuracy

- Accuracy implies that the data is correct. Inaccurate data can have severe consequences on funding opportunities and performance.

Example:

Did Joe Jones stay in your shelter for 350 days or was he not discharged after his 30 day stay?

This would directly affect a community's average length of stay for those experiencing homelessness.

- Your data should reflect a true and real world picture.





Example:

Name	Admission	Discharge	LOS
Sauce Gardner	10/01/22	01/15/23	102
Sally Quinn	02/02/23	02/18/23	16
Micky Dee	12/15/22	03/31/23	106
Joe Jones	10/15/21	11/15/21	30
Joe Jones actual discharge date: 11/15/21		Avg. LOS	60 days
		Avg. LOS	143 days



❖ Completeness

- Your data should contain all the necessary information and fields needed to draw conclusions.
- Missing data can lead to incomplete and misleading assumptions.
- It is important to understand the full set of requirements that constitute a comprehensive set of data for your particular project or application.



❖ Consistency/Reliability

- Data should be consistent across sources and time. A particular piece of information should not contradict another piece of information collected in another source or system.

Example:

Joe Jones' birthday in project A: December 13, 1990

Joe Jones' birthday in project B: December 13, 1991

- When information contradicts itself it becomes unreliable and unusable.



❖ Timeliness

- Timeliness refers to the 'freshness' and relevancy of the current data. Depending on the project type, data entry should take place in as real time as possible.
- Timeliness is an important indicator in the review of utilization and trends at any given point in time.



❖ Training

- The importance of training for all people in the organization concerning the what and why of data collection cannot be understated.
- Clear and accurate data definitions must be available and agreed upon across the organization. A firm understanding of the data elements by anyone touching the data prevents misinterpretations and inconsistencies across an organization.
- Reports using an organization's data should be available to all members to educate and prevent inaccuracies.



Data At the Organizational Level



- **Effective Service Delivery:** Accurate and reliable data is essential for understanding the needs and demographics of the homeless population. This information helps organizations tailor their services to meet specific requirements, ensuring that individuals receive the right support and resources.
- **Resource Allocation:** Limited resources are a common challenge for non-profits and service providers. High-quality data enables these organizations to allocate their resources efficiently. They can identify areas with the highest need, target interventions effectively, and minimize waste.
- **Evidence-Based Decision-Making:** Data quality enables evidence-based decision-making. By collecting and analyzing accurate data, organizations can identify trends, track progress, and determine which programs or interventions are most effective. This information guides strategic planning and policy development.
- **Accountability:** Donors, funders, and government agencies often require non-profits to demonstrate the impact of their work. High-quality data allows organizations to provide transparent and credible reports on their activities and outcomes, fostering trust and accountability.



- **Grant Opportunities:** Many grants and funding opportunities are competitive, and funders often prioritize organizations that can demonstrate their ability to collect and manage data effectively. Data quality enhances an organization's chances of securing funding and partnerships.
- **Improved Collaboration:** Data that meets high-quality standards can be easily shared and integrated with other organizations and agencies involved in homelessness services. This promotes collaboration and coordination, leading to a more comprehensive and efficient approach to addressing homelessness.
- **Long-Term Planning:** Non-profits and service providers need to plan for the long term to make sustainable changes in addressing homelessness. High-quality data helps in identifying trends and forecasting future needs, allowing organizations to plan for the years ahead.
- **Client-Centered Approach:** Homeless individuals often have complex needs, and a client-centered approach is crucial. Accurate data helps organizations understand individual circumstances, preferences, and barriers, enabling them to provide more personalized and effective support.
- **Avoiding Duplication and Overlaps:** High-quality data can help organizations identify areas where services may overlap or where there are gaps in coverage. This information allows for more efficient resource allocation and reduces duplication of efforts.

❖ In Conclusion

High-quality data is a foundation. Finding ways for your organization to prevent, detect, and correct data quality issues will set the stage for your data to be used at the agency level and the community at large.





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**Dive Into Data:
Linked HMIS & Medicaid Records**

**Monarch Housing Associates
2023 Housing as a Human Right Conference**

October 3, 2023
Somerset NJ

Acknowledgements

Partners



Funders

- National Institute on Minority Health and Health Disparities (R01MD01261)
- Robert Wood Johnson Foundation

Additional thanks

- NJ Division of Medical Assistance and Health Services and the NJ Housing and Mortgage Finance Agency
- PA Department of Community & Economic Development, Allegheny County, Delaware County, Lancaster County, and Philadelphia County

The content of this presentation is the sole responsibility of the author and does not necessarily represent the official views of the funders or agencies providing data.

What are HMIS and Medicaid Claims (a.k.a. MMIS)?

