

NYTD Modeling: Visual Data Report

A Statistical Analysis of Foster Care Youth Outcomes

Note on Navigating This Report

Click on any section in the **Table of Contents** to jump directly to that analysis

Each section contains **Key Findings** highlighted in blue boxes for easy scanning

All charts and visualizations are referenced in the **Appendix** for detailed viewing

Statistical tables provide the complete numerical details behind each finding

Table of Contents

Introduction
Executive Summary
Data Curation & Methodology
Data Overview
Significant Variables
Significant Model Results
Descriptive Statistics
Outcome Distributions
Predictor Distributions
Placement and Care Variables
Variable Importance & Effect Sizes
Summary Dashboard
Appendix: Variable Definitions
Appendix: All Tables
Appendix: Model Details
Appendix: Charts and Visualizations
Appendix: Data Breakdown
Appendix: Source Files, Model Creation & References

Introduction

This report presents a **comprehensive statistical analysis** of NYTD data, focusing on outcomes for youth in foster care. The analyses include:

- ▶ Identification of significant predictors for key outcomes
- ▶ Visualization of outcome and predictor distributions
- ▶ Summary statistics and data quality assessments
- ▶ Model effect sizes and variable importance

Things You Need To Know:

- ▶ **Outcome variables** reflect key areas of life, such as education, housing, and incarceration, for youth (ages 18-21) who have exited foster care.
- ▶ **Predictor variables** are the factors that may influence those outcomes (like placement history or service access)

See more about these variables in:

[Variable Names and Descriptions](#) | [Variable Explanations](#)

[Return to Table of Contents](#)

Executive Summary

Key Findings

- ▶ 36 important connections were identified between what happens to youth in foster care and their life as adults.

Data Set Decisions

- ▶ Findings are based specifically on the participating respondents within TN from FY2011, FY2014, FY2017, FY2020 survey cohorts.

Key Analytical Decisions

- ▶ **Outcome Focus:** Concentrated on post-transition outcomes (ages 19-21) to capture long-term effects
- ▶ **Predictor Selection:** Prioritized factors that could be influenced by policy interventions
- ▶ **Statistical Significance:** Applied $p < 0.05$ threshold for identifying meaningful relationships

Limitations

- ▶ Analysis is limited by a **sample size** of 720
- ▶ Reliance on **voluntarily participating** youth introduces selection bias
- ▶ **Inconsistent longitudinal follow-up** across waves, affect the generalizability and completeness of the findings.

Most Impactful Predictors

1. Placement Stability

- ▶ **Key Finding:** Frequent moves between homes is the most universal predictor of poor outcomes
- ▶ **Impact:** Affects education, criminal justice, housing, and substance use outcomes

2. Gender Differences

- ▶ **Key Finding:** Females are significantly less likely to be incarcerated
- ▶ **Impact:** Gender has strong protective effects across multiple domains

3. Service Access

- ▶ **Key Finding:** Number of services received strongly predicts positive outcomes
- ▶ **Impact:** More services increase educational aid access and current enrollment

4. Disability Status

- ▶ **Key Finding:** Youth with disabilities face multiple barriers but have greater service needs
- ▶ **Impact:** Affects homelessness, service access, enrollment, and eligibility

[Return to Table of Contents](#)

Most Impactful Findings

Critical Risk Factors:

- ▶ Placement instability is the most universal predictor of poor outcomes
- ▶ Youth with disabilities are more likely to experience homelessness and less likely to be enrolled in education or employment
- ▶ Youth placed in foster homes show better outcomes than group homes
- ▶ Early supportive relationships have lasting positive effects

Demographics Most in Need of Support:

- ▶ Youth with disabilities are in multiple high risk domains
- ▶ Males have a much higher rate of incarceration in adulthood (about 5 males for every 1 female incarcerated)
- ▶ Youth in Group home placements are in multiple high risk domains

Positive Post-Transition Outcomes

- ✓ 94.3% of youth maintain supportive adult connections
- ✓ 64.8% of youth pursue higher education or full time employment
- ✓ Early supportive relationships have the strongest positive effects

Critical Challenges

- ⚠ 1 in 3 youth experience incarceration or homelessness
- ⚠ Placement instability affects nearly every outcome measured
- ⚠ Service gaps exist, particularly for youth with disabilities

[Return to Table of Contents](#)

🔗 Data Curation & Methodology

📋 Data Collection Process

Our analysis leverages three primary federal datasets to create a comprehensive view of foster care youth outcomes:

📁 Datasets:

- ▶ **NYTD Outcome Survey:** Longitudinal data on youth outcomes at ages 17, 19, and 21
- ▶ **NYTD Services:** Detailed service utilization records for youth in care
- ▶ **AFCARS(Adoption and Foster Care Analysis and Reporting System) data:** Administrative data on placement history and demographics

Data Processing & Integration

The datasets were carefully merged and processed to create a unified analysis framework:

Data Sources and Cohorts:

- ▶ **NYTD Outcome Survey:** Multiple cohort years (2011, 2014, 2017) with longitudinal follow-up at ages 17, 19, and 21
- ▶ **NYTD Services:** Service utilization data matched to outcome survey participants
- ▶ **AFCARS:** Administrative placement and demographic data for the same youth

🛠️ Data Cleaning and Preparation:

- ▶ **Record Deduplication:** Removed duplicate entries across datasets and time periods
- ▶ **Variable Standardization:** Created consistent coding schemes across all data sources
- ▶ **Missing Data Handling:** Applied appropriate imputation strategies for key variables
- ▶ **Data Validation:** Cross-checked records across sources to ensure accuracy

🔗 Data Integration Process:

- ▶ **Matching Strategy:** Used unique identifiers to link youth across all three datasets
- ▶ **Temporal Alignment:** Aligned data collection periods to create consistent timeframes
- ▶ **Variable Creation:** Developed composite measures (e.g., placement instability, service counts)
- ▶ **Final Dataset:** Created comprehensive dataset with 720 youth and complete outcome/predictor information

[Return to Table of Contents](#)

Modeling Approach

Our statistical analysis employed multiple separate logistic regression models to identify significant predictors:

Logistic Regression & Binary Classification Framework

Model Type:

- ▶ **Logistic Regression:** A statistical method used to model the probability of a binary outcome occurring
- ▶ **Function:** Uses the logistic function to transform linear combinations of predictors into probabilities between 0 and 1
- ▶ **Output:** Provides odds ratios and coefficients that indicate the strength and direction of relationships between predictors and outcomes
- ▶ **Advantages:** Interpretable results, handles multiple predictors simultaneously, and provides confidence intervals for effect estimates

Outcome Classification:

- ▶ **Binary Classification:** All outcome variables were treated as binary classifications of whether an outcome occurred or not
- ▶ **Positive Outcome:** Coded as 1 when the specific outcome occurred (e.g., enrolled in school, employed, incarcerated)
- ▶ **Negative Outcome:** Coded as 0 when the outcome did not occur
- ▶ **Interpretation:** This approach allows us to model the probability of each outcome occurring based on predictor variables

