Kevin O'Connell

Data Driven Recovery Project

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Kevin@oconnellresearch.com

Tools For Cost And Program Forecasting In Justice And Behavioral Health

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TABLES AND FIGURES

Overview

This guide gives an overview of tools available to Data Driven Recovery Project[1] counties to estimate caseloads, impacts, and cost-beneficialty of 5 different programs related to behavioral health and justice populations. Utilizing approaches gleaned from best practices and literature reviews as well as local situations around the types of choices and tradeoffs that California counties face, these tradeoffs are not only fiscal, but operational.

- Mental Health Courts
- Mental Health Diversion
- Mobile Crisis Response
- Full-Service Partnership
- Assisted Outpatient Treatment

Diverting clients with behavioral health needs is an important piece of the conversation when finding ways to get people into treatment. People with behavioral health needs generally stay longer in locked facilities after justice involvement, encounter the justice system more often, and have higher rates of return into the justice system. Counties have made considerable effort, in partnership with state and federal entities, to try to align the legal system and funding needed to best meet people's treatment needs. But these choices are inherently local since multiple agencies are involved, and often their budgets and caseloads are not strategically linked. The use of one-time funds or grant sources can jump start innovative programs or practices, but true sustainability requires more collaborative approaches to understand the "bottom line" and determine fiscal beneficially for specific points of view. Cost avoidance is a common goal for human service programs but shouldn't be the only consideration. The main element is actually achieving desired outcomes with available funds. If achieved, this can enable more investment and funding, if it also avoids the cost associated with negative outcomes. Among other upsides, that framing can enable more investment if on balance it avoids costs associated with worse outcomes. When designed appropriately, counties best use their own resources. But true long-term and sustainable cost savings is a multi-year endeavor, and one that outlasts most grant or budget horizons.

Deciding to develop a new program, or change the strategy of an existing one, can be challenging without understanding the implications for multiple county partners. An in-depth examination of how new funds or added capacity will affect multiple agencies over a multi-year perspective creates a unified view of impacts, and a shared vision. In the provision of services at the local level there can be many funding streams, and agencies and players involved. It is

[1] The Data Driven Recovery Project is a multi-county effort to leverage data to help counties leverage data to inform system improvement and better outcomes for clients.

important to understand the impacts of whether new programs shift costs to other payers within the county, avoid costs all together, or finds more sustainable funding sources.

The Data Driven Recovery Project, through its partnerships with counties looking to understand multiple programs and systems of care, has developed collaborative approaches to data analysis to understand caseload impacts as well as cost implications. Cost-benefit analysis should always be a collaborative exercise and DDRP's approach ensures this is the case at the outset of the project. County leaders work together to assess, analyze, and plan for cost and caseload implications. Measuring the impacts of a program is challenging, and often done through the perspective of single agencies or systems of care. But people involved in the justice system, homelessness, and behavioral health care systems need a broader perspective for the county to mitigate the risk of unforeseen consequences. Creating the tools and a collaborative approach to being data driven about new strategies will improve counties abilities to align governance and funding strategies.

The document approaches these challenges in three ways:

- Create a clear sharable list of cost elements that have been consistently gathered and used across programs.
- Present a list of key outcomes often used in justice and behavioral health.
- Present an overview of analytic models for forecasting fiscal and caseload impacts.

The initial cohort of DDRP counties has used these approaches to help estimate impacts on the following programs.

Assessing the impact of a program is usually achieved by measuring a person's use of one service before or after an intervention. For programs that are intending to redirect people's use of one service to another, this can be invaluable in both planning for changes, as well as level setting people's expectations given the size, volume, and scope of a program. This analysis is often done by looking at outcomes as before and after (pre/post intervention) as this assumes the program intervention is the cause of the change in outcomes, such as reduced days in jail, increases in treatment days, etc. This can be a useful indicator of success, as well as forecast cross system impacts. Using integrated data can augment this understanding to better estimate "causal" impacts, so a county can better understand cause and effect of programming decisions.

The goal of this paper is to give an overview of some of the basic facts needed to create a useable and viable collaborative tool, as well as give readers an idea of how they might build on these in their own counties.

Program Design

- Create a "county cost" book can help benchmark costs and give counties a starting point for grants and collaborative work
- Help forecast the timing and level of need of various resources, as well as frame a program in terms the resources it uses
- Test new programs for their likely cost efficacy, as well as develop scenarios
- Understand drivers of cost to anticipate where cost may increase, and look for options
- Develop timelines for pursuing new funds or looking for new funds if funding is time sensitive
- Assess population reduction strategies for places like hospitals or jails

Ongoing Program Management

- Benchmark costs to do a process review and look for more efficient delivery mechanisms, even if the savings are applied to some other part of government
- Adapt assumptions if program caseloads or costs are not as expected
- Investigate capacity if clients are staying programs longer than expected

PROJECTING CASELOAD IMPACTS

Changes in programs, either building new programs, or increasing people served, has short- and medium-term impacts on multiple county agencies. Although choices are often made about clients, cases, and treatment on an individual level, larger scale strategies and policies needs to be made across hundreds if not thousands of clients. The cumulative effect of programs to offer treatment or divert people into treatment need to account for these caseload impacts, both to inform stakeholders, and to plan for the resources needed at "full implementation"[2]. Full implementation is a concept that many program designs start with, instead of approaching them as a progression. In this case, changes in caseloads are best observed as changes from a current level, then compared new projected level. Projecting caseloads is a necessary first step in developing a better understanding of both the flow of clients into and out of a new program, as well as the basis for cost analysis.