Homeless Management Information System (HMIS)

- **Client information** (e.g., demographics, income sources, disabilities, homeless history) collected at delivery of **each service**
- **Services information** (e.g., homelessness prevention, emergency shelter, permanent supportive housing) **collected at service entry, update, or exit**
- Primary use for **planning, management, and accountability**

Medicaid Claims (i.e., Medicaid Management Information System/MMIS)

- **Client information** (e.g., demographics, eligibility category, dates of enrollment) collected in the **enrollment application process**
- **Services information** for most Medicaid-paid services (e.g., hospital stays, ambulatory visits, non-emergency transportation) from **fee-for-services claims** or **managed care organization encounter** records
- Used for **eligibility determination** and **payment**

Linked HMIS and Medicaid data used by Rutgers Center for State Health Policy (CSHP)

- **Statewide Medicaid claims linked to HMIS held by the NJ Housing and Mortgage Finance Agency (HMFA)**
 - Linkage performed by a “trusted third party” and CSHP receives *only* de-identified data (i.e., HIPAA “Limited Data Set”)
 - Currently covers 19 counties (excludes HMIS records from Middlesex and Bergen Cos) for 2011-Q1 2023
- **CSHP uses these data for...**
 - *Role of Homelessness and Supportive Housing in Healthcare Disparities among Adults in Medicaid* (NIH funded)
 - *Data to Action* to promote cross-sector collaboration addressing health needs of people experiencing homelessness (PEH) (RWJF funded)
 - Evaluation of the Housing Supports in NJ’s §1115 Medicaid Comprehensive Demonstration Waiver (Pending review by NJ Medicaid & CMS)

NIH Study: Selected Research Questions

1. What was the **impact of the ACA Medicaid expansion** on people experiencing homelessness (PEH) in NJ and PA?
2. What are health services **predictors of first episodes** of homelessness?
3. To what extent are there racial/ethnic and rural disparities in **placement in permanent supportive housing (PSH)**?
4. How does **PSH placement change Medicaid spending** (overall spending and spending for hospital inpatient & emergency departments, community physical & behavioral health visits, prescription drugs, etc.)?
5. What **factors explain variations** in the association of PSH placement on Medicaid spending and utilization outcomes?

***RWJF Data to Action* project**

- 1. Describe existing and planned exemplary collaborations** to improve health services for PEH
- 2. In-depth interviews** with ≈ 25 PEH with complex health needs and challenges navigating healthcare and housing services
- 3. Data visualizations** of patterns of avoidable and essential use of health services among Medicaid-enrolled PEH
- 4. Cross-sector convening** to review evidence and foster cross-sector collaboration
- 5. Media outreach and policy briefings** to reduce barriers and promote project collaborative program development

***Data to Action:* Describe existing and planned exemplary collaborations**

- **Collaborations among hospitals and homeless service organizations**
- **Health systems and housing development partnerships**
- **FQHC-based collaborations to strengthen their PEH service mission**
- **Healthcare services for people who are unstably housed**

Data to Action: PEH Perspective Interviews

It is unusual for healthcare providers to ask about housing, and if they do, help is often minimal or even unhelpful.

“I was pregnant, and I was -- at the gynecologist that they said, you know, how is your housing situation? And I said, I'm currently homeless. I live at a shelter and they said, well, if you don't have a safe place, which the shelter was a safe place, but if you don't have your own place or whatever or, you know, you're on the, no, when I was living on the street, I told them, you know, I'm homeless and they said, well, if you give birth, we will take the baby won't allow you to go home without an address.” (2320)

Emphasis added.

Data to Action: PEH Perspective Interviews

Housing providers addressing healthcare needs is more common.

“Yeah, as soon as they make sure you make your appointments and call you referrals Ms. [redacted], I don't know, everybody has their own personal relationship but I'm pretty sure across the board that she asked everybody about their health problems that they have them and make sure that they were on them on top of that. Doing what you got to do and making sure, I get, she knows all my appointments ahead of time. Like I screenshot even the stuff in November you know to see the analogies. So she knows ahead of time and then like yesterday she called me up and made sure I was going to be available or if my dental appointment was still the same.” (2383)

Emphasis added.

Data to Action: Data Visualization Metrics

- Linked Medicaid-HMIS data
 - Population-based rates among people experiencing homelessness
 - Comparisons arrayed across **CoCs, MCOs, & individual hospitals**
 - Summary CoC ranking
- Demographics
 - Behavioral and physical conditions
 - Prevalence of common conditions
 - Multiple chronic conditions
 - Emergency department (ED) and inpatient utilization
 - High frequency use
 - Avoidable/preventable use
 - Readmissions
 - Community follow up after behavior health ED visits or inpatient discharges
 - Primary care utilization
 - Overall
 - High-risk groups
 - Community behavioral health utilization
 - FQHC resources
 - Data quality indicators

