



Effects of Functional Family Parole on Re-Arrest and Employment for Youth in Washington State:

TECHNICAL APPENDIX

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NOTE: See the *Executive Summary* for highlights and key findings: <http://www.dshs.wa.gov/rda/>.

STUDY METHOD | Natural experiment using propensity score matching with regression models

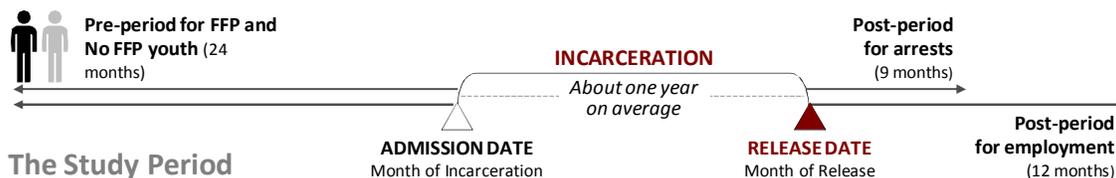
METHOD

A quasi-experimental design was used to evaluate the impact of Functional Family Parole (FFP) with respect to criminal justice and employment outcomes. A comparison group was constructed using propensity score matching to identify a set of youth who were as similar as possible with regards to demographics and criminal history to those released after the elimination of enhanced parole. In addition to the matching process, demographics and relevant characteristics and history were also controlled for in the regression models to adjust for any residual pre-existing differences.

Group Definitions

Groups were defined based on the JRA residence release date and whether this date fell in the “FFP” or “no FFP” time period. Outcome periods were limited based on the current availability of arrest and wage data.

- **FFP:** Youth with release dates during the timeframe July 1, 2008 through December 2008.
- **No FFP:** Youth with release dates during the timeframe July 1, 2009 through December 2009.



The Study Period

Cases with and without parole in the “no FFP” period were compared on a list of potentially confounding variables. Because some youth who meet specific criteria or who have specific case types are still eligible for specific types of parole, we excluded those from both groups who had:

- Arrests in the follow-up period that could be classified as “violation of parole,”
- Sex offenses listed as most serious offense (rape2, rape of child1, rape of child2, indecent liberties, child molestation1),
- Auto theft as most serious offense (theft of motor vehicle, possession of stolen vehicle).

Other offenses for which there appeared differences between the FFP and no FFP groups were used in the propensity score matching algorithm (see tables on following pages).



ARREST MODELS | Youth released with FFP are LESS likely to be arrested and have fewer arrests than those released without parole

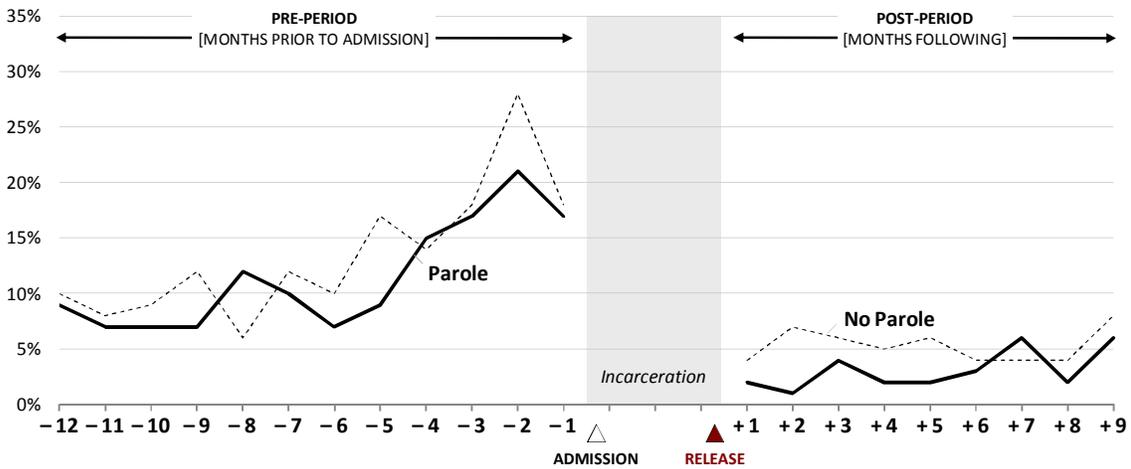
Baseline youth characteristics for arrest analysis after propensity-score matching