A forward-looking strategy first addresses the baseline number of people referred, or candidates for treatment of a program, then overlays the changes in caseloads from multiple perspectives. The goal is to ascertain the amount of people for whom there is an intent to treat

[2] Full Implementation: The process of moving from an initial step in implementation to full implementation depends on the complexity of the system and the stakeholders involved. Where multiple complex, and separate systems must interact, the time to reach full implementation can vary both in alignment of processes as well as intended clients served.

or be part of the target population to better assess the scale and opportunities moving forward[3]. Since inclusion in a program includes several considerations, it is important to have a clear understanding of potential participant eligibility. Understanding the percent who enter a program, as well as how long they stay, gives a layered view of both the number of people in a program as well as the changes likely to happen in other populations. Given the complexity inherent in implementing multi-agency efforts, the goal is to clearly identify which costs will change based on the new program or policy.

Example:

> A county is endeavoring to create a general diversion program for clients with misdemeanor charges and whose mental health condition contributed to their current charges. The current monthly referral rate to diversion eligibility assessment is 10 people per month, with 50% being accepted. Through more early identification of Mental health clients, the county expects to raise this to 20 referrals per month but have a slightly lower acceptance rate at 40%. The model is in essence measuring the difference in referrals accepted between the old and new system, and then projecting the program specific caseloads based on the time (or length of stay) in diversion. The model then estimates avoided caseloads or populations across multiple impact areas such as jail, psychiatric hospitals, and state hospital. The model shows that the diversion program will reach a steady state of 20 clients in about 18 months, along with a consistent ADP avoidance of 10 people in jail starting in around 7 months.

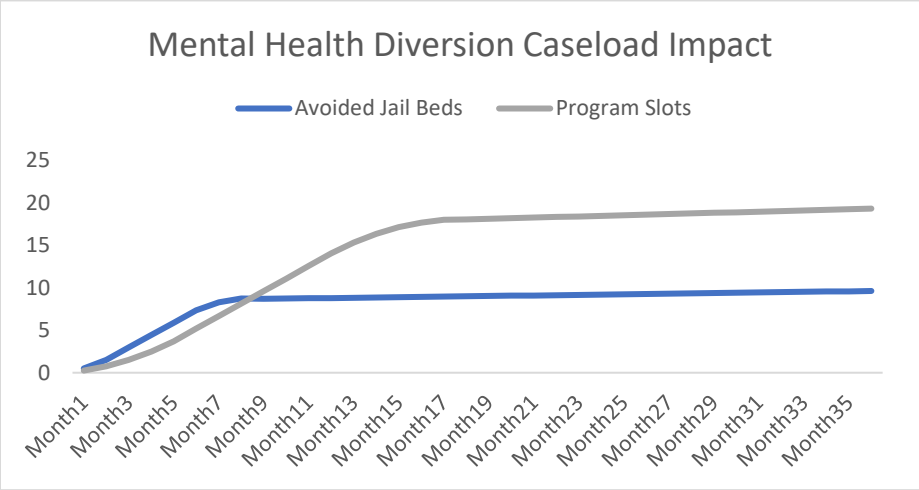

Figure 1: Caseload Impact Example

[3] Target Population: The subset of people for whom the program is designed, that you will actively recruit and retain

This approach is the basis for analyzing various types of impacts where we would expect long term changes in the use of other systems by "diverting" people from one resource to another. If a policy goal is increasing treatment and services and moving someone into a system of care most able to that, it becomes the basis for measuring the impact of improving outcomes.

ASSIGNING REVENUE AND COSTS TO SYSTEM COMPONENTS

For counties aspiring to create sustainably funded programs, as well as ones that have impacts across agencies and domains, there needs to be a reliable reference point, or "fact book" to use in a variety of collaborative endeavors, from grant seeking to budget development. One of the most challenging steps in developing a cost analysis strategy is creating credible estimates of county costs and revenue sources for resources likely to impacted by a program or policy change. The challenge comes in doing an estimate requiring a careful understanding of different agencies' business models, revenue sources, as well as individual processes as drivers of cost. These components are often changing, both due to factors such as cost escalation and inflation, but also changes in the prices of contracted services. The approach herein relies on a collaborative group or team to do an initial cost and revenue analysis to ensure the county has a solid estimate of their cost structure and revenue sources. Although budgets and line items are public documents, attributing them requires an ongoing collaborative commitment.

This approach assumes "budget savings" is not a reality in the short term, but more a way to look at tradeoffs between how competing services use existing resources, or approaches that could slow cost growth over time. The shifting of costs to something more effective as noted by a programs outcome can give the county a full view of change in policy or programs.

Having a basic understanding of what drives agency costs for various parts of the system can bring a better understanding of how justice and human service agencies can work together to divert or refer clients to programs and services best situated and funded to meet the volume of clients. Building out this approach requires data from fiscal perspectives as well as operations, to ensure cost estimates have both a basis in budget reality, as well as attributed to the right operational aspect of a system of care. The outline overview includes the following:

- *Cost Analysis:* This compendium of costs lays out an approach tabulating costs across justice, behavioral health, and homeless services and applies them to the proper resource.
- *Payer Perspective and Revenue Sources:* Revenue can come from a number of sources. Ideally, costs are shifted or avoided to revenue sources most able to sustain a program. Changing policy can shift costs between levels of government as well as within budgets.

COST ANALYSIS

Costs need to be broken down by those that are fixed, versus those that vary based on the number of people served. The simplest approach is like an average cost, but this could overstate the impacts of certain types of resources since these includes a many different kinds of costs. This piece is among the more challenging since costs vary in how they are put into practice. Costs can change in several ways:

- Average Costs: The total cost of a resource, divided by the output as measured by the appropriate unit (e.g., Average population, Bed days, referrals, etc)
- Fixed Costs: Theses are costs that do not change in response to output, such as insurance premiums or debt service. Many management positions, as well as IT costs could also be grouped here.
- Step-Fixed Costs: A cost that remains constant up until a threshold is reached, and capacity must be added/deducted. The constant can be related to legal standards or staffing, but as workloads change, these will respond slower than true variable costs.
- Short Term Operating Costs: The cost that is impacted as soon as the output changes. This could be looked at as "For every 1 unit change in workload X, the demand for Y changes by Z%". These are true marginal costs and are generally areas where true cost savings can take place.
- Long Term Operating Costs: The combination of short-term operating costs and Step fixed costs such that changes in output would take longer to respond.