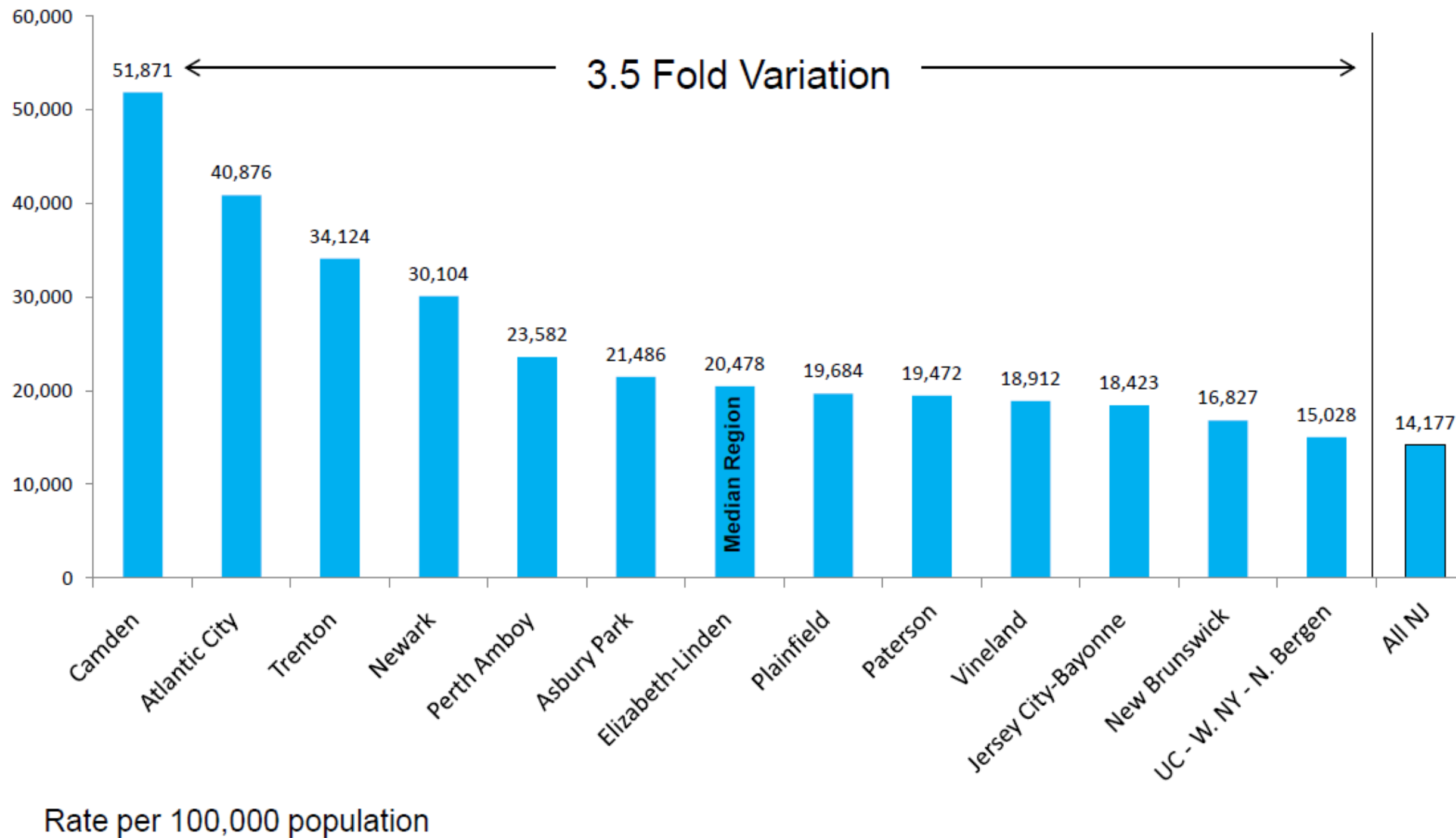
Table 1 | **Comparing Performance across 13 New Jersey Low-Income Areas (1=Best, 13=Worst)**

Areas	Overall Rank	Avoidable Hospitalizations	Avoidable ED Visits	Inpatient High Use	ED High Use	Hospital Readmissions
Atlantic City-Pleasantville City	13	12	12	12	12	8
Newark City-East Orange City-Irvington Township-City of Orange Township	12	11	10	11	10	13
Trenton City	11	10	11	10	11	12
Camden City	10	13	13	4	13	10
Asbury Park City-Neptune Township	9	4	8	13	9	9
Perth Amboy City-Hopelawn	8	9	9	8	6	7
Jersey City-Bayonne City	7	8	3	9	2	11
Vineland City-Millville City	6	7	4	6	8	2
Paterson City-Passaic City-Clifton City	5	6	5	5	4	6
Elizabeth City-Linden City-Winfield Township	4	2	7	3	5	5
Plainfield City-North Plainfield Borough	3	3	6	2	7	1
Union City-W. New York Town-Guttenberg Town-N. Bergen Township	2	5	1	7	1	4
New Brunswick City-Franklin Township	1	1	2	1	3	3

