



Length-of-Stay Close Custody Releases: 2000 - 2009

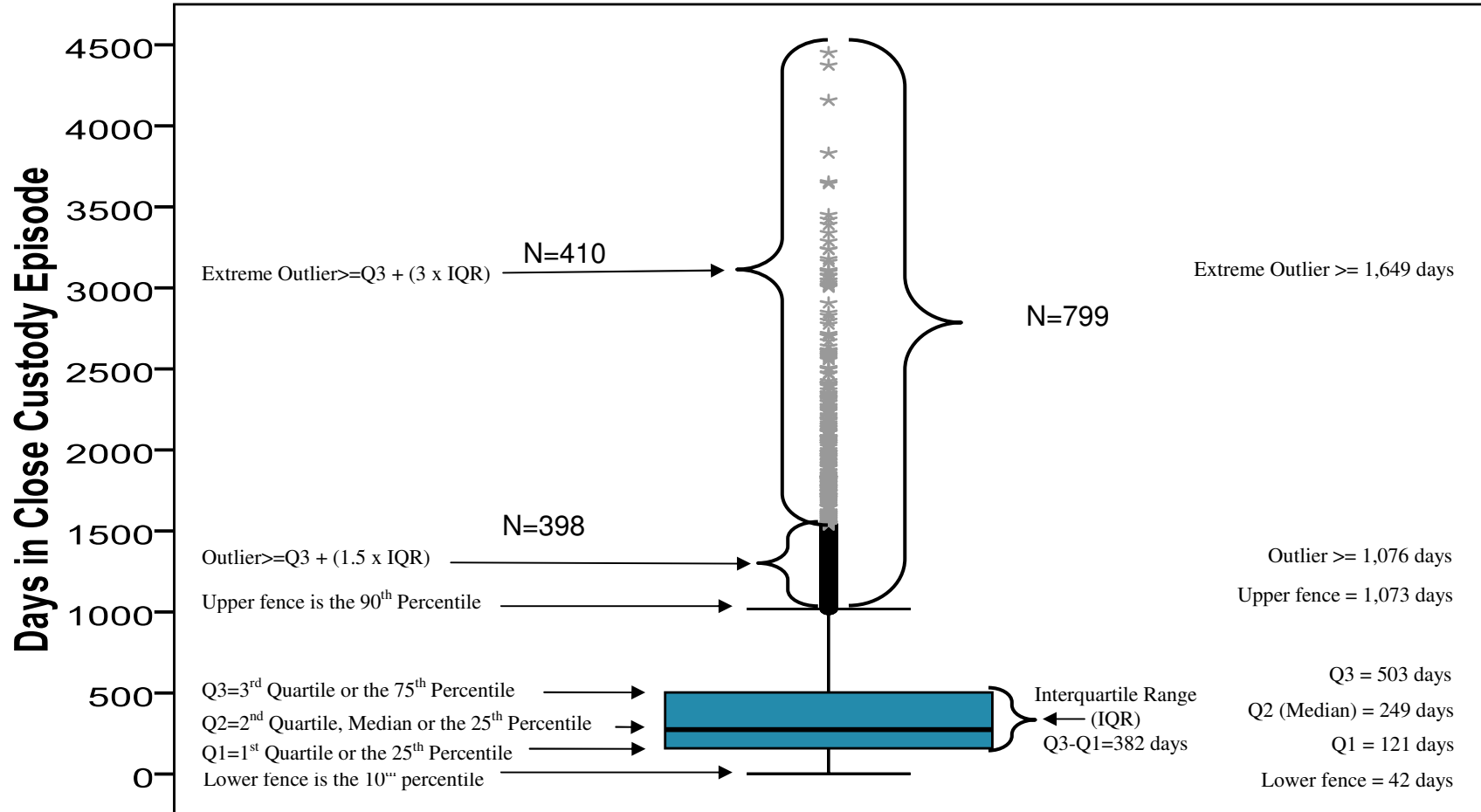
*MISSION:
To protect the public
by holding youth offenders
accountable
and providing opportunities
for reformation.*

**Prepared by
Research and Evaluation
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**Information Systems
Oregon Youth Authority**



Figure 1: OYA Close Custody Releases: 2000-2009



Close Custody Releases, 2000-2009: Summary Statistics (N = 8,019 release episodes)						
Percentile	Cumulative # of Releases	Released within # of Days	Mean # of Days	Standard Deviation	Range	
					Minimum # of Days	Maximum # of Days
10th	802	42	435	534	1	4,451
25th (Q1)	2,004	121	For a glossary of key terms and example of calculations see Appendixes A through C.			
50th (Q2 or Median)	4,010	249				
75th (Q3)	6,014	503				
90th	7,217	1,073				
100th	8,019	4,451				

Executive Summary

The current study examines the collected LOS data to enrich the broader discussion about the relationship between LOS and youth outcomes and more specifically, to inform future decisions about how OYA uses its resources in pursuit of the agency's mission.

OYA averaged 802 releases from close custody annually between January 1, 2000, and December 31, 2009. The total number of releases during that decade was 8,019. This report provides (a) an in-depth exploration of those releases from the perspective of LOS, (b) an analysis of the LOS trends from 2000 through 2009 across demographic, crime type, and Status variables; (c) an examination of the relationship between LOS and bed capacity; and (d) an investigation of the relationship between LOS and recidivism. Although this report cannot exhaustively address all questions concerning LOS for youth who were released from OYA facilities, we believe this study will be useful in understanding LOS and making informed release decisions.

Summary of the Findings

Of all of the youth who were released from OYA close custody from 2000-2009, LOS ranged from 1 to 4,451 days and

- 10% were released within 42 days
- 25% were released within 121 days
- 50% were released within 249 days
- 75% were released within 503 days
- 90% were released within 1,073 days

In addition

- Nearly 800 youth were statistical outliers, staying 1,079 days or more; and of those, 410 youth were extreme statistical outliers, staying 1,649 days or more
- Males stayed longer than females
- PSR youth stayed longer than DOC youth
- Both male and female Asian youth stayed longer than any other race/ethnicity
- DOC youth on average don't stay as long as PSR youth because a number of DOC youth finish their sentences at DOC and many of

those stay at OYA for a very short period of time

- For every day a non sex offender is in closed custody, the average sex offender is in closed custody 2.7 days

Comparing 2000 to 2009

- Overall, mean LOS increased 29% from 337 to 452 days
- For males, mean LOS increased 37% from 350 to 479 days
- For females, LOS went from 249 to 249 days but varied
- For DOC males, mean LOS increased 61% from 585 to 944 days
- For DOC females, mean LOS decreased 14% from 566 to 487 days but varied
- For DBA males, mean LOS went from 336 to 339 days but varied
- For DBA females, mean LOS went from 230 to 217 days but varied
- For PSR males, mean LOS went from 950 to 897 days but varied
- For revoked males, mean LOS went from 202 to 225 but varied
- For revoked females, mean LOS went from 179 to 190 but varied
- For juvenile youth committed for a sex offense, mean LOS decreased 22% from 947 to 741 days
- For juvenile youth committed for a non sex offense, mean LOS increased 7% from 311 days to 332 days

LOS is affected by bed capacity

- As DOC beds go up, DBA beds go down
- As DOC beds go up, PSR beds go down

There was no statistical relationship between LOS and recidivism in this data set

Previous research has indicated that reducing LOS may not affect recidivism or revocation

Reducing LOS could increase the number of youth OYA provides reformation services for, which in turn improves public safety by reducing recidivism.



Introduction

The Oregon Youth Authority (OYA) has been tracking length of stay (LOS) of youth in close custody since 1998. The current study examines the collected LOS data to enrich the broader discussion about the relationship between LOS and youth outcomes and more specifically, to inform future decisions about how OYA uses its resources in pursuit of the agency's mission.

OYA averaged 802 releases from close custody annually between January 1, 2000, and December 31, 2009¹. The total number of releases during that decade was 8,019. This report provides (a) an in-depth exploration of those releases from the perspective of LOS, (b) an analysis of the LOS trends from 2000 through 2009 across demographic, crime type, and Status variables; (c) an examination of the relationship between LOS and bed capacity; and (d) an investigation of the relationship between LOS and recidivism. Although this report cannot exhaustively address all questions concerning LOS for youth who were released from OYA facilities, we believe this study will be useful in understanding LOS and making informed release decisions.

Lack of Published Length of Stay Research

LOS studies on juveniles incarcerated in close custody facilities for criminal behavior are few. For instance, we found nothing in the literature addressing possible differences among subpopulations or LOS trends over time. The limited research has focused on the relationship between LOS and recidivism, and the findings are mixed. For example, while Winokur, Smith, Bontrager, and Blankenship (2008) reported no consistent relationship between LOS and

recidivism, they also concluded that when youth in high-risk facilities stayed longer, they had higher recidivism rates. In contrast, Traynelis-Yurek and Giacobbe (1988) reported that older youth who stayed longer had lower reincarceration rates. Finally, Archwamety and Katsiyannis (1999), and Katsiyannis and Archwamety (1997), found that females and males that recidivated had significantly longer LOS than their counterparts of the same sex that did not recidivate. Hence, based on the research literature, there appear to be no clear and simple statements we can make about the relationship between LOS and recidivism.

OYA has been tracking LOS for at least the last decade and has been providing administrators and legislators with summary tables of how long youth are staying in close custody facilities (OYA, 2005). Although we do know quite a bit about LOS for youth released from OYA close custody, the agency has not previously produced an in-depth analysis of the data.

This report addresses the following research questions:

- How much time do youth stay in OYA close custody?
- How much time do youth in different sub population stay in OYA close custody?
- What is the overall LOS trend over time?
- Are the LOS trends different for different sub populations?
- Is there a relationship between bed capacity and LOS?
- Is there a relationship between LOS and recidivism?

Measures

Measured in days, LOS is calculated each time a youth is released from OYA close custody during the calendar year. Typically, this occurs when a youth is released to OYA parole supervision, returned to the physical custody of

¹ For precision, often we use the term releases rather than youth because individual youth may experience multiple OYA close custody episodes. However, youth is used periodically to reduce redundancy.



the Department of Corrections (DOC), released to DOC post-prison supervision, or terminated from OYA. A temporary change of location, say to a hospital, does not constitute a release. Thorough definitions of the measures are provided in the Appendixes. In particular, Appendix A provides a glossary of key terminology with examples of the descriptive statistics used in this analysis, and Appendix B provides an example of how the measures for this analysis are calculated. In addition, Figure 1 (page 2) provides a detailed description of the boxplot and its features with actual data from the overall population.

Interpreting LOS data in this report. LOS data often contain outliers; values that are extreme in either direction. In the case of LOS data, outliers at the lower end are tempered by a “floor effect” because a length of stay less than zero days is not possible. On the other hand, there is no realistic “ceiling effect” for outliers on the upper end because it is possible for a youth to stay in OYA close custody as long as 13 years (365 days x 13 years [age 12 to 25] = 4,745 days). While such extreme cases are not typical, they are not altogether unusual. For example, of 794 releases in 2009, there were 29 cases with over 2,000 LOS days, three of the 29 cases were over 3,000 days, and three of the 29 cases were over 4,000. Though few in number, these extreme LOS figures have a strong influence on the mean, indicated by high standard deviations, especially when the analysis focuses on a small subpopulation such as female DOC offenders. (OYA released only 15 DOC females in 2009.)

To provide a more complete picture of LOS in this study, we calculated both the mean and the median measures. Because the median is the middle score in a data array, it is not influenced by the outliers. Using both of these measures together provides a more meaningful interpretation of the LOS data. In addition, the overall and trend analysis presented below

includes boxplots (described in more detail in the following section called ‘*About the charts and tables*’). Boxplot charts provide a more comprehensive picture of the data than simply reporting mean and median measures.