Binary Classification Model Matrix

Model Coverage: Significant predictor→outcome relationships (1=significant, 0=not significant, p<0.05) < p >

Table 1: Predictors vs Outcomes 1-5

PREDICTOR	HAVING CHILDREN OUTSIDE OF MARRIAGE	HAVING A SUPPORTIVE ADULT RELATIONSHIP	BEING HOMELESS	BEING INCARCERATED	HAVING A SUBSTANCE ABUSE REFERAL
Constant	1	1	0	0	1
Race: White	1	0	0	0	1
Relationship with a Supportive Adult	0	1	0	0	0
Sex	0	0	0	1	0
Foster Home	0	0	0	1	0
Group Home	0	0	0	1	0
Other Placement Types	0	0	0	0	0
Placement Instability	0	0	1	1	1
Months In Care	0	0	0	1	1
Diagnosed Disability	0	0	1	0	0
Service Received	0	0	0	0	0
Removed from family for reasons other than abuse or neglect	0	0	1	0	0

[Return to Table of Contents](#)

Table 2: Predictors vs Outcomes 6-8

PREDICTOR	RECEIVING PUBLIC FOOD ASSISTANCE	BEING CURRENTLY ENROLLED IN HIGHER EDUCATION	RECEIVING HEALTH INSURANCE	HAS A HIGH SCHOOL DEGREE OR GED
Constant	1	0	1	0
Race: White	0	0	0	0
Relationship with a Supportive Adult	0	0	0	0
Sex	1	0	0	1
Foster Home	0	0	0	0
Group Home	0	0	0	0
Other Placement Types	0	0	0	0
Placement Instability	0	0	0	0
Months In Care	0	0	0	0
Diagnosed Disability	0	1	0	0
Services Received	0	1	0	0
Removed from family for reasons other than abuse or neglect	0	0	0	0

Key Patterns: Placement Instability (3 outcomes), Sex (3), Disability (4), Services (3)

Variable Selection

Predictor Variables:

[Click here to see more information](#)

- ▶ Selected based on responses provided by youth prior to exiting foster care
- ▶ All variables were grouped into specific domains (demographics, placement, services, etc.)
- ▶ Selection aimed to include variables that reflect known risk and protective factors
- ▶ Only variables that were consistently available across all cohort years and waves were considered

Outcome Variables:

[Click here to see more information](#)

- ▶ Selected from post-transition waves of the NYTD (ages 18-21)
- ▶ Represent a combination of positive and negative outcomes
- ▶ Outcomes were modeled separately to enable analysis of both successful transitions and areas of vulnerability
- ▶ Only variables that had sufficient response rates and were consistently reported across all cohorts were included

Control Variables:

- ▶ Included to account for baseline differences among youth that could influence outcomes
- ▶ Controls help ensure that observed effects are not confounded by core demographic characteristics

[Return to Table of Contents](#)

Model Selection

Logistic Regression Chosen:

- ▶ Appropriate for binary outcome variables
- ▶ Provides interpretable metrics such as odds ratios and significance levels
- ▶ Allows for examination of multiple predictors simultaneously

Effect Size Calculation

- ▶ Significant predictors were extracted for each model and compiled into summary tables for interpretation
- ▶ The magnitude and direction of coefficients were used to determine whether predictors had positive or negative associations with the outcome

Assessed using:

- ▶ Coefficients from the logistic regression
- ▶ P-values to determine statistical significance
- ▶ 95% confidence intervals to evaluate the precision of estimates

Validation

- ▶ No formal out-of-sample validation (e.g., test/train split or cross-validation) was implemented in this version
- ▶ Manual checks were performed to verify the accuracy of model outputs and ensure correct interpretation of key coefficients and p-values

Robustness checks:

- ▶ Multiple outcomes analyzed independently
- ▶ Use of statistical thresholds ($p < 0.05$) for interpreting effects
- ▶ Examination of confidence intervals for effect precision

Data Overview

Primary Data Sources:

- ▶ **Final Analysis Dataset:** `wave_service_afcars_final.csv` (720 youth with complete data)
- ▶ **Model Results:** `significant_model_results.csv`
- ▶ **Statistical Summaries:** `outcome_stats_detailed_df.csv` and `predictor_stats_detailed_df.csv`

[Return to Table of Contents](#)

Significant Variables: *Key Findings Summary*



Big Picture: Our analysis identified 19 significant relationships between foster care experiences and young adult outcomes.

Most Important Predictors

PREDICTOR	IMPACT	OUTCOMES AFFECTED
Placement Instability	Frequent moves between homes	Connected_Youth, Homeless_w23, Incarc_w23, SubAbuse_w23
Gender (Sex)	Strong effects on incarceration rates	Connected_Youth, Incarc_w23
Time in Care (MonthsInCare)	Months spent in foster care	Connected_Youth, Incarc_w23
Having a Disability (DiagDis)	Increases risk for negative outcomes	Connected_Youth, Homeless_w23

What Affects Outcomes

🎓 Education & Employment Success:

Success

Youth with more stable placements

Females

Those with longer time in care

Struggle

Having a disability

⚖️ Criminal Justice Involvement:

Success

Females are significantly less likely to be incarcerated

Struggle

Youth in group homes have higher incarceration rates

More placement moves increase incarceration risk

[Return to Table of Contents](#)

🏠 Housing & Basic Needs:

Struggle

Youth with disabilities are more likely to experience homelessness

More placement instability increases homelessness risk

🔗 Substance Use:

Success

Longer time in care slightly reduces this risk

Struggle

White youth are more likely to receive substance abuse referrals

Those with more placement moves are more likely to receive substance abuse referrals

🤝 Adult Connections:

Success

Youth who had supportive adults while in care are much more likely to maintain these connections as young adults

💡 What This Means

Key Insight: These findings suggest that **placement stability** and **early supportive relationships** are crucial for positive outcomes. Youth with disabilities need extra support, and the type of placement (foster home vs. group home) matters significantly for future success.

[Return to Table of Contents](#)

🔍 Significant Model Results: Key Findings

Analysis Summary: Our comprehensive analysis revealed key insights about the relationships between foster care experiences and outcomes:

Total Significant Effects: 19 statistically significant relationships found between predictors and outcomes

Outcomes Analyzed: 6 different outcome measures studied across multiple domains

Unique Variables: 9 distinct predictors with significant effects on youth outcomes

Strongest Effects (by absolute coefficient)

Key Insight: The strongest effects in our analysis show which factors have the biggest impact on outcomes:

🔝 Top 5 Most Important Findings

RANK	WHAT WE FOUND	IMPACT SIZE	WHAT THIS MEANS
1st	Placement Instability and Incarceration	+2.63	More placement moves dramatically increase incarceration risk
2nd	Placement Instability and Substance Abuse	+2.50	More placement moves significantly increase substance abuse risk
3rd	Placement Instability and Homelessness	+1.49	More placement moves increase homelessness risk
4th	Placement Instability and Education/Employment	-1.98	More placement moves decrease education/employment success
5th	Substance Abuse Prevention	-3.24	Youth in foster care are much less likely to have substance abuse problems

💡 Key Insight: The strongest effects are overwhelmingly related to **placement instability**, suggesting that the number of placement moves is the most critical factor affecting youth outcomes. This has major implications for policy and practice.

