OYA Feeder System Technical Report:
Predicting Adult Felony Convictions among Youth Committed to the Oregon Youth Authority

Prepared by
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Introduction

This report is one in a series examining where, when, and how individuals at high risk for a future adult felony conviction can be identified within other state-funded programs. Previous reports have documented the prevalence of prior social service contacts among Oregon adults with felony convictions (Racer, 2015a) and have identified which agency contacts are most predictive of future adult felony convictions (Racer, 2015b, 2019a, 2019b).

The report focuses on future adult felony convictions among youth with OYA involvement. OYA involvement consists of one or more disposition orders committing a youth to OYA for a period of out-of-home placement in the community (OYA Probation) or in a youth correctional facility (YCF). OYA involvement was previously identified as a strong predictor of future adult felony convictions (Racer, 2015b). This report takes a detailed look at the population of OYA youth to (1) describe the prevalence of adult felony convictions among former OYA youth, (2) describe the prevalence of contacts with other state services prior to OYA involvement, and (3) examine whether future adult felony convictions can be accurately predicted among OYA youth. The present report also examines the value added by including contacts with other state agencies in the models predicting adult felony conviction. It is presumed that the prediction of a first-time adult felony conviction will be improved by the coordination of information across agencies. Although we are currently unable to include cross-agency service details (e.g., types of services received, extent of contact) in the model, the present report provides an initial look at the added value of including cross-agency contacts by comparing the predictive accuracy of models using (a) demographics alone, (b) demographics and OYA records, and (c) demographics, OYA records, and cross-agency contact information (i.e., yes/no per agency).

General Methods

Sample

The analyses within this report use the previously described "Feeder System" dataset (e.g., Braun, 2014; Racer, 2015b). The original dataset included individual-level administrative records of all contacts with the following Oregon state agencies and programs: Self-Sufficiency (SS), Medical Assistance (DMAP), Mental Health (MH), Alcohol and Drug Services (AD), Child Protective Services (CPS), Foster Care (FC), Oregon Youth Authority (OYA), and the Department of Corrections, including Community Corrections (DOC). County Juvenile Department (JD) records subsequently became available and were added to the dataset prior to the present report. The source data spans a 14-year period from 2000 to 2013 (1998 to 2010 for CPS and FC). The full dataset includes individuals of all ages (from 0 to 100+). Prior reports in this series have restricted analyses to individuals who were between 8 and 12 years of age at the start of tracking (the year 2000; see Racer, 2015b for further detail), which allowed tracking of adult felony convictions through at least age 21 (and up to age 25 for the oldest youth in the sample). That age range was chosen to maximize sensitivity to childhood service contacts while also

allowing at least 4 years of eligibility for adult arrests (at a minimum, ages 18-21). For the present report, early childhood contacts were of less concern, since most juvenile department contacts occur in adolescence. In addition, we were more concerned with maximizing coverage of adult convictions. Therefore, the present report restricted analyses to individuals who were between the ages of 13 and 15 in 2000 (26-28 in 2013; year of birth (YOB) = 1985-1987). This allowed adult felony convictions to be tracked through age 25 for all individuals in the sample and ensured coverage of prior agency contacts from at least age 15 forward (age 13 forward for Child Protective Services and Foster Care). If an individual's *only* contact(s) with an agency occurred before these ages, there will be no record of that contact within the Feeder System dataset and the individual will be treated as if the contact did not occur.

Because this report examines outcomes for OYA-involved youth, the sample is further restricted to youth who had an OYA disposition order (i.e. commitment) between 2000 and 2013. Given the age range of the selected cohort (YOB 1985-1987), most of the initial OYA dispositions occurred between 2000 and 2004. Only youth whose initial OYA disposition occurred at least 90 days before their first adult felony conviction were included. Youth who were placed with OYA on a DOC conviction are excluded from the OYA sample. The final sample consisted of 1,757 unique youth.

