



Prevalence and Timing of DHS, OHA, and OYA Services Prior to First DOC Commitment

Prepared by
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Research & Evaluation
February 9, 2015

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Executive Summary

Each year, approximately 7500 adults enter the jurisdiction of the Oregon Department of Corrections (DOC) for the first time. Given that individuals with limited social and economic resources tend to be over-represented within the criminal justice system, it is expected that many, and perhaps most, of the DOC entrants have had prior contact with services provided by the Department of Human Services (e.g., income assistance, child protective services) and Oregon Health Authority (e.g., medical assistance, drug and alcohol treatment). In addition, many adult offenders have histories of juvenile offenses, which in the most serious cases could entail involvement with the Oregon Youth Authority. Pre-DOC contacts with the Department of Human Services (DHS), Oregon Health Authority (OHA), and/or Oregon Youth Authority (OYA) can serve as a flag for additional prevention needs, if the individuals at highest risk for future DOC contact can be differentiated from the broader population of people receiving services. This report is the first in a series of studies aimed at identifying *where, when, and how* individuals at highest risk for future felony convictions can be identified within other state-funded programs, with the ultimate goal of reducing “escalation” to DOC by targeting additional prevention resources to those individuals who are at highest risk of future DOC contact.

The present report provides a descriptive overview of prior DHS, OHA, and OYA contacts among adults entering DOC for the first time. The report is organized into two parts. Part 1 takes a *retrospective* look at the social service histories of DOC entrants to estimate the prevalence of prior DHS, OHA, and OYA program access among 98,404 individuals who entered DOC for the first time between January 1, 2005 and December 31, 2013. The results of Part 1 estimate *how many DOC entrants could potentially have been identified earlier* (i.e., had received other state services prior to DOC). Part 2 takes a *prospective* look at the rates of future DOC entry among 211,685 individuals who accessed DHS, OHA, or OYA programs in the year 2001. The results of Part 2 estimate the “*hit rate*” or *density of future DOC entrants among all individuals served by each agency*.

The key finding from Part 1 is that no less than 68% of all first-time DOC entrants, and 80% of the youngest DOC entrants, had previously accessed one or more DHS, OHA, or OYA services. Almost 60% of all new DOC entrants had received Self-Sufficiency (SS) services (e.g., cash assistance or food benefits), 44% had received Medical Assistance (DMAP), 27% had received Alcohol or Drug Treatment Services (AD), and 20% had received Mental Health Treatment Services (MH). Rates of pre-adulthood services (substantiated Child Protective Services claims (CPS), Foster Care placements (FC), and OYA dispositions) were more difficult to estimate with the available records (see limitations, below), but it is cautiously estimated that 13% of first-time DOC entrants had a substantiated child protective services claim, 8% had a prior foster care placement, and 9% had a prior OYA commitment. Altogether, the high rate of prior service contacts confirms that many future DOC entrants could potentially be identified within other state services *before* they come into contact with DOC. If these high-risk service

recipients can be identified, they can be targeted for additional prevention resources and potentially diverted from ever entering DOC.

The key finding from Part 2 is that, on average, 10% of individuals who accessed DHS, OHA, and/or OYA entered DOC within the next 12 years. However, rates of future DOC entry varied considerably by agency. Overall rates of future DOC entry were 9% for recipients of Medical Assistance, 10% for Self-Sufficiency recipients, 13% for Mental Health Treatment Services recipients, and 16% for Alcohol and Drug Treatment Services recipients. Recipients of services limited to childhood and adolescence (Child Protective Services, Foster Care, and OYA) generally had higher rates of future DOC contact; 13% of minors with a substantiated Child Protective Services claim, 21% of those with a Foster Care placement, and 57% of those with an OYA disposition entered DOC within the next 12 years.

There are two primary limitations to the present findings. The first is that the time span of the available records, though sizable, does not fully capture each individual's history. Instead we are capturing a 5-to-13-year window preceding DOC entry. Services received in early childhood (before age 9 or 10) are especially unlikely to be detected in the current data. Conversely, when childhood/adolescent records are available, the window of observation for adult records (e.g., eligibility for DOC) is shortened. The second major limitation is that arrest records have not yet been incorporated into the analyses. Thus, some services may have been prompted and/or mandated by contact with law enforcement. This may in part explain the relatively high rates of alcohol and drug treatment services, for example.

Together, the findings from Part 1 and Part 2 build a foundation for future efforts to determine *when*, *where*, and *how* to identify individuals at high risk of future DOC entry. The findings show that most DOC entrants have one or more prior contacts with state-funded services, but only about 1 in 10 service recipients escalate to DOC within the next 13 years. Future efforts will use all available information to identify patterns and characteristics that differentiate the 10% who escalate to DOC from the 90% who don't. Accurate identification of the highest risk individuals will allow prevention resources to be focused on those most at risk. This process must also balance "hit rates" (percentage of future DOC entrants within each service) with "base rates" (percentage of the state population receiving each service) to maximize impact. For example, a randomly-selected youth within OYA is clearly at higher risk than a randomly-selected individual within SS (57% of OYA vs. 10% of SS recipients later enter DOC); however, many more individuals enter SS (104,819 in 2001) than OYA (852 in 2001). Thus diverting all 2001 OYA recipients from DOC would reduce the DOC population by 486 (57% of 852) over 13 years (2001-2014) whereas diverting all 2001 SS recipients would reduce the DOC population by 10,481 (10% of 104,819) over 13 years.

Rationale and Purpose

The Oregon Youth Authority (OYA) is partnering with other state agencies to identify patterns of service utilization that predict future involvement with OYA and/or the Oregon Department of Corrections (DOC). Toward this end, an unprecedented sharing of information across agencies has allowed OYA to combine 10+ years of individual-level enrollment records from Oregon State Self-Sufficiency (SS) services (including nutrition assistance (SNAP), income assistance (TANF), employment services, employment-related child care services, and domestic violence services), Medical Assistance (DMAP), Mental Health Treatment (MH), Alcohol and Drug Treatment (AD), Substantiated Child Protective Services Claims (CPS), Foster Care Placements (FC), Oregon Youth Authority (OYA) placements, and Department of Corrections (DOC) sentences. The combined records will ultimately be used to identify patterns of movement through services, to identify individual and family characteristics that predict patterns of service utilization, and to statistically predict risk for entering OYA and/or DOC.

This report is the first in a series examining pathways to future DOC involvement. Pathways to OYA are presented in a separate series of reports. The report is organized into two parts. Part 1 takes a *retrospective* look at the social service histories of DOC entrants to estimate the prevalence of prior DHS, OHA, and OYA program access among individuals who entered DOC for the first time between January 1, 2005 and December 31, 2013. The results of Part 1 estimate *how many DOC entrants could potentially have been identified earlier* (i.e., had received other state services prior to DOC). Part 2 takes a *prospective* look at the rates of future DOC entry among 211,685 individuals who accessed DHS, OHA, or OYA programs in the year 2001. The results of Part 2 estimate the *“hit rate” or density of future DOC entrants among all individuals served by each agency*.

The purpose of Part 1 was to answer the following research questions:

- (a) What proportion of new DOC entrants had prior contact with DHS, OHA, or OYA?
- (b) How long before DOC entry did these contacts occur?
- (c) On average, how many programs were accessed before DOC?
- (d) Which program types tend to co-occur?
- (e) Do rates of prior contact differ by gender or by race/ethnicity?

The purpose of Part 2 was to answer the following research questions:

- (a) What are the rates of future DOC entry among individuals served by DHS, OHA, or OYA?
- (b) How much time elapses between each type of program and DOC entry?
- (c) Do rates of future DOC entry differ by gender, age, or race/ethnicity?
- (d) Does the rate of future DOC entry differ by the total number of programs accessed?

Source Data

Table 1 provides a full list of the programs and service dates available for the present analyses. Enrollment records for OYA, DOC, DMAP, SS, MH, and AD services were available between January 2, 2000 and December 31, 2013. Enrollment records for CPS and FC were available between January 2, 1998 and December 31, 2010. Note that CPS and FC records are at the child level; thus, CPS or FC histories among DOC entrants indicate that the DOC entrant was the recipient of child protective services or foster care services before the age of 18.

