

# Findings from the Economic Analysis of JDC/RF: Policy Implications for Juvenile Drug Courts

## Overview: The Economic Analysis of JDC/RF

Findings from the National Cross-Site Evaluation of Juvenile Drug Courts and Reclaiming Futures (JDC/RF) indicate that costs associated with providing services in accordance with the JDC/RF integrated model are offset by substantial savings to society. The integrated model, which was created as a combination of two existing models: Juvenile Drug Courts: Strategies in Practice (JDC: SIP) & Reclaiming Futures (RF), is part of an effort by the Office of Juvenile Justice and Delinquency Prevention (OJJDP) and the Substance Abuse and Mental Health Services Administration's (SAMHSA) Center for Substance Abuse Treatment (CSAT), in partnership with the Robert Wood Johnson Foundation, to improve the effectiveness and efficacy of JDCs. The JDC/RF National Cross-Site Evaluation includes five sites that received funding under this initiative.

This brief describes a two-part study of JDC/RF *program costs*, meaning the monetary value of time and resources required to operate the program, and estimated *net economic benefits*, meaning the monetary value of program benefits minus the program costs. Adolescent treatment program costs and associated net benefits are not studied as frequently as adult programs, despite the fact that studies of this nature for adults have become more numerous in recent years.<sup>1</sup> The findings of the current study help fill this gap, lending an important contribution to the adolescent treatment research community. The study found that the five sites participating in the JDC/RF National Cross-Site Evaluation experienced net *benefits to society* that greatly exceeded JDC/RF program costs. These benefits were directly related to data collected before and after the JDC/RF intervention on traditional measures of JDC programmatic success such as crime, substance abuse, education, physical health, and mental health. Findings provide preliminary economic justification for the JDC/RF program.

### Study Highlights

**JDC/RF programs produce net benefits to society that greatly exceed program costs:**

**\$122,857 per Youth**  
Social Cost Savings Associated with  
JDC/RF

– **\$38,288 per Youth**  
Average Cost for JDC/RF Episode

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**\$84,569 per Youth**  
Net Societal Benefit of JDC/RF

### Policy Implications for Stakeholders:

- Benefits of the JDC/RF program greatly outweigh program costs making it a cost saving intervention for juvenile offenders with substance use disorders.
- JDC/RF programs can realize even more net benefits by taking advantage of in-kind cost opportunities available in their communities.
- Because economic impact varies by certain client characteristics, programs can realize costs savings by conducting targeted outreach, recruitment, and engagement for identified populations.
- JDC/RF programs should use cost data to demonstrate program impact and sustainability.

<sup>1</sup> Zavala, S.K., French, M.T., Henderson, C.E., Alberga, L., Rowe, C., and Liddle, H.A. (2005). Guidelines and challenges for estimating the economic costs and benefits of adolescent substance abuse treatments. *Journal of Substance Abuse Treatment*, 29, 191-205.

To inform policymakers and program managers that are seeking to improve or create a JDC/RF site, this brief highlights the study components and results, and summarizes the main policy implications. Study highlights are presented in the box on page one and described in more detail throughout this brief.

## The Cost Analysis

The first step to evaluate the economic impact of the JDC/RF program was determining the estimated direct expenditures (i.e., standard operating costs) and indirect costs (i.e., full value of all resources invested in the program, regardless of cost or funding source) of providing JDC/RF services within each of the five sites. Conducting these site-specific analyses and their subsequent reports was necessary in order to capture costs related to the variability in the services provided and resources available among the diverse sites. Each site reviewed and approved their individual cost reports, further validating the cost estimates. Site reports contained the following breakdown of costs: Total annual program cost; annual cost per youth; weekly cost per youth; and, average cost per youth over the duration of the program (i.e., the average cost per JDC/RF episode based on youths' average length of stay). Cost data represent a single fiscal year when the project was at full capacity, which typically was year three of the grant, and all cost estimates are reported in dollars adjusted to their 2012 value. For the purposes of this brief, all information is presented as an average or range across the five sites.<sup>2</sup>

The analysis considered the following categories to calculate costs: criminal justice system (including court and probation); substance use and mental health treatment; community services and volunteers, and, miscellaneous resources (e.g. travel and training). *Opportunity costs*, or the value of leveraged resources integral to the program, such as volunteer time, were also included in the calculation. These leveraged resources are necessary to consider in the assessment of JDC/RF's net economic benefits due to the model's emphasis on developing and maintaining community partnerships to provide youth with a full continuum of services. Costs, associated with the criminal justice system contributed the largest proportion, with 51% comprising total average costs among the sites. Other average proportions of direct costs included substance and mental health treatment costs (17% of all costs), community services and volunteer costs (7% of all costs), and miscellaneous costs (24% of all costs).