Together, these are the key pieces of using data and forecasting tools to look at changes in cost from multiple perspectives. The approach used in this document is based on the top-down costing method which takes a single resource and breaks it down into its component parts or cost areas so the components can be aligned to a service or resource required to staff or operate a program. [4] Usually these would include "Long term Operating Costs", noted above, but could be adapted to a decision. Since this uses aggregated costs, the total amount of various line items of cost drivers is compared to the output of the resource. This could be done at the program or location level, or the county level. For example, if a community wants to add a new treatment facility and it knows the operating costs will cost $X to add Y capacity, it can divide X by Y to get at the cost estimate to deliver a service that would be responsive to other system changes.

With multiple agencies and approaches, developing cost drivers is an important step in developing a consistent approach for assessing the impact of program from a fiscal perspective.

[4] Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Program Costs. (2021). Retrieved 21 April 2021, from https://www.gao.gov/products/gao-20-195g

The list below details common expenses that make up the costs of the resource, broken out by law enforcement and custody, courts and probation, and behavioral health costs.

Table 1: Justice Costs- Arrest and Custody

	Arrest	Jail
Unit of Output	Per Arrest	Per Bed Day
Types of Unit Costs	• Wages and Salaries of Front-Line Law Enforcement and average time spent on calls resulting in arrest. • Gas and car maintenance • Booking Fees into jail • Investigations or evidence teams	• Wages/Benefits of Jail Direct Service staff • Training • Travel (in county and out of county) • Food • Laundry • Clothing/Personal Items • Supplies • Pharmacy • Medical/Dental Services • Mental Health Services such as crisis beds, inpatient beds, and outpatient • Jail Transportation to Court

Table 2: Justice Costs- Court and Probation Costs

	Probation	Dispositional Court Process	Treatment Courts	State Hospital
Unit of Output	Per Probationer day	Per filing or per disposition	Per Client	Per Bed day
Types of Unit Costs	• Wages/Benefits of case carrying officers • Training • Travel (in county and out of county) • Supervisory Supplies (testing, etc.) • Duplicating/Printing • Professional Services (Mental Health and Substance Abuse, or Counseling/Therapy etc.)	• Wages/Benefits of Judges/Courtroom Staff • District Attorney Assigned to Criminal or Court Calendars, and case investigators. • Public Defenders office • Training • Travel (in county and out of county) • Supplies/Duplication • Bailiffs/Court Security • Interpreters • Court Funded Investigation • Psychiatric Assessment	• Time spent by collaborative court team (Judge, DA, PD, Treatment, etc) on the treatment Court Calendar. • Differential Treatment Costs • Referral Assessments for eligibility	• Clinical Staff • Front line Security Staff • Training • Travel (in county and out of county) • Food • Laundry • Clothing/Personal Items • Supplies • Other marginal costs • Pharmacy • Medical/Dental Services • Court Reports

Table 3: Health and Behavioral Health

	Outpatient	Inpatient/Residential/Psychiatric Hospital	Crisis Stabilization Costs
Unit of Output	Per Bed days	Per bed day	Per bed day
Types of Unit Costs	• Evaluation/assessments • Crisis services • Case management/care coordination • Counseling • Medication management	• Evaluation/assessments • Crisis services • Case management/care coordination • Counseling • Medication management	• Evaluation/assessments • Crisis services • Counseling

REVENUE SOURCES AND PAYER PERSPECTIVE

Ideally, a strategy does not just shift costs, but represents a better long-term strategy for funding for both the client as well as the county. By assigning the relative cost to each level of government, the strategies used for shifting costs from one funding stream, or resource is clearer. By understanding cost shifts (and making them transparent), the various parties have a shared understanding of who, when and how much, different parties benefit or are burdened by cost shifts. If partners are really working together, they will help find ways to reallocate some of their own dollars to improve outcomes and lower overall costs. i.e. both jails and hospitals can financially benefit by shifting to a more sustainable option in the community, and should help find ways to finance the long term shift.

This shift will not always be cost savings, but represents a change in resource allocation, or move to more stable funding streams:

- *City:* The proportion of a cost that is born by city general fund. This can come from revenue sources like taxes, grants, or allocations from state and federal governments.
- *County:* The proportion of costs that are born by the county-controlled funds, be it the general fund or allocations such as various Realignment Funds.
- *State:* The proportion of funds controlled by the State, through spending bills determined every year or other state level allocations. Examples include MHSA funds, or services paid for by the state general fund.

- *Federal:* The proportion of funds controlled by the federal government, either through spending or through reimbursement. Examples include Medicaid, Housing, and other entitlement programs.

Calculating these perspectives can vary by program or context, with the key consideration being the baseline or normal share across the population served. The more accurate these calculations, the more accurate the shift in resource allocation when applied to different programs. When considering how to allocate the correct percentage, the easiest way to think about this is look at who controls the actual funds and how they are spent. For example, even though the state allocates 2011 realignment funds, how that money is spent is a county decision. Further, the breakout between perspectives is often a blending of funds. The perspective is important in both estimating the cost of the program or intervention, as well as the various system inputs.

One consideration for these amounts can also be reimbursement rates, and how to account for the actual cost of an intervention, versus what can be collected from various billing. Another consideration is the role of one-time funds or grants in looking at the long-term funds for a project. Since many grants can start a project, when the grants end, there needs to be sustainable plans for continuing a program.