While measuring LOS with the mean number of days for an annual cohort is the most common computation, this method has received considerable criticism in the research literature (Lynch, 1993; Lynch and Sabol, 1997; Patterson and Preston, 2008). The problem lies in the assumption that the population remains stationary, which it does not. The number and types of criminal youth who are released vary from year to year. Consequently, mean LOS for a given cohort is often under- or over-estimated. For example, if OYA released three youth incarcerated for homicide-related crimes in year one and then released no such youth in year two, mean LOS would likely be higher in year one than in year two due to the extremely long LOS generally associated with homicide crimes. In addition, there are many youth in the physical custody of OYA who were committed to DOC that are released to DOC to finish their sentences as adults. The true LOS for these youth is not measured with the current methodology. For a thorough review of this issue see Lynch (1993).

Although the issue does create a limitation for this study, we have chosen to use mean and median to measure LOS because they are the measures generally used for LOS analysis in the literature. Also, because we are analyzing 10 years of data, this limitation is likely to have less effect on our measures. Finally, because in addition to mean and median measures we analyze boxplots (described below), we provide a more complete view of the data, which further reduces the effects of this limitation.

About the charts and tables. Again, we use boxplots to provide a visual representation of the data (see Figure 1, page 2, for a labeled diagram of the boxplots used in this report). There are



several advantages to using boxplots. They are useful when presenting data that includes outliers. They provide information about the spread (the amount values vary around a central measure) of the data and the average. In boxplots, the spread is indicated by plotting the 90th and 10th percentiles (referred to as the upper and lower fences, respectively), and the 25th and 75th percentiles (the first and third quartiles, respectively). The range between the first and third quartiles is called the interquartile range (IQR). One common measure, the mean, or average, is not represented on the boxplot. Instead, the boxplot presents the median (50th percentile) as the measure of central tendency. We include mean LOS in the table accompanying each boxplot. Another advantage of boxplots is their representation of both outliers and extreme outliers. This gives us substantially more insight about how long youth are staying in close custody. We include further description of these charts and an example of how they are calculated in Figure 1 (page 2), Appendix A (page 24), and Appendix B (page 25).

To make the boxplots visually comparable, the same scale is used (from 0 to 5,000 days) for each figure with boxplots in this section. Also, for consistency and convenience the charts and tables are presented immediately following the text. The exception to this practice is Figure 1, which we locate at the beginning of this document for quick reference. Consequently, the text relating to Figure 1 does not immediately follow Figure 1.

In addition to the boxplot analysis we provide trend charts for most of the populations in this study. However, unlike the boxplots, we do not fix the scales in the trend charts to be the same. A consistent scale would make it very difficult to visually detect variations in the trend lines in many cases. For example, the highest LOS in Figure 12 is 547 days, but the highest LOS in Figure 13 is 1,866 days; they appear to be the

same height, but they are very different. Therefore, comparisons across charts should be made with caution, keeping in mind that scales are different. Also, we did not include a trend chart for 5 Day Guests; OYA has not provided this service since 2005 and inclusion of this population would distort the analysis.

The following section reports an overall description of the population and an in-depth analysis by sex, race, Status, and sex offender status. Within each sub section of the following section we provide at least two sets of analysis: (1) an analysis of LOS for the overall and subpopulations that aggregates all youth released from 2000-2009; and (2) an analysis of the trends for the overall and subpopulations. In addition, the first sub section includes tables that describe the study population.

Overall

Study Population Description. Tables 1 and 2 present the demographic and Status (also see Appendix A for definitions) information of the entire sample. Table 1 includes all releases during the period and Table 2 only includes the unique youth that were released during the period².

Although the demographic categories in Tables 1 and 2 are clear, some definition of the “Status” categories is necessary. Except for “Revoked” and “5 Day Camp Guest” categories, Status is defined as the type of current disposition/commitment for each youth during the current episode. Specifically, “DOC” dispositions include all Measure 11, Measure 11 Reduced, or DOC Waived³ commitments; “Public Safety Reserve (PSR)” dispositions include any youth committed to OYA youth

² Youth released multiple times are recognized only once in Table 2.

³ All DOC youth that are under the physical custody of OYA committed their crimes under 18 years of age.



correctional facilities essentially for a Measure 11 crime that was under 15 years of age at the time of the offense; and “Discretionary Bed Allocation (DBA)” dispositions include any youth committed to OYA youth correctional facilities that are not revoked or committed for a PSR type of crime. “Revoked” are youth who were previously committed to an OYA youth correctional facility and released but were returned to close custody for failing to meet the condition of their parole. And “5 Day Camp Guests”⁴ were essentially short term revocations.

Compared to the current population at OYA, there are a number of differences in both the demographic and Status percentages (see OYA, 2009a). Because Status changes for many of these youth from one release to the next most of the Statuses are not included in Table 2; however, DOC is included to point out the differences in the population for this study and the current population at OYA (see OYA, 2009a).

As we might expect, categories of youth who have shorter LOS are over represented in the study population and youth who have longer LOS are under represented. Most notably, the Quick Facts report shows 8% of the youth in close custody on July 1, 2009, were female, and 43% had a Status of DOC. Contrast these figures to the study population, which is 13% female, and 23% DOC youth.

Some of these differences could have an impact on LOS. For example, while DOC youth only make up 23% overall population in this report, DOC youth made up 43% of the current OYA population. So, if we assumed that the current population would stay the same amount of time as the population in this report, we would be seriously underestimating how long they will be staying. Therefore, inferences about LOS for the

overall current population in close custody should be made with caution. However, inferences can be made with more confidence within specific subpopulations (e.g., we could assume that females in DBA beds currently will stay approximately the same LOS as females in this study that were in DBA beds). Further discussion on this issue is provided in the discussion section of the report.

Table 1: Close Custody Releases 2000-2009 by Demographic and Status

	#	%
Total	8019	100%
Sex		
Female	1018	13%
Male	7001	87%
Race/Ethnicity		
African American	748	9%
Asian	137	2%
Caucasian	5474	68%
Hispanic	1207	15%
Native American	381	5%
Other/Unknown	72	1%
Status (see Appendix A for definitions)		
Department of Corrections	1290	16%
Commit to OYA Facility: DBA	3641	45%
Commit to OYA Facility: PSR	610	8%
Revoked	2314	29%
5 Day Camp Guest	164	2%

Table 2: Close Custody Youth Released 2000-2009 by Demographic and Status

	#	%
Total	5534	100%
Sex		
Female	682	12%
Male	4852	88%
Race/Ethnicity		
African American	534	10%
Asian	102	2%
Caucasian	3724	67%
Hispanic	870	16%
Native American	251	5%
Other/Unknown	53	1%
Status		
Department of Corrections	1272	23%

⁴ 5 Day Guest was a Status and practice that OYA discontinued in 2005



LOS for All Youth Released from Close Custody from 2000 through 2009. Figure 1 (see page 2) illustrates two important points: (a) LOS for youth that were released from close custody from 2000 through 2009 varied considerably, and (b) a substantial number of youth stayed for a sizeable length of time.

The boxplot and table in Figure 1 mark several percentile points and indicate the percentage of youth who were released within the given number of days. Specifically, out of the 8,019 youth that were released during this time period, the percentile ranks indicate that the following:

- 90% were released within 1,073 days
- 75% were released within 503 days
- 50% were released within 249 days
- 25% were released within 121 days
- 10% were released within 42 days

The rectangle in the Figure 1 boxplot shows the IQR, which represents the length-of-stay day range for the “middle” half of the study population. (The IQR extends 25 percentiles on either side of the median LOS.) More specifically, we see that about half of the youth released during the study period had a length of stay between 121 and 503 days.

The summary statistics for this data set are also provided in the table in Figure 1. The mean number of days that youth stayed was 435 and the standard deviation was 534 days. The minimum was 1 day and the maximum was 4,451 days.

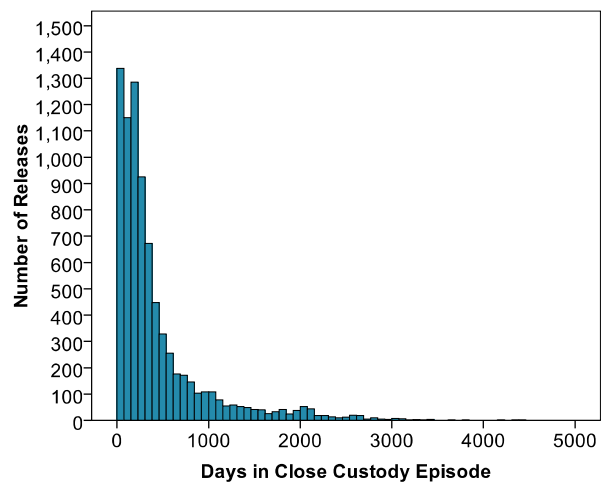
What immediately stands out in Figure 1 is the large number of youth who stayed for an extremely long time. For the entire data set, outliers begin at 1,076 days and extreme outliers begin at 1,649 days. There were 799 outliers, 410 of which were extreme outliers. In other words, 799 youth stayed 1,076 days or more and of those 799 youth, 410 stayed 1,649 days or

more. In the most extreme case, one youth stayed more than 12 years.

LOS varied a great deal and a substantial number of youth stayed for a considerable length of time

The histogram in Figure 2, however, points out that most of the youth did not stay more than 500 days. In fact, as reported above, 75% of the youth stayed fewer than 503 days.

Figure 2: Histogram for All Close Custody Releases, 2000-2009

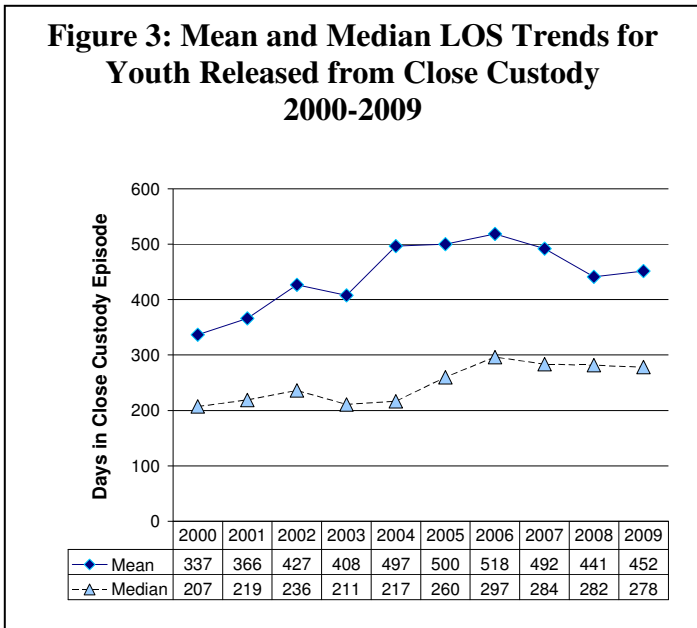


Most of the youth (75%) stayed fewer than 503 days.

Figure 3 presents the LOS trends for all youth released from OYA close custody by year of release. Both the mean and median essentially followed the same pattern. Mean and median LOS increased from 2000 to 2002. From 2002 to 2003, mean and median LOS decreased slightly (possibly due to the bed reduction mandated by the legislature) but increased again in 2004 and continued to increase until it peaked in 2006. From 2006 until 2009 mean and median LOS declined slightly. Overall, from 2000-2009, the mean LOS increased 29%, and the median



increased 34%, even though mean and median LOS both declined in recent years.



In sum, most of the youth did not stay extremely long. For example, three quarters of the releases stayed less than 503 days, half stayed less than 249 days, and a quarter stayed less than 121 days. On the other hand, some of youth stayed for a long time. For example, 10% of the releases stayed between 3 and 13 years. And although many of the youth did stay for long periods, the overall trend is beginning to decline.