## Results

As Table 1 shows, the average annual total cost to operate a JDC/RF program in the study was \$1,712,482. The range among the five sites was \$782,001 to \$3,442,448. These cost variations partially resulted from the differences in program implementation at the sites, where some sites have two or three "treatment tracks" at their facilities. These sites have much larger capacity than others have and in turn serve a greater number of clients. For instance, during the year of study (2012), there were 245 new admissions among the five sites, with an average daily census from 12 to 56. The weekly cost per youth was \$963, ranging from \$522 to \$1,250. Further, the average length of stay was 40.9 weeks, with 32.3 weeks being the shortest and 56.7 being the longest. Knowing the average length of stay permitted calculation of the average program cost per JDC/RF "episode," or instance of each youth going through a JDC/RF program, which amounted to \$38,288. Among the five sites, the average cost per episode ranged from \$19,299 to \$49,369.

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<sup>2</sup> For the full report and breakdown of costs by site (anonymous), please reference: McCollister, K., Baumer, P., and the University of Arizona – Southwest Institute for Research on Women (2015). Cross-Site Report: Cost Analysis Overview and Results Narrative: Five Site Report – March 2015. The University of Arizona: Tucson, AZ.

**Table 1: Summary Costs of JDC/RF**

	Total annual program cost	Annual program cost per youth	Average Length-of-stay in weeks	Average daily census	Weekly cost per youth	Episode cost per youth
Minimum	\$782,001	\$27,196	32.3	12	\$522	\$19,299
Maximum	\$3,442,661	\$65,167	56.7	56	\$1,250	\$49,369
Mean	\$1,712,482	\$50,216	40.9	35.2	\$963	\$38,288

The study also considered *incremental costs* of RF, meaning, the costs associated with integrating RF services within an existing JDC. It was estimated that these costs average 15% of total JDC/RF program costs, ranging from 8% to 26% of costs among sites. The components included in the RF incremental costs calculation are staff and volunteer time, assessment, community services, and training and technical assistance.

### Limitations

There are some limitations associated with the cost study. One overarching issue is that it is challenging to isolate and quantify the cost of Reclaiming Futures, as it is a systems-level approach to coordinate existing resources across multiple agencies. In addition, sites provided differing levels of data detail pertaining to costs. Some services that JDC/RF youth received, including those from multiple substance use or mental health providers or from external community services could not be calculated, as most of the sites do not have financial data at this level of detail. Further, costs could not be tracked for individual participant-level services. Although the scope of the cost study was to present average aggregate-level data at each site and across sites, the most accurate cost of all services provided can only be calculated when matched at the individual level.

### The JDC/RF Benefit-Cost Analysis

Although it is important to know the estimated JDC/RF operating costs, they are only part of the financial picture. These operating costs are mitigated if there are corresponding reductions in societal costs that are a direct result of youth receiving JDC/RF services. For instance, substantial economic benefits can be realized by youth committing fewer crimes, abstaining from illicit substances, attending school or work more often, and being healthier overall.

To determine the net savings associated with the costs of providing JDC/RF services, the research team selected several measures of success regarding adolescent substance use and juvenile justice interventions: the number of crimes committed, days missed school or work, days bothered by mental health problems, and days bothered by physical health problems. Data on these outcomes are required from each of these sites via self-reported responses from the Global Assessment of Individual Needs (GAIN) instrument<sup>3</sup> administered to all youth upon and after program intake. These numbers were then multiplied by monetary conversion factors from published benefit-cost studies.<sup>45</sup> In sum, the analysis examined changes in days or numbers for each outcome measure prior to receiving JDC/RF services compared to after

<sup>3</sup> Dennis, M. L., Titus, J. C., White, M. K., Unsicker, J. I., & Hodgkins, D. (2003). *Global appraisal of individual needs: Administration guide for the GAIN and related measures*. Bloomington, IL: Chestnut Health Systems.

<sup>4</sup> Estimates for days missed school or work, days physical health problems, and days mental health problems from French, M., Salome, H., and Carney, M. (2002). Using the DATCAP and ASI to estimate the costs and benefits of residential addiction treatment in the State of Washington. *Social Science and Medicine*, 55, 2267-2282.

