



California State Association of Counties



Support Hub for Criminal Justice Programming

California County Adult Criminal Justice Cost-Benefit Model Guide



Table of Contents

- California County Project Roles and Working Groups2**
- Project Roles.....2**
- County Policy Team 2
- AJ-CB Project Coordinator 2
- AJ-CB County Model Manager..... 2
- Working Groups.....3**
- Recidivism and Resource Use Working Group 3
- Marginal Costs Working Group 3
- Programs Working Group..... 3
- Recidivism Rates.....5**
- Calculating the Three Measures of Recidivism6**
- 1. Define local supervision cohorts..... 6
- 2. Define the time period over which recidivism will be measured 7
- 3. Gather case-level data on probation clients..... 7
- 4. Match recidivism data elements..... 8
- 5. Use the Recidivism Tool..... 8
- 6. Enter the recidivism parameters into the Adult Justice Cost-Benefit Model..... 8
- Resource Use11**
- Probability of Resource Use.....11**
- Calculating Probability of Resource Use..... 12
- Resource Use Amount.....13**
- State: Prison..... 13
- State: Parole 13
- County: Post-Release Community Supervision (PRCS) and Mandatory Supervision 13
- County: Probation Supervision..... 14
- County: Jail..... 14
- Criminal Justice System Costs15**
- Law Enforcement: Marginal Cost of an Arrest15**
- Courts: Marginal Cost of a Conviction16**
- Correctional Facilities: Marginal Cost of Jail and Prison16**
- Community Corrections: Marginal Cost of Probation, Post-Release Community Supervision, and Parole16**
- Victimization Costs.....17**
- Program Inventory.....18**
- 1. Compile Basic Program Information18**
- 2. Match Local Criminal Justice Programs to the Clearinghouse Database and AJ-CB19**
- Match Local Programs to the Results First Clearinghouse Database..... 19
- Match Programs to the Adult Justice: Cost-Benefit Model..... 19
- 3. Calculate Program Expenditures.....20**
- Estimate Program Participant Costs (for programs matched to the AJ-CB) 20

California County Project Roles and Working Groups

Counties have found it helpful to identify project leads and create working groups to focus on developing the program inventory and completing the steps required to populate the Adult Justice: Cost-Benefit model (AJ-CB), run cost-benefit analysis on local criminal justice programs, and use the results of the analysis. This document describes the staff roles and working groups that jurisdictions have used to successfully complete the work. Some of these people may be the same or overlap.

Project Roles

We recommend establishing three types of project roles to guide the Program Inventory and model work: County Policy Team, project coordinator, and AJ-CB county model manager. The purpose of each is described in further detail below.

County Policy Team

Counties have found it helpful to establish a County Policy Team that is responsible for guiding the program inventory and model development. Additionally, the Policy Team is often responsible for identifying the priorities of the work, developing project goals, creating a timeline for deliverables, and determining how the results will be applied to inform local policy and budgetary decisions.

The County Policy Team typically includes county leadership, criminal justice agency leadership, and other local stakeholders (as appropriate). In some counties, the County Policy Team consists of the Community Corrections Partnership and/or the County Board of Supervisors. Other counties have chosen to designate an independent team of local stakeholders and agency leaders to interpret the results of the work and advise governing bodies as they make policy decisions.

AJ-CB Project Coordinator

Many counties have found it helpful to designate a project coordinator to serve as the main point of contact in the county for the project, oversee the development of the program inventory and AJ-CB model, coordinate with the local working groups to ensure the work moves forward in accordance with the county's timeline, and facilitate communication across project working groups.

Project coordinators should develop a working knowledge of local criminal justice programs and the AJ-CB model to ensure effective implementation and build capacity for future efforts. They are also typically responsible for communication between the county's working groups and local decision makers, anticipating and addressing questions from the policy team, and making policy recommendations (as appropriate).

AJ-CB County Model Manager

For version control purposes, we recommend identifying a county model manager. This individual typically serves as the main point of contact for model related work and is

The Programs working group should include individuals that are knowledgeable about the criminal justice programs their agency provides to system-involved adults in the county. Typically, this working group includes representatives from probation, the sheriff's office, and court administration (if there are specialty courts in the county). Once the group begins estimating program costs, fiscal analysts from each agency offering programs should become involved.