Sex

Males stay much longer than Females. Figure 4 shows that males stayed much longer than females. In particular, the mean, the median, the 75th and 90th percentiles, and the upper range limit were much longer for males. Additionally, the IQR was also larger for males, indicating more spread around the median. Simply put, males stayed longer by every measure.

Although females stayed fewer days than males by these measures, the lengths of stay among the

1,018 females released during the study period varied widely:

- 90% were released within 725 days
- 75% were released within 363 days
- 50% were released within 197 days
- 25% were released within 95 days
- 10% were released within 41 days

The boxplot and table representing the females in Figure 4 point out that half of the females stayed between 95 and 363 days.

Among the females, outliers started at 765 days and extreme outliers started at 1,167 days. Ninety-one females were outliers (this is a cumulative count that includes the extreme outliers) and 39 females were extreme outliers. In the most extreme case, one female stayed over eight years.

Male length of stay also varied. The LOS percentile breakout of the 7,001 males that were released during this time period follows:

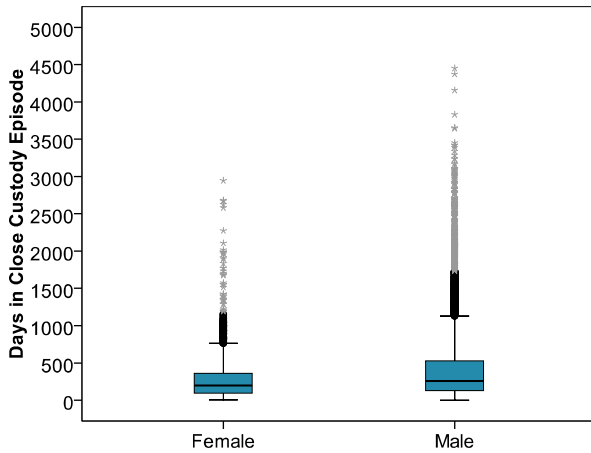
- 90% were released within 1,128 days
- 75% were released within 530 days
- 50% were released within 257 days
- 25% were released within 129 days
- 10% were released within 42 days

The boxplot and table for the males in Figure 4 point out that half of the males stayed between 129 and 530 days. These figures are close to the upper and lower IQR limits of the overall population (121 and 503 days, respectively). This is no surprise because males comprise over 85% of the study population.

For the males, outliers started at 1,132 days and extreme outliers started at 1,733 days. Of the 699 males represented in the outlier group, 365 (more than half) were extreme outliers. In the most extreme case, one male stayed in close custody over 12 years.



Figure 4: Boxplot and Tables for Close Custody Releases, 2000-2009 by Sex



Female Close Custody Releases, 2000- 2009: Summary Statistics (N=1,018 release episodes)						
Percentile	Cumulative # of Releases	Released within # of Days	Mean # of Days	Standard Deviation	Range	
					Min	Max
10th	102	41	313	378	4	2,945
25th	255	95				
50th	509	197				
75th	764	363				
90th	916	725				
100th	1,018	2,945				

Male Close Custody Releases, 2000- 2009: Summary Statistics (N=7,001 release episodes)						
Percentile	Cumulative # of Releases	Released within # of Days	Mean # of Days	Standard Deviation	Range	
					Min	Max
10th	700	42	453	551	1	4,451
25th	1,750	129				
50th	3,501	257				
75th	5,251	530				
90th	6,301	1,128				
100th	7,001	4,451				

For a glossary of key terms and example of calculations see Appendixes A through C

Although males stayed much longer than females, almost 10% of the females stayed more than two years. And in the most extreme case, one female stayed for over eight years.

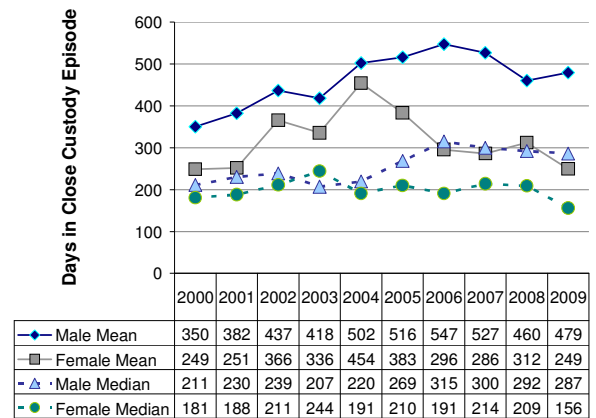
Mean LOS for all male close custody releases⁵ was 37% longer in 2009 than 2000. Figure 5 (also see Appendix C for details) indicates an

⁵ All close custody releases include both juvenile and DOC youth.

overall upward trend in mean and median LOS for male youth released from close custody over the study period. Specifically, for the males, mean LOS increased from 350 days in 2000 until 2006 where it peaked at 547 days, an increase of 56%. Mean LOS then declined in 2007 and 2008, but increased slightly in 2009. The median LOS for the males followed a similar trend.

Mean LOS for all female close custody releases varied over the last decade. The mean LOS was 249 days for the female youth released from close custody in both 2000 and 2009 (see Figure 5; also see Appendix C for details). However, the mean LOS for females increased from 2000 until 2004 where it peaked at 454 days (an increase of 82%) and then declined back to 249 days in 2009. So, mean LOS peaked two years earlier among females than it did among males. The median number of days for females followed a different pattern than their mean LOS. Median LOS vacillated within a range of 88 days, but was at its lowest point at the end of the study period in 2009. The difference in the mean and median trends suggests that outliers were the key driver of the inverted V-trend (recall the peak in 2004) in mean LOS figures for the females.

Figure 5: Mean and Median LOS Trends for All Youth Released from Close Custody 2000-2009 by Sex



In summary, the overall LOS for males was much longer than females; however, LOS varied considerable for both females and males. And, although females don't stay as long as males, some females stayed for an extremely time. While LOS for the sexes in the overall population was long for a large proportion of both sexes, it does appear to be declining in recent years.

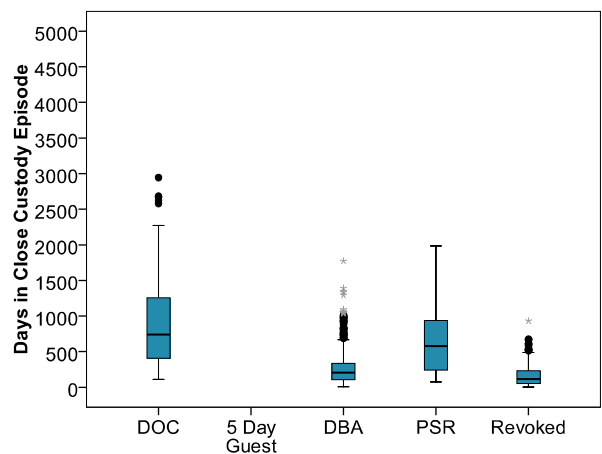
Status

LOS varied dramatically across Statuses for the females (see Figure 4). As would be expected due to the nature of crimes typical of youth receiving adult sentences, DOC females stayed much longer than any other Status. Moreover, DOC females even stayed longer than the DOC males (see Figure 5). Again, as expected, females in the public safety reserve (PSR) stayed the next longest, followed by the DBA, and finally by the revoked females. There were no females in the 5 Day Guest status (for more information on this status see the next section on males and Status). A comparison of median LOS by Status looks like this:

- Half of the DOC females were released within 741 days
- Half of the PSR females were released within 578 days
- Half of the DBA females were released within 204 days
- Half of the Revoked females were released within 115 days

Although there were very few outliers in any of the Statuses at release, several females did stay for extended periods of time. The longest LOS for any female was 2,945 days, and she was a DOC youth.

Figure 6: Boxplot and Table for Female Close Custody Releases, 2000-2009 by Status at Release



Status at Release from Close Custody					
	DOC	5 Day Guest	DBA	PSR	Revoked
Releases	108	NA	588	22	300
Mean	925	NA	265	688	161
Std. Deviation	662	NA	239	549	145
Median	741	NA	204	578	115
Minimum	111	NA	7	77	4
Maximum	2,945	NA	1,773	1,984	932

Males varied differently than females across Statuses (see Figure 7). Unlike females, males with a PSR status at release had the longest LOS. In fact, both the mean and median LOS of PSR males were over 100 days more than that of DOC males. Not surprisingly, males in the 5 Day Guest⁶ status group experienced the shortest LOS duration. The list below details median LOS by status for all males in the study population:

- Half of the PSR males were released within 749 days
- Half of the DOC males were released within 636 days

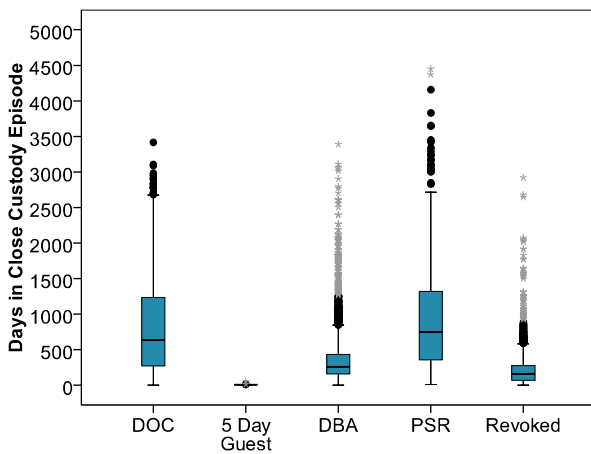
⁶ 5 Day Guest was a Status and practice that OYA discontinued in 2005.



- Half of the DBA males were released within 258 days
- Half of the Revoked males were released within 160 days
- Half of the 5 Day Guest males were released within 7 days

Males in the PSR group stayed longer than any other Status. In fact, the PSR males stayed over 100 days more, on average, than the DOC males. The longest LOS in this study was a PSR male who stayed 4,451 days.

Figure 7: Boxplot and Table for Male Close Custody Releases 2000-2009 by Status at Release

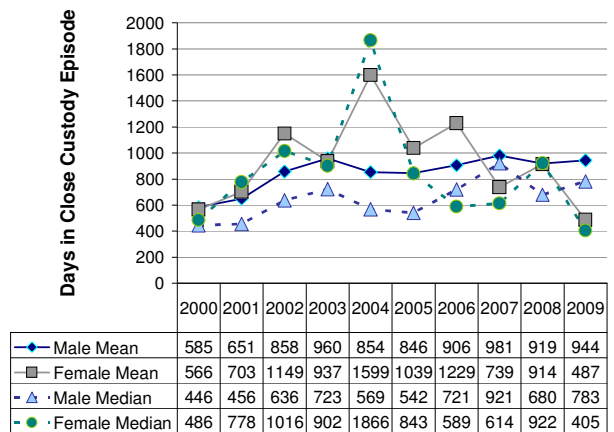


Status at Release from Close Custody					
	DOC	5 Day Guest	DBA	PSR	Revoked
Releases	1,182	164	3,053	588	2,014
Mean	846	7	375	961	229
Std. Deviation	724	4	398	807	273
Median	636	7	258	749	160
Minimum	2	2	2	11	1
Maximum	3,417	57	3,390	4,451	2,921

LOS for the DOC males has increased considerably from 2000-2009⁷. The increase in both mean and median LOS for DOC males over this time period has been substantial (see Figure 8; also see Appendix D for details). In 2000, the mean LOS was 585 days for male DOC youth and increased 61% by 2009 to 944 days. Although there have been some ups and downs during this period, the general trend has been upward.

DOC females experienced varying LOS⁸. For the females, Figure 8 (also see Appendix D for details) also shows that the mean LOS for DOC youth released during this period increased from 566 days in 2000 until it peaked at 1,599 days in 2004. After 2004, the mean LOS went down to 487 days in 2009, the lowest number of days during the period. The trend in median LOS followed a similar pattern, increasing until it peaked in 2004, and falling to its lowest number of days in 2009.

