Oregon Youth Authority Demand Forecast

April 2013
Background

The Office of Economic Analysis produces the semi-annual Juvenile Corrections Population Forecast which provides projections for close custody bed space managed by the Oregon Youth Authority (OYA). Executive Orders 98-06, 04-02, and 08-15 direct the Department of Administrative Services and the Juvenile Corrections Population Forecasting Advisory Committee to produce the forecast. The forecast is mandated to estimate monthly populations over a ten year period and is due April 15 and October 15 of each year. OYA uses the forecast for planning and budgeting.

The forecast is for close custody beds (incarcerated youths) and OYA residential treatment beds. The close custody population is composed of three groups: the Public Safety Reserve (PSR), Department of Corrections (DOC) offenders who are supervised by OYA, and the discretionary close custody (DCC) population. The PSR and DOC offenders represent the portion of OYA’s close custody population for which incarceration is mandatory. The remaining bed space is for DCC and is occupied by youths judged to need close custody incarceration above others, but it is not mandatory incarceration.

Each of the four population groups is forecasted separately. The DOC and PSR forecasts provide direct estimates of the number of beds that will be needed to house those populations. The DCC and residential treatment population forecasts are estimates of the demand for beds regardless of whether the demand is met.

The forecast advisory committee is comprised of individuals with knowledge of the juvenile justice system. It meets prior to each forecast to discuss issues and trends related to the system and how they could affect the forecast. The committee also defines the demand measure used for the discretionary population.

Juvenile Corrections Population Forecasting Advisory Committee

Torri Lynn (Chair)  
Linn County Juvenile Department  
Linn County Juvenile Department  
University of Washington  
Department of Human Services  
Jefferson County Community Justice Department  
Oregon Youth Authority  
Clackamas County Juvenile Department  

John Mark Eddy  
Donna Keddy  
Jeffrey Lichtenberg  
Fariborz Pakseresht  
Ellen Crawford (pending appointment)
**Juvenile Crime Information**

**Information Sources**

There are a number of sources for information concerning juvenile crime. The forecast analysis relies primarily on the Juvenile Justice Information System (JJIS). This data system maintains information on juvenile referrals in Oregon and juveniles supervised by OYA and county juvenile departments. It provides the most complete and timely source of juvenile crime data for Oregon.

The advisory committee meets before each forecast and provides information related to factors driving trends, changes in judicial system processes, and identification of things which may impact the forecast but do not yet show up in statistical data.

Additionally, national data and research in juvenile crime are surveyed prior to each forecast. Although national level research and statistics are based on data that is typically several years old, it is valuable in understanding trends seen in Oregon in comparison to national trends.

**National Data and Trends**

In general, national juvenile justice trends are reflected in Oregon specific data. National juvenile crime and delinquency trends generally indicate a substantial decrease in juvenile crime from the mid 1990's through the early 2000's, followed by relatively little change through current data. The charts below display different measures of nationwide juvenile crime/delinquency based on arrests, court cases, and survey data. They indicate that serious juvenile crime/delinquency at the national level peaked in the mid 1990's, dropped substantially from then through the early 2000's, and has been relative stable since the mid 2000's.

The FBI Uniform Crime Reporting (UCR) program provides the number of arrests by age and crime type. The Violent Crime Index and Property Crime Index are standardized measures commonly used to characterize crime rates for those categories1.

The nationwide violent crime rate and property crime rate for juveniles reached peak levels in the mid 1990's. Since then, they fell rapidly through the early 2000's to roughly half their peak levels and have not seen major changes in recent years.

---

Juvenile court case statistics provide another measure of juvenile crime. Adjudicated cases, specifically those resulting in a facility placement, also serve as measures of relative demand for juvenile correctional services. Those trends (chart right) peaked in the mid 1990's, then fell gradually, leveling off in recent years at a level about 20 percent below the peak.

Serious violent crimes perpetrated by youths aged 12 to 17, based on survey data, has declined dramatically from peak levels in the 1990's. As compared to the Violent Crime Index (above), which is based on law enforcement agency reports of arrests, this indicator assesses crime reported by victims when surveyed. As such, it is believed to capture more total crime since it does not depend on any interaction with, or success of, the criminal justice system.

