

**Cost-Benefit Analysis of Pima County's
Drug Treatment Alternative to Prison (DTAP) Program
Final Report**

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Program Overview

The Pima County Drug Treatment Alternative to Prison (DTAP) program is a three-year program funded by the United States Department of Justice, Office of Justice Programs, Bureau of Justice Assistance (BJA) and by the United States Department of Health and Human Services, Center for Substance Abuse Treatment, Substance Abuse and Mental Health Services Administration (SAMHSA). This funding covered two objectives with regard to reducing drug addiction and drug-related crime in Pima County. The first is Pima County's Drug Court Enhancement program, which provides additional wrap-around recovery support services to probationers in drug court.

The second, and the focus of this cost-benefit analysis (CBA), is Pima County's Drug Treatment Alternative to Prison (DTAP) program. DTAP provides residential drug treatment and needs-based wrap-around recovery support services in lieu of prison to selected non-violent repeat drug offenders who are motivated to change their behaviors and for whom this is at least their third narcotics offense.

Methods

This report covers the results of a cost-benefit analysis of the DTAP program based upon what is known to date about its first-year participants. In brief, a CBA estimates the dollar value of both the costs and benefits of a program so that these costs and benefits can be directly compared to ascertain whether benefits exceed costs (i.e., net benefits > 0). The 20 First-Year DTAP participants included in this CBA entered the program between January 1, 2011 and November 30, 2011. Therefore, we had almost one full year of data or longer on all participants. The main CBA was conducted from the perspective of the State. This means that only costs and benefits to the State are included in this analysis—e.g., no costs paid by Pima County are included. We also calculated the costs and benefits to the criminal justice system (CJS) as a whole; these results include County costs. It should be noted that the State perspective calculated in this report does not include all possible benefits to the State. Examples of additional benefits not counted here include income taxes from DTAP completers who successfully join the workforce, reduction in Child Protective Services costs for the children of DTAP participants who are able to care for their children, and the benefits of any reductions in crime attributable to DTAP. All costs and benefits are reported as 2011 U.S. dollars and a 3% discount rate was used to adjust all future costs to baseline.

Identification of a control group

In order to determine the impact of having drug offenders enter the DTAP program, we must have an estimate of what would have happened to these same offenders if DTAP were not available. To accomplish this we identified a group of drug offenders in Pima County who were arrested in the period just before DTAP became available, and who were judged to have been eligible had DTAP existed at that time. We identified this control group by searching Pima County court case records starting from the date just prior to the start of the DTAP program (December 31, 2010) and working backward in time until we had 50 control cases. Figure 1 provides a flowchart of the requisite criteria by which an individual is determined to be eligible for DTAP. The same criteria were used to determine inclusion in the control group.