Figure 8: Mean and Median LOS Trends for DOC Youth Released from Close Custody 2000-2009 by Sex



⁷ Unlike the boxplot analysis above, the DOC group here includes both those who were released to the community and those returned to DOC close custody.

⁸ The variance in the LOS trend for DOC females could be due to the small number of releases each year. These numbers ranged from 6 to 15 (see Appendix D for details). Therefore, we omitted providing percent change because it may be misleading.

DOC youth completing their sentence at DOC had shorter LOS than DOC youth who completed their sentences at OYA⁹. Another important distinction with DOC youth is that many of the DOC youth that come to OYA do not finish their sentences at OYA. These youth are moved to the adult system for a variety of reasons including age (youth can only legally stay at OYA until their 25th birthday), disciplinary/behavior problems, or refusal to participate in treatment. As expected, Figure 9 suggests that youth who completed their sentences at OYA stayed quite a bit longer than DOC youth who are completing their sentences at DOC. However, these averages are somewhat misleading because many of the youth that were returned to DOC stayed for a very short period of time. Comparing DOC youth who completed their sentences at OYA with those who completed their sentence at DOC:

- 10% of the DOC youth that are completing their sentence at DOC were released (i.e., returned to DOC) within 42 days
- 10% of the DOC youth who completed their sentence at OYA were released (i.e., released to post-prison supervision in the community) within 309 days
- 25% of the DOC youth that are completing their sentence at DOC were released within 153 days
- 25% of the DOC youth who completed their sentence at OYA were released within 513 days

Most of the DOC youth stay for long periods of time, especially those who finish their sentences at OYA:

- 25% of the youth who completed their sentence at OYA stayed for more than 1,392 days
- 25 % of the youth who are completing their sentences at DOC stayed for more than 1,065 days

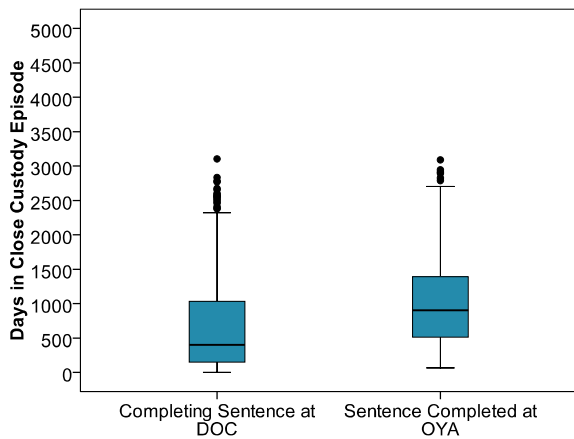
Prior LOS reports have not distinguished these two groups. And this is an important distinction for at least two reasons. First, because including these groups in the overall averages reduces the mean substantially. In fact, our finding above that suggested that youth that were released that had a PSR Status when they left had the highest LOS might not have been true if we would have restricted the analysis only to youth who were released into the community. Second, these two groups have quite different lengths-of-stay between sexes. The following analyses illustrate those differences.

Most of the DOC youth stay for long periods of time, especially those who finish their sentences at OYA.

⁹ The analysis of DOC youth completing their sentence at DOC versus DOC youth who completed their sentences at OYA only includes youth released from 2005 thru 2009 because data on these two groups were unavailable prior to 2005.



Figure 9: Boxplot and Table for DOC Close Custody Releases 2005-2009 by Release Destination



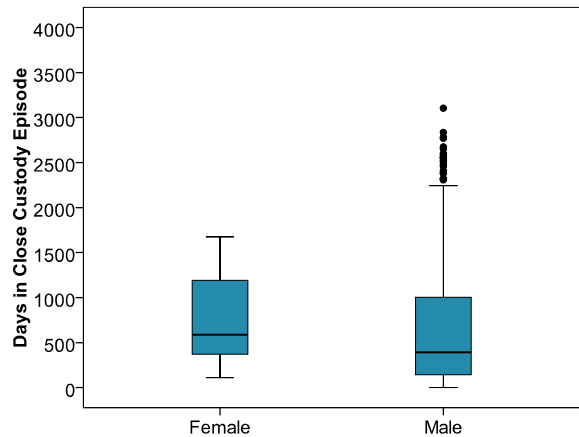
Sentence Completion Location for DOC Youth Released from Close Custody 2005-2009		
	Completing Sentence at DOC	Sentence Completed at OYA
Releases	262	371
Mean	725	1,047
Std. Deviation	779	670
Median	400	903
Minimum	2	67
Maximum	3,104	3,090

Female DOC youth that finished their sentences at DOC stayed longer at OYA than their male counterparts. Despite having no outliers, the mean and median LOS was higher for females that were released back to DOC than it was for the males¹⁰; however, these measures may underestimate the extent of these differences because there were a number of outliers in the male group which increased the mean for the males (see Figure 10). Excluding these male outliers would make the differences

¹⁰ Caution is advised in the interpretation because the number of DOC females that completed their sentence at DOC is so small (n=13).

in LOS between the sexes even more pronounced. Interestingly, this may explain why DOC females had longer LOS than DOC males. The analysis below highlights those differences.

Figure 10: Boxplot and Table for DOC Close Custody Releases 2005-2009 Completing Sentences at DOC by Sex

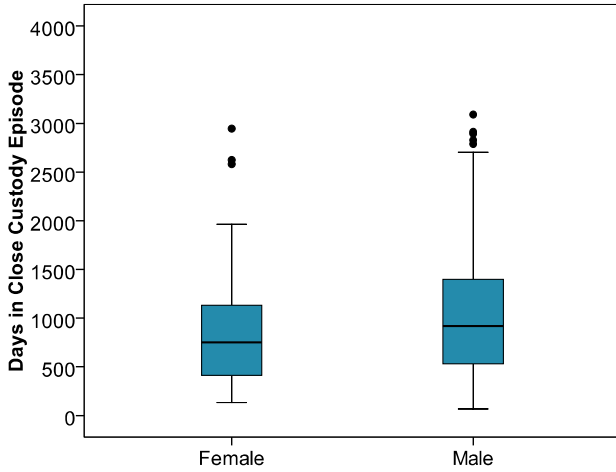


Completing Sentence at DOC for DOC Youth Released from Close Custody 2005-2009		
	Female	Male
Releases	13	251
Mean	728	719
Std. Deviation	540	789
Median	589	392
Minimum	111	2
Maximum	1,674	3,104

DOC females that finished their sentence at OYA stayed less time than their male counterparts. Recall from Figure 10 that DOC females stayed longer than DOC males. This finding might be alarming without further investigation. Figure 11 indicates that the males who completed their sentence at OYA stayed longer than the females who completed their sentence at OYA. The reason these findings suggest that females appeared to stay longer than DOC males is because many of the DOC males that completed their sentences at DOC stayed for very short periods of time.



Figure 11: Boxplot and Table for DOC Close Custody Releases 2005-2009 Sentences Completed at OYA by Sex



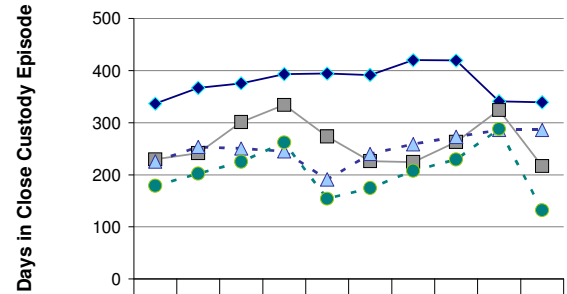
Sentence Completed at OYA for DOC Youth Released from Close Custody 2005-2009		
	Female	Male
Releases	41	330
Mean	885	1,067
Std. Deviation	673	668
Median	750	918
Minimum	134	67
Maximum	2,945	3,090

The LOS trend for male DBA youth was relatively flat. Although there was a slight increase in the mean LOS for male DBA youth during this period, the drop in LOS over the last two years resulted in less than a 1% change from 2000 to 2009 (see Figure 12; also see Appendix E for details). Except for 2004, the median LOS increased steadily until it peaked in 2008 and remained the same in 2009. Overall, this was a 21% increase in the median LOS from 2000 to 2009.

LOS varied for the female DBA population but has fallen overall. Figure 12 (also see Appendix E for details) indicates that mean and median LOS has gone up and down in a similar

pattern for the female DBA youth during this period. However, in 2009 the mean and median LOS both fell substantially. In fact, the median LOS fell 26% from 179 days in 2000 to 132 days in 2009.

Figure 12: Mean and Median LOS Trends for DBA Youth Released from Close Custody 2000-2009 by Sex

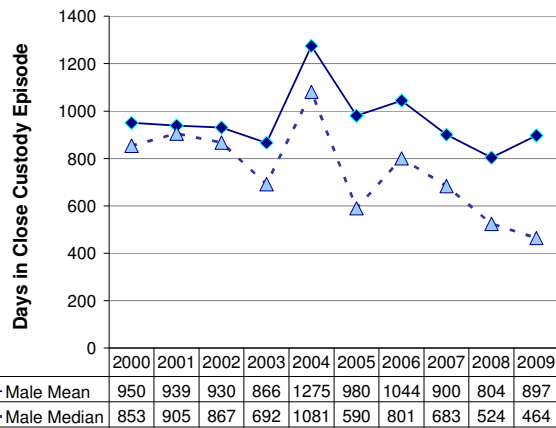


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Male Mean	336	367	376	393	394	392	420	419	341	339
Female Mean	230	242	301	334	274	226	225	263	324	217
Male Median	226	254	251	245	191	240	259	273	286	286
Female Median	179	202	225	262	154	175	208	230	288	132

LOS for PSR males is generally going down. Figure 13 (also see Appendix F for details) shows that except for a spike in 2004 the mean LOS for PSR males stayed about the same; however, the median LOS fell 45% from 853 days in 2000 to 464 days in 2009. Moreover, from the peak of 1,275 days in 2004, the mean LOS fell 30% from 2004 to 897 days in 2009; and from the peak of 1,081 days in 2004, the median LOS fell 55% from 2004 to 2009.



Figure 13: Mean and Median LOS Trends for PSR Male Youth Released from Close Custody 2000-2009



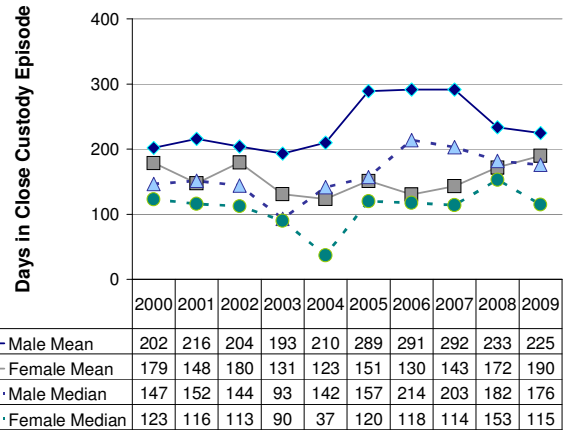
With some exception, the LOS trend for revoked males has remained fairly stable.

Although the scale in Figure 14 (also see Appendix H for details) creates the illusion of substantial variance, the LOS for males that were revoked is relatively flat. However, it is also notable that the median LOS is so much lower than the mean, again indicating the presence of outliers. Recall from Figure 5 (page 8) that there were a number of outliers and extreme outliers in the revoked status. This suggests that although the overall median and mean scores are relatively low (the highest mean LOS was 292 days for these youth), there are still a substantial number of revoked youth staying for extended periods of time. The most extreme case was 2,921 days in 2007 (the specific year is not presented in any figure or table in this report but is available in the raw data); this youth stayed 10 times longer than the mean LOS for this group.