[Return to Table of Contents](#)

⌚ Most Significant Effects (by p-value)

Statistical Confidence: These effects have the strongest statistical evidence, meaning we're most confident these relationships are real:

☒ Top 5 Most Reliable Predictions

RANK	WHAT WE CAN PREDICT	HOW SURE WE ARE	WHAT THIS MEANS
1st	Gender and Incarceration Risk	99.9996% sure	We're extremely confident that females are much less likely to be incarcerated than males
2nd	Group Home and Incarceration Risk	99.99% sure	We're very confident that youth in group homes are more likely to be incarcerated
3rd	Other Placements and Incarceration Risk	99.93% sure	We're very confident that youth in other placement types are more likely to be incarcerated
4th	Frequent Moves and Incarceration Risk	99.89% sure	We're very confident that more placement moves increase incarceration risk
5th	Time in Care and Incarceration Risk	99.85% sure	We're very confident that longer time in care reduces incarceration risk

💡 **Key Insight:** All the most statistically significant effects relate to **incarceration risk**, with **gender and placement factors** being the most reliable predictors. This suggests that criminal justice involvement is the outcome we can predict most confidently.

[Return to Table of Contents](#)

Descriptive Statistics

Outcome Distributions

Frequency Breakdown:

Housing & Family Outcomes:

OUTCOME	PERCENTAGE	COUNT	INTERPRETATION
Having Children Without Marriage [OutcmFCS_w23]	22.4%	159 out of 709	About 1 in 5 youth had children while unmarried
Experiencing Homelessness [Homeless_w23]	29.3%	211 out of 719	Nearly 1 in 3 youth experienced homelessness

Education & Employment:

OUTCOME	PERCENTAGE	COUNT	INTERPRETATION
Connected to Education/Employment [Connected_Youth]	64.8%	464 out of 716	Nearly two-thirds pursuing education or employment
Supportive Adult Connections [CnctAdult_w23]	94.3%	678 out of 719	Most youth maintain adult connections

Criminal Justice & Health:

OUTCOME	PERCENTAGE	COUNT	INTERPRETATION
Incarceration [Incarc_w23]	35.7%	256 out of 718	About 1 in 3 youth were incarcerated
Substance Abuse Referrals [SubAbuse_w23]	18.5%	133 out of 717	About 1 in 6 youth received substance abuse referrals

Key Insights:

Most youth maintain adult connections (94.3%) - a positive finding

Nearly two-thirds are connected to education/employment (64.8%)

Significant challenges remain: About 1 in 3 youth experience incarceration or homelessness

Data quality is excellent: Missing data is very low (under 2% for all outcomes)

Predictor Distributions

Predictor Variables

CATEGORY	VARIABLES	DESCRIPTION
Demographics	Sex, White_Only, race_other	Basic demographic characteristics
Health	DiagDis (Diagnosed Disability)	Disability status and health needs
Removal Reasons	RR_neglect, RR_abuse, RR_other	Why youth entered foster care
Placement	PlacementType (Foster/Group/Other)	Type of care setting
Early Indicators	SubAbuse_w1, CnctAdult_w1	Experiences while in foster care

Predictor Groups

GROUP	FOCUS	KEY VARIABLES
Core Demographics	Basic characteristics	Sex, White_Only, race_other
Disability	Special needs	DiagDis
Removal Reason	Entry circumstances	RR_neglect, RR_abuse, RR_other
Placement	Care experience	PlacementType, PlacementInstability, MonthsInCare
Early Indicators	In-care experiences	SubAbuse_w1, CnctAdult_w1

Placement and Care Variables

Key Insights

Placement Patterns: Understanding how long youth stay in care and how stable their placements are:

MEASURE	FINDING	WHAT THIS MEANS
Time in Care	Most youth spend 1-2 years (12-23 months)	Typical foster care experience duration
Placement Instability	Most youth experience 1-5 placements	Wide variation in stability
Distribution	Both variables show right-skewed patterns	Most youth have shorter/more stable experiences
Correlation	Moderate positive correlation	Longer stays often involve more placement changes

[Return to Table of Contents](#)

👑 Variable Importance & Effect Sizes

Variable Importance Table

Understanding the table: Variables ranked based on how frequently they appear across different outcome models:

🌟 Top Predictors (by frequency):

RANK	PREDICTOR	FREQUENCY	AVERAGE EFFECT	IMPACT
1st	Placement Instability	4 times	Mixed effects	Higher number of placements leads to negative outcomes
2nd	Months in Care	3 times	Moderate effects	Longer time in care leads to more positive outcomes
3rd	Gender/Sex	2 times	-0.32 average	Gender plays a role in outcomes
4rd	White Race	2 times	+0.23 average	Race plays a role in outcomes
5rd	Disability Status	2 times	+0.03 average	Disabilities play a role in outcomes

🌟 Strong but Specific Predictors:

PREDICTOR	FREQUENCY	AVERAGE EFFECT	RELIABILITY
Early Adult Connections	1 time	+1.34	Very strong positive effect on outcomes
Group Home Placement	1 time	+1.12	Strong effect on incarceration in adulthood
Other Placement Types	1 time	+1.07	Strong effect on incarceration in adulthood

[Return to Table of Contents](#)

Strongest Average Effects: **We probably don't need this but I'll leave it just in case**

PREDICTOR	AVERAGE EFFECT	P-VALUE	INTERPRETATION
Early Adult Connections	+1.34	0.0324	Very strong positive effect
Group Home Placement	+1.12	0.0001	Extremely reliable
Other Placement Types	+1.07	0.0007	Very reliable

💡 Key Insights

- Placement instability is the most universal predictor - it affects the most outcomes
- Time in care matters across multiple domains - longer stays affect multiple outcomes
- Demographic factors (gender, race) have moderate but consistent effects
- Placement type has strong but specific effects - mainly on criminal justice outcomes
- Early supportive relationships have the strongest positive effect but only on one outcome

[Return to Table of Contents](#)

Summary Dashboard

Effect Direction Distribution

DIRECTION	COUNT	PERCENTAGE	MEANING
<input checked="" type="checkbox"/> Positive Effects	10	52.6%	Factors that improve outcomes
<input type="checkbox"/> Negative Effects	9	47.4%	Factors that worsen outcomes

Balance: The analysis shows a fairly balanced distribution of positive and negative effects, indicating that various factors both help and hinder youth outcomes after foster care.