Recidivism Rates

Users are required to enter information about local recidivism rates on the Inputs tab of the Adult Justice: Cost-Benefit Model (AJ-CB). The rates serve as the backbone of the cost-benefit model and are used to establish local recidivism baselines. The model compares the estimated effectiveness of programs against the baseline and monetizes the expected difference in recidivism rates as the result of program participation.

For the purposes of the model, recidivism is defined as *any offense committed after an individual is released to the community or after initial placement in the community that results in a conviction*.⁴

The model requires information about three different aspects of recidivism:

1. Cumulative recidivism rate (conviction rate)

The cumulative recidivism rate reflects the cohort recidivism rate over the site defined follow-up period and is simply a count of the number of offenders who recidivate.⁵

2. Total recidivating events

This measure should reflect the total volume of recidivism for each year in the follow-up period. The count should include multiple conviction events, even if they occur in different years of the follow-up period, for the same offender.

3. Crime probability (most serious recidivism event)

The crime probability measure is an estimation of the percentage of recidivating events that are felonies versus misdemeanors.

Users will need the following in order to produce recidivism rates for the AJ-CB:

1. Cumulative recidivism (or conviction) rate;
2. Timing of recidivism; and
3. Crime class for recidivating event/s (misdemeanor or felony).

The remainder of this document describes how to determine the recidivism parameters needed to populate the AJ-CB.

⁴ Most counties use convictions occurring in their local superior court but some counties are able to access statewide Department of Justice data archives.

⁵ Because the cumulative recidivism rate is focused only on whether an offender recidivates or not, users do not need to code recidivism events by crime type. Additionally, if an offender has multiple recidivism events over the follow-up period, the tool only counts the first recidivism event for this measure of recidivism.

Counties should use their agency's risk assessment tool to define the categories for the cohort. However, in order to create a cohort based on risk, the categories in the instrument (e.g. high, moderate, and low risk) must be mutually exclusive, meaning that an individual cannot fall into more than one risk category.

- **Supervision type**

Counties may also create a cohort that breaks out the various types of supervision in order to better match probationers to programs (e.g. probation, post release community supervision, and mandatory supervision).

- **Demographic characteristics**

Counties can create a cohort that breaks out individuals on supervision by demographic characteristics of interest, such as race, ethnicity, or gender.

All cohorts should include probationers who came under county supervision during a one-year period.

2. Define the time period over which recidivism will be measured

The follow-up period for the cohort should start immediately after placement on probation (or possibly a brief window, maybe 30 days, to account for data anomalies).

The length of time to follow each cohort member should be the same across cohorts and will depend on local data availability. However, most jurisdictions measure recidivism over five or more years. Basing the calculation on a longer period of time (versus the standard of two or three years) allows users to observe the long-term impact of local programming, which has implications for expanding jail capacity and using other capital resources in the criminal justice system. The downside of drawing populations from further back in time is that populations may change.

For example, if a county decides to use a six-year follow-up period then an offender who starts probation on January 1, 2012 should be followed through January 1, 2018. Though some additional time (past January 1, 2018) may need to be added to ensure courts have processed records associated with offenses occurring near the end of the follow-up observation period.

3. Gather case-level data on probation clients

Counties need information about each probation client's probation start date and all convictions (e.g. recidivating events) following the start of their probation sentence.

For each conviction, users will also need the following information:

- Conviction date; and
- Most serious offense associated with the conviction, broken out by felony or misdemeanor.

Table 1. AJ-CB: Total Recidivists

Total Recidivists		
	1. General	2. Misd.
1	150	100
2	100	80
3	75	70
4	50	50
5	25	30
6	20	25
7	15	20
8	10	15
9	10	10
10	5	5
No	400	500

b. Enter Recidivism by Unique Persons Data

Users should enter the data from the 'Recidivism by Unique Persons' table in the Recidivism Report (generated by the Recidivism Tool) into the corresponding cells of the Total Recidivists table (shown in Figure 1). Cohort 1 data should be entered into the white cells and Cohort 2 data should be entered into the gray cells.

The AJ-CB allows users to enter data for up to 10 years. For any full year not included in the cohort analysis, users should enter 0 or leave the field blank. For example, if a county chooses to track recidivism for 5 years following release from supervision, they should enter data from the Recidivism Report for years 1-5 and 0's in years 6-10. Users must also enter the total number of individuals in the cohort who did not recidivate in the No row.

c. Enter Recidivism by Level Data into the Percent of Convictions that are Felonies Table

Users will need to enter the percent of all recidivism events that are felonies for the appropriate population into the 'Percent of Convictions that are Felonies' table in the AJ-CB. The model automatically calculates the percent of convictions that are misdemeanors.