To allow us to combine records across agencies, the Department of Human Services Integrated Client Services (ICS) Team used probabilistic matching of names and dates of birth to identify individuals across datasets, and then assigned the same unique numeric identifier to every record for a given individual. We used these identifiers to match records across all programs for every individual.

For OYA and DOC, codes within the records enabled identification of each individual's very first contact with the agency; only these first-ever contacts were retained for the analyses. For DHS and OHA services, the "first" date of service is the earliest service date within the years covered by our records; it may or may not have been the individual's first-ever contact with that program (i.e., any pre-1998 CPS/FC contacts would be missed, as would any pre-2000 SS, DMAP, MH or AD contacts). To identify services received *before* DOC, the earliest dates for each service were compared against each individual's first-ever DOC sentencing date.

Table 1. Full list of all program records available for the present analyses.

Agency	Program	Acronym	Ages of Eligibility	Enrollment Dates	Number of Unique Individuals
DHS	Self-Sufficiency	SS	0-100+	2000-2013	2,046,969
OHA	Medical Assistance	DMAP	0-100+	2000-2013	1,789,174
OHA	Mental Health	MH	0-100+	2000-2013	430,990
OHA	Alcohol and Drug Treatment	AD	0-100+	2000-2013	386,535
DHS	Substantiated Child Protective Services Claims	CPS	0-17	1998-2010	108,536
DHS	Foster Care Placements	FC	0-17	1998-2010	53,128
OYA	Oregon Youth Authority (First Contacts Only)	OYA	12-19	2000-2013	10,275
DOC	Department of Corrections (First Contacts Only)	DOC	15-100+	2000-2013	166,774

Part 1: Prevalence of prior services among new DOC entrants

The goal of Part 1 was to estimate the prevalence of prior SS, DMAP, MH, AD, CPS, FC, and OYA contact among first-time DOC entrants.

Methods

As shown in Table 1, there were 166, 774 unique individuals who entered DOC for the first time between 2000 and 2013. For the retrospective analysis of prior DHS, OHA, and OYA contacts, we selected only those individuals who entered DOC between 2005 and 2013 (n=100,015) to ensure that each individual had the opportunity for at least 5 years of social service records prior to DOC entry. We also restricted our sample to individuals for whom dates of birth were available (n=98,747) and who were at least 18 years of age when they entered DOC for the first time (n=98,404); individuals younger than 18 serve their DOC commitments under OYA, and are included in the separate series of reports examining service contacts among OYA entrants.

To examine rates of pre-DOC service access, DOC commitment records for the final sample of 98,404 DOC entrants were merged with records of the earliest available contacts with SS, DMAP, MH, AD, CPS, FC, and OYA using the unique individual-level identifiers provided by ICS. DOC entrants were counted as having a pre-DOC contact with a program if the earliest contact date for that program preceded DOC entry by no less than 3 months. Rates of pre-DOC contact with each program were estimated using two different samples of DOC entrants. **Sample 1** consisted of all 98,404 DOC entrants. This provides the most comprehensive basis for estimating SS, DMAP, MH, and AD contacts, but it necessarily underestimates CPS, FC, and OYA contacts, as many DOC entrants (nearly 50%) were never age-eligible for these services during the time frame of the available records (e.g., an individual who entered DOC in 2005 at age 30 would have been 23 in 1998, when the earliest CPS records are available). **Sample 2** was restricted to DOC entrants who had several years of age-eligibility for CPS, FC, and OYA within the time span of the available records. Specifically, Sample 2 included the 17,458 individuals who were age 12 or younger in the year 2000, ensuring that CPS and FC records were available from at least age 10 forward and that OYA records were available from at least age 12 forward. Demographic characteristics of these two samples are presented in Table 1; note that the second sample was considerably younger than the full sample at the time of DOC entry.

We restricted our analyses to service contacts that occurred at least 3 months prior to DOC entry due to concern that services received shortly before DOC commitment may have been prompted by the arrest(s) that led to DOC commitment, and also because services that begin very close in time to DOC commitment provide limited opportunities for additional prevention efforts. In most cases the 3-month restriction had a negligible effect on rates of service (the vast majority of first DHS, OHA, or OYA service contacts occurred more than 3 months before DOC). However, rates of prior AD service declined by 3 percentage points, due to the fact that approximately 10% of DOC entrants with prior AD

services had enrolled in AD less than 3 months before DOC entry. See Appendix A for rates of service contact without the 3-month restriction.

Sample Characteristics

Descriptive characteristics of Sample 1 and Sample 2 are presented in Table 2. The average age of all first-time DOC entrants between 2005 and 2013 (Sample 1) was just under 32 years. Sample 2, which included only the youngest DOC entrants, had an average age of 20 years at the time of DOC entry. The proportion of incarceration versus probation sentences was similar across both samples, as was the proportion of Caucasians (66-67%). The proportions of non-Caucasian ethnicities were slightly higher in Sample 2, but this should be interpreted cautiously due to the fact that Sample 1 had a higher percentage of missing ethnicity information (16% for Sample 1 versus 10% for Sample 2). The proportion of females was somewhat lower in Sample 2 than in Sample 1.

Table 2. Demographic characteristics of first-time DOC entrants included in Part One.

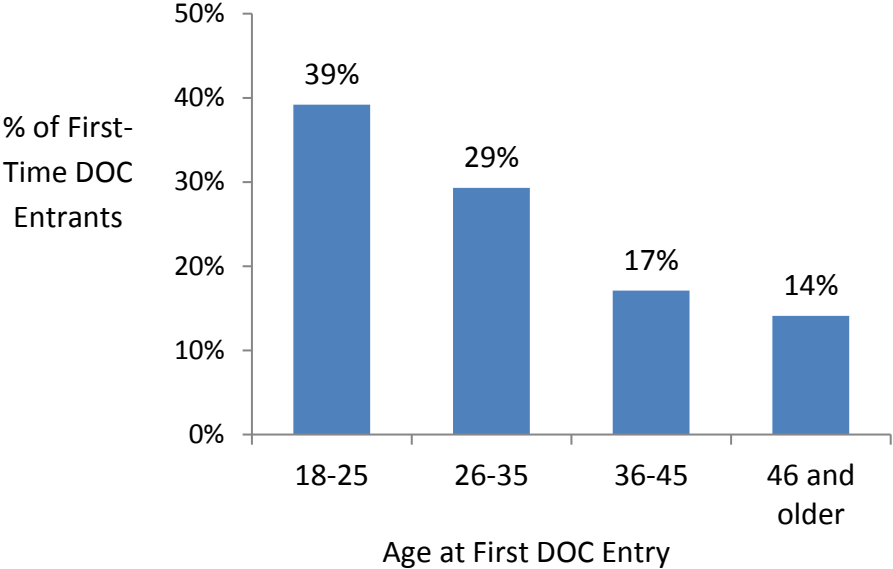
Sample Characteristics, First-Time DOC Entrants 2005-2013^a								
	Average Age At DOC Entry (Range)	%Probation; %Incarceration	%Male; %Female	Race/Ethnicity				
				Caucasian	Hispanic	African American	Native American	Unknown
Sample 1^b N=98,404	31.8 years (18-93)	87.3% P 10.7% I	73.7% M 26.2% F	66.2%	10.1%	4.1%	2.1%	15.8%
Sample 2^c N=17,458	20.6 years (18-25)	88.6% P 9.8% I	79.3% M 20.6% F	67.0%	13.4%	5.5%	2.6%	9.9%

^aExcludes DOC entrants who served their sentence under OYA

^b Sample 1 includes DOC entrants of all ages

^c Sample 2 includes only DOC entrants who were < 13 years old in the year 2000, to ensure an adequate period of eligibility for CW, FC, and OYA services.

Figure 1. Distribution of age at first DOC entry (Sample 1). Nearly 40% of new DOC entrants were age 25 or younger.



Results

What proportion of DOC entrants had prior contact with DHS, OHA, or OYA?