The LOS for revoked females has also remained fairly stable. For the females, there does not appear to be any direction in the trend of LOS (see Figure 11; also see Appendix H for details). The mean LOS was 179 days in 2000 and 190 days in 2009. In other words, with few exceptions, the length of time that we have kept

revoked females has remained fairly consistent over the past 10 years.

Figure 14: Mean and Median LOS Trends for Revoked Youth Released from Close Custody 2000-2009 by Sex



In sum, males in the PSR group stayed longer than any other Status. And, while some of the difference in LOS between PSR and DOC youth may be somewhat misleading because so many of the DOC youth are released to complete their sentences at DOC, a close examination of the data suggests that many of those differences still remain. For example, of the 588 PSR males released during the study period, 21 stayed over 3,000 days. By comparison, only 3 out of 1,182 DOC males released experienced such extreme lengths of stay. Further, 8 of the PSR group stayed longer than any other youth. The longest LOS in this study was a PSR male who stayed 4,451 days.

The trends for each of the legal statuses were not all the same. Recall that the overall LOS has been declining in recent years (see Figure 3), this decline does not appear to be occurring for both sexes across all Statuses. While the LOS for males in PSR, DBA, and revoked statuses has begun to decline, LOS for DOC males has been



increasing. LOS has declined for the females¹¹ in the DOC status, but did not decline for females DBA status until 2009. And, LOS increased for females in the revoked status. It appears that most of the decline in the overall LOS can be attributed to males in the PSR, DBA, and revoked statuses, and females in the DOC and DBA statuses.

Race/Ethnicity

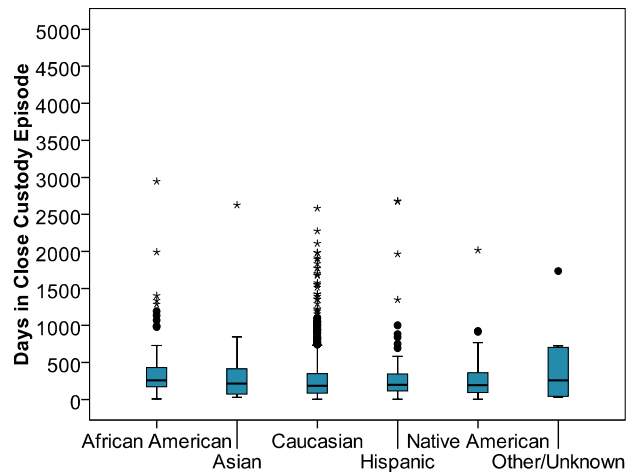
LOS varied by race/ethnicity for females, but not to a large extent (see Figure 15). On average, African American females stayed the longest of any racial group¹². However, a visual inspection of the boxplot suggests that differences in LOS by race/ethnicity were not substantial. In fact, further analysis confirms no statistically significant difference in LOS by race/ethnicity, $F(5, 1,010) = 1.615, p = .153$.¹³ Median LOS days among females with breakout by race/ethnicity follows:

- Half of the African American females were released within 260 days
- Half of the Asian females were released within 214 days
- Half of the Caucasian females were released within 185 days
- Half of the Hispanic females were released within 197 days
- Half of the Native American females were released within 191 days

- Half of the Other/Unknown females were released within 256 days

Also, the longest stay within each of these race/ethnicities was over 2,000 days for all but the Other/Unknown group, which had only 10 females.

Figure 15: Boxplot and Table for Female Close Custody Releases 2000-2009 by Race



Releases from Close Custody by Race						
	African American	Asian	Caucasian	Hispanic	Native American	Other / Unknown
Releases	116	14	694	103	81	10
Mean	385	428	301	319	276	429
Std. Deviation	408	673	361	436	291	524
Median	260	214	185	197	191	256
Minimum	8	30	4	4	4	31
Maximum	2,945	2,625	2,581	2,681	2,016	1,734

¹¹ Again, PSR was not included in the trend analysis for females because there were too few cases. Also, because there were so few cases of DOC females they are not likely to have any influence of the overall trend.

¹² Asian females did have a higher mean than the other races but there were only 14 Asian females and the median score was lower than median score for the African American females. Most of the high mean score for the Asian female can be accounted for by one Asian youth who stayed for 2,625 days

¹³ Statistical significance only was tested on variables where the differences were not apparent.

The difference in LOS across races for females was not significant.

Males did not vary as much as females between race/ethnicity categories (see Figure 16). Except for Asian males, the median LOS was relatively even across the race/ethnicity

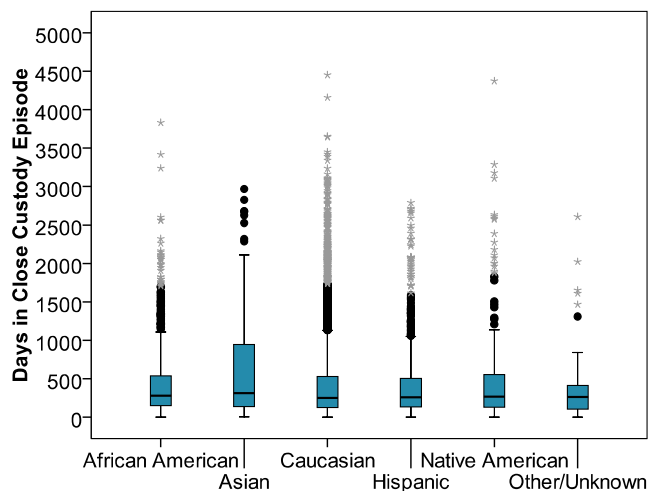


categories. Visual inspection of the boxplots suggests that most Asian males stayed longer than males of other race/ethnicities. The remaining groups appear to be similar. Although there is not a large difference between the race/ethnicity groups, we found the group wise differences (the overall difference across all groups) to be statistically significant, $F(5, 6,993) = 5.817, p < .001$. However, this finding is due to the difference in the Asian group. Median LOS for males by race is summarized below:

- Half of the African Americans males were released within 281 days
- Half of the Asian males were released within 315 days
- Half of the Caucasian males were released within 252 days
- Half of the Hispanic males were released within 257 days
- Half of the Native American males were released within 269 days
- Half of the Other/Unknown males were released within 262 days

Most of the races had extreme outliers, with the lowest maximum score being Other/Unknown (2,608 days) and the highest maximum score being Caucasian (4,451, days).

Figure 16: Boxplot and Table for Male Close Custody Releases 2000-2009 by Race



Releases from Close Custody by Race						
	African American	Asian	Caucasian	Hispanic	Native American	Other / Unknown
Releases	632	123	4,780	1,104	300	62
Mean	467	668	455	406	487	402
Std. Deviation	533	781	560	452	627	515
Median	281	315	252	257	269	262
Minimum	2	7	1	2	2	2
Maximum	3,831	2,968	4,451	2,790	4,373	2,608

We do not provide analysis of the trends for race/ethnicity because some of the populations are too small for analysis.

For the males, most of the races had extreme outliers, and the highest maximum score was Caucasian (4,451 days).

Juvenile Males Committed for a Sex Offense vs. Juveniles Males Committed for a Non-Sex Offense

Juvenile¹⁴ releases committed for a sex offense stayed much longer than juvenile releases committed for a non-sex offense. Figure 17 points out a dramatic difference in LOS between first-time releases of juvenile males committed

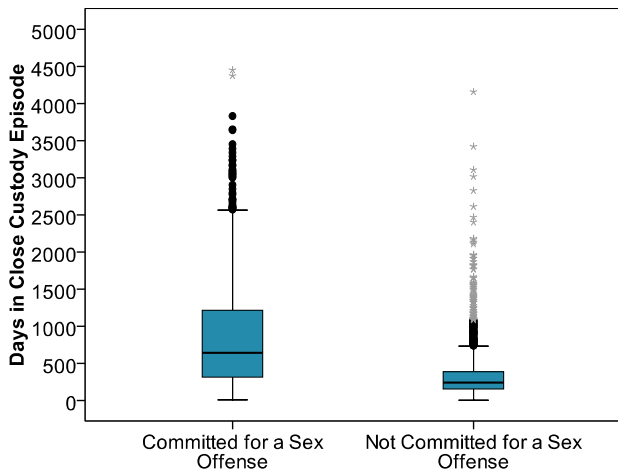
¹⁴ For the purpose of this report, juveniles are any youth that are not under the DOC Status.

for a sex offense and their counterparts who were committed for a non-sex offense. For every day a non sex offender is in closed custody, the average sex offender is in closed custody 2.7 days. Comparing the boxplots suggests that these differences are not due to a few outliers:

- 75% of the youth committed for a sex offense were released within 1,218 days
- 75% of the youth committed for a non-sex offense were released within 387 days.

In other words, 248 (25%) juvenile male youth that were released for the first time and committed for a sex offense stayed for more than 1,218 days.

Figure 17: Boxplot and Table for Juvenile Male First-Time Close Custody Releases 2000-2009 by Crime Type



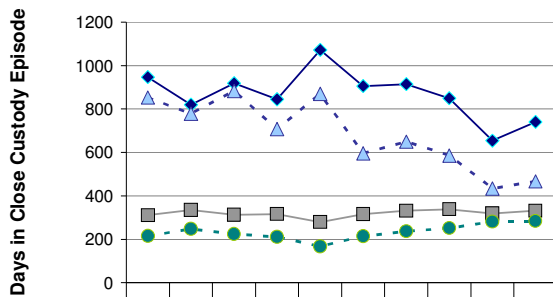
Most Serious Crime Type on Commitment at Release from Close Custody		
	Committed for a Sex Offense	Committed for a Non-Sex Offense
Releases	991	2,650
Mean	870	320
Std. Deviation	750	313
Median	642	241
Minimum	7	2
Maximum	4,451	4,157

The LOS for juveniles committed for a sex offense is going down, and the gap between first-time release male juveniles committed for a sex offense and those committed for a non-sex offense is decreasing. As the analysis above indicated (see Juvenile Males Committed for a Sex Offense Released 2000-2009, page 10), juvenile youth committed for a sex offense generally stay much longer than their counterparts. However, it appears that the trend in LOS for youth committed for a sex offense is decreasing, and the difference between those youth and youth committed for a non-sex offense has decreased substantially since it peaked in 2004 (see Figure 15; also see Appendix G for details). So, in 2004, the median number of days for first-time release male juveniles committed for a sex offense was 5.2 times longer than first-time release male juveniles committed for a non-sex offense; by 2009, the median number of days for first-time release male juveniles committed for a sex offense was only 1.6 times longer than first-time release male juveniles committed for a non-sex offense.

The trend in LOS for first-time release male juveniles committed for a non-sex offense is relatively flat. Figure 18 (also see Appendix G for details) shows that the reduction in the LOS

gap between first-time release male juveniles committed for a sex and those committed for a non-sex has been due to the reduction in the LOS for those committed for a sex offense. The LOS for those committed for a non-sex offense has remained relatively flat.