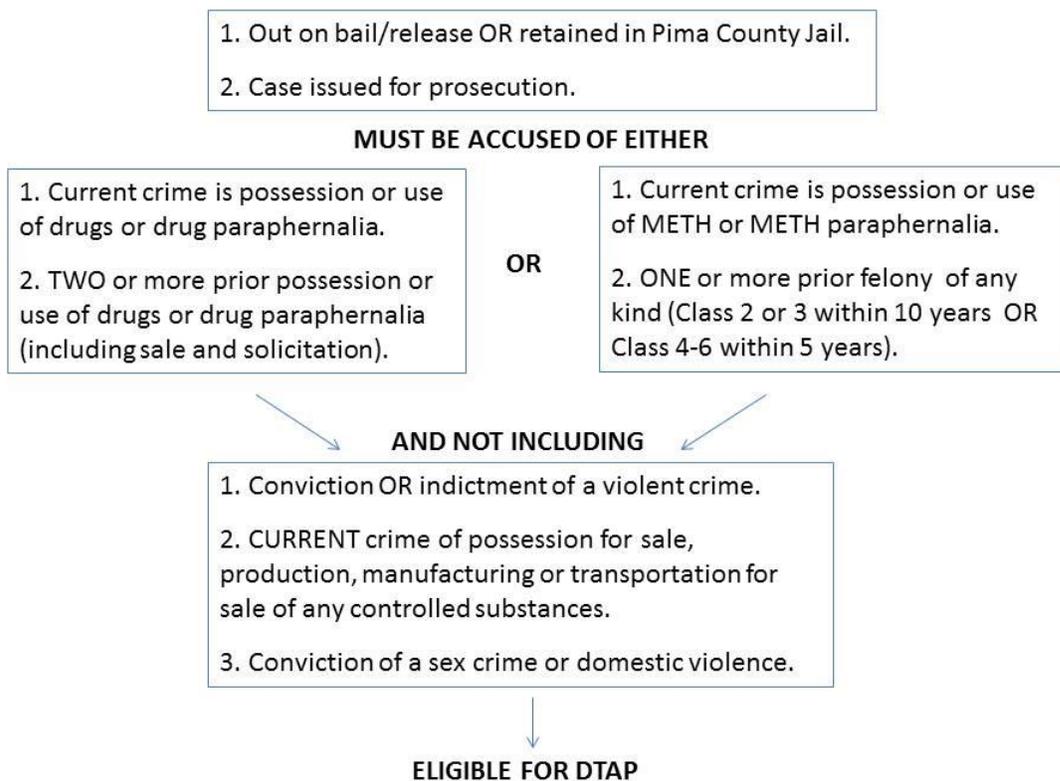


Figure 1. Flowchart of Criteria to Determine DTAP Eligibility¹

Costs and benefits included

Both DTAP participants and our control group members follow the same path through the criminal justice system (CJS) until the point at which a defendant is determined to be eligible for DTAP and agrees to a plea. At this point a DTAP participant who pleads guilty to the drug charge receives three years of probation, including participation in the DTAP program. The common path through the CJS to this point includes an arrest, placement in the Pima County Jail, initial appearance, release on bail or retention in jail until trial/disposition, and a case is issued. Because these costs can be assumed to be similar between groups (we test this assumption below—see Table 3), they are not included in the CBA.

The costs and benefits included in this CBA begin at the point in time when the two groups deviate in their interactions with the CJS. This deviation point occurs just after those in both groups accept their pleas and the DTAP participant is transported to the residential treatment facility to begin their 90-day program while the control counterpart awaits sentencing either out of custody or after being transported back to jail. Table 1 summarizes the cost components for

¹ (A. Floyd, e-mail communication, September 6, 2012)

the DTAP completers, the additional costs for DTAP non-completers and cost components for the control group.

Table 1. Components of the Drug Treatment Alternative to Prison (DTAP) Program for Completers, Non-Completers and the Control Group

DTAP Completer Costs	Additional Costs for DTAP Non-Completer	Control Group Costs
<ul style="list-style-type: none"> ▪ Psychological assessments ▪ Residential treatment ▪ Case management ▪ Medical ▪ Review hearings ▪ Probation 	<ul style="list-style-type: none"> ▪ Additional court hearings ▪ Jail time ▪ Transportation from jail to prison ▪ Prison ▪ Parole 	<ul style="list-style-type: none"> ▪ Sentencing hearing ▪ Jail time ▪ Transportation from jail to prison ▪ Prison ▪ Parole

DTAP Completer Costs

In order for a defendant to be admitted to the DTAP program he/she must meet the statutory requirements as well as the program requirements. One program requirement is no evidence of severe mental illness. As needed, external professional psychological contractors are used to perform the mental health screening and psychological assessments. This is a cost incurred by the DTAP program for some participants.

At the point when the DTAP participant accepts the plea, he or she is immediately transported to a residential treatment facility for 90 days of care. During the residential treatment the DTAP participants do not incur probation fees. The two residential treatment facilities used for DTAP participants cost \$85 per day, a contracted price between the County and the individual facilities.² All residential treatment costs in this evaluation are the actual costs incurred for each DTAP participant.