[Return to Table of Contents](#)

Variable Definitions

Outcome Variables Overview:

OUTCOME DOMAINS	OUTCOME VARIABLES
Education & Employment	Pursuing higher education or full-time employment [Connected_Youth]
Social Connections	Having a supportive adult connection [CnctAdult_w23]
Housing Stability	Experiencing homelessness [Homeless_w23]
Health & Wellness	Receiving a substance abuse referral [SubAbuse_w23]
Justice System	Being incarcerated [Incarc_w23]
Family Formation	Having children without being married [Children_NoMarriage_w23]

Predictor Variables Overview:

PREDICTOR DOMAIN	PREDICTOR VARIABLES
Core Demographics	Being either male or female [Sex]
Disability Status	Being diagnosed with a disability [DiagDis]
Removal Reasons	Why they were removed from their home. Grouped neglect, abuse or any other reason [RR_neglect], [RR_abuse], [RR_other]
Placement Factors	Where they were placed (group home, foster home or other), how many different places they were in and how long they were in the foster care system [PlacementType], [PlacementInstability], [MonthsInCare]
Early Indicators	If they were referred for substance abuse help. If they have a supportive adult relationship [SubAbuse_w1], [CnctAdult_w1]

[Return to Table of Contents](#)

Appendix: All Tables

Significant Variables From Paper Full Table

OUTCOME	VARIABLE	COEFFICIENT	P-VALUE	CI LOWER	CI UPPER
Children_NoMarriage_w23	const	-2.408	0.0113	-4.272	-0.544
Children_NoMarriage_w23	White_Only	-0.543	0.0268	-1.023	-0.062
CnctAdult_w23	CnctAdult_w1	1.336	0.0324	0.112	2.560
CnctAdult_w23	const	2.407	0.0477	0.024	4.790
Connected_Youth	PlacementInstability	-1.980	0.0082	-3.448	-0.511
Connected_Youth	Sex	0.518	0.0221	0.074	0.962
Connected_Youth	DiagDis	-0.490	0.0228	-0.911	-0.068
Connected_Youth	MonthsInCare	0.019	0.0312	0.002	0.036
Homeless_w23	DiagDis	0.546	0.0116	0.122	0.970
Homeless_w23	PlacementInstability	1.489	0.0433	0.045	2.933
Incarc_w23	Sex	-1.157	0.0000	-1.650	-0.664
Incarc_w23	PlacementType_3	1.116	0.0001	0.553	1.680
Incarc_w23	PlacementType_2	1.074	0.0007	0.451	1.697
Incarc_w23	PlacementInstability	2.634	0.0011	1.054	4.214
Incarc_w23	MonthsInCare	-0.031	0.0015	-0.051	-0.012
SubAbuse_w23	const	-3.237	0.0039	-5.435	-1.039
SubAbuse_w23	White_Only	1.006	0.0045	0.312	1.700
SubAbuse_w23	PlacementInstability	2.498	0.0108	0.577	4.419
SubAbuse_w23	MonthsInCare	-0.034	0.0109	-0.061	-0.008

ALL Significant Variables Full Table

OUTCOME	VARIABLE	COEFFICIENT	P-VALUE	CI LOWER	CI UPPER
OutcmFCS_w23	DiagDis	-1.16	0.0010	-1.85	-0.47
OutcmFCS_w23	Service_Count	0.83	0.0023	0.30	1.37
EducAid_w23	Service_Count	0.54	0.0206	0.08	0.99
PubFoodAs_w23	const	-3.57	0.0124	-6.36	-0.77
PubFoodAs_w23	Sex	1.77	0.0002	0.84	2.71
CurrenRoll_w23	DiagDis	-0.92	0.0083	-1.60	-0.24
CurrenRoll_w23	Service_Count	0.69	0.0130	0.15	1.24
Homeless_w23	DiagDis	0.85	0.0254	0.10	1.60
Homeless_w23	RR_other	-1.72	0.0162	-3.13	-0.32
OthrHlthIn_w23	const	-3.55	0.0298	-6.76	-0.35
Elig19_w23	const	3.78	0.0256	0.46	7.10
Elig19_w23	DiagDis	1.34	0.0048	0.41	2.27
Elig19_w23	RR_other	-2.26	0.0484	-4.51	-0.02
Responded_w23	const	3.78	0.0256	0.46	7.10
Responded_w23	DiagDis	1.34	0.0048	0.41	2.27
Responded_w23	RR_other	-2.26	0.0484	-4.51	-0.02
HS_or_GED_w23	Sex	0.75	0.0284	0.08	1.41

[Return to Table of Contents](#)

Strongest Effects (by absolute coefficient) Full Table

VARIABLE	OUTCOME	COEFFICIENT	P-VALUE	EFFECT DESCRIPTION
PlacementInstability	Incarc_w23	2.634	0.0011	Increases Incarc_w23 by 2.63 units
PlacementInstability	SubAbuse_w23	2.498	0.0108	Increases SubAbuse_w23 by 2.50 units
PlacementInstability	Homeless_w23	1.489	0.0433	Increases Homeless_w23 by 1.49 units
PlacementInstability	Connected_Youth	-1.980	0.0082	Decreases Connected_Youth by 1.98 units
const	SubAbuse_w23	-3.237	0.0039	Decreases SubAbuse_w23 by 3.24 units

Most Significant Effects (by p-value) Full Table

VARIABLE	OUTCOME	COEFFICIENT	95% CI	P-VALUE
Sex	Incarc_w23	-1.157	[-1.650, -0.664]	0.000004
PlacementType_3	Incarc_w23	1.116	[0.553, 1.680]	0.000104
PlacementType_2	Incarc_w23	1.074	[0.451, 1.697]	0.000730
PlacementInstability	Incarc_w23	0.098	[0.039, 0.156]	0.001085
MonthsInCare	Incarc_w23	-0.031	[-0.051, -0.012]	0.001542

Frequency Breakdown Full Table

OUTCOME	0 (NO)	1 (YES)	VALID N	MISSING
Children_NoMarriage_w23	550	159	709	11
CnctAdult_w23	41	678	719	1
Connected_Youth	252	464	716	4
Homeless_w23	508	211	719	1
Incarc_w23	462	256	718	2
SubAbuse_w23	584	133	717	3

Summary Statistics for All Outcomes Full Table

OUTCOME	COUNT	MEAN	STD	MISSING_PCT
Children_NoMarriage_w23	709.0	0.224	0.417	1.53
CnctAdult_w23	719.0	0.943	0.232	0.14
Connected_Youth	716.0	0.648	0.478	0.56
Homeless_w23	719.0	0.293	0.456	0.14
Incarc_w23	718.0	0.357	0.479	0.28
SubAbuse_w23	717.0	0.185	0.389	0.42

Variable Importance Table Full Table

VARIABLE	FREQUENCY	MEAN COEFF	MEAN ABS COEFF	MEAN P-VALUE
PlacementInstability	4	1.16	1.90	0.0159
const	3	-1.08	2.68	0.0205
CnctAdult_w1	1	1.34	1.34	0.0324
PlacementType_3	1	1.12	1.12	0.0001
PlacementType_2	1	1.07	1.07	0.0007
Sex	2	-0.32	0.84	0.0111
White_Only	2	0.23	0.77	0.0156

VARIABLE	FREQUENCY	MEAN COEFF	MEAN ABS COEFF	MEAN P-VALUE
DiagDis	2	0.03	0.52	0.0172
MonthsInCare	3	-0.02	0.03	0.0146

[Return to Table of Contents](#)