Figure 18: Mean and Median LOS Trends for Juvenile Male First-Time Close Custody Releases 2000-2009 by Youth Committed for a Sex Offense Compared to Youth Committed for a Non-Sex Offense

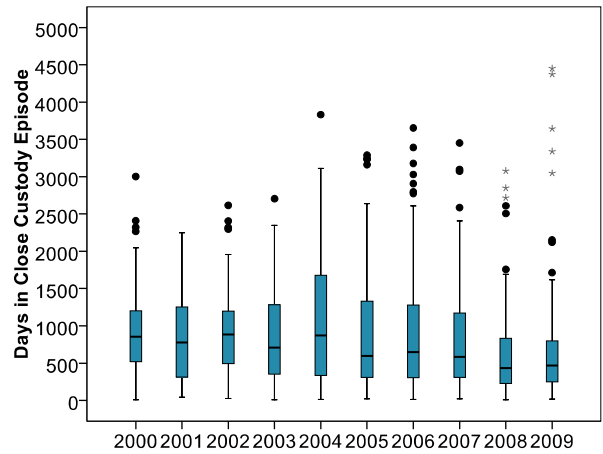


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
SO Mean	947	820	919	845	1073	906	915	850	654	741
Not SO Mean	311	335	313	316	280	316	331	338	319	332
SO Median	853	779	883	708	870	596	650	586	434	467
Not SO Median	215	248	224	211	167	214	237	252	282	284

Median LOS for juvenile male first-time releases that were committed for a sex offense went down 46% after peaking in 2004. Again, the trend for LOS of first-time release male juveniles that were committed for a sex offense is going down (see Figure 18). Even with the slight increase in 2009, they still stayed for substantially shorter time. Further analysis with boxplots (see Figure 19) indicates that the slight increase in the mean LOS in 2009 was the result of just a few extreme outliers. Note the size and the height of the boxes from 2004 until 2009. This indicates the substantial decrease in the LOS for a large number of these youth. It is also interesting to note that the overall LOS for youth from 2000-2007 was so high that there were no extreme outliers. With LOS declining so dramatically for these youth in 2008 and 2009, releases that would not have been flagged as

simple outliers in 2004 are now in the extreme outlier range, further indicating the drastic drop in LOS experienced by many of these youth.

Figure 19: Boxplots of LOS Trends for Juvenile Male First-Time Close Custody Releases 2000-2009 by Youth Committed for a Sex Offense



Bed capacity and LOS

Bed capacity affects LOS for youth with indeterminate sentences (see Appendix A for definitions of determinate and indeterminate sentences). Because bed capacity is mandated by the Oregon legislature, and constraints are imposed by the legislatively adopted budget, youth in discretionary beds may be released simply because there is no bed available for them. Figure 20 exemplifies this point. During a period from July 2008 through December 2008, the agency experienced a surge of youth committed to DOC and then placed in the physical custody of OYA (although we can return them to DOC for various reasons, such as failure to engage in treatment or aging out of the juvenile system, OYA cannot refuse bed space to DOC youth who committed their crimes under the age of 18). Based on weekly bed counts, as the number beds used by DOC youth increased,



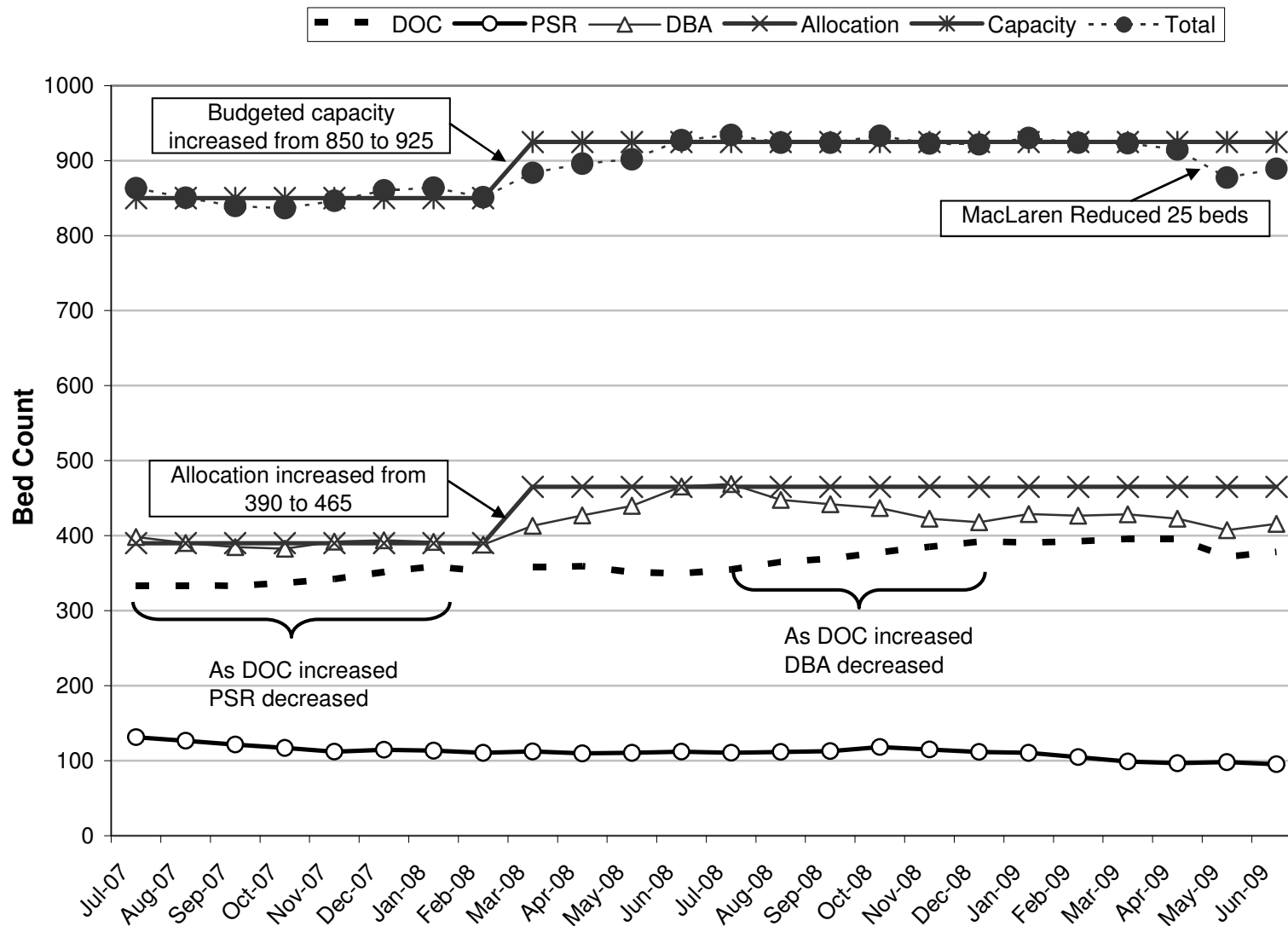
the number of beds occupied by DBA youth decreased. This was one of the rare times that OYA close custody was below the established DBA capacity. The effects of bed capacity on LOS are predictable and likely account for the dramatic drop in LOS for the DBA group in 2008.

An interesting—but not surprising—point is that under normal circumstances, the number of DBA beds used statewide matches exactly the number of discretionary beds allocated. And even when the allocation changes, the number of DBA beds in use quickly catches up to the allocation. For example, from July 2007 through February 2008, the number of DBA beds used was the same as the allocation. In March 2008, the allocation increased 75 beds. By June 2008, the number of DBA beds used was again equal to the allocation. However, as the demand for DOC beds began to increase between August and September 2008, the number of DBA beds used quickly fell below the number of beds allocated.

Moreover, Figure 20 demonstrates that pressure from increasing DOC beds also affects the number of PSR beds used. Based on a weekly bed count, during a period from July 2007 through January 2008, as the number of beds occupied by DOC youth in OYA facilities increased, the number of beds used for PSR youth decreased. Although the relationship is not as strong as that between DOC and DBA, it is still evident that increasing numbers of DOC youth in OYA facilities also decreases the number of PSR beds used. In other words, when the use of mandatory beds increases, the number of non-mandatory beds decreases, resulting in reduced LOS for youth in PSR and DBA beds (OYA, 2006).



Figure 20
Average Bed Use by DOC/DBA/PSR, July 2007 - June 2009: Statewide



LOS and recidivism

Do youth who stay longer in close custody have higher recidivism rates? We

examined the relationship between LOS and recidivism using two survival analysis techniques: Kaplan-Meier and Cox regression (For a review, see Wright, 2000). Survival analysis is a set of statistical techniques that enable researchers to model dichotomous outcomes¹⁵ over time.

In survival analysis the dependent or outcome variable is merely a dichotomous event over time. The dichotomous event for this analysis is recidivism.¹⁶ Three pieces of information are necessary in order to calculate the dependent variable: (a) whether the event occurred; (b) if so, the date the event occurred; and (c) the last date of the study. Two outcomes can occur during the course of the study: (a) the event can occur, or (b) the youth can be censored. (Youth who do not recidivate prior to the study's end date are censored from the data set and counted as having "survived"—not recidivated—for the period of time they were active in the study.) The dependent variable for survival analysis is the length of time before the event occurred or, if the event did not occur, the length of time the subject was in the study prior to being censored. In this case, the dependent variable is referred to as "Days to Recidivate or Censor."

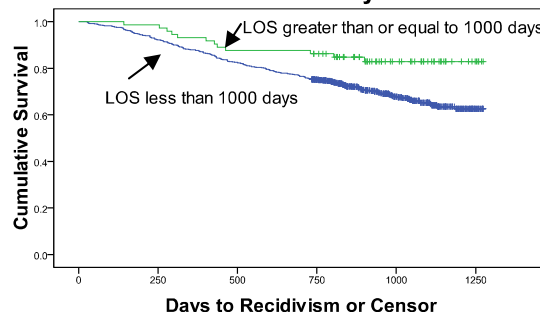
¹⁵ A dichotomous outcome, or event, has only two outcomes: Either the event happened, or it did not.

¹⁶ For the purpose of this study, recidivism is defined as a felony adjudication or adult conviction with a disposition of formal supervision by the state or county within the length of the study (from 1/1/2006 through 6/30/2009).

Kaplan-Meier is a univariate survival analysis technique that examines the relationship between a single categorical independent variable and the outcome variable. In this case, we categorized LOS into two groups: (a) LOS greater than or equal to 1,000 days; and (b) LOS less than 1,000 days. Figure 20 graphically represents the findings of the Kaplan-Meier analysis and illustrates that youth who stay longer have better survival rates ($\chi^2=6.7$, $p<.05$). ***However, further analysis reveals that other variables are mediating the effects of LOS on recidivism.***

Figure 20

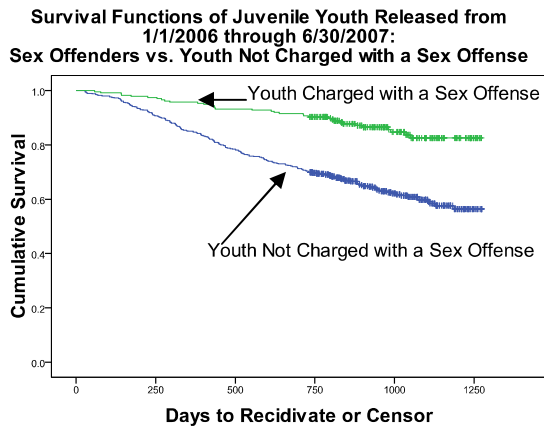
Survival Functions of Juvenile Youth Released from 1/1/2006 through 6/30/2007: LOS greater than or equal to 1000 vs. LOS less than 1000 days



Recall that, although the gap narrowed in recent years, juvenile sex offenders stay much longer than youth that were charged with a non-sex offense as their most serious crime. As a result, sex offenders dominate the group of youth with LOS of 1,000 days or more. Figure 21 presents the Kaplan-Meier Survival functions for juveniles charged with a sex offense vs. juveniles not charged with a sex offense. This chart clearly indicates that youth not charged with a sex offense were far more likely to recidivate than youth charged with a sex offense ($\chi^2=39.6$, $p<.001$).



Figure 21



Which is it, LOS or sex offender status?

To answer this question, we employed Cox regression. For the Cox regression, we used the same dependent variable (days to recidivate or censor) as the Kaplan-Meier analysis. However, Cox regression is a multivariate statistical technique that allows us to determine which variables have a statistically significant relationship with recidivism while controlling for any other variables that might have an influence on the outcome.