After completion of residential treatment the DTAP participant moves to a family residence or transitional housing. Transitional housing costs and associated living expenses are included on a case-by-case basis as needed and are generally categorized by the DTAP program as Case Management costs. As an example, one DTAP participant’s transitional living expenses included \$705 for housing, \$452 for transportation, \$120 for food, and \$97 for clothing. Again, all Case Management costs are the actual costs incurred for each DTAP participant.

From the time of completion of the residential treatment until graduation from the DTAP program, DTAP participants are on special probation and are required to attend DTAP review hearings in Drug Court every two weeks in order to assess progress, acknowledge sobriety anniversaries, satisfy probation requirements, and address any shortcomings or failures.

² (A. Floyd, e-mail correspondence, April, 20, 2012).

Monthly probation fees are set by Arizona Revised Statutes (ARS) §13-901 at \$65 per month.³ The cost of DTAP review hearings is calculated based on the 2011 salary values of the staff involved.⁴ Benefits are estimated to be 30% of salary. The 30% benefits rate is based on an average across all Pima County employees.⁵ The length of time for a review hearing per DTAP participant is approximately five minutes. The time for the Drug Court Judge, Prosecutor, Defense attorney, Court Reporter, Clerk for the Judge, and the Pima County Sheriff's Office Deputy Bailiff is included in the calculation for the DTAP review hearing. Based on actual length of the hearing and salaries, the cost of a DTAP review hearing is calculated to be \$21.68 per participant per review hearing. As the DTAP participant progresses through the program, the court may decide the DTAP review hearings may be reduced to one time per month. For the DTAP review hearing cost, the actual number of hearings attended by each participant was used for the period up to the mid-November 2012 evaluation date. Then for those who had not yet graduated by that date we assumed hearings would occur two times per month and that graduation would occur 18 months into the program.

When a DTAP participant graduates from the program, the individual no longer attends DTAP review hearings and costs for these hearings cease. However the monthly probation cost of \$65 per month continues until the end of the three-year probation sentence.

DTAP Non-Completer Costs

DTAP non-completers may fail at any point in the DTAP program: during residential drug treatment, between the end of the residential treatment and graduation from the program, or between graduation and the end of probation. When a DTAP participant has failed to comply with the requirements of the program, the DTAP non-completer attends a number of additional (revocation) hearings prior to being remanded to prison. DTAP non-completers are required to attend one or more of the following types of hearings: initial application on petition to revoke probation hearing, violation hearing, violation/change of plea hearing, and disposition/sentencing. The cost for each of these hearings is calculated based on the average time of the hearing, the hourly rate plus benefits for Pima County employees attending the hearing, and transportation costs to/from the court appearance (\$21.60/non-completer/hearing).⁶ The initial application on the petition to revoke probation hearing costs \$62.63, the violation hearing costs \$55.90, the violation/change of plea hearing costs \$73.57, and the disposition/sentencing hearing costs \$67.83. The actual number and types of hearings attended and actual DTAP program costs incurred before failing were used to calculate the costs for each DTAP non-completer.

Other additional program costs considered for DTAP non-completers include the cost of incarceration and parole. The 2010 adjusted daily per capita cost of incarceration of a male in a minimum custody, in-state corrections facility taken from the Arizona Department of Corrections

³ Arizona State Legislature 13-901 Probation

(<http://www.azleg.gov/FormatDocument.asp?inDoc=/ars/13/00901.htm&Title=13&DocType=ARS>)

⁴ (A. Floyd, L. Lefferts, M. Rueschhoff, e-mail correspondence & letter, March 26, 2012 – November 14, 2012).

⁵ (D. Smutzer, e-mail correspondence, September 28, 2012).

⁶ (A. Floyd, e-mail correspondence, August, 31, 2012).