MEASURING IMPACTS

Although measuring changes in caseloads based on tradeoffs between two resources is one way to look at program impacts and their monetary value, a more important way is to look at how a program impacted or changes outcomes we care about. Importantly, as the sophistication of analysis increases around outcome analysis, so does the explanatory power. For impact analysis, there are several ways to measure impacts and contextualize the methods. Further, the kinds of outcomes of interest that we care about may be different from the ones that can be monetized. The list below is list of key outcome measures that are commonly used in justice and behavioral health and can be monetized in straightforward way.

Table 4: Outcome Measures

Area	Outcome	Definition	Preferred Direction
Justice	Arrest	The number of times a client was taken into custody and booked into jail	Down
Justice	Jail days	The number of bed days spent in a jail	Down

Justice	Court filings	The number of new court filings in criminal court	Down
Justice	Probation days	The number of days under probation supervision	Depends
Justice	Psychiatric Assessment	The number of psychiatric assessments ordered and completed	Depends
Housing	Shelter	The number of nights spent in a homeless shelter bed	Down
Housing	Supportive Housing	The number of nights spent	Up
BH	Outpatient Services	The number days or service hours in treatment	Up
BH	Inpatient BH Services	The number of days in a residential or inpatient treatment setting	Down
BH	Crisis Stabilization	The number of days in a crisis stabilization unit	Down
BH	Psychiatric Hospital	The number of days in a psychiatric hospital	Down
BH	State Hospital	The number of days in a State hospital facility	Down
Health	Emergency Room	The number admission into an emergency room	Down

An outcome evaluation measures a program's results and determines whether intended outcomes were achieved. It tests hypotheses by comparing conditions before and after participation, by comparing participants with similar individuals who did not participate, or by comparing a combination of both. This gives important context to the impact of program not just in providing a service but for achieving improvements that align with a program human centered goal. There are three main ways that this done, each with tradeoffs in complexity and explanatory power.

- *Pre/Post Analysis*: Comparing a change in an outcome of interest in a time before and after an intervention. This is a common approach that is relatively easy to implement and a hallmark of most reporting to state entities. For example, a treatment program averaged 10 days in treatment in the year before an intervention, but in the year after achieved 11 days on average. This could be expressed as a 10% change. This approach is easy to implement, but does not control for external factors, or for other factors about the person.
- *Quasi-Experimental Design:* Quasi-experimental designs identify a comparison group that is as similar as possible to the treatment group in terms of baseline (pre-intervention) characteristics. The comparison group captures what would have been the

outcomes if the program had not been implemented. This can be done through several more complex analytics approaches depending on the needs, such as regression discontinuity or propensity score matching, where the goal is to best estimate the causal impact of a program.

- *Random Assignment:* The most sophisticated approach, this create a treatment and control group where the chance of program participation is randomly assigned such to reduce bias and better estimate the causal impact across a treatment population. This approach, although the most rigorous, is rarely done partly because the design implies some differential level of service as well a being challenging to implement.

COMMUNITY TREATMENT MODELS

Community Treatment Models vary and can meet several needs as well as levels of care. Two approaches designed to increase levels of care for clients are Assisted Outpatient Treatment (AOT) and Full Service Partnerships (FSP)[5], especially when they have high levels of service need. Although the entry point for each of these modalities is different, with AOT[6] being court mandated or negotiated into treatment involuntarily and FSP being a voluntary treatment approach, both have similar types of care and services when it comes to an actual treatment plan. In both approaches, analysis is needed to calculate the kinds of costs and caseloads being avoided when moved into a long-term program intervention.

Table 5: Cost Breakdown Example-FSP and AOT

	FSP	AOT
Annual Program Cost	$1,749,600	$1,100,000
Number of Participants	100	50
City	0%	0%
County	40%	40%
State	60%	60%
Federal	0%	0%

[5] Adult FSP programs are designed for adults ages 26-59 who have been diagnosed with a severe mental illness and would benefit from an intensive service program. Adult FSP programs assist with housing, employment and education in addition to providing mental health services and integrated treatment for individuals who have a co-occurring mental health and substance abuse disorder. Children can also be in an FSP, but these two programs should be assessed separately since the systems of care are different.

[6] AOT provides court-ordered voluntary mental health services to adults diagnosed with a severe mental illness and a history of psychiatric hospitalization and/or incarceration due to psychiatric symptoms. Individuals served are unlikely to survive safely in the community. Most individuals referred through AOT engage in treatment, thereby avoiding the need for a court order.

Annual Days in Program	28,908	15,783
Cost Per Day	$61	$63

The community treatment models use local data to estimate the caseload impacts, costs, and benefits of changes in policy and practice. Those changes could include new treatment pathways, or specialized caseloads, as well as changes in policy regarding how clients move through the level of intervention. This tool relies on program data gathered on the number of individuals admitted to AOT and FSP, time in program, any diversions from the system because of the program, and outcome data on the effectiveness of the program. For AOT, the model estimates the cost avoidance of diverting individuals out of psychiatric hospitalization and into AOT, as well as jail incarceration since encounters in these situations is part of the requirement. For both programs, the model also uses outcome data to estimate reductions of future use of justice, housing, health, and behavioral health resources.

Each model can also account for the payer perspective of the program, as well as the caseloads. This uses a top-down approach as well as estimates of payer perspective for the program. A per day cost is then estimated by dividing the annual program cost by the number of days in program.

Program costs are a combination of several ongoing costs that start at program entry:

- Treatment and Case Management Costs
- Costs for Treatment Reports to the Court, if separate from treatment costs (AOT)
- Court costs for report updates based on the participation of the judiciary (civil court) (AOT)

Full-Service Partnership does not assume any court or justice involvement. However, specialty Forensic FSP or other approaches may be more costly if they include interaction or costs involved in case management and justice interactions. Further, as a separate target population, its more appropriate to look at these program separately from general FSP programs.