Underlying much national criminal justice research and juvenile criminality is data from the Federal Bureau of Investigation’s Uniform Crime Reporting (UCR) program and U.S. Census Bureau’s surveys of criminal justice agencies. Below is a listing of agencies which maintain references to national level data.

- Bureau of Justice Statistics
- Office of Juvenile Justice and Delinquency Prevention
- National Juvenile Court Data Archive
- National Criminal Justice Reference Service
- National Archive of Criminal Justice Data
- Forum on Child and Family Statistics (general source for national data on children)

**Oregon Data from the Juvenile Justice Information System (JJIS)**

Reports from national data are not available for the most recent years and they generally lack sufficient detail to use directly in the forecast. Oregon’s JJIS data system, in contrast, provides juvenile justice information from 1996 to the current day in considerable detail. The data system is used at both the county and the state level. Of interest in forecasting, it tracks individual events for individual youths such as dates and offenses for referrals to county juvenile departments, dispositions ordered by a court,
placement information for custody and supervision episodes, and risk assessment details. Informal events or dispositions are often not recorded. An example might be a court requirement for a youth to write an essay.

Referrals to Oregon county juvenile departments are the primary source for assessing overall juvenile criminality for the forecast. Youths are referred by law enforcement. In general, a referral is analogous to an arrest for a crime in the adult criminal justice system. Detail data on individual referrals is available going back through 1996, and is generally considered to be consistent over time in the way actual events are characterized in the data. The referral data is used for the forecast in establishing juvenile crime trends. For each referral, the data captures the youth's identity and a variety of characteristics including date of referral, age, gender, race, and offense information such as the statute violated, OYA’s 19 point severity classification for the offense, and crime class such as “A Felony” or “B Misdemeanor”.
Crime Trends from JJIS Referral Data

Juvenile crime, measured by the number of referrals, has dropped significantly in Oregon since the mid 1990's. In 1996, there were approximately 10,400 referrals for felonies. By 2011, that number had dropped to about 3,600, a 65 percent reduction (over the same period, the total number of juveniles in Oregon age 12 to 17 increased about 5 percent), with recent data showing further decline. Similarly, though less dramatic, the number of misdemeanor referrals over the same period declined by 49 percent. For both felony and misdemeanor referrals, reductions were relatively rapid from 1998 to 2002, gradual from 2003 to 2007, and rapid again into mid-2011. The average annualized percentage change in the number of felony referrals was about -11% over the past three years. Over the past decade, the average annual percentage change was about -7% per year.

The general reduction in crime rates is not specific to Oregon or to the juvenile population. Declines in crime rates have been observed nationwide. Although the reduction in juvenile crime is a national phenomenon and much research has been devoted to analyzing the reasons for the decline, there is no single widely accepted explanation for the reduction. Various sources discuss theories related to race, gender, curfew enforcement, weapon laws, drug use, gang activity, economic factors, social factors, geographic factors, etc. Most reports provide analyses that demonstrate significant declines across various categories, but fail to draw satisfying conclusions as to the underlying causes. This suggests the reduction is a general societal change. Additional factors influencing the trend could include successful youth programs (as evidenced by a reduction in recidivism), law enforcement reductions or shifts in emphasis, or juveniles becoming more effective at avoiding enforcement.

**Annual Number of Referrals for Felony and Class A Misdemeanor Offenses**
Population Size, Trends and Forecast Tracking

Population Size

The Public Safety Reserve (PSR) population stayed relatively constant at about 200 from 1996 to 2002. From 2002 on it has decreased steadily. The current (April 1, 2013) PSR count is 49, after averaging 59 over the past 12 months. The general decline is attributable simply to fewer juveniles entering the population over time, and also reflective of fewer serious violent crimes being committed by young teens. Prior forecasts have projected a rebound in the PSR population size based on the presumption that observed size represents a historic low which, in the long run, will not be maintained. This assumption has not proven correct so far.

The Department of Corrections (DOC) population increased rapidly from 1996 through 1999 to roughly 300. The rapid increase was due to Measure 11 which made incarceration mandatory for serious violent crimes. It remained near 300 through 2006, and then gradually increased through 2008 to exceed 390 in April 2009. By January 2010, the DOC count had declined to around 370, and has remained relatively stable at that level since. Over the past 12 months, the DOC population has averaged 361 juveniles.