(ADC) FY 2010 Operating Per Capita Cost Report was \$46.59.⁷ This cost was adjusted to 2011 dollars using the appropriate annual average Consumer Price Index. The 2011 adjusted daily per capita cost of incarceration used in this report is \$48.06. The cost of parole has been set by ARS §31-418 at \$65 per month per parolee.⁸

The adjusted daily per capita prison (incarceration) cost does not include medical costs, inmate management functions (i.e. kennels for security dogs, wildland fire crews, inter-prison inmate transportation, etc.), and does include depreciation, not an actual expense incurred by ADC. This adjusted rate was calculated by ADC in order to better compare state owned corrections facilities with private contract facilities. The adjusted daily per capita cost is a better comparison with DTAP because medical costs are excluded. In the DTAP program the cost of medical care is provided through other funding sources such as Arizona Health Care Cost Containment System (AHCCCS). DTAP does, however, provide healthcare costs that would not be provided to inmates by ADC such as eye examinations and glasses, as well as dental work needed to increase the likelihood of employment. The medical costs that are typically covered for inmates by ADC are equivalent to those provided by other funding sources for DTAP participants. For example, an inmate with strep throat would be treated in prison with the cost for the healthcare provider and medication incurred by ADC. A DTAP participant who becomes ill with strep throat while in residential treatment would be transported to El Rio Community Health Center with the cost for the healthcare provider incurred by AHCCCS and the cost of the medication paid by the DTAP program. Based on the differences in the types of medical care provided and the payment sources for the care we used the adjusted daily per capita rate (i.e., the rate excluding medical costs) for incarceration and included all medical costs paid by the DTAP program for participants.

For the First-Year DTAP non-completers, the length of the sentence in days assigned by the court minus the days served while in the DTAP program times the 2011 adjusted per capita daily prison cost equals the total prison cost. Thus, prison costs for non-completers can be considered a conservative (high) estimate since this calculation assumes that they serve their entire sentence and this does not always happen. The length of parole was assigned to a DTAP non-completer based on the average length of parole given to controls with similar prison sentences and the cost of parole is set by ARS as mentioned earlier.

Control Costs

Costs for the control group are the costs of their sentencing hearing, additional jail time between change of plea and sentencing, transportation to prison, prison, and parole. The cost of prison for the controls is the same 2011 adjusted per capita daily prison cost used for DTAP non-completers, \$48.06. The sentencing hearing cost for the control group is based on the estimated duration of the hearing in minutes times the salaries including benefits for the Drug Court Judge, Prosecutor, Court Reporter, Clerk for the Judge, Pima County Sheriff's Office Deputy Bailiff,

⁷ Arizona Department of Corrections. (2011). *FY2010 Operating Per Capita Cost Report*. Phoenix, AZ: Bureau of Planning, Budget and Research. Retrieved from http://www.azcorrections.gov/adc/reports/ADC_FY2010_PerCapitaRep.pdf

⁸ Arizona State Legislature §31-148 Community supervision fee; deposit; community corrections enhancement fund; drug testing costs. (<http://www.azleg.state.az.us/FormatDocument.asp?inDoc=/ars/31/00418.htm&Title=31&DocType=ARS>)

and adult probation officers plus transportation to and from the court house plus one hour of time for the Defense attorney. More Defense attorney time is needed for control group defendants because each can use a different Defense attorney and each attorney needs to prepare for and wait at the courthouse until his or her defendant's hearing. All DTAP participants use the same Defense attorney and are seen on the same day.

If the control group defendant was in custody at the time of sentencing only one day of subsequent jail time (Table 2 - \$91.90/day) was added to his or her costs. In the case where the control group defendant was not in custody at the time of sentencing, then one "first" day of jail time (Table 2 - \$225.86/day) was added to his or her costs. In addition hearing costs did not include transportation costs if the defendant was not in custody at time of the disposition/sentencing hearing (Table 2 – disposition/sentencing hearing with transportation to and from the court house \$107.46, without transportation to and from the court house \$85.85). For the two controls who had not yet completed their prison sentences as of mid-November 2012, it was assumed they would complete their entire prison sentence. This assumption is similar to that used for DTAP non-completers above, and thus, helps balance the conservatism of that prison cost estimate. A further assumption for these controls was that they would also face a parole period equal to the average length of parole received by other controls with similar sentences.