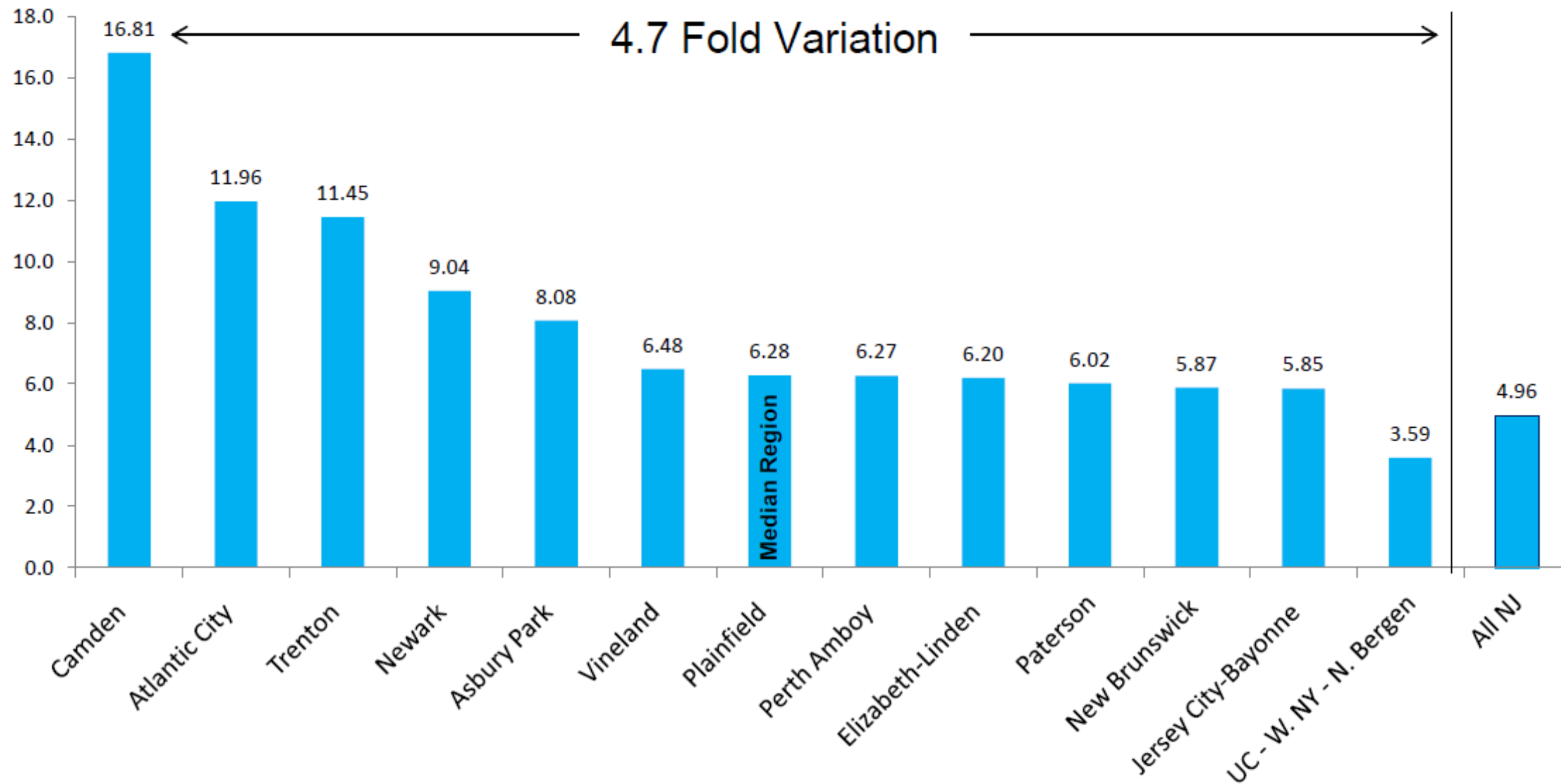
Rankings: Worst three Next three Intermediate four Best three

Regions are arranged in order of worst to best overall performance rank based on the average of individual measure rankings. See appendix for performance measure definitions and data sources.