Data Reduction and Coding

Demographics. Self-reported (or parent-reported) gender and race/ethnicity were included in the administrative data from each agency. If a youth had contact with only one agency, gender and race/ethnicity were determined by that agency. If a youth had contact with multiple agencies, the gender and race/ethnicity that were recorded the most frequently were used. In cases where records were inconsistent and no single gender was recorded most often, youth gender was categorized as unknown (< 0.5% of cases). In cases where no one race/ethnicity was recorded most often, the youth was categorized as multiracial/multiethnic (2% of cases). For the predictive analyses, race/ethnicity was coded as a binary variable with White = 0 and all other races/ethnicities ("non-White") =1. Youth age was determined using birth dates recorded in the administrative data from each agency. In cases where different dates of birth were recorded across different agencies, the date of birth recorded most often was used to calculate youth age. Age at first program contact was coded as a truncated whole number (e.g., an age of 13 years, 8 months was recorded as 13 years).

OYA Data. The available OYA data included juvenile referrals, OYA dispositions, and OYA Risk/Needs Assessments (RNAs) through age 18. RNAs were excluded from the analyses as they were not widely used until after the present cohort had turned 19. For the purposes of predictive modeling, juvenile referral data was summarized by offense type. Offense types were based primarily upon Oregon Revised Statute (ORS) criminal codes, although some related offense types were combined into higher-order categories. Binary variables were created for

each offense type using the following approach: (1) the distributions of total counts for each offense type were examined, (2) cut points were identified to separate approximately the top 25% of the sample from the lower 75% (e.g., if 75% of youth had 1 or 2 felony offenses, counts were regrouped into 2 or fewer (75% of youth) versus 3 or more (25% of youth), and (3) for each offense type, a yes/no variable was created with "yes" (coded as 1) indicating that the number of referrals of that type placed the youth in the top 25th percentile, and "no" (coded as 0) indicating that the youth was not in the upper 25th percentile. Total number of juvenile criminal referrals was also included as a categorical predictor with 4 levels (1-2, 3-4, 4-7, or 8+ criminal referrals). OYA disposition records were used to create a yes/no indicator of whether the youth ever received a YCF disposition.

Other agency contacts. Yes/no indicators of agency contact were created to summarize prior contacts with SS, DMAP, CPS, FC, MH, AD, and JD. Contact with each agency was coded as "yes" if the contact occurred at least 90 days before the youth's first OYA disposition; contact was coded as "no" if there was either no record of contact with that agency, or if the initial contact occurred less than 90 days before the OYA disposition. For the regression analyses, "yes" was coded as '1' and "no" was coded as '0'. See Table 3 for rates of prior program contacts.

Adult felony conviction. For all analyses, the outcome of interest was a first-time adult felony conviction as indicated by DOC administrative records. Approximately 83% of first-time felony convictions resulted in probation and approximately 17% resulted in incarceration.

Section 1: Rates of future adult felony conviction (ages 18-25) among OYA youth

Methods

Sample. The sample included all youth with an OYA Probation or OYA YCF disposition, who were between the ages of 26 and 28 at the end of the Feeder System tracking period (December 31, 2013), which corresponds to birth years 1985-1987. Records of agency contacts were available from at least age 15 (age 13 for child welfare and foster care records) through age 25 for every youth in the sample. The sample consisted of 1,757 unique youth.

Outcome measure. The outcome measure was an adult felony conviction between the ages of 18 and 25, as indicated by DOC administrative records.

Results

Descriptive Statistics. Table 1 shows demographics and OYA disposition histories. Approximately 50% of youth with any OYA dispositions received one or more commitments to an OYA youth correctional facility (YCF). Males are overrepresented among the OYA population (79% male). Approximately 77% of OYA youth were identified as White, followed by 11% identified as Hispanic/Latino and 5% identified as African American. Average age at first OYA disposition within the Feeder System records was approximately 16 years.

Table 1. Descriptive statistics for OYA youth.