Figure 1. AJ-CB: Percent of Convictions-Felonies

% of Convictions-Felonies	
40%	33%

d. **Enter Recidivism Events Data into the Total Recidivating Events Table**

Finally, users should enter the data from the 'Recidivism Events' table in the Recidivism Report into the corresponding cells of the Recidivating Events table in the AJ-CB. Cohort 1 data should be entered into the white cells and Cohort 2 data should be entered into the gray cells.

The AJ-CB allows users to enter data for up to 10 years. However, users should only enter data for each full year included in their cohort analysis and enter 0 for any remaining years not included in the analysis.

Table 2. AJ-CB: Total Recidivating Events Table

Total Recidivating Events		
1	250	200
2	200	150
3	190	100
4	150	80
5	110	70
6	70	50
7	50	25
8	40	20
9	30	15
10	20	10

Resource Use

Defendants use different taxpayer resources as they move through the criminal justice system. When a crime occurs a series of events start, beginning with arrest and concluding with case disposition or the completion of a court ordered sentence. The likelihood of each subsequent event in the system varies, as does the amount of time each resource is used by a particular defendant.

As such, the model requires information about the likelihood and average length of stay, by crime type, for the following resources: probation, jail only, jail and probation post-release, prison, community supervision following release from prison and other. The resource use analysis is of a recent year and does not need to be for the same year as the one used for the recidivism cohort.

Probability of Resource Use

The AJ-CB model considers the probability of sentencing outcomes resulting from felony and misdemeanor convictions resulting from recidivating events. Specifically, the model requires information about the percent of misdemeanor and felony convictions that result in the following sentences: probation, jail only, jail and probation post-release, prison, and community supervision following release from prison.

Users can think of the potential outcomes following conviction as a probability tree where the potential outcomes are listed at the end of each “branch”. The next page provides an example of the probabilities considered by the AJ-CB model.¹⁰ The example starts with 100 felony convictions and the second row of “branches” illustrates the sentencing outcomes for the cases.

¹⁰ Note that the model requires sentencing probabilities for both felonies and misdemeanors.

Courts: Marginal Cost of a Conviction

The AJ-CB model also requires information about the county- specific cost of a criminal conviction. The top-down approach to estimating the marginal cost of a conviction will require expenditure information from the Public Defender’s Office, the District Attorney’s Office, and the Courts. Each agency (or the County Administrative Office) should provide the cost workgroup with their operating expenditures for the most recent fiscal year for all criminal cases. The information provided should allow the workgroup to identify operating expenses (such as court staff time, transportation costs, bailiff wages, and etc.) and fixed costs (such as capital expenses, administrative staff, and utilities). For the purposes of marginal costing, only operating costs should be included in the calculation.

Once operating costs have been identified, the total criminal operating expenditures for the three agencies should be divided by the total number of convictions over the same time period as the expenditures to obtain the marginal cost of a conviction. For an example of the calculation, see page 17 of Vera’s *A Guide to Calculating Justice-System Marginal Costs*.¹⁵

The cost workgroup can use this template ([XLS](#)) to collect and track the necessary components needed to calculate the marginal cost of a conviction (see Court-Conviction Costs tab). The template allows counties to enter the operating costs for each agency, along with the total number of convictions in order to calculate the marginal cost for a conviction using the top down approach.

Correctional Facilities: Marginal Cost of Jail and Prison

The AJ-CB also requires the marginal cost of a jail bed day. This cost can be calculated by looking at the operating costs for the jail over the most recent year expenditure data is available and dividing it by the total number of jail bed days used.

Jail operating costs include only those costs that change with small to medium changes in the jail population (e.g. food, linens, transportation, medical, and front-line correctional officer’s wages and benefits). The cost calculation should exclude any administrative or fixed costs that are not related to the direct supervision and care of individuals held in the jail. The cost template spreadsheet ([XLS](#)) includes examples of cost categories that counties should include in their marginal cost calculation (see Jail tab).

The model comes prepopulated with the most recent estimate of the state contract bed rate. The CSAC Hub team recommends using this value for the marginal cost estimate.