Nearly 70% of all new DOC entrants (Sample 1) accessed DHS, OHA, or OYA prior to DOC entry (see Figure 2). Figure 2 shows the Total, SS, DMAP, MH, and AD estimates from Sample 1 and the CPS, FC, and OYA estimates from Sample 2; Table 2 shows the rates across all programs for each sample separately. Among younger DOC entrants only (Sample 2), 80% had previously accessed one or more programs within DHS, OHA, and OYA (See Table 2). Across both samples, rates of prior access were highest for SS and DMAP, and lowest for FC and OYA (see Table 2). This is broadly consistent with the prevalence rates of these services in the general Oregon state population (see Table 1).¹ Rates of pre-DOC contact with AD services were quite high in both samples, averaging around 30%. MH services were accessed by 20% of all new DOC entrants (Sample 1) and 34% of younger DOC entrants (Sample 2).

Given the limited time frame of the available data, the true prevalence rates for SS, DMAP, MH, and AD may lie somewhere between the estimates for Sample 1 and Sample 2. The true prevalence rates for CPS, FC, and OYA are expected to lie closest to the estimates for Sample 2; Sample 1 estimates of CPS, FC, and OYA are provided for informational purposes but must be recognized as underestimates given that half of the individuals in Sample 1 were never age-eligible for these services within the time range of the available records. Throughout the remainder of the Results, Sample 1 is used for estimates related to SS, DMAP, MH, or AD and Sample 2 is used for estimates related to CPS, FC, or OYA.

¹ Note that Table 1 indicates that foster care served about 5 times more youth than OYA statewide, but this is due in large part to the wider age range served by foster care; among youth ages 12-17, FC served about 25% more youth than OYA (FC served an average of about 825 youth ages 12-17 per year, while OYA averaged about 650 youth per year).

Figure 2. Estimated prevalence rates of prior DHS, OHA, and OYA contact among new DOC entrants. SS, DMAP, MH, and AD estimates are from Sample 1; CPS, FC, and OYA estimates are from Sample 2.

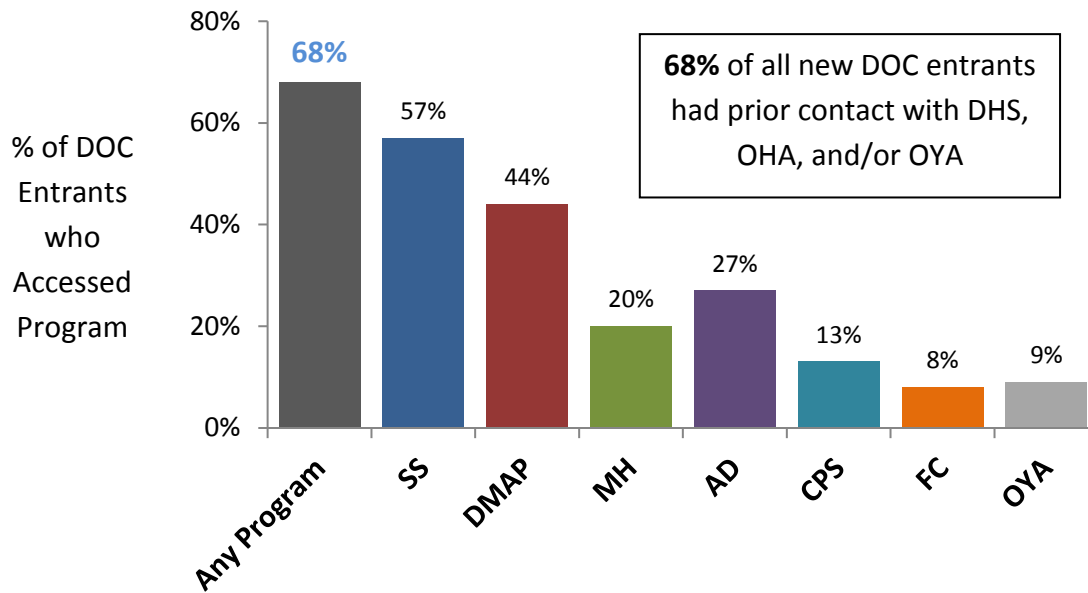


Table 2. Prevalence of prior DHS, OHA, and OYA contacts by Sample.

	% of Sample who had Pre-DOC Contact ^a with:							
	Any Program	SS	DMAP	MH	AD	CPS	FC	OYA
Sample 1 ^{b,c} N=98,404 Ages 18-92	68.0%	56.6%	44.2%	19.7%	27.1%	3.4% ^c	2.6% ^c	2.9% ^c
Sample 2 ^d N=17,458 Ages 18-25	80.3%	70.7%	61.5%	33.7%	34.2%	12.6%	8.2%	8.9%

^aRestricted to contacts that occurred at least 3 months before DOC entry

^b Sample 1 estimates should be considered lower limits; services accessed before the year 2000 (1998 for CPS & FC) are not included.

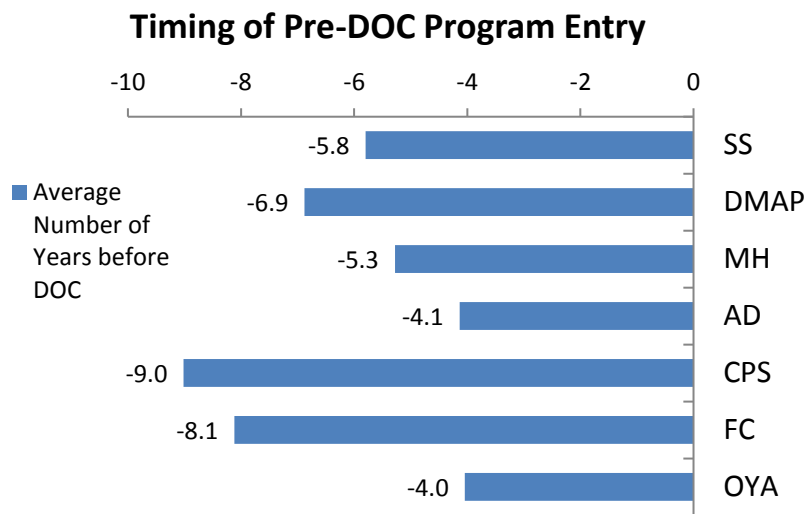
^c Sample 1 underestimates CPS, FC, and OYA involvement as only 50% of the sample was age-eligible for these services during the time span of the available records; however, the estimates could be considered lower limits.

^dSample 2 is not representative of the general DOC population (younger age of entry); estimates might be considered upper limits.

How long before DOC entry did the contacts occur?

Among individuals who had pre-DOC contact with DHS, OHA, and/or OYA, the number of years from the earliest record of program access to DOC entry ranged from 9.0 (CPS) to 4.0 (OYA). On average, CPS referrals occurred earliest (9.0 years before DOC), followed by FC placements (8.1 years before DOC), DMAP services (6.9 years), SS services (5.8 years), MH services (5.3 years), AD (4.2 years), and OYA (4.0 years).

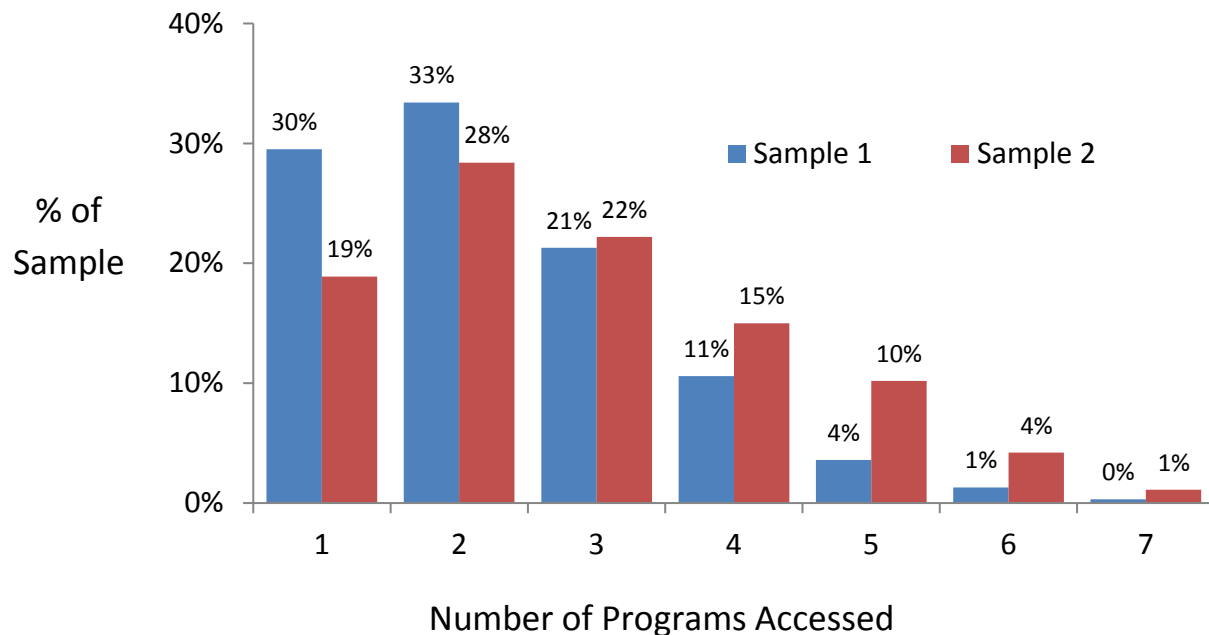
Figure 3. Years from program access to DOC entry (DOC entry occurs at Time = 0). Estimates for SS, DMAP, MH, and AD are based on Sample 1; CW, FC, and OYA estimates are based on Sample 2.