Matched Sample					
CHARACTERISTICS	FFP n = 163	NO FFP n = 163	CHARACTERISTICS	FFP n = 163	NO FFP n = 163
Mean age at release	17.1	17.3	Prior Serious Mental Illness Diagnosis or Medications	13%	14%
White Only (non-Hispanic)	47%	43%	Prior ADHD, Conduct, Impulse Diagnosis or Medications	21%	21%
Black (non-Hispanic)	14%	20%	Prior Substance Abuse Services, Diagnosis or Arrests	45%	46%
Hispanic	29%	29%	ISCA Total Score	33.6	33.3
Other Racial/Ethnic Minority	10%	9%	Prior DSHS Medical, Medicaid Medical Coverage	5.8	5.5
Male	89%	90%	Number of Prior Felony Arrests	1.85	2.02
Prior Arrests	83%	85%	Number of Prior Gross Misdemeanor Arrests	0.74	1.05
Number Arrests Months 13-24 Prior to Admission	0.64	0.83	Most Serious Offense Assault*	20%	20%
Number Arrests Months 7-12 Prior to Admission	0.53	0.63	Most Serious Offense Robbery **	14%	20%
Number Arrests Months 4-6 Prior to Admission	0.31	0.44			
Number Arrests Months 1-3 Prior to Admission	0.61	0.72			

* Includes Assault 1, Assault 2, and Assault 2 Attempt.

** Includes Robbery 1, Robbery 1 Attempt, Robbery 2, Robbery 2 Attempt.

Arrest rates for FFP and No FFP Groups



Logistic Regression for Any Arrest in the Post Period

Parameter	Parameter Estimate	Odds Ratio	p-value
No FFP ¹	0.534	1.706	0.0475
White	-0.2973	0.743	0.2929
Male	0.0372	1.038	0.938
Age at Release	-0.139	0.87	0.1844
ISCA Score	0.0281	1.029	0.1425
Prior Arrest (any class)	1.0823	2.951	0.0632
Number of Prior Felony Arrests	0.1818	1.199	0.0126
Number of Prior Gross Misdemeanor Arrests	0.0831	1.087	0.292
Number of Prior Other Arrests	0.0552	1.057	0.4674
Most Serious Offense Assault ²	-0.1119	0.894	0.7659
Most Serious Offense Robbery ³	-0.2979	0.742	0.4291

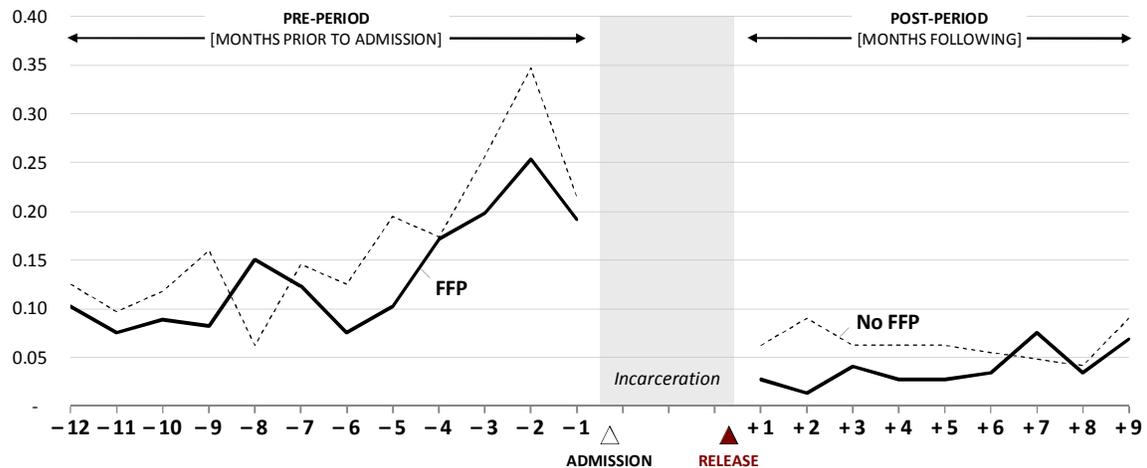
¹Reference group is FFP. ²Includes Assault 1, Assault 2, and Assault 2 Attempt.
³Includes Robbery 1, Robbery 1 Attempt, Robbery 2, Robbery 2 Attempt.