Rates of Avoidable Emergency Department Visits



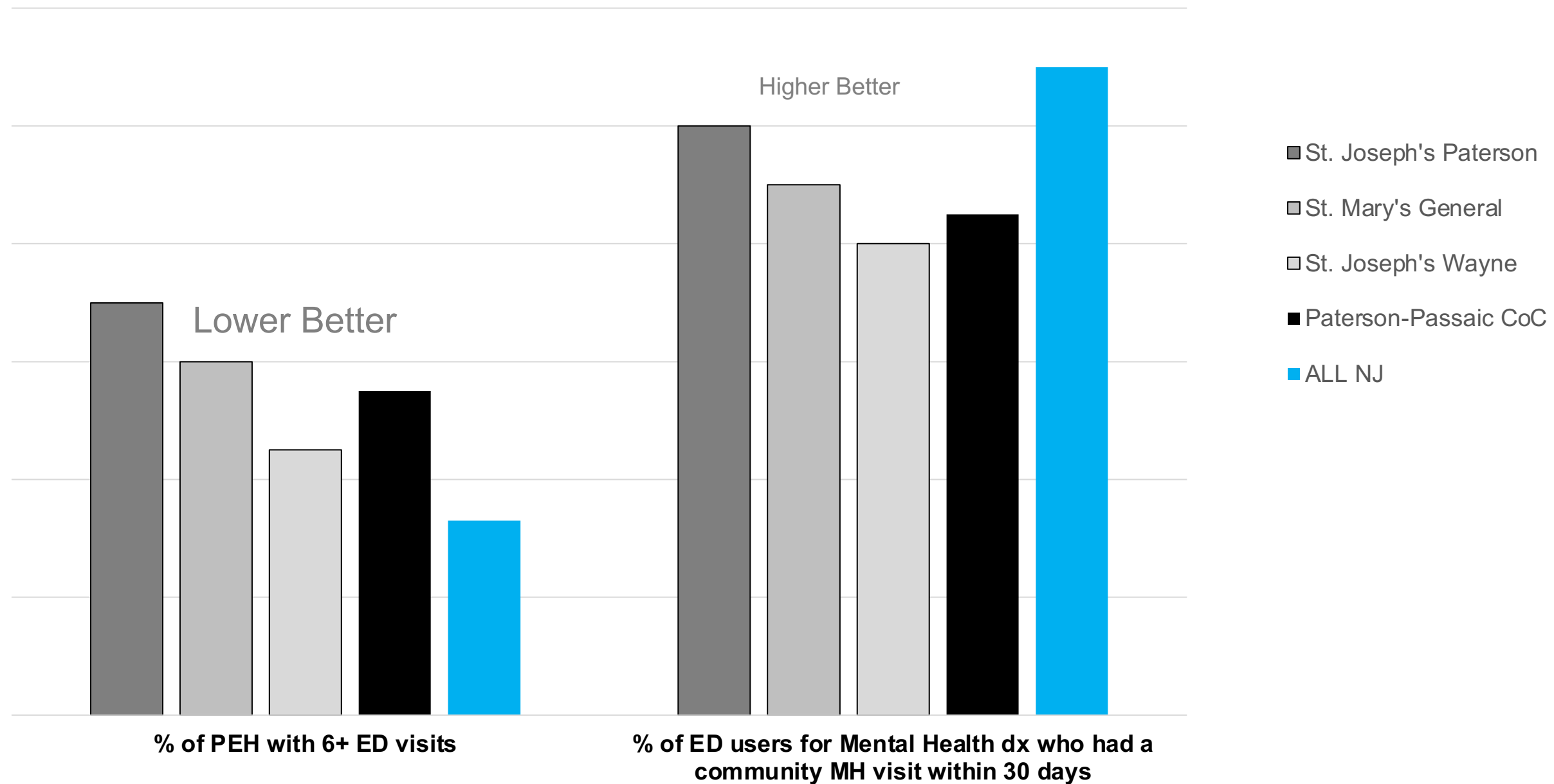
Rates of Treat-and-Release ED High Use



Rate per 100 hospital users

Data Visualization Example: Emergency Department High Use & Community Mental Health Visits among PEH in Passaic CoC, 2022

Not Real Data



Thank You!

Questions & Discussion

For questions or to receive updates
contact Oliver Lontok

olontok@ifh.rutgers.edu

Housing Supports in NJ's §1115 NJ Comprehensive Medicaid Demonstration Waiver

- Expand “Housing Specialist” services in Medicaid managed care organization (MCO)
 - Screen all Medicaid members for housing needs
 - Provide referrals for housing and other services to members at risk for housing instability
- Medicaid Housing Unit within NJ Medicaid
 - Monitor and enforce new contract requirements for Medicaid MCOs
 - Promote cross-agency collaboration and engagement
 - Performance measurement and reporting
- New Medicaid-paid pre-tenancy transition and tenancy sustaining services

***Data to Action* Project Steering Committee**

Michelle Blanchfield, Zufall Health

Steve Barry, RWJBarnabas Health

Aaron Tuchill, Camden Coalition

Naomi Lesnewski, Hudson County

Lynn Seaward, Monmouth County

Sr. Rosemary Moynihan, Trinitas
Regional Medical Center

Mike Callahan, NJ DCA Office of Homelessness
Prevention

Nancy Scotto Rosato, NJ DOH Family Health
Services

Lee Ruszczyk, Henry J. Austin Health Center

Valerie Mielke, NJ DHS Div. of Mental Health and
Addiction Services

Melanie Walter, NJ Housing and Mortgage Finance
Agency

Zakiyyah Wilson, Community Consultant

Tristan Gibson, NJ DHS Div. of Medical Assistance
and Health Services

Chelsey Hoelz, NJ DHS Div. of Medical Assistance
and Health Services

Raymond McGhee, Robert Wood Johnson
Foundation

```
15 # Encode categorical variables
16 label_encoders = {}
17 for column in df.select_dtypes(include=['object']).columns:
18     le = LabelEncoder()
19     df[column] = le.fit_transform(df[column])
20     label_encoders[column] = le
21
22 # Normalization
23 scaler = StandardScaler()
24 df_scaled = pd.DataFrame(scaler.fit_transform(df), columns=df.columns)
25
26 # Split data into training and test sets
27 X = df_scaled.drop('Destination', axis=1)
28 y = df['Destination']
29 X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=42)
30 # Initialize the model
31 model = RandomForestClassifier()
32
33 # Train the model
34 model.fit(X_train, y_train)
35 # Evaluate the model
36 y_pred = model.predict(X_test)
```

**From Homelessness to Equitably Housed:
One Algorithm at a Time**

Dr. Michael Callahan – Director, Office of Homelessness Prevention
Department of Community Affairs

Data can be a powerful tool for positive change in the homelessness services and provider ecosystem, but it can also be misused or "weaponized" in ways that perpetuate homelessness and housing insecurity.





What if we used the methods that perpetuate housing bias in New Jersey to instead promote equitable system access, ensure fair resource allocation, and hold service providers accountable for equitable results?

Similarly, what is after Built for Zero?