On average, how many different programs were accessed before DOC entry?

Most DOC entrants who accessed DHS, OHA, or OYA had contact with multiple programs. Among all DOC entrants (Sample 1) who accessed services, an average of 2.3 different programs were accessed before DOC entry. Among the youngest DOC entrants (Sample 2) an average of 2.9 programs were accessed before DOC. Three or more pre-DOC programs were accessed by 38% of the Sample 1 service recipients and 53% of the Sample 2 service recipients (see Figure 4).

Figure 4. Number of programs accessed before DOC, as a percentage of the number of individuals who accessed one or more programs.



Which programs tended to co-occur?

Two programs, SS and AD, occurred as the only pre-DOC program contact in approximately 20% of the DOC population who accessed those services. All other programs (i.e., DMAP, MH, CPS, FC, and OYA) co-occurred with other services in at least 94% of cases (see Table 4). Note that we use the term “co-occurrence” to mean that multiple programs were accessed prior to DOC entry; the different programs did not necessarily overlap in time. SS and DMAP were the most common co-occurring programs; DMAP rarely occurred without a history of SS, and both SS and DMAP were accessed by the vast majority (83-99%) of DOC entrants who accessed MH, CPS, FC, or OYA. SS and DMAP histories were also present among most (62-74%) individuals who accessed AD. The majority of individuals with a CPS or FC history also received MH services, and about half received AD services. Interestingly, AD services were extremely common among DOC entrants who had a history of OYA (80% of individuals with an OYA history also received AD services).

Table 4. Rates of co-occurrence between programs. Co-occurrence rates higher than 75% are highlighted.

		Percentage of Those Who Received:						
		SS ^a	DMAP ^a	MH ^a	AD ^a	CPS ^b	FC ^b	OYA ^b
Who Also Received:	No Other Programs	19.4%	5.3%	5.6%	20.3%	1.2%	0.1%	0.5%
	SS	--	90.9%	87.4%	73.6%	94.9%	94.4%	89.5%
	DMAP	71.0%	--	83.1%	61.8%	94.3%	99.5%	97.9%
	MH	30.3%	37.0%	--	36.1%	70.7%	88.0%	83.9%
	AD	35.2%	37.8%	49.8%	--	49.9%	55.1%	79.5%
	CPS					--	68.7%	25.0%
	FC					44.8%	--	23.3%
	OYA					17.7%	25.3%	--

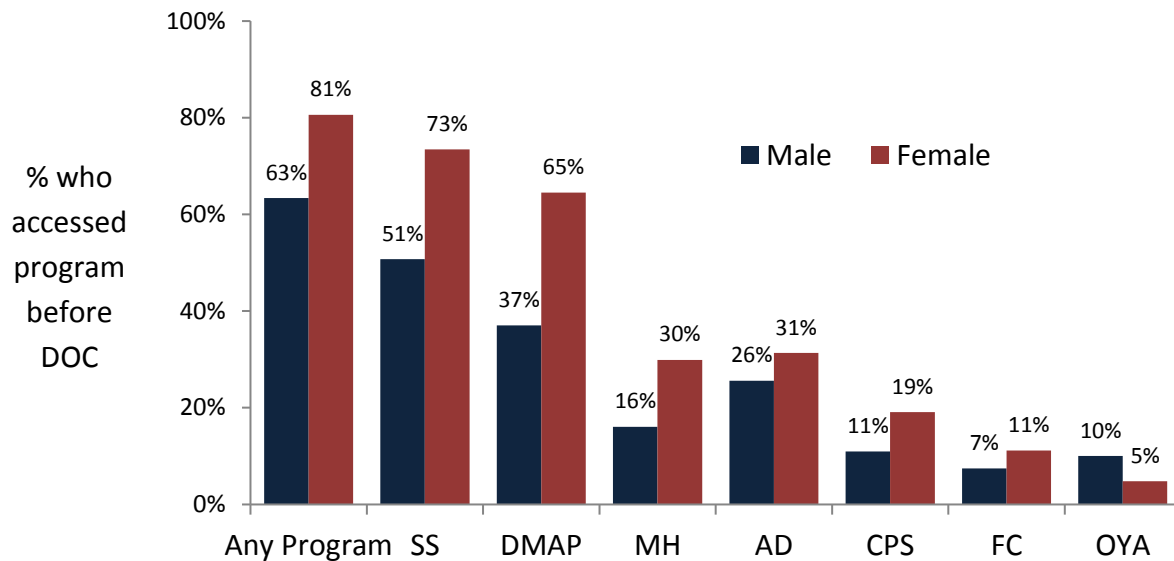
^aCo-occurrence rates between SS, DMAP, MH, and AD were estimated using Sample 1.

^bCo-occurrence rates involving CPS, FC, and OYA were estimated using Sample 2.

Do rates of prior DHS, OHA or OYA contact differ by gender?

Rates of pre-DOC program access by gender are shown in Figure 5. Female DOC entrants were more likely than males to access DHS and OHA programs. Pre-DOC contact with the Oregon Youth Authority, however, was more common among males than females. Among the DHS and OHA programs, gender differences were smallest for AD services (1.2 times more common among women) and largest for MH services (1.9 times more common among women).

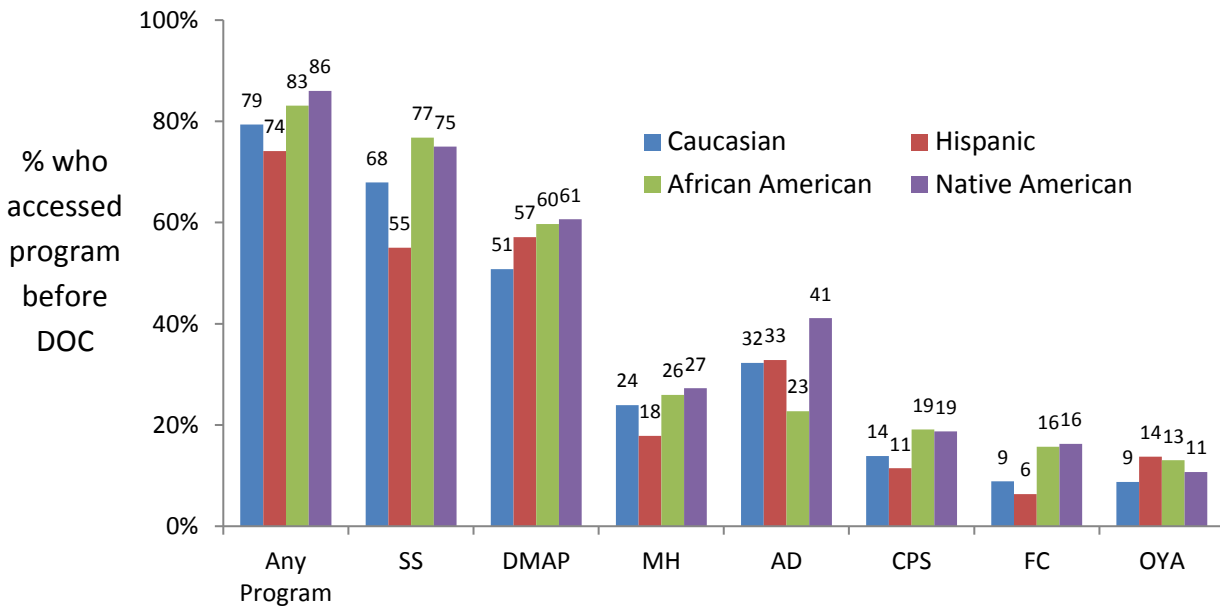
Figure 5. Rates of pre-DOC program access by gender. Total (“Any”), SS, DMAP, MH, and AD estimates are based upon Sample 1; CPS, FC, and OYA estimates are based upon Sample 2.