Descriptive Statistics	**Youth with OYA Dispositions**	
	n	Percent
Total Number of Youth with OYA dispositions	1,757	
Sex		
Male	1376	78%
Female	381	22%
Race/Ethnicity		
White	1352	77%
Hispanic/Latino	186	11%
Asian	16	<1%
African American	91	5%
Native American	61	4%
Other and Unknown	51	3%
Average age at first OYA disposition in records (Mean (SD))		16.0 (1.2) years
First OYA Disposition Type		
Community Placement	1253	71%
Youth Correctional Facility	504	29%
Any OYA YCF Dispositions	866	49%

Adult Felony Rates. As shown in Table 2, 52% of OYA youth were convicted of an adult felony between the ages of 18 and 25. Table 2 also shows adult felony rates for subsamples defined by demographics (gender, race/ethnicity) and disposition types. Adult felony rates were higher for males than females (57% versus 34%). The highest rates of adult felony conviction were observed for youth with any history of an OYA YCF commitment and youth whose race/ethnicity was identified as African American. Approximately 60% of youth in these groups were convicted of an adult felony between the ages of 18 and 25. Youth who received only OYA Probation (no YCF placements) had an adult felony rate of 46%.

Table 2. Adult felony outcomes with breakouts by demographic and disposition subgroups.

Adult (age 18-25) Felony Rates, OYA Youth

		Total N	N with adult felony before age 26	% with adult felony before age 26
Full Sample		1,757	920	**52%**
Subpopulation		Total N	N with adult felony	% with adult felony
Gender	Males	1375	789	57%
	Females	381	131	34%
Race/Ethnicity	White	1352	695	51%
	Hispanic/Latino	186	104	56%
	Asian	16	8	
	African American	91	58	64%
	Native American	61	27	44%
	Other and Unknown	51	28	55%
Disposition Subgroups				
	First OYA = Community Placement	1253	622	50%
	First OYA = Youth Correctional Facility	504	298	59%
	Any OYA YCF Dispositions	866	515	60%
	No YCF Dispositions	891	405	46%

Summary

More than half (52%) of all youth with OYA involvement were convicted of an adult felony offense between the ages of 18 and 25. Rates were lowest for females (34%) and were highest for youth with any YCF commitments (60%) and for youth identified as African American (64%).

Section 2: Prevalence of contacts with other state services prior to first OYA disposition

Methods

Sample. As in Section 1, the sample consisted of all youth with OYA dispositions who were born in the years 1985-1987. Records of agency contacts were available from at least age 15 (age 13 for CPS and FC) through age 25 for each youth in the sample. The sample consisted of 1,757 unique youth.

Outcome Measures. The outcome measures were the rates of prior contact with other agencies. Administrative data from each agency was used to identify agency contacts that occurred at least 3 months before the youth's first OYA disposition. Records were available for the following services: Self-Sufficiency, Medical Assistance, Child Protective Services (substantiated reports only), Foster Care placements, Mental Health Services, and Alcohol and Drug Services.

Tracking Window. To allow tracking of adult felonies through age 25, the youth in this cohort were ages 13-15 during the first year that Feeder System records were available for SS, DMAP, MH, and AD (the year 2000), and age 11-13 during the first year that records were available for CPS and FC (1998). Agency contacts can only be detected if they occurred at or after those ages. Prior agency contacts must occur at or after those ages *and* prior to a youth's first OYA disposition. The rates reported below would likely be considerably higher if agency contacts were available from birth forward.

Results

Rates of Prior Agency Contacts. As shown in Table 3, 84% of youth entering OYA had prior contact with one or more of the Feeder System agencies (excluding county juvenile departments). Nearly half of youth entering OYA had prior contact with 3 or more agencies. The percentage of OYA youth who had contact with each individual agency ranged from 69% for Medical Assistance to 13% for substantiated Child Protective Services reports.

Table 3. Rates of prior service contacts and future felony conviction rates by agency

		Services Prior to First OYA Disposition in Records			
Total Number of Youth = 1757		n	% of Total N	N Felony	% Adult Felony, 18-25
Prior Service Contacts (>= 90 days before OYA)					
Self-Sufficiency		1005	53%	569	57%
Medical Assistance		1302	69%	738	57%
Child Protective Services		252	13%	145	58%
Foster Care Placement		297	16%	172	58%
Mental Health Services		882	47%	485	55%
Alcohol and Drug Services		629	33%	390	62%
No Prior non-Juvenile-Justice Service Contacts		343	18%	156	46%
County Juvenile Department Contact		1548	82%	869	56%
Number of prior agencies contacted (excluding County Juvenile Departments)	0	276	16%	125	45%
	1	244	14%	115	47%
	2	414	24%	208	50%
	3	441	25%	245	56%
	4	272	16%	158	58%
	5+	110	6%	69	64%