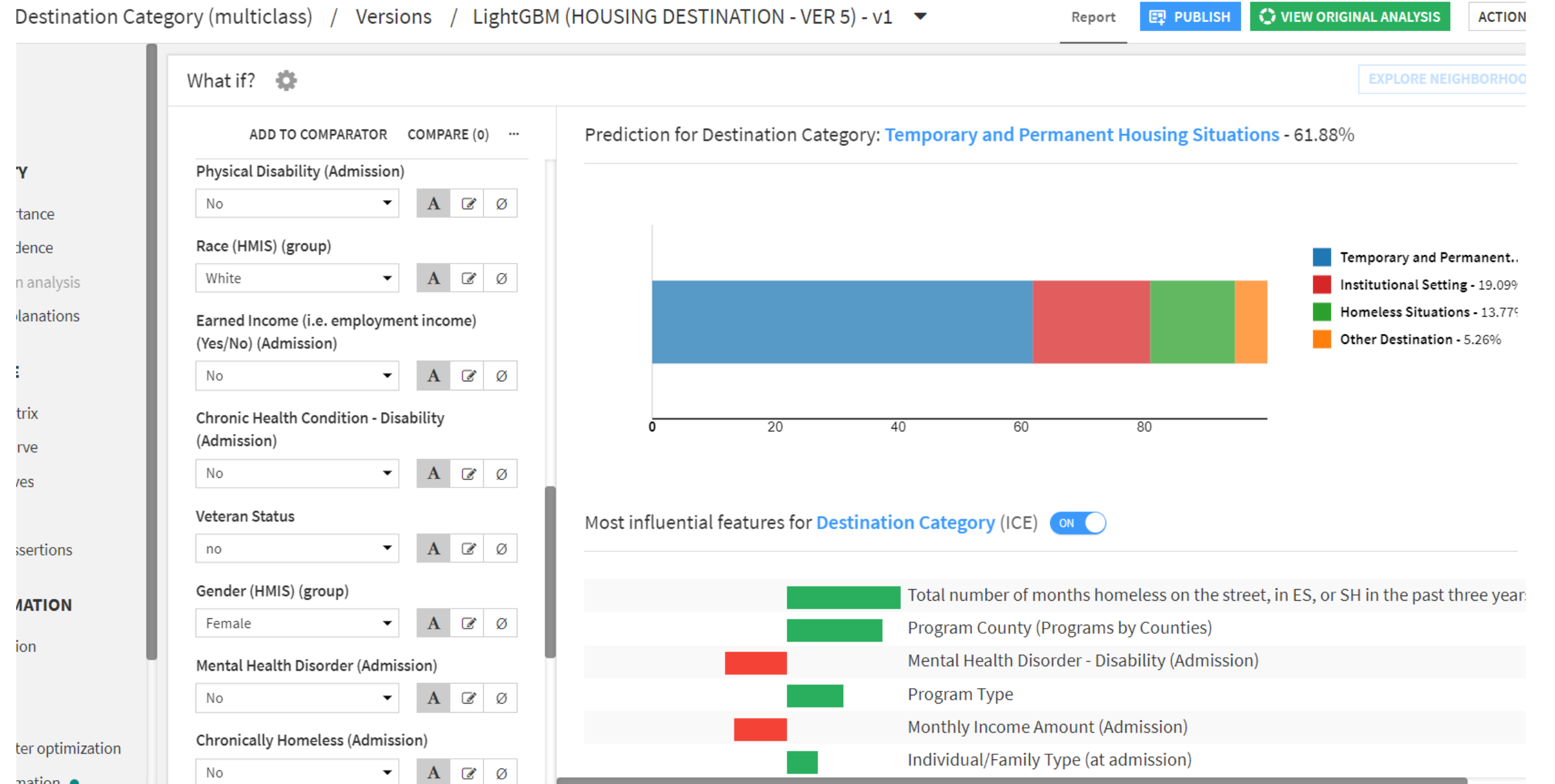
Moving beyond the throughput model of service optimization to housing to iterate and drive equitable housing outcomes is paramount to both sustainment of functional zero and its key threat—a dynamic and ever-changing provider and governmental landscape.