Matched Sample Regression table for Total Arrests

Variable	Parameter Estimate	Standard Error	p value
No FFP ¹	0.17536	0.08635	0.0431
White	-0.04823	0.09029	0.5936
Male	0.02999	0.14344	0.8345
Age at Release	0.00298	0.03325	0.9286
ISCA	0.01233	0.00563	0.0291
Prior Quarterly Earnings	0.07553	0.13644	0.5802
Prior Arrest (any class)	0.09397	0.02574	0.0003
Number of Prior Felony Arrests	-0.00383	0.02779	0.8905
Number of Prior Gross Misdemeanor Arrests	0.02944	0.02686	0.2738
Most Serious Offense Assault ²	0.08054	0.11772	0.4944
Most Serious Offense Robbery ³	0.01055	0.12074	0.9304

¹Reference group is FFP. ²Includes Assault 1, Assault 2, and Assault 2 Attempt.
³Includes Robbery 1, Robbery 1 Attempt, Robbery 2, Robbery 2 Attempt.

Number of arrests for FFP and No FFP Groups



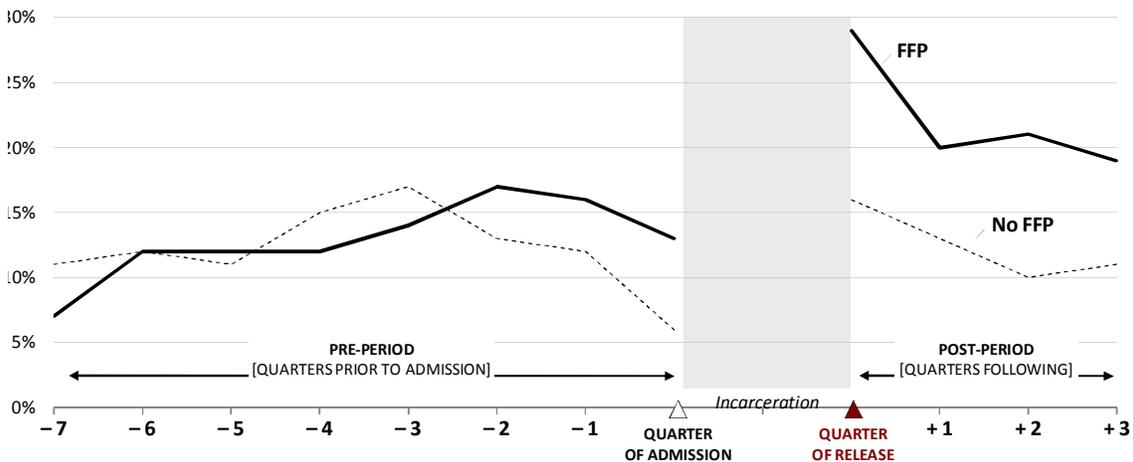
EMPLOYMENT MODELS | Youth released with FFP are MORE likely to be employed than those released without FFP

Baseline youth characteristics for employment analysis after propensity-score matching