Do rates of prior DHS, OHA, or OYA contact differ by race/ethnicity?

Figure 6 shows rates of pre-DOC program access for the four largest race/ethnicity categories. Overall rates of any pre-DOC program access were fairly comparable, ranging from 74% of Hispanics to 86% of Native Americans. Compared to Caucasian DOC entrants, there appear to be lower rates of SS, MH, CPS, and FC access among Hispanics, higher rates of SS, DMAP, CPS, and FC among both African Americans and Native Americans, lower rates of AD access among African Americans, and higher rates of AD access among Native Americans.

Figure 6. Rates of pre-DOC program access, separated by race/ethnicity. Total (“Any”), SS, DMAP, MH, and AD estimates are based upon Sample 1; CPS, FC, and OYA estimates are based upon Sample 2. Note that average rates of “any program” access are higher than for the full sample (as shown in Figure 2 and Table 2) because individuals without race/ethnicity data are excluded from the Figure 6 estimates, and most individuals with missing race/ethnicity data did not access pre-DOC services.



Part One Summary and Limitations

Summary. Between 68% and 80% (depending upon the sample) of all new DOC entrants had prior contact with DHS, OHA, and/or OYA, and approximately half (38-53%) of these individuals had contact with at least 3 of the 7 programs that were tracked. Contacts with DHS, OHA, and OYA occurred an average of 4 to 9 years before DOC entry. Together, these findings confirm that most DOC entrants could potentially be identified within other state programs (and often several different state programs) *before* they enter DOC. Furthermore, the average program contact occurred at least 4 years before DOC entry, providing considerable opportunity for prevention efforts. Women were more likely than men to access DHS or OHA programs prior to entering DOC, whereas men were more likely than women to access OYA prior to entering DOC. Overall rates of program access were fairly comparable across major racial/ethnic groups; however, there were some notable differences within individual programs that will be explored further in future reports.

Limitations. Estimated access rates for all programs are limited by the time window of the available records; program access will be missed in those individuals whose most recent service occurred before 1/2/2000 (or before 1/2/1998 for CPS and FC).

Furthermore, estimates of prior SS, DMAP, MH, and AD services were drawn from all first-time DOC entrants from the years 2005-2013 (N=98,404), while the primary estimates of prior CPS, FC, and OYA services were drawn from subsamples of the youngest DOC entrants (N=17,458). Including all DOC entrants in the estimates of CPS, FC, and OYA services would necessarily lead to underestimates, as most DOC entrants are too old to have been eligible for CPS, FC, and OYA services in the 5 to 10 years preceding DOC entry. On the other hand, our decision to base our estimates of CPS, FC, and OYA rates on the youngest DOC entrants may also lead to bias – individuals who enter DOC before the age of 26 may not be representative of the larger DOC population, and they may be more likely to have had prior contact with CPS, FC, and/or OYA. Thus, estimates of CPS, FC, and OYA prevalence rates should be viewed cautiously.

An additional limitation is that we cannot currently differentiate services that were prompted by criminal offenses, as arrest data were not available for analysis at the time of this report. It may be that the high rates of program access, at least for some programs, are due in part to services being prompted by contact with law enforcement. While arrest-related services are important potential predictors of DOC risk, the patterns of service access that predict DOC risk may differ for services that were prompted by offenses versus those that were not.

Finally, race/ethnicity information was missing for up to 16% of DOC entrants, which adds error to our estimates of prior service access within individual ethnic and minority groups.

Part 2: Rates of future DOC contact among DHS, OHA, and OYA recipients

The goal of Part 2 was to estimate rates of future DOC entry among all individuals who enrolled in SS, DMAP, MH, AD, CPS, FC, or OYA services in 2001.

Methods

To estimate rates of future DOC entry among those who accessed DHS, OHA, and/or OYA, we identified a cohort of individuals who entered one or more non-DOC programs in 2001 and determined how many of these individuals had entered DOC by the end of 2013.

We chose 2001 as our enrollment year because it was the first year in which new enrollments could be identified for all programs (i.e., we could identify individuals who enrolled in 2001 and were *not* enrolled in 2000). From the full population of all individuals who accessed DHS, OHA, or OYA in 2001 (n=330,302), we selected only those who were between the ages of 9 and 45 in the year 2001 (n=207,660). Individuals older than 45 in 2001 were excluded due to the declining risk of experiencing a first DOC contact beyond age 45 (over 85% of first-time DOC entrants are between the ages of 18 and 45). Individuals younger than 9 years of age were excluded to ensure a minimum of 4 years of age-eligibility for DOC by the end of 2013. Individuals whose first DOC entry preceded, or was less than 3 months after, a 2001 program enrollment were also excluded. The final sample consisted of 201,083 individuals who accessed DHS, OHA, and/or OYA in 2001 but had not yet had contact with DOC (see Table 5). The cross-referenced DOC records were used to determine how many of these individuals entered DOC for the first time by the end of 2013.

Table 5. Sample characteristics for Part Two.

Sample Characteristics, 2001 Cohort									
		TOTAL	Program Accessed in 2001						OYA^b
			SS	DMAP	MH	AD	CPS	FC	
Sample size		201,083	104,819	101,396	30,367	29,238	2,440	1,463	852
Average age at Program Entry ^a		26.0	26.0	25.7	25.9	29.3	12.3	12.7	15.8
% Male		49.4	48.5	45.9	44.2	70.9	41.9	48.5	81.2
Race/ Ethnicity	%Caucasian	69.9	72.6	65.6	85.2	77.1	76.8	74.9	79.2
	%Hispanic	9.3	6.5	10.8	5.5	12.0	9.5	7.8	8.8
	%African American	3.4	3.7	3.5	4.0	3.7	5.2	8.3	6.1
	%Native American	2.4	2.1	2.3	2.4	4.3	2.1	4.5	3.1
	%Unknown/ Missing	13.1	13.4	15.6	1.8	1.7	5.1	2.7	2.1

^aRange = 9-45 for SS, DMAP, MH, and AD; Range = 9-17 for CPS, FC, and OYA.

^bNote that the OYA sample excludes any youth who were serving DOC sentences (OYA-DOC youth do not meet the minimum 3-month separation between program contact and DOC entry).

Results

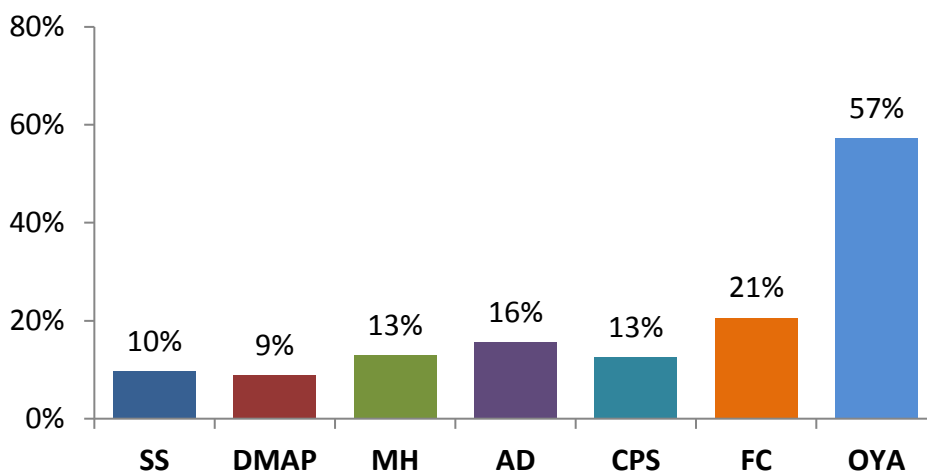
What are the rates of future DOC entry among individuals receiving DHS, OHA, and OYA services?