As expected, given the Kaplan-Meier findings above, when we placed either sex offender status or LOS (greater than, or less than, 1000 days) alone in the Cox regression model, they both had a statistically significant relationship with recidivism (for the LOS variable, the significance level was $p < .01$; for the sex offender variable, the significance level was $p < .001$). However, when we placed both variables in the model together, LOS was no longer significant ($p = .471$) and sex offender remains significant ($p < .001$). Moreover, regardless of how many significant variables we added to the model (e.g., substance use, Risk/Needs Assessment level), youth

charged with a non-sex offense were almost three times more likely to recidivate than youth charged with a sex offense.

Our answer is explicit, while controlling for LOS, there was a strong negative relationship between sex offending and recidivism rates (i.e., sex offenders were less likely to recidivate); and *LOS was not statistically related to recidivism for this population.*

Discussion, Summary, Conclusion and Recommendations

The purpose of this report was to provide a more in-depth look at LOS for youth released from OYA close custody facilities. To begin, the descriptive statistics suggested that there were several differences in the population for this report compared to the population currently in OYA close custody (OYA, 2009a).

These differences generally reflect the varying LOS for the study populations and create limitations to our findings. For example, males, DOC, and youth who were committed for a sex offense stay longer than their counterparts. Because the proportion of youth in those categories is less than in the current OYA population, generalizing the findings of this study to current overall population should be made with caution. For example, it would not be appropriate to assume that the average youth who comes to OYA would stay approximately 435 days (see Figure 1). Again, however, inferences made about current subpopulation may be appropriate. For example, it would be appropriate to assume that the average DBA female would stay approximately 265 days (see Figure 4).



Three other limitations need to be considered when interpreting these results. First, as reported, there are a number of youth that are released to complete their sentences at DOC. These youth have varying LOS and a number of these youth stay for very short periods of time at OYA. What is not captured in this report is the LOS for those youth after they are released to DOC. Whether these youth stayed at OYA for a short period or not, many are likely to stay for long periods of time; some will stay for their entire life. Future research should continue to investigate these youth to better estimate their entire LOS in close custody settings.

Second, this report did not investigate racial differences across subpopulations. For example, although there does not appear to be substantial difference between LOS by race for the entire study population (see Figures 6 & 7), future analysis may uncover differences in the subpopulations. Specifically, there may be differences in those populations where OYA has releasing authority. Further analysis is needed to determine if those differences exist.

Third, this study does not provide any information about the LOS of youth currently in close custody. Future research could address this issue, at least in part, by examining the LOS for those youth.

Although these limitations need to be considered, several findings still deserve highlighting.

The large proportion of youth with extended LOS was an important finding. Almost 800 youth were statistical outliers and they stayed 1,079 days (nearly 3 years) or more. Moreover, 410 youth were statistically

extreme outliers and they stayed 1,649 days (over 4.5 years) or more (see Figure 1).

Equally important was the finding that many of these youth who stayed for a long time were not serving determinate sentences, meaning that OYA or the courts have some discretion over their LOS. For example, it was the males in the PSR Status that stayed even longer than the DOC youth (see Figure 5).

We did not find any statistically significant differences in LOS across races for the females (see Figure 6); however, we did find statistically significant difference in LOS across races for the males (see Figure 7). As indicated above, although the only substantial difference was between Asians and any other race when we analyze across all youth released, there may be difference that are masked within subpopulations. For example, juvenile youth who were committed for a sex offense may differ in LOS by race. Conversely, juvenile youth who were not committed for a sex offense may differ in LOS by race. Further analysis should be conducted to determine if subpopulations have an effect on LOS for race populations.

Although LOS has fluctuated since 2000, the trend analysis indicated for both sexes that LOS increased for the entire OYA population up through 2007, and generally declined in 2008 and 2009 (see Figure 12). Most of this decrease can be attributed to youth with indeterminate sentences, and especially for sex offenders with indeterminate sentences. LOS for DOC youth increased during the study period but remained fairly stable for revoked youth.



We found evidence that LOS was affected by bed capacity (see Figure 19). By examining the use of beds over time, it was clear that when the number of beds used by DOC youth increases, the number of beds used by both PSR and DBA youth decreases. This implies that release decisions may be guided not only by a youth's progress in treatment but also by capacity management, which is unrelated to the youth's readiness to transition out of close custody. Further research should address this issue to determine if youth who do not complete their programming and are released for capacity reason recidivate at higher rates than youth who complete their programming.

Finally, comprehensive investigation of the relationship between LOS and recidivism using survival analysis techniques provided insights about the data that may have been otherwise misleading. At first glance, it appeared that youth who stayed longer had lower recidivism rates. However, when we used multivariate statistical methods to control for influencing variables, we found that it was sex offenders who were lowering the recidivism rates rather than LOS. We concluded that there was no relationship between LOS and recidivism for the youth who were released from OYA close custody.

Even though sex offenders have significantly lower recidivism rates, juvenile male youth that were committed for a sex offense and released for the first-time did stay considerably longer than youth who were committed for a non-sex offense (see Figure 8). Previous research by OYA (2007) had similar findings comparing juveniles released from close custody in 2006 who were charged with a sex offense and those who were not charged with sex offenses:

- Juveniles charged with a sex offense stayed 2.6 times as long as juveniles charged with a non-sex offense
- Juveniles charged with a sex offense were 6.5 times more likely to have stayed more than 2 years than juveniles charged with a non-sex offense
- Juveniles charged with a sex offense were 18 times more likely to have stayed more than 2,000 days than juveniles charged with a non-sex offense

With these consistent and profound differences, it is clear that juveniles committed for a sex offense stay much longer than their counterparts. Again, however, the trend analysis indicated that the differences in LOS between sex offenders and juveniles charged as non-sex offenders appear to be lessening. For example, for juveniles released in 2004, the difference in mean LOS between sex offenders and those charged as non-sex offenders was 619 days; by 2008 the same difference in mean LOS between these groups was only 206 days.

There may be good reasons to continue this downward trend for all youth committed to OYA on indeterminate sentences. For example, many of those youth were held until their sentence had expired, which meant that we would be unable to provide them with any transition services after they were released. Keeping youth until expiration without providing any transition services in the community may serve to increase recidivism rates, so future research should examine this issue.

Obviously, there is some risk in reducing sentences. However, we know that the risk



involved in releasing these youth may not be as high as we might expect because most of those PSR youth were committed for a sex offense, and youth committed for a sex offense are less likely to re-offend than youth not committed for a sex offense. We also know that there was no relationship between LOS and recidivism. In addition, previous research by OYA Research and Evaluation (2009b) on youth released early found no difference in recidivism rates between the youth released early and a matched comparison sample; and the comparison group had a significantly lower revocation rate than the early release group ($X^2 = 4.93$, $df = 1$, $p < .05$). So, while there is some risk in shortening LOS, there is also evidence that the risk may not be as high as we might expect. And, because resource crises are not an unusual circumstance in state government, OYA should document a process for identifying youth for release or retention based on our current knowledge about what influences recidivism. The document should be updated regularly to reflect insights about factors affecting youth success.

Additionally, reducing LOS may have practical benefits for public safety. A point not made in this report is that when bed capacity is increased, the number of beds used increases almost immediately. This point is clearly illustrated in Figure 19. Note that in March 2008 the bed capacity was increased from 850 to 925 beds. After the increase, bed use started increasing each month, and within four months the number of beds used was at full capacity. This indicates that there is a need for beds. If we reduce LOS we can increase the number of youth who occupy a bed in a given time frame. In other words, by reducing LOS we can increase the amount of youth we provide

reformation services for, which in turn improves public safety by reducing recidivism.

The major contributions of this study are (a) the uncovering of the large numbers of youth who stay at OYA for extreme lengths of time, and (b) the discovery that many of those youth who stayed at OYA for extreme lengths of time are on indeterminate sentences. Previous methods for reporting LOS did not reveal those findings for two reasons: (1) Simply reporting mean and median LOS measures do not expose the outliers; and (2) by not disaggregating the sub group populations sufficiently differences in those populations remain hidden. Further research on LOS should address both of these issues by continuing to (a) exam the boxplots, and (b) further disaggregate subgroup populations that may be masking differences in LOS (e.g., race/ethnicity by crime type or Status).

At the very least, OYA should continue to keep a close eye on the LOS trends of youth released from our close custody facilities. In addition, OYA should conduct a more thorough cost/benefit analysis of reducing LOS for youth on indeterminate sentences, and OYA should conduct further investigations to determine which youth are the least likely to recidivate among those youth who are staying for extended periods of time.



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Appendix A: Glossary of Terms

1st Quartile: Often referred to as Q1, or the 25 percentile, this is a measure of spread around the median. It is determined by ordering the numbers from smallest to largest and then finding the value that marks the point at which 25% of the numbers are below and 75 % of the numbers are above (also see appendix A).

2nd Quartile: See the median.

3rd Quartile: Often referred to as Q3, or the 75 percentile, this is a measure of spread around the median. It is determined by ordering the numbers from smallest to largest and then finding the value that marks the point at which 75% of the numbers are below and 25 % of the numbers are above (also see appendix A).

Close Custody: OYA facilities that hold youth in confined settings. These include all youth correctional facilities (MacLaren, Hillcrest, Oak Creek, North Coast, Rogue Valley, Eastern Oregon, and Tillamook) and transitional programs (River Bend, Camp Tillamook, Camp Florence, Young Women’s Transition Program).

Department of Corrections (DOC): Youth who were under the physical custody of OYA because they committed their crimes under the age of 18 but were under the jurisdiction of DOC because they were either convicted under Measure 11 or waived to adult court.

Determinate Sentences: Sentence with determined LOS. For example, Measure 11 sentences and DOC waived sentences have LOS that are pre determined.

Discretionary Bed Allocation (DBA): DBA is essentially a bed classification where beds are set aside for OYA commitments who were not committed for PSR crimes (see Public Safety Reserve Offenders below). “The beds are considered ‘discretionary’ and counties are

expected to limit their use to beds apportioned to their county” (OYA, 2005).

Extreme Outlier: Extreme outliers are values that are vary extremely from the median in either direction. They are determined by the following formula: $Q3 + (3 \times IQR)$.

Indeterminate Sentences: Sentence without a determined LOS. For these sentences OYA has discretion in releasing decisions.

Juvenile Sex Offenders: Youth who were committed to OYA whose most serious committing offense was a sex crime.

Juveniles not charged as Sex Offenders: Youth who were committed to OYA whose most serious committing offense was not a sex crime.

Juvenile Offenders: All youth that were committed by the juvenile courts to youth correctional facilities.

Mean: Mean is calculated by starting with a given population, adding the number of days stayed for each episode (again, we are counting episodes, not youth), and dividing by the total number of episodes in that given population. For example, for all 730 releases from close custody in 2008 there was a total of 322,676 days stayed, so the mean number of days for youth released from close custody in 2008 was 442 ($322,676 / 730$; also see appendix A).

Median: Often referred to as Q2, or the 2nd quartile, median is calculated by ordering episodes LOS for a given population from the shortest to the longest and finding the middle value (also see appendix A).

Outlier: Outliers are values that are vary greatly from the median in either direction. They are determined by the following formula: $Q3 + (1.5 \times IQR)$.