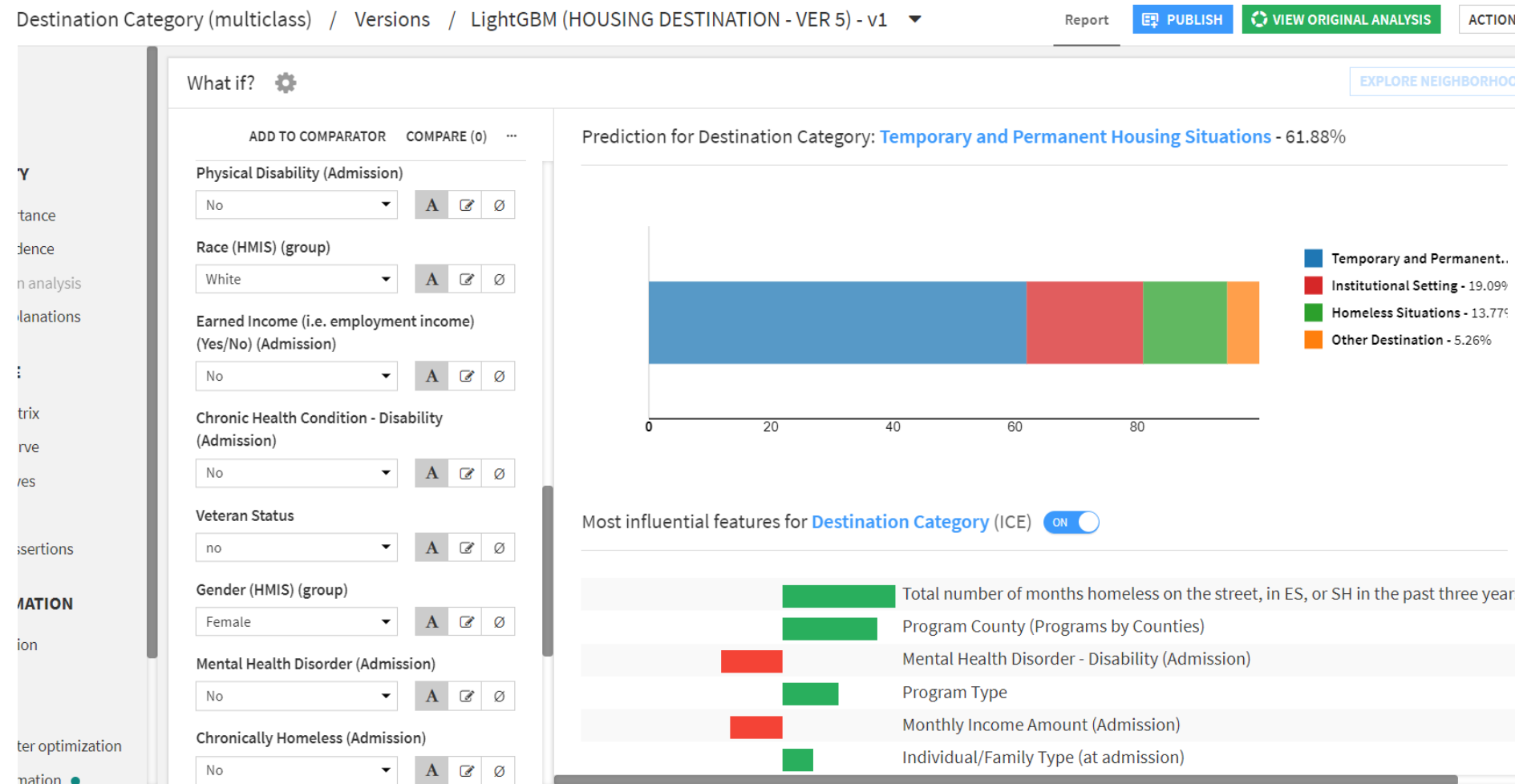


ML for Equity

Project RoofReckon

Predicting Housing Outcomes Using 33 key features.





Project RoofReckon

Trained on 10 years of HMIS data and housing outcomes.

- 1.21 million encounters
- 333 individual features (variables)

Project RoofReckon - Performance

- **ROC AUC – 0.8934**

RoofReckon's ROC AUC (Receiver Operating Characteristic - Area Under the Curve) value is .8934. This metric is commonly used to evaluate the performance of classification models.

ROC AUC = 0.5: This is equivalent to random guessing. For example, if you were trying to classify whether an email is spam or not, a model with an ROC AUC of 0.5 would be no better than flipping a coin.