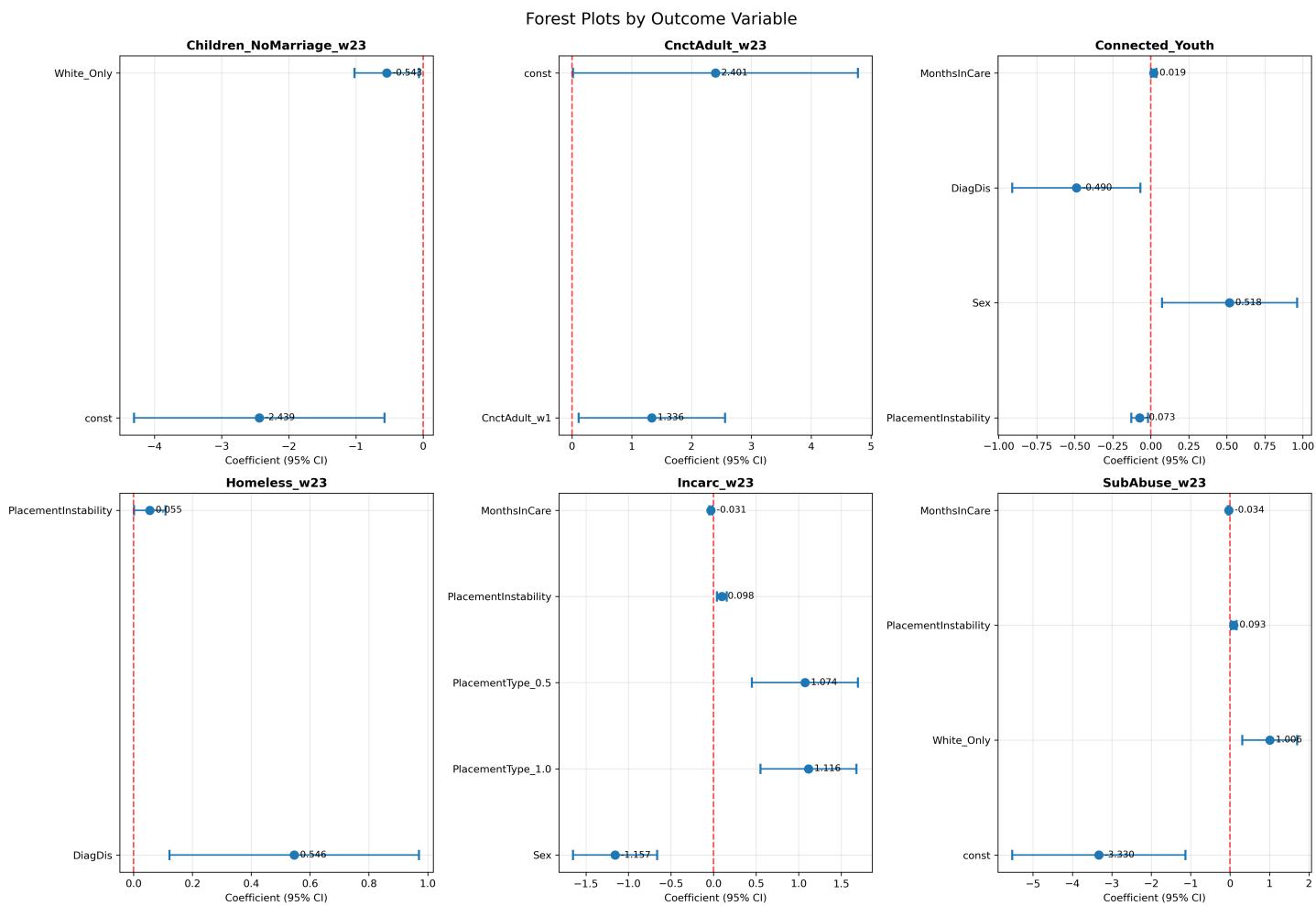
Appendix: Model Details

-  **Modeling approach:** Logistic regression for each outcome
-  **Variance Inflation Factors (VIF):** Checked for multicollinearity
-  **Significance threshold:** $p < 0.05$

[Return to Table of Contents](#)