Overall, 10% of individuals who entered DHS, OHA, and/or OYA programs in the year 2001 entered DOC by the end of 2013 (see Table 6 and Figure 7). Rates of DOC entry varied by program, and ranged from a low of 9% (DMAP) to a high of 57% (OYA). The average age at DOC entry was 28.7 years, which is slightly younger than the average age across all new DOC entrants as reported in Part 1 (31.8 years).

Table 6. Rates of future DOC entry among the 2001 cohort for each program.

Rates of Future DOC Entry among 2001 Program Cohorts								
	TOTAL	Program Accessed in 2001						
		SS	DMAP	MH	AD	CPS	FC	OYA
Number of 2001 entrants into program	201,083	104,819	101,396	30,367	29,238	2,440	1,463	852
Number who later entered DOC	20,453	10,117	9,058	3,927	4,556	304	301	487
% who entered DOC	10.2	9.7	8.9	12.9	15.6	12.5	20.6	57.2
Average age at DOC entry	28.7	29.4	29.3	27.5	29.1	20.7	20.8	20.9

Figure 7. Percentage of 2001 cohort for each program who entered DOC by the end of 2013.



We examined the representativeness of the 2001 cohort by comparing the 2001 estimates against estimates from yearly cohorts who entered DHS, OHA, or OYA between 2002 and 2005. As shown in Table 7, rates of DOC entry were fairly stable across cohorts. The slight declines in DOC entry rates from 2001-2005 were expected due to the shortened window of opportunity for DOC entry (i.e., the DOC follow-up period decreases from 12 years for the 2001 cohort to 8 years for the 2005 cohort).

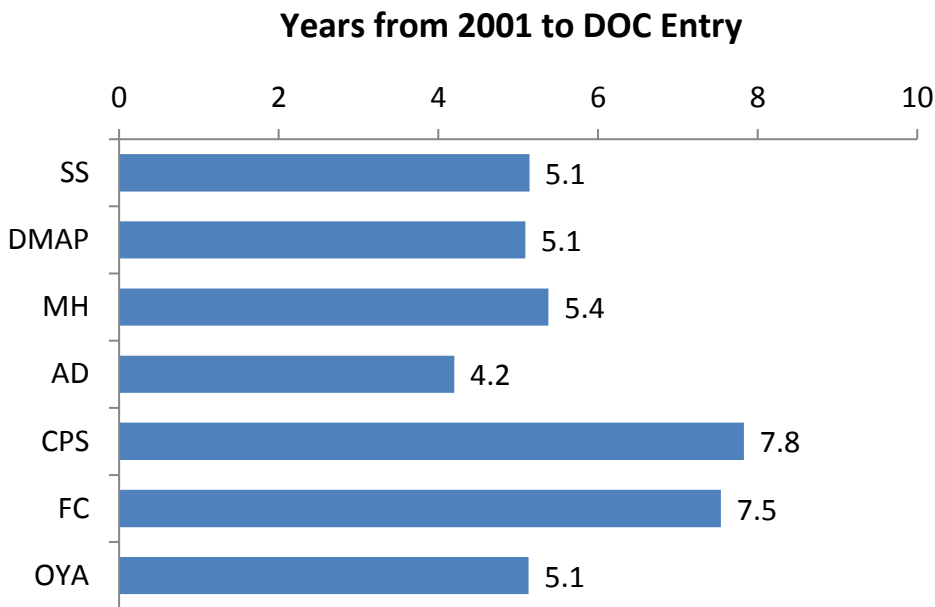
Table 7. Rates of DOC entry by Earliest Recorded Year of Program Access

	SS	DMAP	MH	AD	CPS	FC	OYA
2001	10%	9%	13%	16%	13%	21%	57%
2002	9	8	12	15	12	21	52
2003	8	7	12	14	11	19	53
2004	7	7	12	14	12	17	53
2005	7	6	10	13	10	18	50
RANGE	7-10%	6-9%	10-13%	13-16%	10-13%	17-21%	50-57%

How much time elapsed between DHS, OHA, or OYA services and DOC entry?

On average, 5 years elapsed between DHS, OHA, or OYA program access and DOC entry. Figure 8 shows average time to DOC for each type of program accessed in 2001. The true elapsed time between first DHS, OHA, or OYA access and later DOC entry may be somewhat longer, given that the maximum possible length of time between service access and DOC entry in the present dataset is 12 years (2001-2013) for SS, DMAP, MH, AD, and OYA, and 15 years (1998-2013) for CPS and FC.

Figure 8. Years from Program Access to DOC Entry, by Program Type



Do rates of DOC entry differ by gender, age, or ethnicity?

Average rates of future DOC entry are presented by gender, age, and race/ethnicity in Figure 9. Across all program types, rates of future DOC entry were higher for males (14%) than females (7%), and higher for individuals who were age 25 or younger when they accessed services (12-13%) than for individuals who were 26 or older (7-8%). Average rates of DOC entry appeared fairly comparable across major racial/ethnic groups (11-14%), with slight elevations for African American and Native American individuals.

Figure 9. Average rates of DOC entry (collapsing across program types) by gender, age, and race/ethnicity. Note that (a) the average rate of DOC entry across ethnic groups is higher than the full-sample average because DOC entry was less common among individuals missing race/ethnicity information, and (b) the 9-17-year old age group includes youth with OYA histories; the rate of DOC entry for youth who accessed only DHS and/or OHA (no OYA) was 10%.

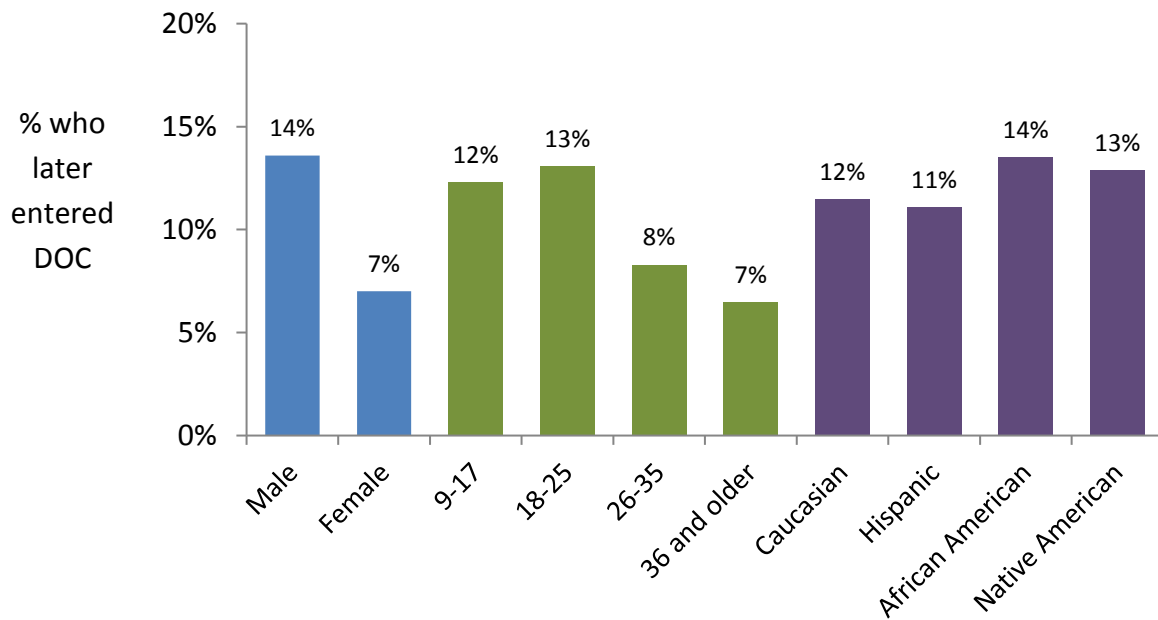


Figure 10 shows rates of DOC contact by gender for each individual program type. For all programs except AD, males were approximately twice as likely as females to have future contact with DOC. Among individuals who accessed AD, rates of future DOC entry were similar regardless of gender.

Figure 10. Rates of future DOC contact by gender and 2001 program type.