Summary

More than 80% of all youth with OYA involvement had prior contact with one or more other agencies (excluding juvenile departments), and more than 45% had contact with 3 or more agencies prior to their first OYA disposition. Self-Sufficiency and Medical Assistance services were the most common, but nearly half of the OYA youth had received Mental Health services, and one-third had received Alcohol and Drug services. Future adult felony rates were comparable and considerable (55-62%) for the subpopulations accessing each agency, although youth with no juvenile justice involvement prior to OYA had the lowest rates of future adult felony convictions (46%). In general, adult felony conviction rates increased as the number of different agency/service contacts increased.

Section 3: Predicting adult felony convictions from OYA records and cross-agency contacts

Methods

Sample. As in Sections 1 and 2, the sample consisted of all youth OYA contact who were born in the years 1985-1987. Records of agency contacts were available from at least age 15 (age 13 for CPS and FC) through age 25 for each youth in the sample. The sample consisted of 1,757 unique youth (920 of whom received an adult felony conviction between ages 18 and 25).

Outcome measure. The outcome measure was an adult felony conviction between the ages of 18 and 25, as indicated by DOC administrative records.

Analytic Approach. Hierarchical stepwise logistic regression was used to identify which variables were most predictive of future adult felony conviction, and to compare the relative contributions of demographic information (Step 1), OYA-specific information (Step 2), and cross-agency contacts (Step 3). Models were built using a randomly-selected 50% of the sample ("development sample") and verified using the remaining 50% of the sample ("validation sample"). Previous Feeder System reports have used an 80/20 split; a 50/50 split was used in the present report due to the small size of the total sample (1,757 total cases). The development model used backwards elimination via the Wald statistic to retain only those variables that significantly contributed to the prediction of future adult felony conviction.

Evaluating predictors. Odds ratios are used to quantify the relative contributions of individual predictors within the final models. For binary (e.g., yes/no) variables, odds ratios reflect the multiplication of risk associated with a "yes" versus "no" response. For example, an odds ratio of 2.0 indicates that the risk for individuals with a "yes" response on that predictor variable is two times higher than the risk for individuals with a "no" response on that variable. Odds ratios less than 1.0 indicate protective factors, with "yes" responses reducing risk compared to "no" responses; for example, an odds ratio of 0.5 indicates that the that the risk for individuals with a "yes" response on that predictor is two times lower (1/0.5 = 2.0) than the risk for individuals with a "no" response on that predictor. For variables with more than two categories (e.g., age in whole years), the odds ratio reflects the multiplication of risk between each level of the category (e.g., each 1-year increase in age).

Evaluating model accuracy. The overall ability of the model to accurately predict first-time adult felony conviction was evaluated using the area under the curve (AUC) statistic. The AUC indicates how often the model would produce a higher risk score for an individual who actually received an adult felony conviction versus an individual who did not receive an adult felony conviction. In other words, if pairs of individuals were randomly selected from the DOC and non-DOC groups, the AUC indicates how often the model produces a higher risk score for the person from the DOC group. AUC can range from 0.50 to 1.00, with 1.00 indicating a perfect fit

(the model always assigns higher risk scores to those in the DOC group versus the non-DOC group) and 0.50 indicating that the model does not improve predictions beyond what would be achieved by chance ("coin-toss" predictions). In social sciences, an AUC of .70 is often considered to be the minimum threshold for acceptable models.

Evaluating Model stability. Cases were divided randomly into a development sample (50% of cases) used to create the initial model and a validation sample (50% of cases) used to evaluate the stability of the model when applied to a new sample. Two validation approaches were used: first, the development model was applied to the validation sample to evaluate the stability of the AUC across samples; second, a new regression model was run on the validation sample using only those variables that were significant in the development model. The second method was used to evaluate the stability of the individual predictors (i.e., odds ratios and significance levels) across different samples. As reported below, overall model accuracy was consistent across the development and validation samples. However, some predictors that were significant for the development sample were not significant for the validation sample, suggesting that they could be excluded without significantly impacting model accuracy.