The Discretionary Close Custody (DCC) population size is primarily driven by budgeted capacity. Budget levels set the number of close custody beds available, which first serve DOC and PSR groups, with the remaining being allocated for discretionary use.

Prior to January 2003, the DCC population size was generally around 600. In January 2003, budget cuts significantly reduced the availability of DCC beds. In the first months of 2003, several hundred DCC youths were released on parole sooner than normal to achieve the reduction. The recent decrease in the DCC population (late 2010 through mid 2012) is also associated with budget reductions.

Population Sizes, January 2000 to March 2013: DCC, PSR, and DOC
Oregon Youth Population Trends

Projecting Oregon’s juvenile population over the next ten years, it is estimated that the population of males ages 12-17 will grow by 2.4% which is below the projected growth of 12.2% for all age groups. Though the juvenile population is expected to increase somewhat over the next decade, this increase will not happen until 2015.

Prior Forecast Tracking

Forecast tracking is evaluated for the DOC and PSR populations which are direct forecasts. The DCC population is not evaluated since the forecast is not tied to the actual population size (the forecast measures demand for DCC beds as opposed to actual occupation of beds).

The DOC population tracked closely with the prior forecast, and numbered six less on average than the forecast had expected. The maximum forecast deviation was 18.

The PSR population numbered about eight fewer than the forecast expected. The downward trend experienced in the past decade has eased up in recent months.
Percent of juvenile Population ages 13-19 in Close Custody Supervision in 2011

Oregon OYA Close Custody Population

<table>
<thead>
<tr>
<th>Biennium</th>
<th>Total Bed Days Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005-2007</td>
<td>654,208</td>
</tr>
<tr>
<td>2007-2009</td>
<td>654,701</td>
</tr>
<tr>
<td>2009-2011</td>
<td>625,296</td>
</tr>
</tbody>
</table>

*2007-2009 biennium had 995 beds originally allocated but never reached full potential due to budget cuts
Forecast Methodology

General Discussion

The Department of Corrections (DOC) and Public Safety Reserve (PSR) population forecasts are for the number of youth who will require OYA close custody bed space. The majority of the DOC population are youth convicted of a Measure 11 offense. The other significant DOC population is youth waived to adult court. The PSR population is comprised of youth who commit similar crimes but are too young to be prosecuted under Measure 11 (under age 15). The forecast for those populations is a direct count. Together these populations comprise the non-discretionary population. The forecasts are a function of recent trends and estimates of future growth in the 12-17 year old at-risk population.

The Discretionary Close Custody (DCC) forecast and the Residential Bed forecast are conceptually different since the historical population size is a product of the number of beds approved in Legislatively Adopted Budgets. The available beds for DCC equals the total number of budgeted beds less the number taken by the DOC and PSR populations. The actual DCC population size has typically ranged from slightly below to slightly above the number of budgeted beds.

Forecasting the demand for DCC and Residential treatment beds is significantly changed for the April 2013 forecast. The Oregon Youth Authority has developed a model to determine the risk of recidivism for youth entering its custody depending on the placement on that youth in a discretionary close custody bed, a residential bed, or probation. Youth are scored based on a variety of variables, such as risk assessments and criminal history. The score amounts to the estimated success rate in that type of placement and is based on the performance of statistically similar youth in the past. It can also be thought of as the inverse of the likelihood to reoffend once released into the community. In other words, a success score of 70 means that the youth is 70 percent likely to not commit a new crime in the next three years, which implies a three-year recidivism risk of 30 percent.

Once scores are calculated for each youth and each type of placement, it remains to be determined what the appropriate placement is. Where one success score clearly dominates, the youth is deemed appropriate for that placement. Questions arise when a youth’s scores are close enough together as to be statistically indifferent. In these cases, professional discretion would be relied on to differentiate between types of placements. The Youth Corrections Advisory Committee discussed these cases at length and developed a decision rule for classifying these “gray area” cases as appropriate for one type of placement or the other. Given a fixed placement rule, we can now define the demand for youth services, and forecast how this demand is likely to change in the future due to changes in crime trends or the size of the overall youth population.