FSP CASELOADS

FSP is unique in that individuals move through various stages of the program based on their need, and the actual services underlying them can vary by program. In this "whatever it takes" model, it is more important to look at levels of intensity than just program admittance, especially when there are targets for stepping people into different levels, as well as budget implications. Individuals start with the most intensive services, move to more moderate services, and finish with lower intensity services. This allows for a more flexible use and forecast, as well as set goals or benchmarks. Each level of service varies by cost and duration, as well as the proportion of cases that are closed. The model estimates the monthly caseloads for each level of intensity based on length of time for those who successfully move through each level, the rate participants fail out of each intensity level, and the time to closure for those who have their cases closed out. Figure x shows how people flow through levels of intensity, moving from high, the medium to low, with the amount of time in program either a policy goal or done through analysis.

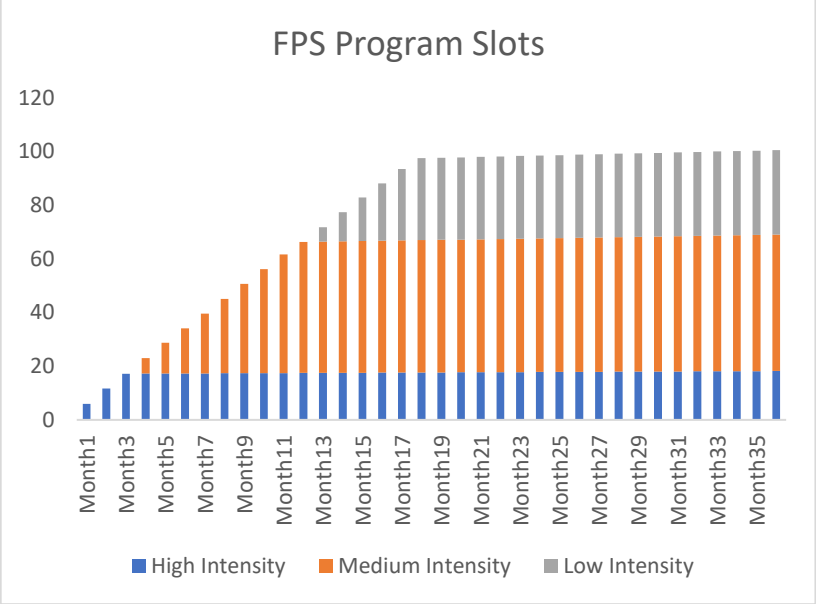

Figure 2: FSP Caseload Example

AOT DIVERSION CALCULATIONS

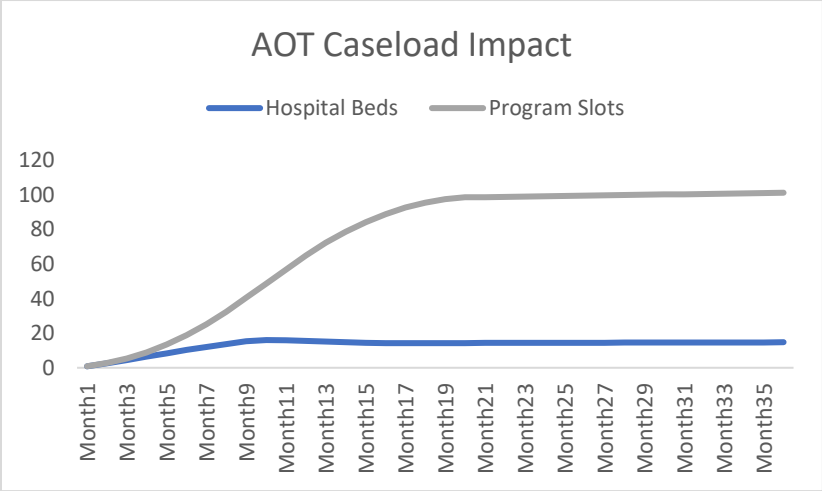

Figure 3: AOT Caseload Example

AOT programs often divert individuals away from psychiatric hospitalization and into an AOT program. The model will produce a month-by-month reduction in the usage of psychiatric beds based on the length of time in a psychiatric hospital and the likelihood an individual is diverted. This month-by-month caseload impact is multiplied by the daily

cost of a bed to estimate the avoided costs from program expansion. AOT is not designed to initially divert individuals from more expensive resources, but if effective can reduce future system involvement.

PROGRAM OUTCOMES

If these programs are effective, they will also avoid future system usage by improving outcomes. The model allows jurisdictions to compare baseline values for justice involvement, housing, behavioral health, and health to those same outcomes for individuals who have gone through AOT or FSP. If possible, it is best to compare like individuals who did not receive the program to those who did. This will provide stronger evidence of the effectiveness of the program. The model uses this information to estimate the monthly change in each of these areas. For AOT, this is then combined with the psychiatric hospitalization diversion impacts to establish an overall impact of the program. FSP avoided costs will be estimated entirely through how effective the program is at avoiding future system involvement for those who go through the program.

COSTS/BENEFIT ANALYSIS

For AOT, the psychiatric hospitalization diversion calculation described above is used to estimate the caseload impact to the system from expanding AOT. This cost of psychiatric hospitalization is multiplied by the daily caseload impact to estimate the costs that are directly avoided because of hospitalization diversions. These avoided costs are compared to the costs of AOT to calculate the benefits of the program relative to the costs of providing the program. Additional system costs must also be calculated to monetize the program outcomes. In addition to the cost described above, this also includes the following costs: housing, behavioral health services, outpatient services, crisis stabilization, and emergency room. The avoided costs are broken out by level of government, city, county, state or federal and compared over a three-year horizon.