Matched Sample			Matched Sample		
CHARACTERISTICS	FFP n = 139	NO FFP n = 139	CHARACTERISTICS	FFP n = 139	NO FFP n = 139
Age at Release	17.8	17.8	Prior Serious Mental Illness Diagnosis or Medications	9%	12%
White Only (non-Hispanic)	50%	45%	Prior ADHD, Conduct, Impulse Diagnosis or Medications	12%	17%
Racial/Ethnic Minority			Prior Substance Abuse Services, Diagnosis or Arrests	55%	50%
Male	92%	93%	ISCA Total Score	32.8	33.0
Prior Employment	32%	33%	Prior DSHS Medical, Medicaid Medical Coverage	5.5	5.0
Average Earnings 4 to 7 Quarters Prior to Admission	\$216	\$188	Number of Prior Felony Arrests	2.4	2.1
Average Earnings Quarters 2 and 3 Prior to Admission	\$280	\$284	Number of Prior Gross Misdemeanor Arrests	0.9	1.2
Average Earnings in Quarter 1 Prior to Admission	\$282	\$259	Most Serious Offense Assault*	18%	21%
Average Earnings in Admission Quarter	\$167	\$148	Most Serious Offense Robbery **	16%	17%

* Includes Assault 1, Assault 2, and Assault 2 Attempt. ** Includes Robbery 1, Robbery 1 Attempt, Robbery 2, Robbery 2 Attempt.

Employment Rates of FFP and No FFP Groups



Matched Sample Regression table for Any Employment

Variable	Parameter Estimate	Odds Ratio	p value
No FFP	-0.7967	0.451	0.0052
White	-0.8035	0.448	0.0067
Male	0.3603	1.434	0.5186
Age at Release	0.7167	2.048	<.0001
ISCA Total Score	-0.0004	1.000	0.9814
Prior Employment	1.1396	3.126	0.0001
Number of Prior Felony Arrests	-0.1488	0.862	0.0372
Number of Prior Gross Misdemeanor Arrests	-0.1308	0.877	0.1777
Most Serious Offense Assault ²	0.0869	1.091	0.8124
Most Serious Offense Robbery ³	-0.3297	0.719	0.4115

¹Reference group is FFP.

²Includes Assault 1, Assault 2, and Assault 2 Attempt.

³Includes Robbery 1, Robbery 1 Attempt, Robbery 2, Robbery 2 Attempt.

Matched Sample Regression table for Earnings

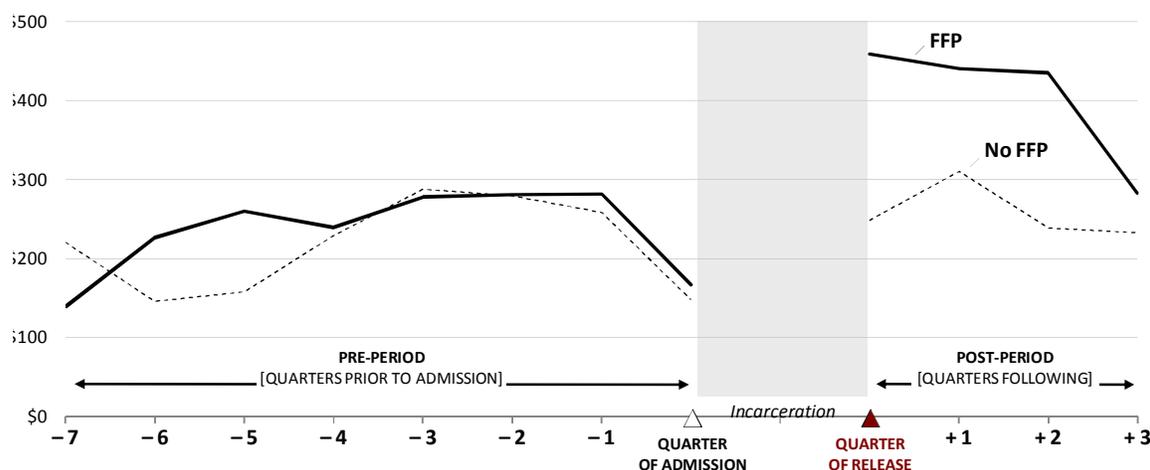
Variable	Parameter Estimate	Standard Error	p value
No FFP ¹	-236.49931	100.05583	0.0188
White	-325.89348	104.31098	0.002
Male	180.9237	190.1361	0.3422
Age at Release	210.34804	60.1183	0.0005
ISCA	0.45701	6.25875	0.9418
Prior Quarterly Earnings	0.69769	0.0496	<.0001
Prior Employment	-92.25323	114.61422	0.4216
Number of Prior Felony Arrests	-33.34588	19.72112	0.092
Number of Prior Gross Misdemeanor Arrests	7.67085	28.22321	0.786
Most Serious Offense Assault ²	-283.59417	135.73584	0.0376
Most Serious Offense Robbery ³	-99.29899	144.61446	0.4929