Once existing youth are identified as appropriate for probation, residential treatment, or close custody, it remains to forecast the number of these youth ten years into the future. Given that crime rates have flattened out after twenty years of decline, the best available predictor of future growth in youth appropriate for an OYA placement is the predicted growth in the number of youth aged 12 to 17, otherwise known as the at-risk population. In the future, more robust data on at-risk populations, including on Department of Human Services caseloads, may be able to predict changes in demand to close custody and residential placements with greater accuracy.

Note that the model is determining the ideal placement for youth regardless of cost, budget size or feasibility. The Youth Corrections Advisory Committee determined that this satisfies the definition of “demand” as characterized in past forecasts. The forecast numbers in this document reflect the ideal in terms of the number of beds in each type of placement that would be necessary to maximize each individual’s chance of success. It remains for agency experts and policymakers to determine the actual size and nature of youth services.
Forecast

The forecast for Oregon Youth Authority resources has been modified to include residential treatment beds. Discretionary close custody beds and residential treatment beds are to some extent substitutes in treating youth offenders. In characterizing the ideal number of each type of placement, in other words the “demand” for these types of beds, forecast should be taken as a whole picture of the system. Therefore, the demand forecast assumes a “package deal” where the decrease in demand for one type of OYA service is also counterbalanced by an increase in another service where the youths are optimally placed according to OYA’s placement algorithm.

The forecast for Discretionary Close Custody beds is 238 beds in the near term, rising to 244 beds in ten years. The forecast is 216 beds on average below the October 2012 forecast. This is entirely the product of the migration to a new, more data-driven methodology for estimating the demand for these beds. The forecast for the demand for residential treatment beds is 1,492 for April 2013, and increases to 1,531 in ten years. This is two and a half times existing budgeted levels for those beds. The implication of the OYA research, and subsequently the forecast, is that some of the youth currently treated in a close custody bed would be at least as well off, if not better off, if they were placed in a residential treatment bed. On the other hand, a substantial number of youth currently on probation would also see an improvement in their likelihood of success if they were placed in a residential bed. This assumes that residential beds are made available to place these youth.

Close Custody and Residential Bed Forecast

As noted above, the recent data for DOC and PSR beds indicates that the prior forecast over-projected those beds somewhat. Both forecasts have been lowered by a handful of beds. The long term growth in
these forecasts has been pegged to the growth rate in the 12-17 year old at-risk population. The chart below illustrates the recent history and latest forecast for these two bed allocations.

**DOC and PSR Population Forecast – History and Forecast:**
Forecast Risks

The forecast assumes that current laws and current criminal justice practices continue as they have in the past. It also assumes trends in juvenile criminal activity continue and that demographics follow expected trends. If those and other assumptions fail, the forecast is at risk.

An additional general risk is associated with the prevalence and success of the juvenile justice system in deterring juvenile crime. The forecast does not assume changes in those programs or practices.

Additional specific risks include the following:

General Economic Conditions. While the impact of the economy on crime is not clear, it stands to reason that those with the least job skills will be impacted disproportionately when the economy is weak. Many juveniles fall into this category. As a result, depending on the degree to which juveniles will face limited job opportunities and turn to criminal activities, the forecast could understate demand.

Budgetary restrictions. Over the next several years budget levels for law enforcement, criminal justice courts, education, and juvenile programs will remain depressed, particularly at the county level. These cuts could impact the juvenile crime rate, juvenile crime prosecutions, and the number and length of placements in close custody in ways that are difficult to predict.

Criminal Trends. Juvenile crime rates have dropped significantly since the late 1990's. The forecast assumes that the lower rates will continue. If the juvenile crime rates rebound to levels of the mid-1990's, the need for juvenile corrections could increase dramatically.

County Resources and Practices. The forecast does not examine the interaction between county funding levels and demand for OYA services, but recognizes that an interaction may exist. In some sense, OYA serves as a backstop when there is a lack of county diversionary resources, and if county resources change there could be an impact in the need for OYA services. In addition, use of OYA resources reflects decisions made at the county level. Systematic change in these practices would impact the forecast for OYA resources.
Forecast Values

A more detailed spreadsheet is available in Excel spreadsheet format from the Office of Economic Analysis web site. They are also listed below for convenience.

http://www.oregon.gov/DAS/OEA/oya.shtml