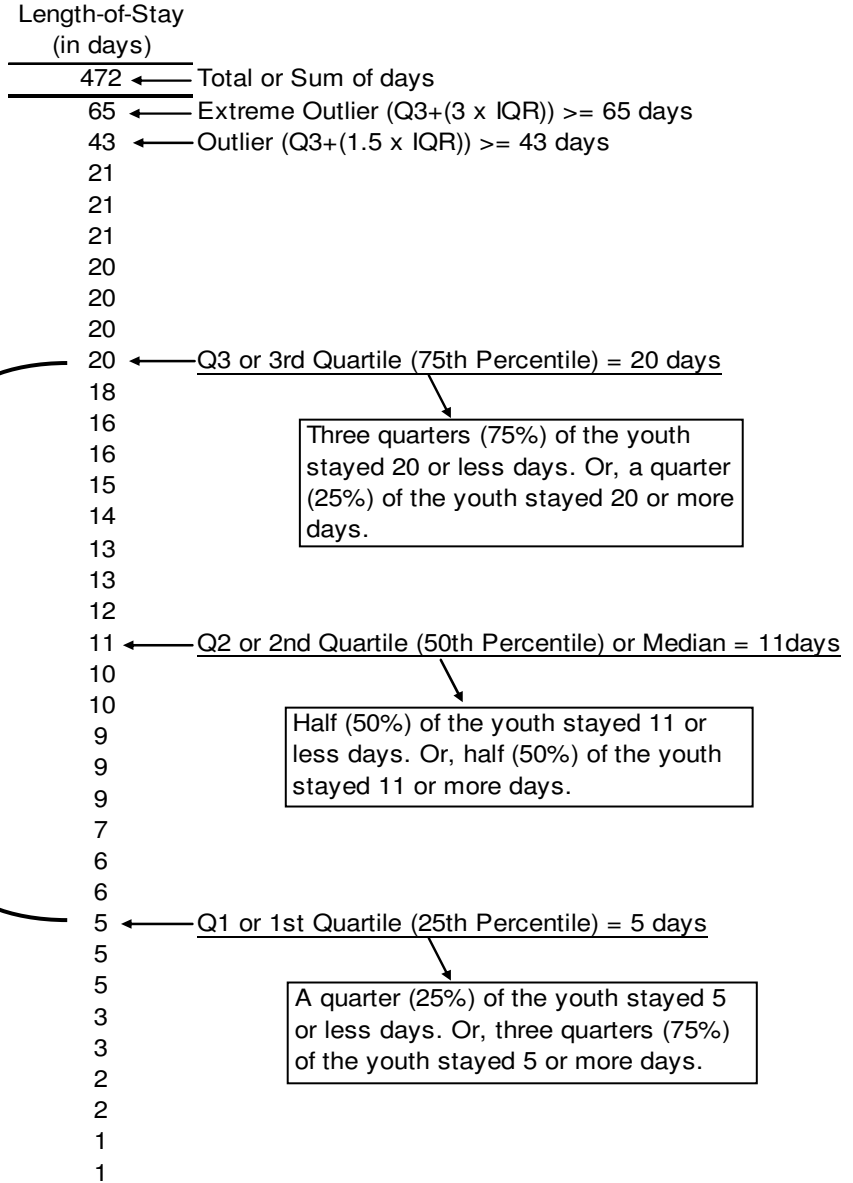


Public Safety Reserve (PSR): PSR is essentially a bed classification where beds are set aside to ensure that close-custody capacity is available for offenders that are committed to OYA for the most serious crimes (murder, attempted murder, rape in the first degree, arson in the first degree, etc.) Juvenile offenders who committed to OYA close custody for Measure 11 type offenses (Public Safety Reserve (PSR)) dispositions include any youth committed to OYA for a Measure 11 crime that was under 15 years of age at the time of the offense



Appendix B: Understanding Mean, Median, Quartiles, Percentiles, and Standard deviation

This example demonstrates in minimal detail typical calculations of different types of averages for length-of-stay (LOS). In this fictitious scenario, 35 youth were released from a detention center during a calendar year. Their LOS ranged from 1 to 65 days. This page defines and presents how the mean, median, mode, percentiles, and outliers are calculated. In addition, the standard deviation is defined and presented; however, computing standard deviation manually is a multi-step process, so it is not presented here.



Interquartile range (IQR) is $Q3 - Q1$ or $20 - 5 = 15$ days

Mean: Add all the numbers in a list and divide by the count of numbers in the list.
 $472 / 35 = 13.5$

Median: Order the numbers from smallest to largest and then find the middle value. = 11

Standard Deviation: Indicates how much scores vary. Or, the average amount scores deviate from the mean (formula for standard deviation not shown) = 2.1

Appendix C:

Oregon Youth Authority									
Close Custody Releases 2000-2009 Length-of-Stay (LOS)* in Days									
Calendar Year	Total			Males			Females		
	Number of Episodes	LOS		Number of Episodes	LOS		Number of Episodes	LOS	
		Mean	Median		Mean	Median		Mean	Median
2000	1017	337	207	881	350	211	136	249	181
2001	953	366	219	838	382	230	115	251	188
2002	883	427	236	761	437	239	122	366	211
2003	911	408	211	795	418	207	116	336	244
2004	714	497	217	634	502	220	80	454	191
2005	681	500	260	596	516	269	85	383	210
2006	650	518	297	575	547	315	75	296	191
2007	696	492	284	595	527	300	101	286	214
2008	720	441	282	628	460	292	92	312	209
2009	794	452	278	698	479	287	96	249	156
Total	8019	435	249	7001	453	257	1018	313	197

* LOS is calculated based on youth released from close custody during the calendar year (includes juvenile and DOC offenders).



Appendix D:

Oregon Youth Authority
Department of Corrections Releases 2000-2009
Close Custody Length-of-Stay (LOS)* in Days

Calendar Year	Number of Episodes	Total LOS		Number of Episodes	Males LOS		Number of Episodes	Females LOS	
		Mean	Median		Mean	Median		Mean	Median
2000	134	583	448	119	585	446	15	566	486
2001	128	653	475	122	651	456	6	703	778
2002	155	880	689	143	858	636	12	1149	1016
2003	102	958	732	93	960	723	9	937	902
2004	136	920	672	124	854	569	12	1599	1866
2005	132	869	594	116	846	542	16	1039	843
2006	123	924	697	116	906	721	7	1229	589
2007	90	960	912	82	981	921	8	739	614
2008	130	919	682	122	919	680	8	914	922
2009	160	901	750	145	944	783	15	487	405
Total	1290	852	650	1182	846	636	108	925	741

* LOS is calculated based on youth released from close custody during the calendar year.



Appendix E:

Oregon Youth Authority									
First-time Released Discretionary Bed Allocation Releases 2000-2009									
Close Custody Length-of-Stay (LOS)* in Days									
Calendar Year	Total			Males			Females		
	Number of Episodes	LOS		Number of Episodes	LOS		Number of Episodes	LOS	
		Mean	Median		Mean	Median		Mean	Median
2000	466	320	215	396	336	226	70	230	179
2001	448	345	243	370	367	254	78	242	202
2002	397	363	248	330	376	251	67	301	225
2003	433	383	246	362	393	245	71	334	262
2004	281	373	184	232	394	191	49	274	154
2005	291	365	231	245	392	240	46	226	175
2006	301	387	245	251	420	259	50	225	208
2007	336	390	258	272	419	273	64	263	230
2008	327	339	288	281	341	286	46	324	288
2009	361	323	275	314	339	286	47	217	132
Total	3641	357	249	3053	375	258	588	265	204

* LOS is calculated based on youth released from close custody during the calendar year.



Appendix F:

Oregon Youth Authority									
First-time Released Public Safety Reserve Releases 2000-2009									
Close Custody Length-of-Stay (LOS)* in Days									
Calendar Year	Total			Males			Females		
	Number of Episodes	LOS		Number of Episodes	LOS		Number of Episodes	LOS	
		Mean	Median		Mean	Median		Mean	Median
2000	59	940	849	58	950	853	1	343	343
2001	57	933	905	55	939	905	2	787	787
2002	47	944	877	44	930	867	3	1155	1684
2003	61	864	748	58	866	692	3	817	938
2004	65	1225	1022	61	1275	1081	4	470	471
2005	70	986	590	68	980	590	2	1187	1187
2006	58	1044	801	58	1044	801	0	-	-
2007	85	879	652	80	900	683	5	546	403
2008	51	790	502	50	804	524	1	133	133
2009	57	884	463	56	897	464	1	182	182
Total	610	951	732	588	961	749	22	688	578

* LOS is calculated based on youth released from close custody during the calendar year.



Appendix G:

Oregon Youth Authority									
Male First-time Juvenile Releases 2000-2009									
Juveniles Committed for a Sex Offense &									
Juveniles Committed for a Non-Sex Offense									
Close Custody Length-of-Stay (LOS)* in Days									
Calendar Year	Number of Episodes	Total		Juveniles Committed for a Sex Offense			Juveniles Committed for a Non-Sex Offense		
		LOS		Number of Episodes	LOS		Number of Episodes	LOS	
		Mean	Median		Mean	Median		Mean	Median
2000	454	415	259	74	947	853	380	311	215
2001	425	441	294	93	820	779	332	335	248
2002	374	441	273	79	919	883	295	313	224
2003	420	458	280	113	845	708	307	316	211
2004	293	577	261	110	1073	870	183	280	167
2005	313	519	282	108	906	596	205	316	214
2006	309	537	311	109	915	650	200	331	237
2007	352	529	322	131	850	586	221	338	252
2008	331	411	299	91	654	434	240	319	282
2009	370	423	304	83	741	467	287	332	284
Total	3641	470	288	991	870	642	2650	320	241

* LOS is calculated based on youth released from close custody during the calendar year.



Appendix H:

Oregon Youth Authority									
Revoked Releases 2000-2009									
Close Custody Length-of-Stay (LOS)* in Days									
Calendar Year	Total			Males			Females		
	Number of Episodes	LOS		Number of Episodes	LOS		Number of Episodes	LOS	
		Mean	Median		Mean	Median		Mean	Median
2000	300	198	144	250	202	147	50	179	123
2001	275	209	147	246	216	152	29	148	116
2002	259	200	139	219	204	144	40	180	113
2003	294	186	93	261	193	93	33	131	90
2004	221	204	140	206	210	142	15	123	37
2005	184	273	155	163	289	157	21	151	120
2006	168	274	203	150	291	214	18	130	118
2007	185	272	191	161	292	203	24	143	114
2008	212	223	180	175	233	182	37	172	153
2009	216	219	160	183	225	176	33	190	115
Total	2314	220	153	2014	229	160	300	161	115

* LOS is calculated based on youth released from close custody during the calendar year.



Appendix I:

Oregon Youth Authority																					
Juvenile* Close Custody Releases 2000-2009																					
Length-of-Stay (LOS)** in Days by Race																					
Calendar Year	Total			African American			Asian			Caucasian			Hispanic			Native American			Unknown/Other		
	Number of Episodes	Mean	Median	Number of Episodes	Mean	Median	Number of Episodes	Mean	Median	Number of Episodes	Mean	Median	Number of Episodes	Mean	Median	Number of Episodes	Mean	Median	Number of Episodes	Mean	Median
2000	825	320	202	68	325	196	18	200	160	606	324	200	87	326	252	36	329	177	10	209	195
2001	780	340	213	49	318	213	8	325	217	589	350	219	88	261	183	40	351	222	6	627	664
2002	703	342	211	51	275	196	11	296	183	515	354	215	82	368	200	38	249	234	6	169	169
2003	788	347	195	59	409	323	7	183	145	581	340	181	95	342	215	43	395	206	3	308	272
2004	567	405	182	35	559	204	9	268	237	424	399	181	66	376	189	27	366	167	6	594	487
2005	545	414	232	38	522	231	6	690	296	398	406	218	80	330	251	21	634	316	2	271	271
2006	527	424	246	37	329	275	8	407	236	370	444	237	80	295	240	25	556	379	7	882	406
2007	606	422	255	56	301	268	11	463	211	394	464	259	99	393	253	33	297	302	13	193	181
2008	590	336	259	60	333	275	7	217	132	385	342	255	100	330	254	34	339	274	4	178	191
2009	634	338	239	73	268	239	8	295	172	384	371	252	148	270	225	19	503	276	2	159	159
Total	6565	364	224	526	349	239	93	317	188	4646	373	223	925	325	224	316	381	227	59	366	272

* Includes DBA, PSR, and revoked youth.
 ** LOS is calculated based on youth released from close custody during the calendar year (includes DBA, PSR, and revoked youth).