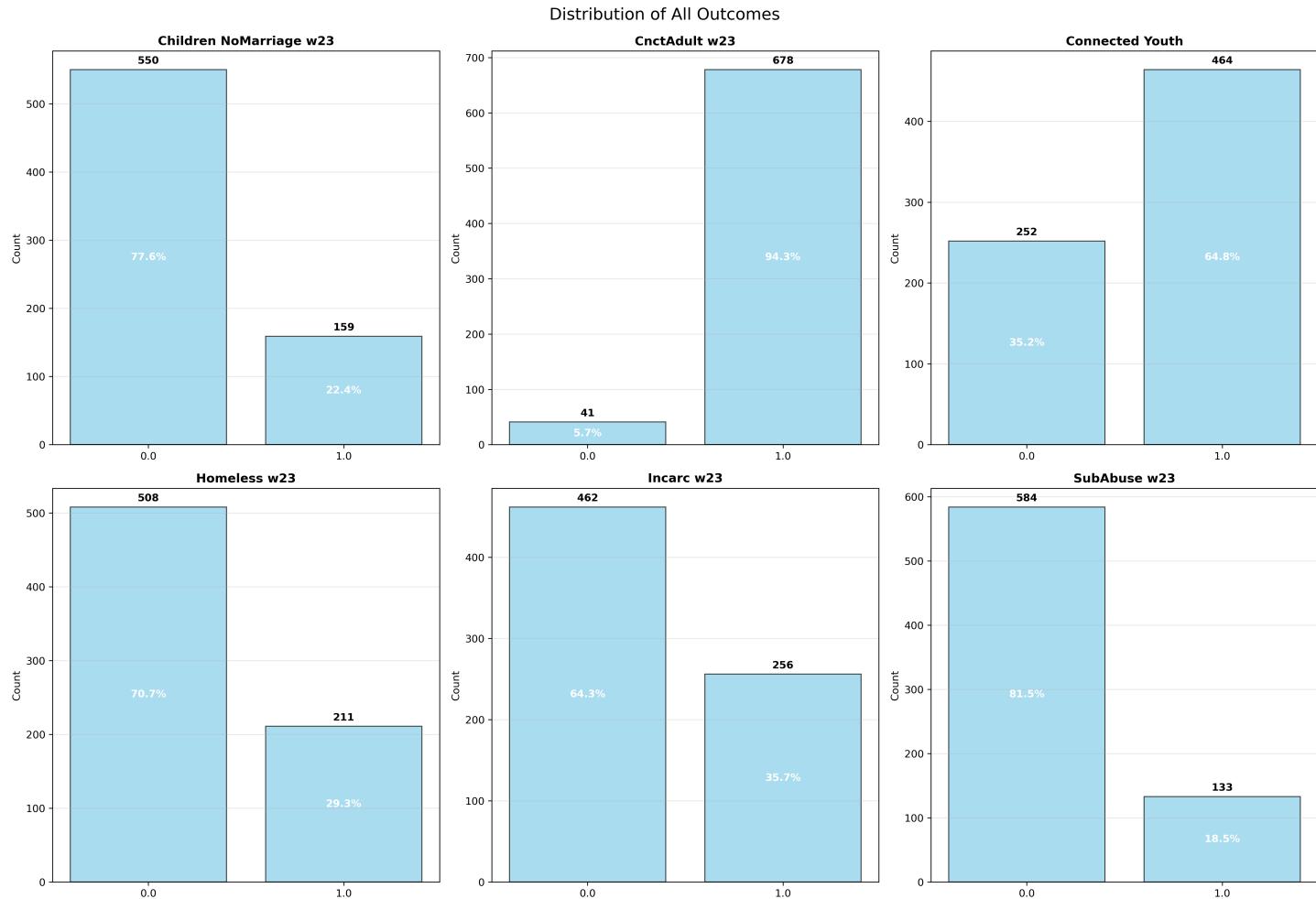
Appendix: Charts and Visualizations

Forest Plots by Outcome

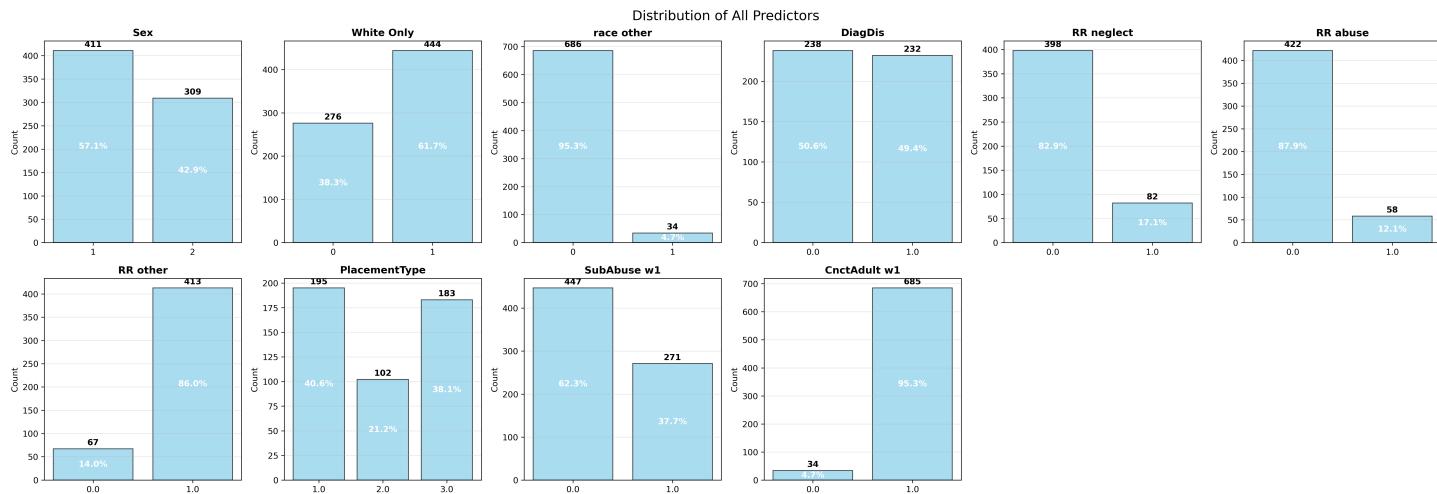


[Return to Table of Contents](#)