Table 2 summarizes the unit cost estimates and actual costs for DTAP program components, probation costs, additional hearing costs, prison costs, and parole costs.

Table 2. Unit Cost Estimates and Actual Costs for Drug Treatment Alternative to Prison (DTAP) Program and Control Group Cost Components (2011 dollars)

Activity	Cost per Person
Psychological assessment ^a	\$150 - \$400
Residential treatment	\$85 per day
Hearings (Pima County costs)	
▪ Review hearing	\$21.68 per hearing
▪ Initial application on petition to revoke probation	\$62.63 per hearing
▪ Violation hearing	\$55.90 per hearing
▪ Violation/Change of plea hearing	\$73.57 per hearing
▪ Disposition/Sentencing for controls w/transportation	\$107.46 per hearing
▪ Disposition/Sentencing for controls w/o transportation	\$85.85 per hearing
Jail costs (Pima County)	
▪ First day in jail	\$225.86 per 1 st day
▪ Subsequent days in jail	\$91.90 per day
Transportation to prison from jail	\$23.98 per person
Prison costs	\$48.06 per day
Probation costs	\$65 per month
Parole costs	\$65 per month

^a Contract professional psychologists were used for the psychological assessments. Actual cost per DTAP participant was used in the cost summary.

Analysis

In our main analysis we calculated the costs and benefits of the DTAP program from the State perspective—i.e., assuming that the State paid the DTAP program costs and including only criminal justice costs and cost savings that would accrue to the State. For completeness, we also calculated results from a criminal justice system (CJS) perspective—i.e., also including the hearing costs that would accrue to Pima County.

A number of important assumptions were made in this CBA:

1. Those First-Year DTAP participants who were still successfully active in the program at the time of this evaluation (mid-November, 2012) will graduate, complete probation, and stay clean.
2. For the currently active DTAP participants, their costs include an estimate of their expected remaining DTAP costs—i.e., the rest of their review hearing and probation costs.
3. Any individuals in the control group or in the First-Year DTAP non-completer group who are still in prison at the time of this evaluation are assumed to remain in prison and serve out their sentenced time. The assigned length of parole was allocated based on the average parole assigned to prisoners with a comparable sentence length.
4. All probation and parole costs are costs to the State and not covered by payments made by the probationers and parolees.
5. All costs are in 2011 US dollars. A 3% discount rate was used to adjust year 2 through 6 costs.

We will also present results assuming that all probation and parole costs are paid by the probationers and parolees leaving no costs to the State—i.e., the opposite of assumption #4 above—as a sensitivity analysis.

Results

The First-Year DTAP cohort and the control group were similar across a number of characteristics indicating that they were a good match (Table 3). As can be seen, although there were some differences between the groups, none was statistically significant—i.e., all p-values were greater than 0.05 indicating that the differences seen were likely due only to chance.

Aggregate Cumulative Costs

Table 4 presents the average cumulative DTAP and other CJS costs per person for the First-Year DTAP completers and non-completers and the prison control group from the State perspective. The DTAP program costs an average of \$7,844 per participant. This cost includes any psychological assessments, the residential treatment facility, case management costs (including all wraparound recovery support services), and medical costs. As expected, DTAP per participant costs are higher for program completers (\$8,661) than for non-completers (\$6,619) since non-completers left the program early. DTAP participants also face monthly probation costs that start after residential treatment program ends and continue until the three years of the program are complete. Again, costs are higher for completers since they are

Table 3. Selected Characteristics of Drug Treatment Alternative to Prison (DTAP) Participants and Prison Comparisons (Control Group)