¹Reference group is FFP.

²Includes Assault 1, Assault 2, and Assault 2 Attempt.

³Includes Robbery 1, Robbery 1 Attempt, Robbery 2, Robbery 2 Attempt.

Average Quarterly Earnings for FFP and No FFP Groups



Data Sources

The primary sources of data for this report were: (1) the RDA Integrated Client Database and (2) JRA program data. The integrated database includes information on DSHS services received, client characteristics, and outcomes such as employment and wages from the Employment Security unemployment insurance (UI) wage data and arrests from the Washington State Patrol. JRA provided a file to RDA that contained specific information such as admission and release dates, most serious offenses, and risk assessment (ISCA) scores for youth released from residences during between July 2008 and December 2009.

Data Notes and Definitions

- Clients with no information in the UI wage file for the outcome period were determined to have earnings of \$0.
- Prior employment, arrests, and other history were measured for the 24-month period prior to JRA residence admission.
- The index date for outcome analyses was the date of release from JRA residence. For the arrest analyses, the index month was the month of release. For the employment analyses, the index was the quarter of release.

JRA residences – Includes institutions/schools, youth camps, and group homes run by the Department of Social and Health Services Juvenile Rehabilitation Administration (JRA).

Age at Release—Calculated based on date of birth and release date.

Prior Arrests—Any felony, gross misdemeanor, or other arrest type recorded in the Washington State Patrol database in the 24 months prior to JRA admission.

Number of Arrests—The total count of any felony, gross misdemeanor, or other arrest type recorded in the Washington State Patrol database in the 24 months prior to JRA admission or the 9 months following release.

Prior Employment—Any wages recorded in the UI wage file during the in the 24 months prior to JRA admission.

Average Earnings—Average quarterly earnings for group in the specified quarter or quarters prior to admission or following release from JRA residence.

Prior Serious Mental Illness Diagnosis or Medications—Washington State public mental health system Access to Care Standards Category A diagnosis such as schizophrenia, bipolar disorder or major depressive disorder, or antipsychotic/antimania medications recorded in medical records during the in the 24 months prior to JRA admission.

Prior ADHD, Conduct, Impulse Diagnosis or ADHD Medications—Pertinent diagnosis in the recorded in medical records during the 24 months prior to JRA admission.

Prior Substance Abuse Services, Diagnosis or Arrests—Substance related diagnosis or procedure recorded in medical records, publicly funded chemical dependency services, or substance-related arrests recorded by Washington State Patrol during the 24 months prior to JRA admission.

ISCA Total Score—The Initial Security Classification Assessment is a risk assessment tool used at the time of JRA admission to determine the risk to public safety.

Prior DSHS Medical, Medicaid Medical Coverage—Medical eligibility for the children’s medical, GAU, TANF, ADATSA, CHIP, and state only CHP categories.

Most serious offense—As recorded in the JRA database.

Propensity Scores

To develop the best possible comparison, we started with the No FFP group and developed a matched comparison based on a composite summary or propensity score that weights the contributing factors according to the likelihood of being in a particular group. The variables listed in the tables for the arrest and employment models were used to creating the matched groups through the use of the propensity scores.