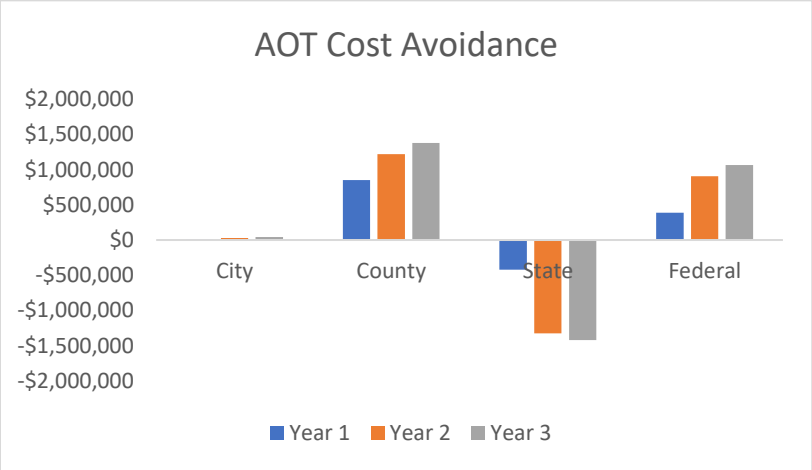

Figure 4: AOT Cost Avoidance Example

These calculations are displayed graphically to show how costs are shifted between different levels of government.

Table 6: AOT Cost Benefit Example

Total Benefit per Participant	**$**	**19,624**
Program Cost	$	17,496
Net Benefit	$	2,128
Benefit to Cost Ratio	$	1.12

The model then compares the full cost of program changes to the full benefits or avoided costs of hospital diversions (AOT) and reduced future system usage through effective programs (both AOT and FSP). These calculations are used to create a benefit to cost ratio which can be interpreted as the avoided costs or benefits for each dollar invested in the program. The below summarizes the results of the cost benefit analysis, where the changes in usages result in total benefits of $19,624 compared to a cost of $17,496. This means that for every $1 invested, there is a $1.12 return over the three years estimated in the program.

COURT BASED TREATMENT[7]

Court based treatment programs are both designed to use the court process to engage people in treatment, as well as offer an alternative to incarceration. There are two distinct approaches: *diversion*[8] for clients who would not have the conviction on their record(pre-plea) if treatment is completed, and *post-plea treatment courts*[9] where the client avoids a jail sentence if treatment is completed. In both approaches, the analysis is used is to calculate the kinds of costs and caseloads being avoided, when diverted to programming. This can be most useful when trying to either adjust an existing set of diversion and treatment court options, or when adding new capacity. Since so much of the challenge around developing court-based treatment programs is in understanding multiple impacts across systems, it is important to have a clear understanding of the value created, but also the treatment capacity required as a program develops.

The Diversion model is combined with the Treatment court model since the clients are often moving between these court options and putting these models in the same visual tool helps stakeholders look at both options together when planning capacity, instead of in isolation. Since treatment options are often similar, regardless of the court process, it also reinforces the human centered system design element.

Table 7: MH Diversion and Treatment Court Example

	MH Diversion	MH Court
Annual Expenditures	$ 250,000	$ 1,000,000
Number of Participants for Outcomes	100	50
City	0%	0%

[7] Although these programs are developed here as Mental Health diversion, they often serve many complex needs, so also go by behavioral Health diversion

[8] California Penal Code 1001.36 allows some people with mental disorders to receive treatment when they are charged with a crime. This program is known as “mental health diversion” in California. If the defendant successfully completes treatment, the criminal charges will be dismissed. The record of the arrest will then be sealed for most purposes and it will be as if the arrest had never happened. Penal Code 1001.36 resulted from the passage of California Senate Bill 215 (SB 215). It became effective on June 27, 2018.

[9] Mental health courts (MHC) are a form of collaborative court that provides specific services and treatment to defendants dealing with mental illness. Mental health courts provide an alternative to the traditional court system by emphasizing a problem-solving model and connecting defendants to a variety of rehabilitative services and support networks. Each MHC has different participant requirements and available services.

County	0%	0%
State	50%	25%
Federal	50%	75%
Annual Days in Program	20,000	15,000
Cost per Day	$ 12.50	$ 66.67

The model is designed to use local data to estimate the caseload impacts, the costs, and benefits of changes in policy and practice. This tool relies on data gathered on the number of individuals receiving diversion or mental health court, how likely they are to successfully complete the program, how likely they are to spend time hospitalized or in the criminal justice system, how long they normally stay in the program after a release decision has been made, and how much each part of the system costs. The model also uses program outcome data to estimate reductions of future justice use, housing, health, and behavioral health resources. The model then compares the costs of the program or policy to the benefits of diversion or future avoided system involvement due to effective programming. This information is used to calculate month by month impacts to future caseloads and provide an estimated return on investment from program expenditures.

Each model can also account for the payer perspective of the program, as well as the caseloads. A per day cost is then estimated by dividing the annual program cost by the number of days in program. It is important to note that MH diversion and MH courts are structured very differently once a client enters the program, so any cost comparison should be done based on impacts, not on cost alone. Since diversion, by definition, is avoiding subsequent justice involvement and supervision in the near term, it is important to understand how a well-designed treatment court uses those tools to ensure a client stays engaged and in treatment.

Mental Health Diversion Inputs

Diversion Current (monthly)	0
Diversion New (monthly)	10
Months to Phase In	6
ALOS Jail	280
% to Jail	100%

Jail Cost per day	$84
ALOS State Hospital	100
% to State Hospital	10%
State Hospital Cost per day	$500
ALOS Psych Hospital	6
% to Psych Hospital	25%
Psych Hospital Cost per day	$350
Probation LOS	700
% to Probation	80%
Probation Cost per day	$9
LOS New Program	720
% To new Program	100%
Programs Cost	$ 20

Table 8: Mental Health Diversion Input Table Example

Mental Health Diversion program and treatment courts are a combination of several ongoing costs that start at the determination of diversion, such as treatment costs, treatment reports to the court, and ongoing court costs to receive updates based on the participation of the judiciary.