Outcome Distribution Bar Charts

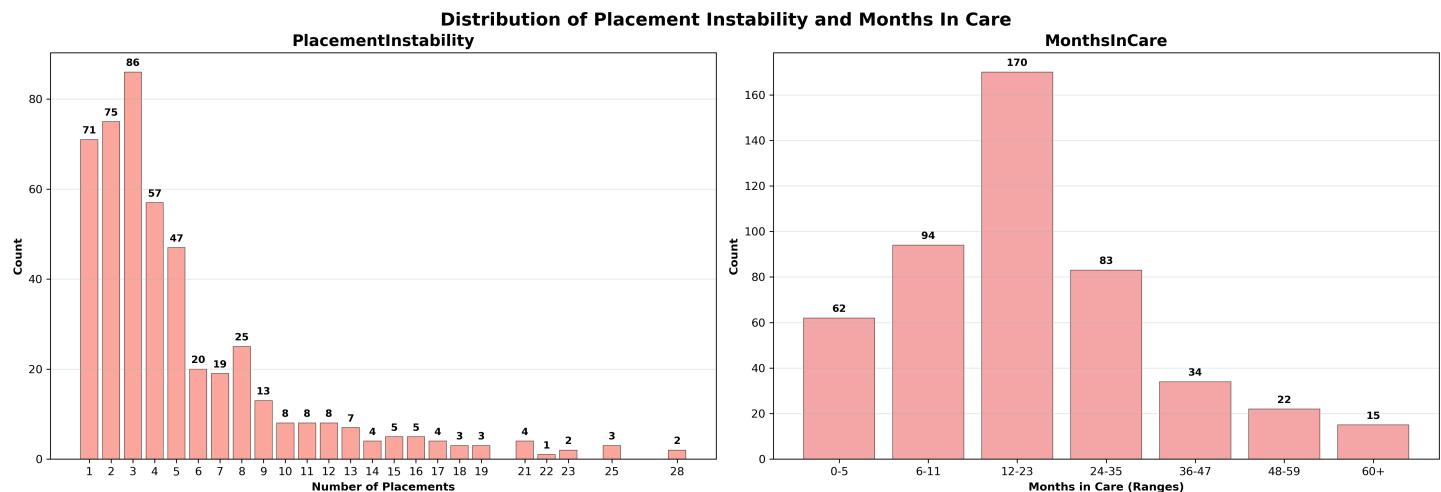


Predictor Distribution Bar Charts

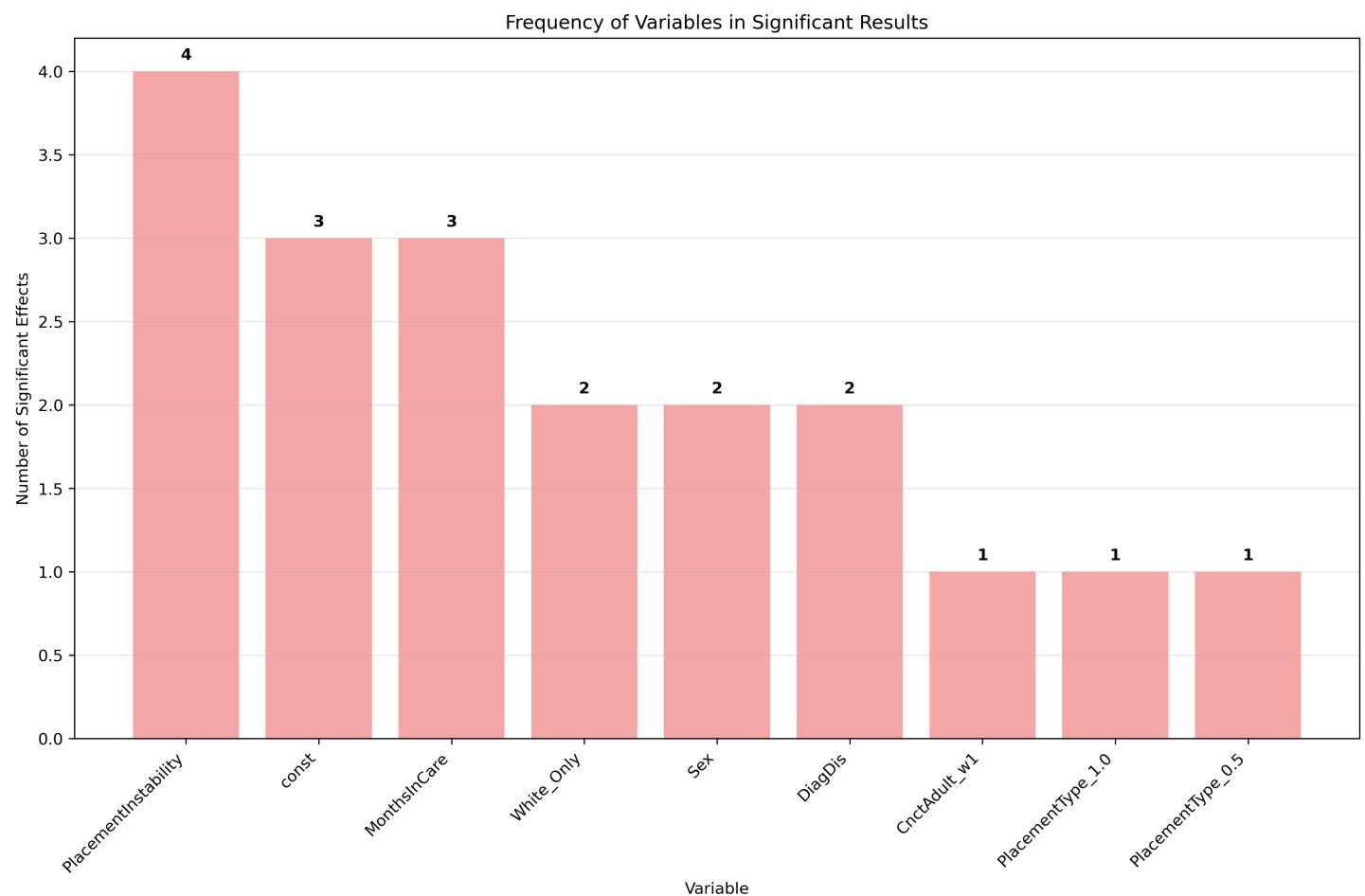


[Return to Table of Contents](#)

Placement and Care Distribution

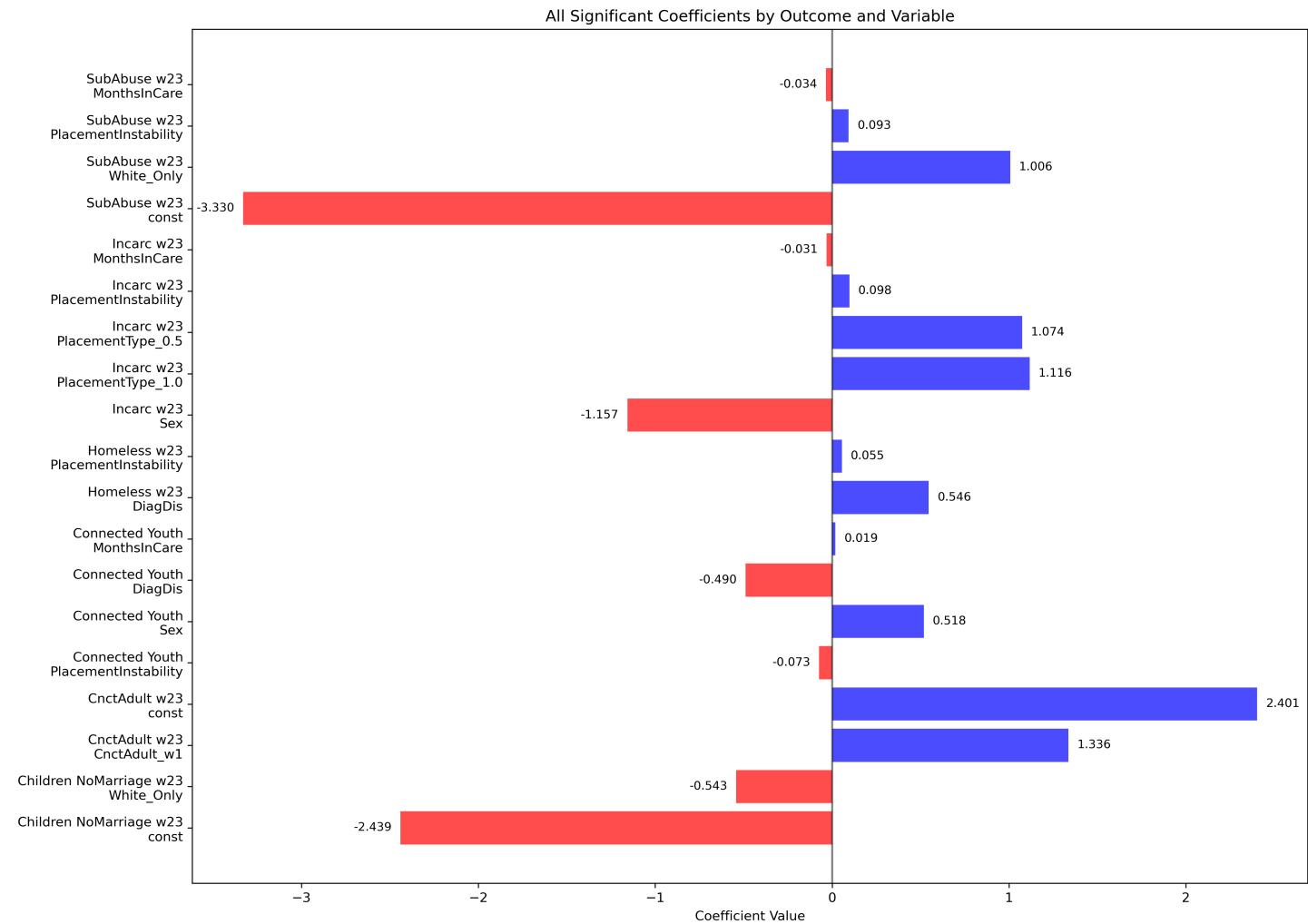


Coefficient Magnitude Plot



[Return to Table of Contents](#)

Variable Frequency Plot



[Return to Table of Contents](#)