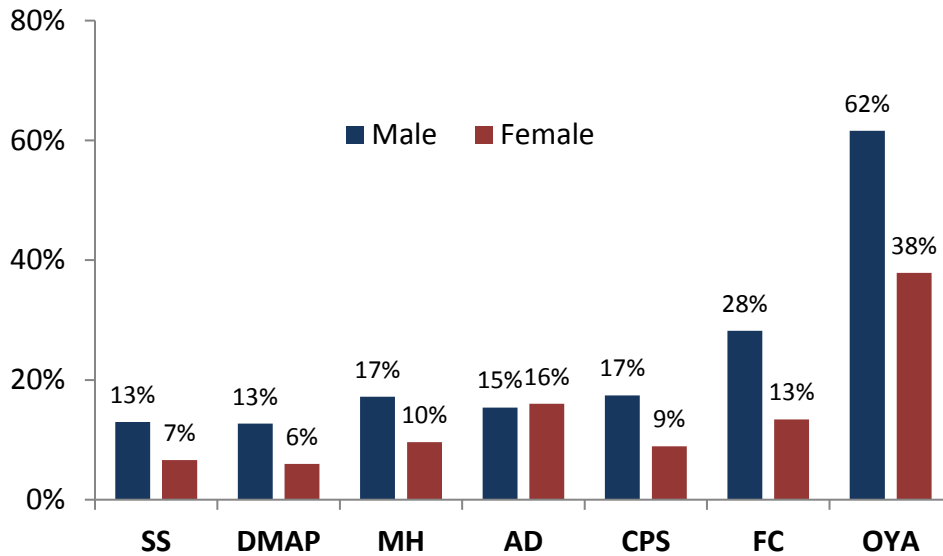


Figure 11 shows rates of DOC contact by age at 2001 program access (for SS, DMAP, MH, and AD only). For all program types, rates of DOC entry were highest for individuals who accessed services before age 26. Rates of future DOC contact were especially high for individuals who accessed AD services before age 18.

Figure 11. Rates of future DOC contact by age group and 2001 program type.

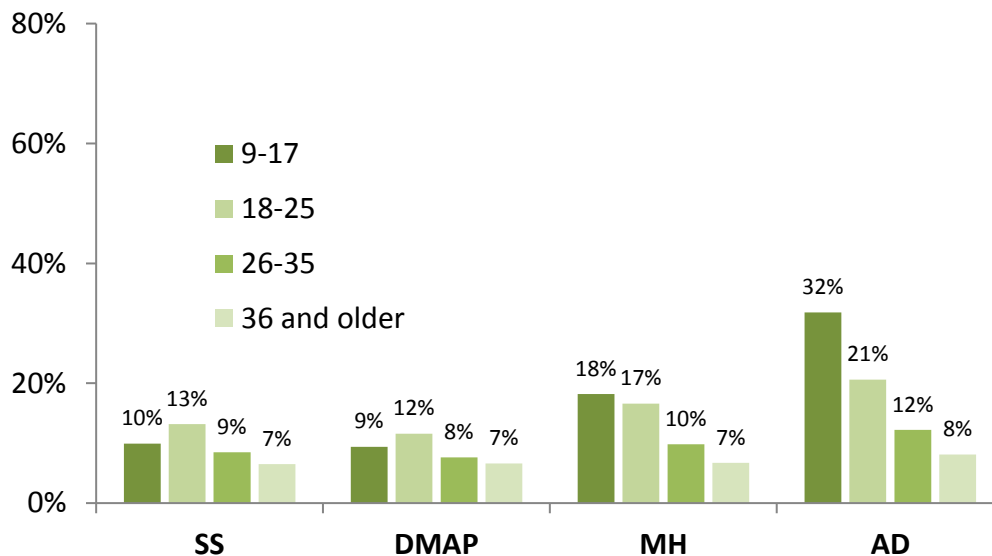
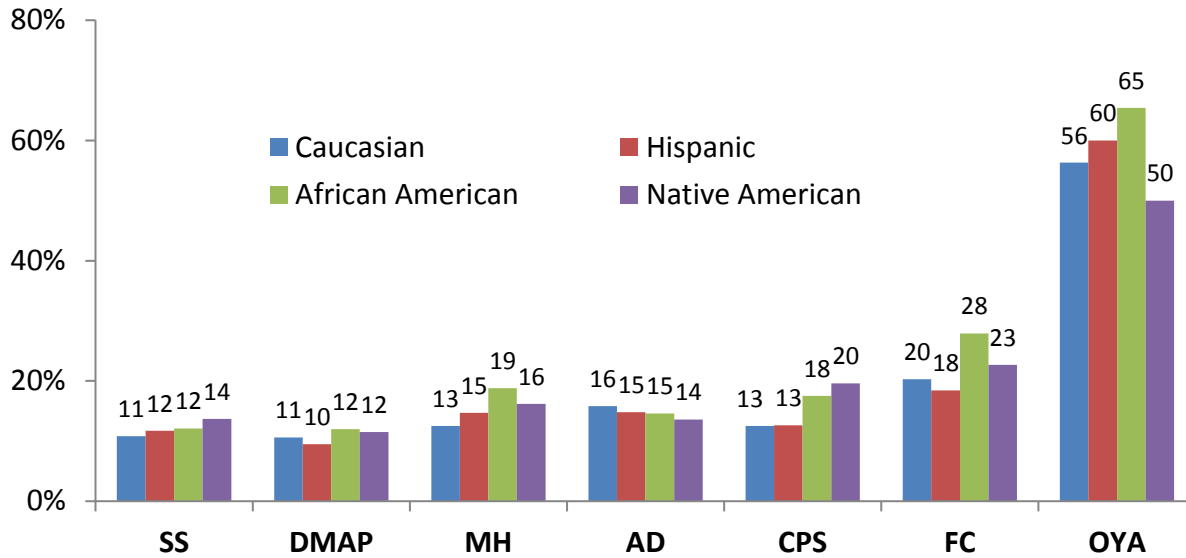


Figure 12 shows rates of DOC contact by race/ethnicity for each program type. Overall racial/ethnic differences were modest, but the rates of future DOC contact appear to be somewhat higher than average among African Americans who accessed Mental Health Treatment Services, Child Protective Services, Foster Care, or OYA, and among Native Americans who accessed Child Protective Services.

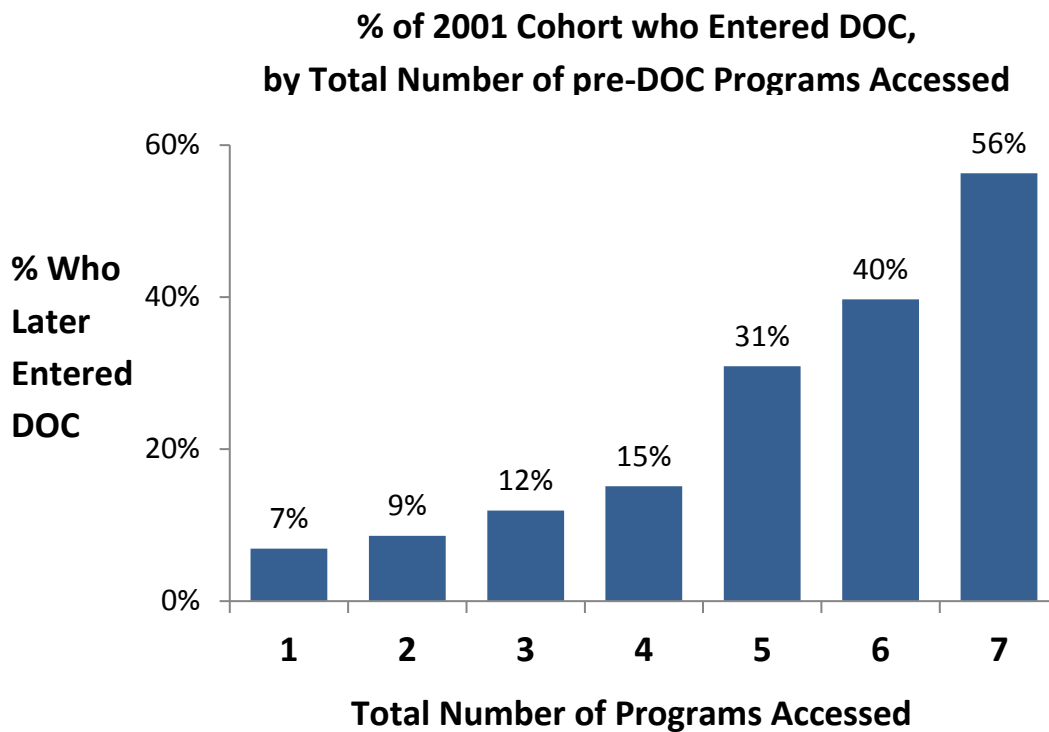
Figure 12. Rates of future DOC contact by ethnicity and 2001 program type.