In the example, 10 people are diverted per month, with an estimated avoidance of 280 days in jail, 100 days of state hospital avoided for the 10% of MH diversion cases found IST, 6 days in a psychiatric hospital for the 25% that went to a facility, and 700 days on probation since 80% of these people would have been placed on supervision. This also assumes a 720-day diversion term.

DIVERSION AND MENTAL HEALTH COURT CASELOAD CALCULATIONS

Mental health diversions and mental health courts move individuals out of costly services into less expensive services intended to reduce future involvement in the system. Mental health diversion and mental health courts both reduce the amount of time individuals spend in jail, state hospitals, and psychiatric hospitals. Successful mental health diversions also avoid individuals moving onto probation caseloads. This model relies on jurisdiction specific data to estimate the monthly reduction of individuals in jail, on probation (mental health diversion only), in the state hospital, and in a psychiatric hospital. Jurisdictions can use the model to estimate the monthly impact of diverting more individuals or expanding mental health court. The model will produce a monthly expected change in caseloads both for the program as well as criminal justice and hospitalization usage.

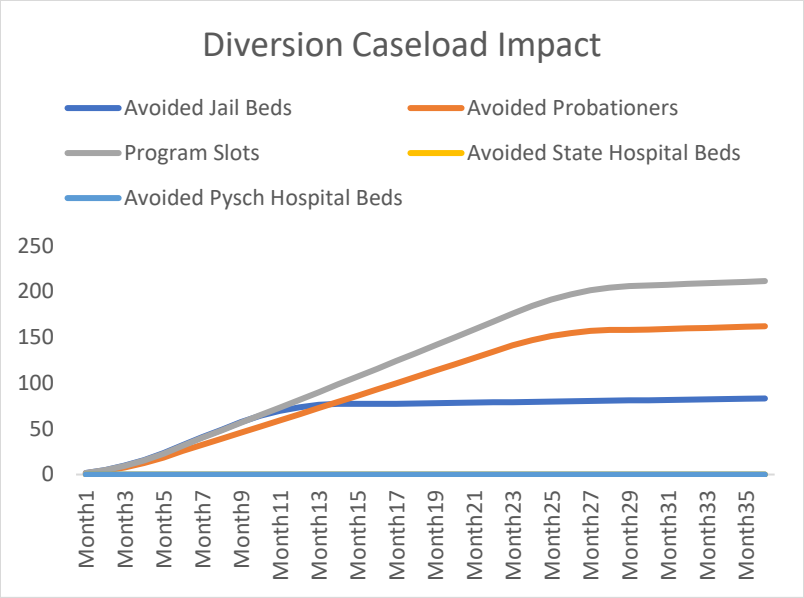

Figure 5: MH Diversion Caseload Example

The model uses jurisdiction specific data on the likelihood an individual will use each part of the system as well as how long they will stay in each part of the system. These values are used to estimate how people flow through the system and how many people will no longer flow through the system if they are successfully diverted. The model also includes a failure rate so that individuals who fail on diversion are assumed to go back through the system as if they had not received diversion. The model produces month by month caseload estimates and graphics to so show the impact of policy changes. Jurisdictions can change the policy lever to estimate future impacts of program expansion or estimate the impact of starting a new program.

PROGRAM OUTCOMES

Mental health diversion and mental health court will reduce caseloads and avoid system costs by diverting individuals out of the system. But if the programs are effective, they will also avoid future system usage by improving outcomes. The model allows jurisdictions to compare baseline values for justice involvement, housing, behavioral health, and health to those same outcomes for individuals who have gone through a diversion program or mental health courts. If possible, it is best to compare like individuals who did not receive the program to those who did. This will provide stronger evidence of the effectiveness of the program. The model uses this information to estimate the monthly change in each of these areas. This is then combined with the diversion impacts to establish an overall impact of changes to mental health diversion and mental health court.

COSTS/BENEFIT ANALYSIS

The calculations described above are used to estimate the caseload impact to the system from changing the number of diversions. To monetize these changes, it is necessary to include cost estimates for each of the areas described above. The daily cost of jail, probation, the state hospital, and psychiatric hospitalization is multiplied by the daily caseload impact to estimate the costs that are directly avoided because of diversion. These avoided costs are compared to the diversion program costs to compare the overall diversion benefits (avoided costs) to program costs. Additional system costs must also be calculated to monetize the program outcomes. In addition to the costs described above, this also includes the following costs: housing, behavioral health services, outpatient services, crisis stabilization, and emergency room. The avoided costs are broken out by level of government, city, county, state or federal and compared over a three-year horizon. These calculations are displayed graphically to show how costs are shifted between different levels of government. When planning a new program, or one started with grant funds, looking at a time horizon for the kinds of ongoing costs, as well as general budget savings can help with forward looking system planning.