<sup>5</sup> Estimates for costs of crime from McCollister, K., French, M., and Fang, H., (2010). The cost of crime to society: New crime-specific estimate for policy and program evaluation. *Drug and Alcohol Dependence* 108, 98-109.

receiving services, in addition to the costs associated with JDC/RF services. Examining changes over time and the associated costs, allowed the research team to assess the economic benefits of JDC/RF as an intervention.

*Results*

Findings evidenced decreases in the number of days missed school or work, days bothered by mental health problems, and number of crimes committed from the period before program intake to the period after. In the year prior to participating in JDC/RF, youth missed an average of 24 days of school or work, had 115 days of mental health problems, and committed 40 crimes. In the year following intake to JDC/RF, youth experienced an average of 15 days of missed school or work (9 fewer days), 91 days of mental health problems (24 fewer days), and 10 crimes committed (30 fewer crimes committed). These decreases are to be expected, given the services provided by JDC/RF programs, where youth are closely monitored and given extensive supervision, in addition to receiving substance use and mental health treatment. On the other hand, the number of days bothered by physical health problems increased from 13 days before to 18 days (5 more days) after. This increase is not surprising, as alcohol or illicit drugs may be used to self-medicate physical health problems. When use is prohibited (i.e., in treatment), these physical health problems may become more noticeable.

Table 2 exhibits the economic benefits (or cost savings) associated with the JDC/RF program and the results of the analysis. Changes in the outcome measures described above translate to an average savings in the year following intake to JDC/RF of \$169.72 per youth for days missed school or work, an additional \$144.56 for days of physical health problems, a \$267.27 savings per youth for days of mental health problems, and a \$122,565 average savings per youth for crimes committed. These components total to an average savings of \$122,857 per youth. Once the costs associated with providing JDC/RF services are subtracted out (\$38,288), a net savings of \$84,569 per youth remains. To put these savings into perspective, for every 50 youth served by the JDC/RF program, there is a net savings of \$4,228,469, and for every 100 youth served, there is a net savings of nearly \$8.5 million.

**Table 2: Costs to Society and Net Savings in JDC/RF**

	Unit cost	Days/Times year before intake to JDC/RF	Cost year before intake to JDC/RF	Days/Times year after intake to JDC/RF	Cost year after intake to JDC/RF	Change in days/times (Pre-Post)	Mean Savings (Pre-Post)
Days of missed school or work	\$19.58	23.7	\$464.01	15.05	\$294.29	8.65	\$169.72
Days of physical health problems	\$27.02	13.15	\$355.27	18.52	\$499.83	-5.37	-\$144.56
Days of mental health problems	\$10.94	115.74	\$1,266.17	91.33	\$998.90	24.41	\$267.27
Crime	varies	39.96	\$168,124.94	9.93	\$45,559.99	30.03	\$122,564.95
Total per youth			\$170,210.39		\$47,353.01		\$122,857.38
JDC/RF Program Episode Cost per youth							\$38,288
<b>Total Net Savings (total savings – JDC/RF program episode costs) per youth</b>							<b>\$84,569.38</b>

### *Cost Savings by Client Variation*

Further analysis indicated that the economic impact of the JDC/RF programs varied by certain client factors. For example, across the five sites, clients that are retained in treatment as needed, or having “positive program status,” had relatively higher savings than those who were not retained in treatment as needed, or “negative program status” (74% reduction in costs vs a 69% reduction in costs to society). Moreover, clients who entered the programs with more self-reported clinical problems (4 or more) realized greater savings than those who entered with fewer problems (less than 4). Clients with four or more clinical problems at intake had an average savings of \$232,190 compared to those with four or fewer problems who had an average savings of \$18,209. Additional economic analyses examining various client factors may illuminate other client characteristics that are associated with JDC/RF program net benefits and help guide policy and decision-making.

### *Limitations*

There are several possible limitations to the JDC/RF benefit-cost analysis. First, the four outcome components for estimating economic benefits are based on self-reported data. Although the research community accepts self-reported data as reliable, it is still not as accurate as medical, school, or criminal records. Therefore, the costs and net benefits should be interpreted as estimated. Second, the estimated costs of criminal activity are based on data from adult offenders<sup>6</sup>, and may warrant cautious interpretation. However, this analysis did consider 12 different crime types, including many less serious crimes associated with adolescents (e.g., vandalism or larceny/theft). Therefore, the reductions in criminal activity costs provide a robust sense of the economic benefits from reduced crime among JDC/RF youth. Finally, the methods used to calculate the JDC/RF cost savings are unique to the JDC/RF program. At this time, it is not possible to compare cost savings to other interventions, such as other substance use treatment modalities or juvenile justice interventions (e.g., juvenile detention, probation, or incarceration).