Results

Overview. Tables 4 and 5 show the results of the hierarchical stepwise logistic regression models for the Development Sample (Table 4) and the Validation Sample (Table 5). *Model accuracy and fit statistics* (Chi-Square, R^2, and AUC) are shown for each step in the far-right columns of the table. Each step consists of the variables in that step and the preceding step(s). Model statistics for Step 1 describe the accuracy of demographics alone for predicting adult felony conviction. Model statistics for Step 2 describe the accuracy gained by adding juvenile referral and OYA history to the model along with demographics. Model statistics for Step 3 describe the accuracy of demographics, referral/OYA history, and other agency contacts for predicting adult felony conviction. Comparison of model statistics across steps shows the added value of OYA history (Step 2 vs. Step 1) and other agency contacts (Step 3 vs. Step 2). *Variable statistics* are shown for each predictor in the model and are based upon each predictor's contribution to the final (Step 3) model. Variables that were not statistically significant in the development model and thus excluded in the final model are indicated by "*n.s.*".

Development Model. Table 4 shows the results for the regression model run on the development sample (50% of cases). *Model statistics.* As shown by the Step 1 model statistics, demographic variables alone produced in an AUC of .61, which was statistically significant but well below the typical cutoff for acceptable model accuracy (minimum AUC of .70). Step 2 model statistics show that adding juvenile referral and OYA history information increased the AUC by 8 percentage points, from 61% to 69%. Step 3 model statistics show that adding information about prior agency contacts provides a small additional improvement in model fit, raising the AUC from 69.2% to 69.6%. Adding agency contact information also increased the proportion of variance accounted for (R^2) from 15% to 16%. *Variable statistics.* Variable statistics show the contribution of each variable to the final (three step) model. Wald statistics

(bigger = better) and odds ratios (further from 1 = better) can be used to compare the relative strength of each predictor. Wald statistics show that male gender is the strongest single predictor of future adult felony conviction, followed by the total number of juvenile criminal charges, any YCF commitments, 2 or more AOD referrals, prior contact with Medical Assistance, and age at first OYA commitment. Juvenile sex offense history was a strong protective factor, with the risk of an adult felony being 1.7 times lower than for youth with no juvenile sex offense history.

Validation Model. The stability of the AUC across samples was evaluated by applying the final development sample model to the validation sample. As shown at the bottom of Table 4, the final model produced an AUC of .707 when applied to the validation sample, which is nearly identical to the AUC of .696 obtained with the development sample and indicates that the model generalizes well across samples. The stability of each predictor was evaluated by entering the variables from the final development model into a new hierarchical stepwise regression model run on the validation sample. Results from the validation model were similar to those described above for the development model, although contact with Medical Assistance and age at first OYA commitment were not significant in the validation model, suggesting that these variables are less reliable predictors of adult felony outcomes. Otherwise, the direction and magnitude of the effects for each predictor were similar across models. As in the development model, the biggest accuracy gains were seen with the addition of referral/OYA history on Step 2. In contrast to the development model, the contribution of prior agency contacts was negligible, with no observed gains in AUC or R^2 on Step 3. Overall model fit was slightly better for the validation model than the development model (AUC = .71 versus .70).

Table 4. Development model predicting first-time adult felony conviction before age 26.

Table 4. OYA Hierarchical Logistic Regression (Outcome = Adult felony conviction ages 18-25) Development Model

50% Development Sample N=888 (458 DOC)	B	SE	Wald	Odds Ratio	p-value	Chi-Square	R^2	ΔR2	AUC
Step 1: Demographics only					.000	36.11	.05	n/a	.610
Male	.81	.19	19.21	2.26	.000				
Non-White Race/Ethnicity[1]	n.s.				.16				
Age at first OYA commitment	.12	.06	3.62	1.12	.057				
Step 2: Demographics plus Juvenile Referrals and OYA History					.000	103.86	.15	.11	.692
Ever OYA YCF	.49	.15	10.84	1.63	.001				
Total Juvenile Criminal Charges, Grouped (0-2, 3-4, 5-7, 8+)	.25	.07	13.37	1.29	.000				
>2 Felony Referrals	n.s.				.86				

[1] Exploratory analyses were also conducted in which distinct racial/ethnic categories (African American, Hispanic, Caucasian) were entered; none were statistically significant predictors.