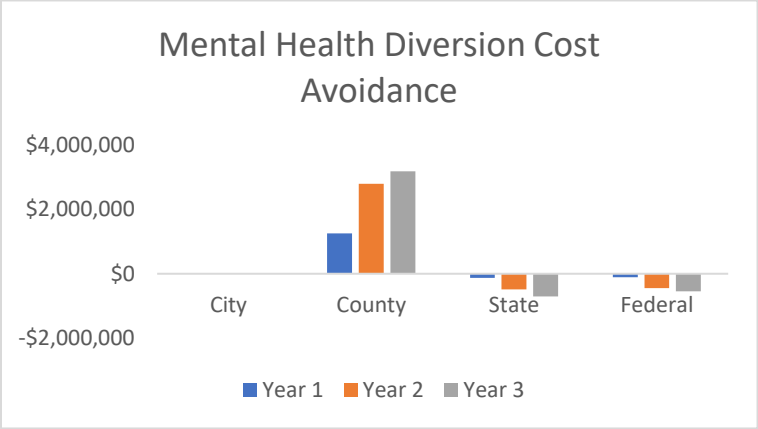

Figure 6: Mental Health Diversion Cost Avoidance Example

The model then compares the full cost of program changes to the full benefits or avoided costs of diversion and reduced future system usage through effective programs. These calculations are used to create a benefit to cost ratio which can be interpreted as the avoided costs or benefits for each dollar invested in the diversion program. The below summarizes the results of the cost benefit analysis, where the changes in usages result in total benefits of $4,082 compared to a cost of $2,500. This means that for every $1 invested, there is a $1.63 return over the three years estimated in the program.

Table 9: Mental Health Diversion Cost Benefit Example

Total Benefit per Participant	**$**	**4,082**
Program Cost	$	2,500
Net Benefit	$	1,582
Benefit to Cost Ratio	$	1.63

CRISIS RESPONSE

Mobile crisis teams are designed to intervene with individuals in crisis to deflect clients from more restrictive settings, like involuntary hospitalization or incarceration. These models can be designed in several ways, both as co-responder units with law enforcement, and those who are dispatched independently of law enforcement. This model can help to better define the roles and impacts of the program, based on the types of team from a baseline. This often means that people who are served by a mobile crisis response team are diverted out of jail or a hospital stay, as compared to the usual response by law enforcement. The model uses local data on the differences in jail and hospitalization usage for those calls handled with a mobile crisis response team compared to those calls handled by law enforcement. The costs of these services are then compared to the cost of avoided jail and hospitalization because of individuals being diverted out of those services. In the example below, assuming 200 calls for service: T

Table 10: Mobile Crisis Response Data Inputs Example

Mobile Crisis Response	
Monthly Calls-MH Subject	200
% Jail Mobile Crisis	0%
% Jail-Police	40%
Jail LOS	12
Acute Inpatient Stay LOS	6
% to Acute Inpatient-Mobile Crisis	10%
% to Inpatient-Police	40%
Mobile Crisis costs (Call)	$275
Jail Cost (Day)	$84
Hospital Cost (Episode)	$2,000

- Police incarcerate 40% of these calls as a baseline, with an average length of stay in jail of 12 days. Mobile crisis teams incarcerate 0%.
- Police take someone to a hospital or acute setting 40% of the time, while mobile crisis take them 10% of the time, with an average length of stay of 6 days.
- At a cost of $275 per call, $85 per day in jail, and $2000 in a hospital bed, the deflection away from hospitals and jail can then be calculated.

MOBILE CRISIS DIVERSION CALCULATIONS

The model relies on local data on the likelihood of a mental health call for service entering the jail or a hospital. Data is needed for both traditional law enforcement's response and the mobile crisis team's response. The model compares the difference in the likelihood of jail and hospitalization based on the type of response. Data is also needed on the average length of stay in jail for these types of calls for service. Finally, data is also required for the cost of both jail and hospitalization. The model then calculates a month-by-month impact on hospitalizations and jail bed days. These month-by-month caseload impacts are multiplied by the cost per day of jail and the cost per episode of hospitalization to estimate an overall cost-avoidance of using mobile crisis response teams. The model also includes projected changes in the county population to estimate the future impacts three years into the future.

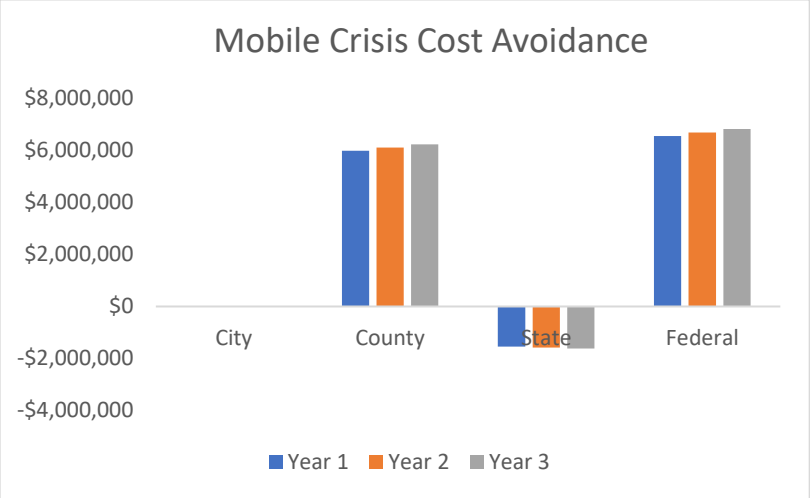

Figure 7: Mobile Crisis Cost Avoidance Example

COST/BENEFIT ANALYSIS

The costs of the mobile crisis team are compared to the estimated avoided costs (benefits) to create a benefit to cost ratio. This can be interpreted as the estimated benefit from each dollar invested in the mobile crisis response team. The model also displays the month by month estimated future calls for service and changes in the jail beds and hospitalizations. Finally, the model also breaks out the annual cost-avoidance by level of government so that any cost shifts across levels of government can be easily tracked. In the example below, $10,993,040 in benefits would accrue to different levels of government, with some cost being shifted to the state level due to lower hospital and jail costs. Assuming a program cost of 3,093,815, this would be net benefit of $4.55 for every dollar invested.

	Annual Cost/Benefit
City	$0
County	$5,988,339
State	-$1,546,907
Federal	$6,551,608
Costs	$3,093,815
CBA	$4.55

Table 11: Mobile Crisis Cost Benefit Example