Community Corrections: Marginal Cost of Probation, Post-Release Community Supervision, and Parole

The cost workgroup will also need to determine the local cost of community supervision, including probation and post-release community supervision (PRCS). Community supervision

¹⁵ Ibid.

Program Inventory

The program inventory allows counties to track the range of investments in programs that are intended to reduce recidivism and serves as a baseline to compare against the evidence-based programs in the Results First Clearinghouse Database and Adult Justice: Cost-Benefit model (AJ-CB). The information collected for the program inventory will help the county match to their programs to the AJ-CB to conduct cost-benefit analysis on them.¹⁸

The process of developing the program inventory requires the county to develop a comprehensive list of all local criminal justice programs that are offered to justice system involved individuals. In addition to listing the name of each program, the inventory should include general information about the program (e.g. description, duration and frequency, oversight agency, capacity, and etc.), whether the program matches the evidence-base (e.g. rigorous local evaluations, national research evaluations, and whether the program is included in the AJ-CB) and program expenditures.

To create the program inventory, users will need to complete three steps: 1) Compile basic information about each adult criminal justice program offered to probationers and individuals held in the jail; 2) Match local criminal justice programs to the evidence-base and AJ-CB; and 3) Calculate program expenditures.

1. Compile Basic Program Information

The county should begin by compiling a list of all programs that are provided to probationers and individuals held in the jail which seek to reduce recidivism. For each program, the workgroup should include the following information:

- Program name;
- Brief description;
- Oversight agency or department;
- Average Duration (e.g. average length of the program);
- Frequency or intensity (e.g. how often the program meets and for how long);
- Delivery setting;
- Target participant population (e.g. substance abusers, high risk individuals, and etc.);
- Criminogenic needs addressed by the program;
- Annual program capacity (e.g. the maximum number of slots available for participants during a one-year period); and
- Number of participants served in a recent year.

The data points above are listed and described in more detail in the Program Inventory Data Collection Template and Program Inventory User Guide.¹⁹

¹⁸ Counties should use the [Program Summaries for Adult Criminal Justice](#) to help them determine if their local programs match the programs in the AJ-CB.

¹⁹ Supporting materials for Phase I of the Program Inventory process include the [Program Inventory Template](#) and [Program Inventory User Guide](#).

To match county programs to the programs in the AJ-CB, the workgroup must review the details of each county program (e.g. program description, target participant population, duration, setting, and so on), compare local program information against the Adult Criminal Justice Program Summaries, and determine if the program is similar enough to one of the programs included in the summaries to match to the AJ-CB.

The Program Summaries provide information about the studies used to calculate the average effect size of each program in the model, including information about the participant population/s, duration of the program, and program providers.

Your lead project consultant can assist with questions about program matching.

3. Calculate Program Expenditures

Finally, counties will need to determine program expenditures (for a recent year) for all programs in the program inventory. Program expenditure information is typically obtained through the agency or provider that offers the program.²¹

Estimate Program Participant Costs (for programs matched to the AJ-CB)

For each program matched to the AJ-CB, counties will need to estimate the annual per participant cost of program participation. Programs that have been matched to the AJ-CB (e.g. those programs that users selected “Yes” from the dropdown list in response to the question in Adult Justice: Cost-Benefit model, Column H, in Phase 2 of the Program Inventory) will automatically be shaded green in Phase 3 of the Program Inventory workbook to indicate that cost information will be needed.

Counties should use the marginal cost of program participation as it represents the direct expense of providing treatment to one additional client. Additionally, program costs should include any quality assurance or program model fidelity related costs. Administrative costs that change with the number of participants (e.g. training or printing of materials) *should* be included in the marginal cost calculation.

Things to keep in mind when calculating the marginal cost of programming:

- Administrative costs, other than those that change with the addition (or subtraction) of a small number of participants, are typically excluded from marginal cost calculations.
- If programs are offered within a correctional facility or as part of the client’s community supervision requirements, the costs of the facility or the supervision *should not* be included in the program costs.
- If an agency contracts with an outside treatment provider to provide the program, the contract price should serve as the marginal cost per participant.

²¹ Please note that *expenditure* information should be used as opposed to *budget* information.

- If there is variation in program cost (e.g. regionally or by treatment modality), users should use the weighted average from the range of participant costs.²²

²² http://en.wikipedia.org/wiki/Weighted_arithmetic_mean#Basic_example