Do rates of DOC entry differ by the number of programs accessed?

Most members of the 2001 cohort (64%) accessed only one or two programs (typically SS and/or DMAP) by the end of 2013. Another 34% of the cohort accessed 3-4 programs, and the remaining 2% (about 4400 individuals) accessed 5 or more programs. As shown in Figure 13, rates of DOC entry increased as more programs were accessed. Members of the 2001 cohort who accessed a total of only one or two programs (typically SS and/or DMAP) between 1998 and 2013 had the lowest rates of DOC entry (7-9%). Individuals accessing 5 or more programs were at the highest risk of future DOC entry (31-56%). The relative increase in risk contributed by individual program types will be explored in future reports.

Figure 13. Rates of DOC entry as a function of the total number of non-DOC programs accessed between 1998 and 2013. Only programs accessed 3 or more months before DOC entry were included.



Part Two Summary and Limitations

Summary. Overall, 10% of individuals ages 9-46 who accessed one or more DHS, OHA, and/or OYA programs in 2001 had entered DOC by the end of 2013. DOC entry occurred an average of 5 years after the initial 2001 program access. Rates of future DOC entry varied by the type of program accessed. Rates of future DOC entry were 9% for recipients of Medical Assistance, 10% for Self-Sufficiency, 13% for Mental Health Treatment Services, 15% for Alcohol and Drug Treatment Services, 12% for Child Protective Services, 20% for Foster Care, and 57% for OYA.

Rates of future DOC entry were consistently higher among men than women, and were higher among individuals who accessed services before age 26. Rates of DOC entry also increased with the total number of non-DOC programs accessed, from a low of 7% among those who only accessed one program by the end of 2013, to a high of 56% among those who accessed all 7 programs. A large increase in rates of future DOC was seen as the number of programs accessed increased from 4 (15%) to 5 (31%). Because 3 of the 7 programs were childhood-limited, individuals who accessed more than 4 programs necessarily accessed CPS, FC, and/or OYA. Thus, this finding parallels the increased rates of future DOC contact found among the youngest program entrants.

Overall rates of DOC entry were fairly comparable across racial/ethnic groups (ranging from 12-14%). However, there were some notable differences within individual program types that need to be explored further. In particular, rates of future DOC appear elevated for African Americans who access MH, CPS, FC, or OYA, as well as for Native Americans who access CPS.

Limitations. As with the findings from Part 1, the results of Part 2 are limited by the time window of the available records. We were unable to detect services received before 2000 (1998 for CPS or FC), we were not able to estimate rates of future DOC contact for individuals who accessed services before approximately age 9, and our estimates of risk of DOC entry are based upon a 4-year (for the youngest members of the cohort) to 13-year window of DOC eligibility. Thus, the present findings may underestimate the true rates of future DOC entry among individuals accessing DHS, OHA, and OYA.

Additional limitations, which are again shared by Part 1, include the incomplete race/ethnicity data, which adds error to our estimates of rates of future DOC within individual ethnic and minority groups, and the absence of arrest data, which would help to identify services (particularly within MH, AD, and FC) that were prompted by contact with law enforcement.

General Discussion and Future Directions

Together, the findings from Part 1 and Part 2 build a foundation for future efforts to identify *when*, *where*, and *how* to identify individuals at high risk of future DOC entry. Nearly 70-80% of all DOC entrants had prior contact with DHS, OHA, or OYA, most had contact with several programs, and most program contacts began several years before DOC entry. This is very encouraging for future prevention efforts, as it suggests that there is ample opportunity to identify high-risk individuals *before* they enter DOC, and ample time to provide additional services in the hopes of preventing high-risk individuals from ever entering DOC.

On the other hand, it will be a challenge to identify the individuals who are at highest risk for DOC entry among all individuals receiving a particular service. Part 2 demonstrated that only about 10% of program recipients will escalate to DOC within the next 13 years. The task ahead is to identify patterns and characteristics that separate the 90% who won't escalate to DOC from the 10% who will. Part 2 provides some clues as to how this might be accomplished. First of all, some programs serve populations whose average rate of future DOC entry is considerably higher than 10%. For example, a relatively high "density" of future DOC entrants was observed among Alcohol and Drug Treatment Services (16% later entered DOC), Foster Care (21% entered DOC), and OYA (57% entered DOC). Programs with a higher density of future DOC entrants may prove to be good targets for additional diversion efforts. However, the density of future DOC entrants within a program needs to be considered in the context of the total number of individuals served by that program. For example, a randomly-selected youth within OYA is clearly at higher risk than a randomly-selected individual within SS (57% of OYA vs. 10% of SS recipients later enter DOC); however, many more individuals enter SS (104,819 in 2001) than OYA (852 in 2001). Diverting all 2001 OYA recipients from DOC would reduce the DOC population by 486 (57% of 852) over 13 years (2001-2014) whereas diverting all 2001 SS recipients would reduce the DOC population by 10,481 (10% of 104,819) over 13 years.

Demographic characteristics of program recipients may also help to identify those at highest risk of future DOC entry. For example, rates of future DOC entry were higher among individuals who accessed programs before age 26. This suggests that it may prove useful to target diversion efforts toward younger service recipients. Targeting diversion efforts toward younger populations also offers the potential to multiply the benefits of diversion over a lifetime of improved educational and occupational opportunities.

Nevertheless, the differences among demographic subgroups that were observed in the present report should be interpreted cautiously. The present analyses are purely descriptive, and cannot speak of the factors driving any observed differences. It is possible, for example, that differences in rates of future DOC contact among racial/ethnic subgroups are driven by differences in age or gender, and vice versa. Future reports will use statistical modeling to further explore subgroup differences and determine the

unique contributions of age, gender, and ethnicity in identifying individuals at the highest risk for future DOC entry within and across program types.

Factors that have not yet been examined may also prove useful for determining where to target prevention efforts. For example, the current measure of pre-DOC program contact simply assesses whether or not a contact was made. Future analyses will consider additional information such as the specific types of services received and the duration of services within each program, as well as whether particular combinations of programs or sequences of program access can be used to help identify the individuals who are most in need of prevention resources. Future studies will also incorporate additional data sources such as school records and arrest records.

Although the present report is just a first step, it demonstrates that there is ample opportunity to identify and serve high-risk individuals before they enter DOC. Future studies will incorporate both additional data sources and sophisticated statistical approaches to clarify the trajectories of high-risk individuals and identify key targets for prevention and intervention resources. More broadly, this report demonstrates the enormous value and potential in sharing information across state agencies, and we look forward to the continued development of these partnerships as we seek to expand our understanding of where, when, and how to target efforts aimed at reducing rates of DOC entry among high-risk individuals.

Appendix A. Study 1 rates of prior contact with and without the 3 month restriction.

		Prevalence of Prior DHS, OHA, and OYA Contact, Including contacts within 3 months of DOC							
	Timing of Pre-DOC Contact	Any Program	SS	DMAP	MH	AD	CPS	FC	OYA
Sample 1 N=98,404	≥ 1 day before DOC	70.3%	58.5%	44.7%	20.7%	30.3%	3.4%	2.6%	2.9%
	≥ 3 months before DOC	68.0%	56.6%	44.2%	19.7%	27.1%	3.4%	2.6%	2.9%
Sample 2 N=17,458	≥ 1 day before DOC	82.4%	72.7%	61.9%	34.4%	37.2%	12.6%	8.2%	9.0%
	≥ 3 months before DOC	80.3%	70.7%	61.5%	33.7%	34.2%	12.6%	8.2%	8.9%