Table 4. OYA Hierarchical Logistic Regression (Outcome = Adult felony conviction ages 18-25) Development Model

50% Development Sample N=888 (458 DOC)	B	SE	Wald	Odds Ratio	p-value	Chi-Square	R^2	ΔR2	AUC
>3 Misdemeanor Referrals	n.s.				.37				
>3 Noncriminal Referrals	n.s.				.92				
>1 Person Referral	n.s.				.46				
>7 Property Referrals	n.s.				.24				
>2 Theft Referrals	n.s.				.89				
>2 Runaway Referrals	n.s.				.82				
>1 AOD Referral	.49	.18	7.30	1.64	.007				
Any Felony AOD Referral	n.s.				.58				
Any Sex Offense	-.54	.19	8.19	.58	.004				
Any Weapon Referral	n.s.				.93				
Any Criminal Mischief	n.s.				.32				
Any Arson	n.s.				.25				
Any Burglary	n.s.				.57				
Any Criminal Trespass	n.s.				.78				
Any Curfew	n.s.				.11				
Any Harassment	n.s.				.32				
Step 3: Demographics, Referral/OYA data, plus Prior Agency Contacts					.000	110.22	.16	.01	.696
Prior Contact with:									
Self Sufficiency	n.s.				.95				
Medical Assistance	.38	.15	6.34	1.47	.012				
Child Protective Services	n.s.				.37				
Foster Care	n.s.				.64				
Mental Health Services	n.s.				.68				
Alcohol and Drug Services	n.s.				.27				
County Juvenile Justice	n.s.				.90				
Constant	-3.56	.99	13.04	.03	.00				
Model applied to Validation Sample									.707

Table 5. Validation model predicting first-time adult felony conviction before age 26.

Table 6. OYA Hierarchical Logistic Regression (Outcome = Adult felony conviction ages 18-25) Validation Sample									
50% Validation Sample N=869 (462 DOC)	β	SE	Wald	Odds Ratio	p-value	Chi-Square	R^2	ΔR 2	AUC
Step 1: Demographics only					.000	34.21	.05	n/a	.581
Male	.90	.19	23.10	2.45	.000				
Age at first OYA commitment	.02	.06	.08	1.02	.778				
Step 2: Demographics plus Juvenile Referrals and OYA History					.000	129.27	.173	.128	.712
Ever OYA YCF	.52	.15	11.77	1.69	.000				
Total Juvenile Criminal Charges, Grouped for OYA (0-2, 3-4, 5-7, 8+)	.39	.07	30.28	1.48	.000				
>1 AOD Referral	.62	.20	10.13	1.87	.001				
Any Sex Offense	-.60	.20	9.56	.55	.002				
Step 3: Demographics, OYA data, plus Prior Contact with Other Agencies					.000	130.04	.19	.00	.715
Prior Contact with:									
Medical Assistance	.15	.16	.80	1.16	.372				
Constant	-2.17	1.01	4.58	.12	.032				

Summary

Together, youth demographics and juvenile justice history were reasonably accurate predictors of first-time adult felony convictions before age 26 (AUC = .71). The total number of juvenile criminal charges, male gender, a history of OYA YCF placement, and substance-related (AOD) referrals were all associated with increased risk for an adult felony conviction, while a history of juvenile sex offense reduced the risk of an adult felony conviction. Information about prior agency contacts generally did not improve the model beyond what could be achieved by demographics and juvenile justice information alone, although prior Medical Assistance was a risk factor in the development (but not validation) model. It is possible that prior agency contacts would have more predictive value if more history was available (e.g., records from birth or early childhood forward).

General Summary and Conclusions

Adult felony convictions before age 26 were very common among youth with OYA involvement, ranging from a low of 34% for females to a high of 61% for African American youth. On average, 52% of all youth with OYA involvement were convicted of an adult felony offense between the ages of 18 and 25.