Demographics	DTAP Participants (N = 20)	Prison Comparisons (N = 50)	p-value
Age	36.4	34.8	(p=0.51)
Male	50.0%	70.0%	(p=0.12)
Race/Ethnicity			
White	80.0%	74.0%	(p=0.60)
Hispanic/Latino	15.0%	24.0%	(p=0.41)
Black/African-American	0.0%	2.0%	(p=0.52)
Asian	5.0%	0.0%	(p=0.11)
High school graduate/GED	80.0%	80.9%	(p=0.93)
Employed at arrest ^a	50.0%	47.8% ^b	(p=0.94)
Number of prior drug arrests	1.4	1.9	(p=0.12)
Number of prior drug treatments	1.0	1.2	(p=0.49)
Number of days in jail before plea	55.1	54.3	(p=0.96)
Number of hearings	6.2	6.3	(p=0.92)

^a The First Year DTAP percentage of employment differs from the one given in the *Pima County Drug Treatment Alternative to Prison (DTAP) Program Evaluation Report: First Year of Implementation, January 1, 2011 to July 31, 2011* prepared by Joanne Basta, PhD. In order to fairly compare employment status between the First Year DTAP participants and the prison comparisons, the DTAP participants who reported their employment situation just prior to entering DTAP as stable/disabled/retired/student/temporarily or seasonally employed were categorized as employed (n=7). Any DTAP participant who reported being unemployed as a result of the drug arrest was also categorized as employed (n=3). This categorization method more closely resembles that used for the control group data.

^bEight prisoner comparisons were missing employment data. The percentage given reflects those working as a percentage of the non-missing data.

assumed to remain in the DTAP program for the full three years. Prison and parole costs only appear for DTAP non-completers and the prison control group. The average prison cost per person for DTAP non-completers (\$29,497) is higher than the average for the prison control group (\$27,401). The average number of days per person in prison for the control group is 581 days (\pm 384). Based on the average sentence per DTAP non-completer, their average number of days in prison per person is 640 (\pm 322).

The prison control group received an average of 145 days (± 173) of parole per person while the DTAP non-completers were assumed to have an average parole of 139 days (± 51). The prison controls have 14 individuals who did not have any days of parole contributing to the large standard deviation.

Table 4. Mean Costs per Person for Drug Treatment Alternative to Prison (DTAP) Participants and Prison Comparisons from the State Perspective (2011 USD)

	N	DTAP Costs	Prob-ation Costs	Jail Before Prison*	Prison Costs	Parole Costs	Total Costs
DTAP All	20	\$7,844	\$1,402	\$98	\$11,799	\$110	\$21,253
Completers	12	\$8,661	\$2,078	\$0	\$0	\$0	\$10,738
Non-completers	8	\$6,619	\$ 388	\$246	\$29,497	\$274	\$37,024
Prison Control Group	50	\$0	\$0	\$2,319	\$27,401	\$340	\$30,059

*Includes cost of transport from jail to prison. Note: All costs are discounted by 3%.

When all relevant costs are considered, all DTAP participants have an average cost of \$21,253 per participant as compared with the prison control group average cost per person of \$30,059. The difference in the average costs between the two groups represents a cost savings of \$8,807 per participant. Note that the average cost of DTAP program non-completers is higher than that of the prison control group since non-completers face *both* the DTAP program costs they incurred before they left the program *and* jail, prison and parole costs.

Table 5 shows the same analysis from the perspective of all criminal justice system (CJS) costs—i.e., including County costs for DTAP review and (for non-completers) revocation hearings. As can be seen, including County costs for hearing increases the costs for the DTAP participants to an average of \$22,837 per participant. However, this amount is still less than the costs of the prison control group (\$30,162 per person).

Finally, Table 6 reports costs and benefits from the State perspective assuming that all probationers and parolees pay for their probation and parole costs—i.e., assuming that the State incurs no net cost for probation or parole. Under this assumption the net benefit of the program is \$9,978 per participant.

Discussion

The Pima County DTAP program started in January 2011 and provides motivated defendants facing a mandatory prison sentence for a drug offense a chance for rehabilitation. This cost-benefit analysis demonstrates that the benefits generated by the First-Year DTAP program

cohort far exceed their costs (i.e., the program results in positive net benefits) under a number of assumptions and from the State and CJS perspectives.