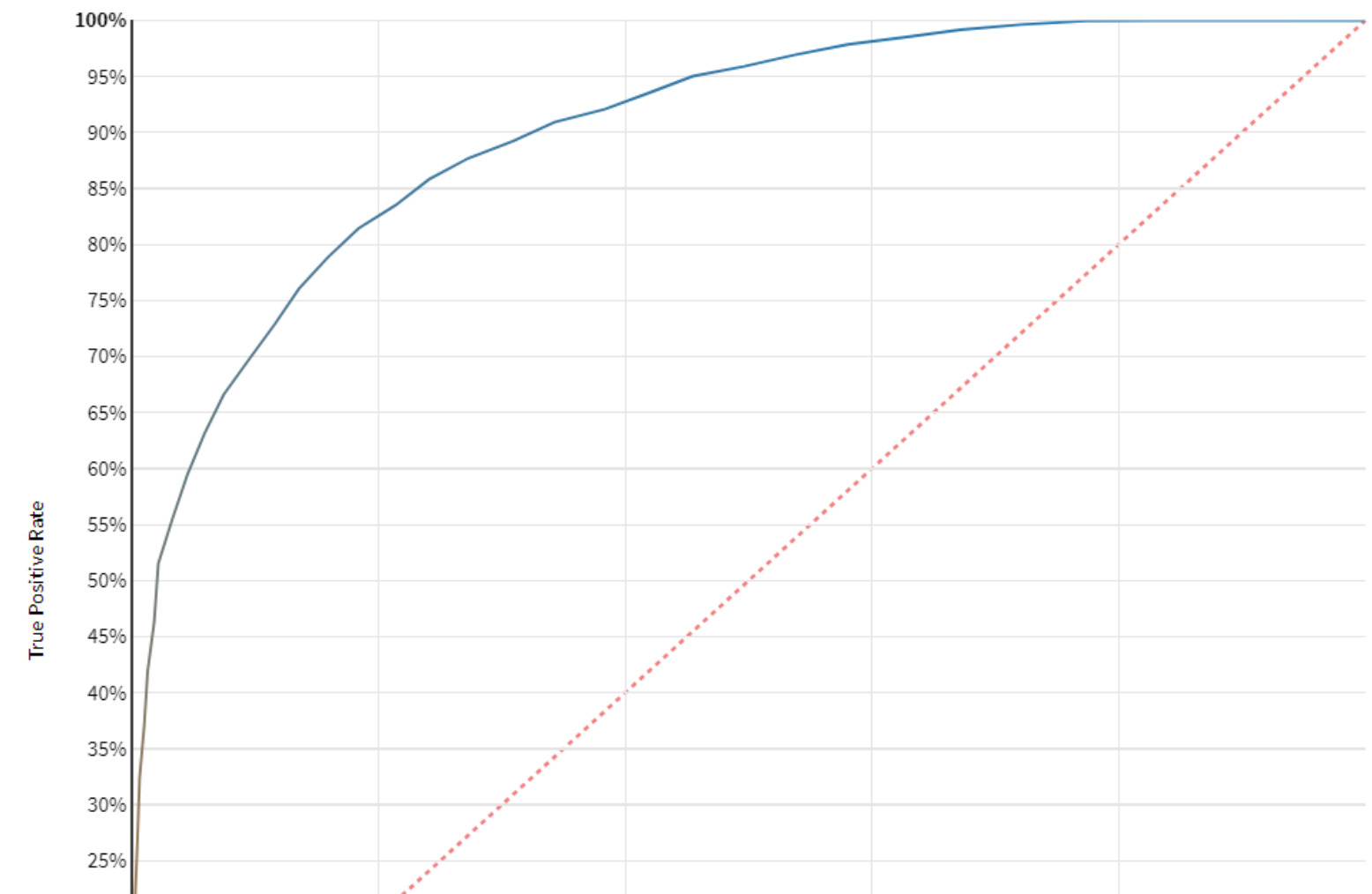
ROC AUC > 0.5: This indicates that the model has some ability to distinguish between the positive and negative classes. The higher the ROC AUC, the better the model is at distinguishing between the classes.

ROC AUC = 1.0: This means the model perfectly distinguishes between the positive and negative classes.

ROC & PR curves **ROC CURVE** PR CURVE

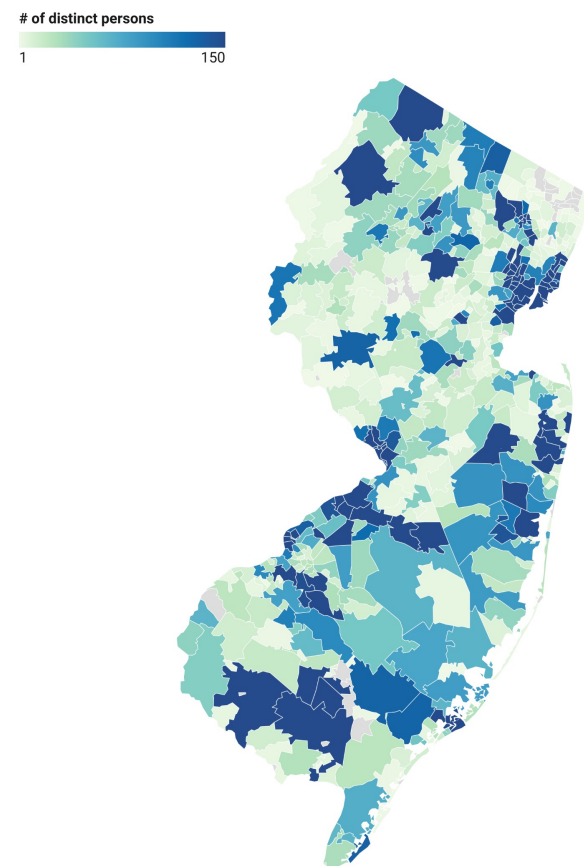
Class: Temporary and Permanent H ▾

The AUC for this class is 0.902



Project RoofReckon – Performance - Other

NJ HPSE: Persons accessing NJ HPSE services in 2022 by ZIP Code



NOTE: Gray regions reflect no ZIP Code level data available at time of report.
Map: OHP/DCA - Source: NJ HMIS & DCA - Map data: © Esri, TomTom North America, Inc., United States Postal Service -
Created with Datawrapper

- **Accuracy = 0.856**

This metric measures the proportion of correct predictions in the total predictions made.

- **Precision = 0.821**

Precision measures the proportion of true positive predictions among all positive predictions.

- **Calibration Loss = 0.046**

Calibration loss measures the difference between predicted probabilities and the true outcomes. A well-calibrated model will have a calibration loss close to 0.

Policy Implications





Thank You To Our Speakers!

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Housing as a Human Right: An Asset-Based Approach to Housing Justice

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Questions?

Thank you for attending the panel!

Housing as a Human Right: An Asset-Based Approach to Housing Justice

October 3, 2023