More than 80% of all youth with OYA involvement had prior contact with one or more other agencies (excluding juvenile justice), and more than 45% had contact with 3 or more agencies prior to their first OYA disposition. Self-Sufficiency and Medical Assistance services were the most common services, but nearly half of the OYA youth had received prior Mental Health services, and one-third had received prior Alcohol and Drug services. In general, adult felony conviction rates increased as the number of contacted agencies increased.

Predictive modeling demonstrated that youth demographics and juvenile justice history can be used to predict first-time adult felony convictions among OYA youth with acceptable accuracy (AUC = .71). Contrary to expectations, information about prior agency contacts did not improve the predictive accuracy beyond what was achieved by demographics and juvenile justice information alone.[2] It is possible that prior agency contacts would have more predictive value if additional history was available (e.g., records from birth or early childhood forward).

Limitations. The present report tracked a cohort of youth whose initial contact with OYA occurred approximately 15 years ago (primarily 2000-2004). It would be useful to replicate these findings with more recent cohorts of youth as the data becomes available. Another limitation is that we were unable to control for time in the community between the ages of 18 and 25. Youth committed to OYA can remain in OYA custody up to their 25th birthday; it is therefore likely that some of the youth in this cohort were in OYA custody during at least some of the adult-felony tracking period (ages 18-25), which would limit their opportunity to commit first-time adult offenses during the tracking period.

Other major limitations include the limited time window for detecting prior service contacts and the inability to include details of prior social service contacts (e.g., extent and type of involvement) as predictors in the model. Due to these limitations, the reported rates of prior service contacts are underestimates, and the contribution of prior services to the models predicting future adult felonies may have been underestimated as well.

Future Directions. The predictive models in this report were designed to show the feasibility of predicting adult felony convictions among OYA youth, and to examine the predictive value of prior contacts with other agencies. These models were able to predict adult felony convictions with reasonable accuracy, and provide a starting point for more refined models. These models are intended to help identify youth most in need of targeted intervention and prevention

[2] Even when entered alone (without demographic or juvenile justice history), pre-OYA contacts with other agencies made minimal contribution to the prediction of adult felony conviction (see Appendix, Table A1).

services. However, the high rate of future adult felony convictions among OYA youth suggests that a universal intervention/prevention effort (i.e., additional services provided to all OYA youth) may be needed as well.

References

Braun, M.J.F. (2014). Prevalence of DHS and OHA Program Access Prior to First OYA Commitment: An Exploratory Analysis. Salem, OR: *Oregon Youth Authority*.

Racer, K. (2015a). Prevalence and Timing of DHR, OHA, and OYA Services Prior to First DOC Commitment. Salem, OR: *Oregon Youth Authority*.

Racer, K. (2015b). Predicting First DOC Commitment from Prior Social Service Involvement. Salem, OR: *Oregon Youth Authority*.

Racer, K. (2019a). Predicting Adult Felony Conviction from contacts with Child Protective Services, Foster Care, Mental Health, and Alcohol and Drug Services. Salem, OR: *Oregon Youth Authority.*

Racer, K. (2019b). Predicting Adult Felony Convictions among Youth with Juvenile Department Dispositions. Salem, OR: *Oregon Youth Authority*.

Appendix

Table A1. Model predicting adult felony convictions from agency contacts only (no demographic or criminal history variables)

N=1,891 (989 w/felony 18-25)						Chi-Square	R^2	AUC
Agency contact >=1 day prior to OYA	β	SE	Wald	Odds Ratio	p-value	27.30	.019	.57
Self-Sufficiency	.121	.102	1.420	1.129	.233			
Medical Assistance	.048	.131	.132	1.049	.716			
Child Protective Services	.075	.143	.278	1.078	.598			
Foster Care	.142	.131	1.174	1.153	.279			
Mental Health Services	-.117	.099	1.390	.889	.238			
Alcohol and Drug Services	.327	.098	11.209	1.387	.001			
County Juvenile Department	.340	.146	5.409	1.405	.020			
Constant	-.413	.155	7.143	.661	.008			