### **Policy Implications**

The JDC/RF Cost and Benefit-Cost Studies described in this brief have important policy implications, especially in an environment where more effective and cost-effective interventions are necessary for long-term program stability. The following policy implications can be considered by funders, program providers, and other stakeholders looking to turn these research findings into action.

**First, benefits of the JDC/RF program greatly outweigh program costs making it a cost saving intervention for juvenile offenders with substance use disorders.** In other words, JDC/RF results in a substantial return on investment, which means that the initial cash expenditure produces substantial savings in future costs that would otherwise occur if juveniles received no intervention. By paying now for such program interventions, communities enable a restorative solution that helps adolescents involved in the criminal justice system become healthier physically and mentally, more productive in school or work, and less engaged in criminal behavior. The JDC/RF program’s economic impact also show how valuable these types of programs are from a rehabilitative standpoint. Engaging youth in JDC/RF is cost saving compared to not providing JDC/RF, which typically results in a drain of resources as youth continually cycle through the juvenile justice and other public systems. These youth can be identified early on, particularly those youth with high levels of criminal behavior, and placed in a JDC/RF or similar program, leading to substantial net savings in the long run.

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<sup>6</sup> McCollister, K., French, M., and Fang, H., (2010). The cost of crime to society: New crime-specific estimate for policy and program evaluation. *Drug and Alcohol Dependence* 108, 98-109.

Second, **JDC/RF programs can realize even more net benefits by taking advantage of in-kind cost opportunities available in their communities (e.g., volunteer time, community resources) as they may enhance service delivery while reducing direct program costs.** Programs such as JDC/RF incorporate not only components to address substance use and criminal behavior issues, but also embrace external community services that address the multiple risk and protective factors necessary to effectively treat youth. Since community engagement is an important component of the JDC/RF model, the five sites provided a natural environment to assess the value of these costs. Substantial variations in program costs across the five JDC/RF sites were, in part, due to in-kind resources or opportunity costs. Programs may be able to leverage these resources through contracted services from community agencies, donated community services, volunteer time, and hiring student interns. In addition, funding officials should emphasize the importance of such leveraging of resources and incentivize programs for maximizing opportunity costs, as they promote program stability and do not require additional costs to provide services.

Third, **because economic impact varies by certain client characteristics, programs can realize costs savings by conducting targeted outreach, recruitment, and engagement for identified populations.** The studies found there are costs savings associated with specific client factors, such as treatment retention and severity of clinical problems, that programs may want to consider. Given the increases in cost savings for clients with “positive program status” that are retained in treatment as needed, programs could focus on client retention and immediate re-engagement strategies for those not retained. Additionally, many programs are hesitant to enroll youth with multiple clinical problems as they may be challenging to treat and may require more resources. However, in addition to the clinical relevance of treating such youth, the increased cost savings from mitigating future illness justifies targeting this special population for program participation.

Finally, **JDC/RF programs should use cost data to demonstrate program impact and sustainability.** Information on costs and associated net economic benefits is important to a wide range of stakeholders, including those entities responsible for funding program planning, implementation, and enhancement. Programs should consider: (1) expanding data systems to capture the most accurate depiction of costs and benefits possible, (2) enumerating the costs of the various services, and (3) tracking youth outcomes through self-report measures, court records, urine screens, and other indicators (e.g., school records, family perceptions). Together this information will further substantiate program value with regard to youth outcomes and associated service-delivery costs and promote the accountability required to continue funding in the future.

#### **About the National Cross-Site Juvenile Drug Court and Reclaiming Futures Evaluation**

The purpose of the National Cross-Site Evaluation of Juvenile Drug Courts and Reclaiming Futures (JDC/RF) is to conduct an independent evaluation of the combined effects of the JDC: SIP and the RF models to identify the factors, elements, and services that perform best with respect to outcomes and cost-effectiveness. The evaluation is led by the University of Arizona, Southwest Institute for Research on Women (SIROW) in partnership with Chestnut Health Systems and Carnevale Associates, LLC. Additional information on the cross-site evaluation, including reports and presentations, can be found at <http://sirow.arizona.edu/jdcrf> or by contacting Monica Davis, Evaluation Coordinator, at (520) 295-9339-ext 211 or [midavis@email.arizona.edu](mailto:midavis@email.arizona.edu).

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