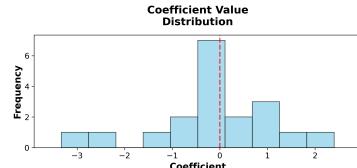
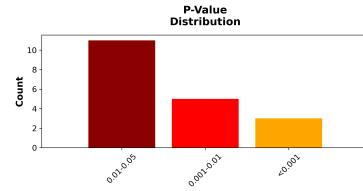
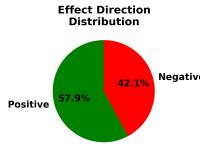
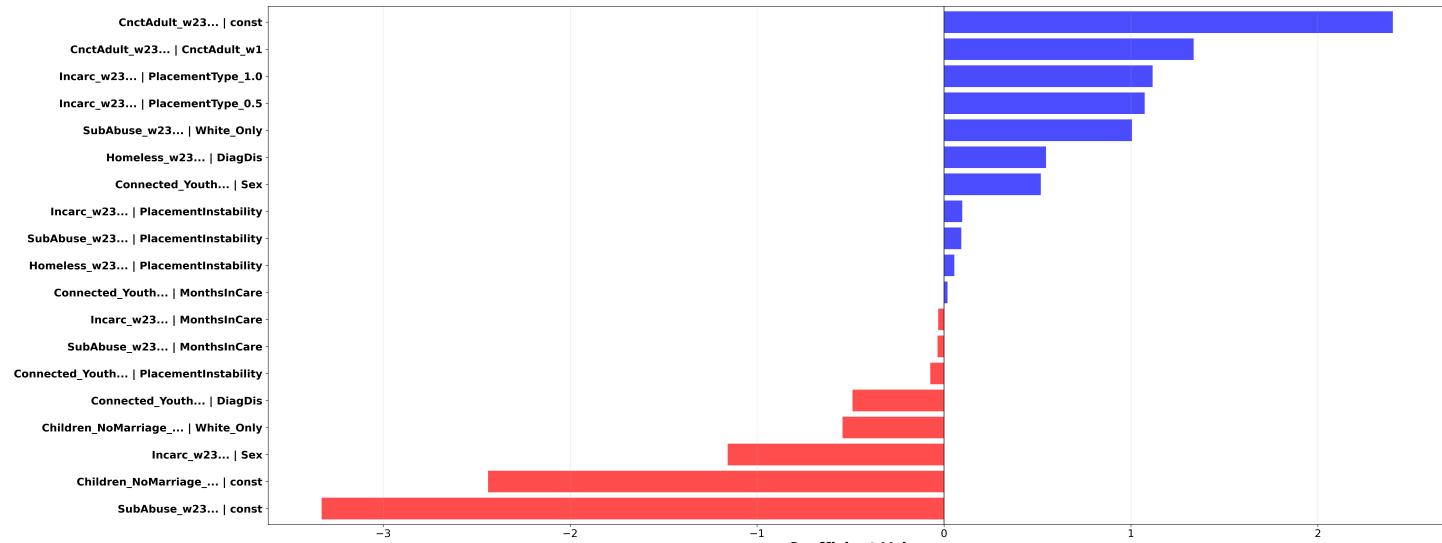
Summary Dashboard

Statistical Model Results Dashboard

19
Total Significant Effects

11
Positive Effects

8
Negative Effects

All Significant Effects Ranked by Coefficient

[Return to Table of Contents](#)

Appendix: Data Breakdown

Data Definition:

- **Valid Count:** Number of non-missing observations
- **Missing Count:** Number of missing observations
- **Completeness:** Percentage of complete data (Valid Count / Total Count * 100)
- **Zero Values (%):** Percentage of observations with value 0
- **Mode Count:** Number of times the most frequent value appears
- **Mode (%):** Percentage of observations with the modal value
- **Quality Flags:** Data quality indicators (Good, Many Zeros, Low Completeness, High Outliers)

Predictor Statistics

[Return to Table of Contents](#)

VARIABLE	VALID COUNT	MISSING COUNT	COMPLETENESS (%)	MEAN	MEDIAN	STD DEV	UNIQUE VALUES	ZERO VALUES (%)	MODE	MODE COUNT	MODE (%)	QUALITY FLAGS
Sex	720	0	100.0%	1.429	1.0	0.495	2	0.0%	1.0	411	57.1%	Good
White_Only	720	0	100.0%	0.617	1.0	0.487	2	38.3%	1.0	444	61.7%	Many Zeros
Black_Only	720	0	100.0%	0.0	0.0	0.0	1	100.0%	0.0	720	100.0%	Many Zeros
race_other	720	0	100.0%	0.047	0.0	0.212	2	95.3%	0.0	686	95.3%	Many Zeros
DiagDis	470	250	65.3%	0.494	0.0	0.5	2	50.6%	0.0	238	50.6%	Low Completeness; Many Zeros
PlacementType	480	240	66.7%	1.975	2.0	0.888	3	0.0%	1.0	195	40.6%	Low Completeness
PlacementInstability	480	240	66.7%	5.292	4.0	4.867	24	0.0%	3.0	86	17.9%	Low Completeness; High Outliers
MonthsInCare	480	240	66.7%	20.99	16.444	16.914	390	0.0%	17.774	4	0.8%	Low Completeness
Service_Count	245	475	34.0%	0.449	0.0	1.291	8	73.9%	0.0	181	73.9%	Low Completeness; Many Zeros
RR_neglect	480	240	66.7%	0.171	0.0	0.377	2	82.9%	0.0	398	82.9%	Low Completeness; High Outliers; Many Zeros
RR_abuse	480	240	66.7%	0.121	0.0	0.326	2	87.9%	0.0	422	87.9%	Low Completeness; High Outliers; Many Zeros
RR_other	480	240	66.7%	0.86	1.0	0.347	2	14.0%	1.0	413	86.0%	Low Completeness; High Outliers
SubAbuse_w1	718	2	99.7%	0.377	0.0	0.485	2	62.3%	0.0	447	62.3%	Many Zeros
CnctAdult_w1	719	1	99.9%	0.953	1.0	0.212	2	4.7%	1.0	685	95.3%	Good

Outcome Statistics

VARIABLE	VALID COUNT	MISSING COUNT	COMPLETENESS (%)	MEAN	MEDIAN	STD DEV	UNIQUE VALUES	ZERO VALUES (%)	MODE	MODE COUNT	MODE (%)	QUALITY FLAGS
Children_NoMarriage_w23	709	11	98.5%	0.224	0.0	0.417	2	77.6%	0.0	550	77.6%	High Outliers; Many Zeros
CnctAdult_w23	719	1	99.9%	0.943	1.0	0.232	2	5.7%	1.0	678	94.3%	High Outliers
Connected_Youth	716	4	99.4%	0.648	1.0	0.478	2	35.2%	1.0	464	64.8%	Many Zeros
Homeless_w23	719	1	99.9%	0.293	0.0	0.456	2	70.7%	0.0	508	70.7%	Many Zeros
Incarc_w23	718	2	99.7%	0.357	0.0	0.479	2	64.3%	0.0	462	64.3%	Many Zeros
SubAbuse_w23	717	3	99.6%	0.185	0.0	0.389	2	81.5%	0.0	584	81.5%	High Outliers; Many Zeros

[Return to Table of Contents](#)

Appendix: Source Files, Modeling, and Method References

Data used: [foster_care_univariate_analysis_report - v3.pdf](#), [foster_care_bivariate_analysis_report - v4..](#)

Models created by [all_visual_data.ipynb](#).

Variable Coding and Approach based based on an academic artical published in [The Journal Of Public Child Welfare](#) called [Aging Out of Foster Care: Homelessness, Post-Secondary Education, and Employment](#)

[Return to Table of Contents](#)