Table 5. Mean Costs per Person for Drug Treatment Alternative to Prison (DTAP) Participants and Prison Comparisons from the Criminal Justice System Perspective (2011 USD)

	N	DTAP Costs	Prob-ation Costs	County Hearing Costs	Jail* Before Prison	Prison Costs	Parole Costs	Total Costs
DTAP All	20	\$7,844	\$1,402	\$1,585	\$98	\$11,799	\$110	\$22,837
Completers	12	\$8,661	\$2,078	\$1,854	\$0	\$0	\$0	\$12,593
Non-completers	8	\$6,619	\$ 388	\$1,181	\$246	\$29,497	\$274	\$38,205
Prison Control Group	50	\$0	\$0	\$103	\$2,319	\$27,401	\$340	\$30,162

*Includes cost of transport from jail to prison. Note: All costs are discounted by 3%.

Table 6. Mean Costs per Person for Drug Treatment Alternative to Prison (DTAP) Participants and Prison Comparisons from the State Perspective Assuming All Probationers and Parolees Pay Their Costs of Probation and Parole (2011 USD)

	N	DTAP Costs	Jail Before Prison*	Prison Costs	Total Costs
DTAP All	20	\$7,844	\$98	\$11,799	\$19,741
Completers	12	\$8,661	\$0	\$0	\$ 8,661
Non-completers	8	\$6,619	\$246	\$29,497	\$36,362
Prison Control Group	50	\$0	\$2,319	\$27,401	\$29,720

As the DTAP program continues, it will undoubtedly become more efficient and may generate even greater cost savings. This is especially true if a more in-depth look at the First-Year DTAP non-completers can be used to better inform the selection and inclusion process and reduce the number of future non-completers.⁹

⁹ In fact, as of the date of this report, the DTAP program has enrolled a total of 51 participants including 6 graduates and 11 non-completers overall. These numbers indicate that the program has already improved from its first-year 60% ((20-8)/20) success rate to the present 78% ((51-11)/51) success rate.

To our knowledge the only other cost-benefit analysis completed for a DTAP program and using a matched control group is one by G.A. Zarkin et al (2005).¹⁰ It examines the DTAP program implemented in 1990 in King County, New York. This program served as the model for the current Pima County DTAP program. The Zarkin et al study presents an estimate of the costs and benefits of a DTAP cohort who entered the program in 1995 -1996 and was followed for six years. The costs this program faced in New York were substantially higher than those in seen in Arizona. Compare the results for the Pima County DTAP program (Table 4) to the Zarkin et al study average per participant DTAP program costs (\$40,718), other CJS costs (\$36,441), prison control costs (\$124,995), and net benefits (\$47,838). However, their benefit-cost ratio (calculated as prison control costs minus other CJS costs for DTAP participants then divided by DTAP program costs) was very similar to what was seen in this study. The Zarkin et al study had a benefit-cost ratio of 2.17, and using the same formula and the results in Table 4, this study has a benefit-cost ratio of 2.12. One major difference between the Zarkin et al study analysis and this CBA is that the Zarkin et al study had the advantage of actual data over six years. This allowed that study to use actual DTAP completion rates and actual completed prison and parole time for both groups.

Summary

This report documents the results of a cost-benefit analysis of the first-year of the Pima County Drug Treatment Alternative to Prison program. Based on what is known regarding these first-year participants through mid-November 2012, and compared to a matched control group of similar offenders who went to prison during the period before DTAP was available, the DTAP program is estimated to save the State an average of \$8,807 per participant.

¹⁰ Zarkin, G.A., Dunlap, L.J., Belenko, S., & Dynia, A. (2005). A benefit-cost analysis of the Kings County District Attorney's Office Drug Treatment Alternative to Prison (DTAP) Program. *Justice Research and Policy*, 7(1), 1-25.