Analysis of Washington State Patrol Arrest Data

For King, Pierce, Spokane, Thurston, Skagit and Kitsap Counties

NW HIDTA/DASA Drug Court Evaluation

Alcohol and Drug Abuse Institute

University of Washington

August 11, 2000

ISSUE

Reduced criminal justice involvement is generally one of the two major outcomes for drug courts (the other being reduced substance use), and number and type of arrests is certainly one major index of criminal activity. Accordingly, the results below are among the most central indicators of drug court success.

BACKGROUND

An earlier report on arrests was submitted 2/2/00. That report focused on the cumulative proportion of each group arrested following contact with the drug court. The results showed that the drug court Graduate group had a much lower proportion of arrests than any other group following drug court referral. The problem with that analysis is that it provided no control for the history of arrests prior to drug court. Without some control for the pattern of pre-court arrests, it is not possible to be sure that the court contributed to the low rates of arrests among the Graduates post-court, since the low post-court rate might simply be a continuation of a low pre-court rate. The analyses in this report address this problem and differs from the earlier analysis in several ways:

1. The initial report included arrest data only through 6/30/97. This report includes data through March, 1999.

2. The initial report included only King, Pierce and Spokane counties. This one adds Thurston, Skagit and Kitsap counties, although none of the latter three have been in operation long enough to have enough post-court follow-up for the analyses to be very useful.

3. This current report looks at numbers of arrests and per cent of persons arrested for both pre- and post drug court, and so allows for the pre-drug court arrest history to be taken into account when interpreting the post drug court arrests.

4. The focus of this report is on the number of arrests that occurred, without considering the types of offenses for which the arrests occurred.

DATA LIMITATIONS

There are several constraints on the conclusions from this study.

First, all subjects in this study should have at least one arrest; the incident arrest that led to their referral to drug court. We assumed that this arrest would normally occur within the year prior to drug court. Overall, approximately 11% of our total sample was not matched with any WSP arrest data at all, although this figure varied by county and offender group. These subjects are excluded from this analysis. For an additional 12% - 15% we received no record of any arrest in the 12 months prior to drug court referral (presumably the period during which the incident arrest would have occurred), but some arrest at a different time. These subjects are included in the analyses. We therefore believe that arrests are under-represented in our data set, either because

of reporting problems (delayed or omitted reports of arrests), or because of problems finding matches between drug court rosters and the WSP data.

Second, the groups may vary in their exposure to the risk of arrest. That is, if members of some groups were more likely to spend time in jail or prison, they would have less time and fewer opportunities for committing crimes and being arrested. If there are significant group differences in incarceration time, it could effect our results substantially. In that case, simple lapsed time intervals should be adjusted for time of exposure. We plan to acquire DOC data on prison time to help examine this possibility.

Third, there is some likelihood of the number of arrests determining the group membership. That is, persons with new arrests are probably more likely to be removed from the drug court program. In this case the lower arrest rates in the Graduate groups would partly be due to a "creaming" process. Thus not only are the number of arrests and group membership not independent, but the number of arrests could actually influence group membership.

Finally, these groups of subjects are clearly self-selected, and clearly have major pre-existing differences in behaviors (e.g., criminal activity) closely related to outcomes. We see little hope of obtaining data that would allow us to do a more thorough job of statistically correcting for these differences. A more definitive answer to the question of drug court effectiveness will probably require a study based on random assignment to drug court vs. standard court procedures.

METHODS

This set of analyses is more complex than any other we have done on this project to date. The following discussion does not provide the detail that would be necessary to replicate the process we used. A more complete technical description will be made available later.

Subjects are all persons identified by the courts from their respective inceptions to the time the identifiers were supplied to us (which ranged from about August, 1999 to February, 2000) who had at least one arrest in the file provided to us by WSP and RDA. All subjects (except the most recently admitted) had complete pre-court referral data. Subjects are included in as many of the follow-up periods as their data permit. For these purposes, we considered anyone who had at least 9 months in a follow-up period to have completed that year (however, arrest rates were not prorated up).

Data. Arrest data were obtained in February, 2000 for the period from April, 1993 through about March, 1999 (a smattering of data were reported for later dates, but did not appear to be complete). This allowed each subject to have two years pre-drug court data, and up to three years post-court data. Since the subjects entered the courts at different times, they have differing follow-up periods, some being quite short. Also, the courts started at different times, so they have differing proportions of participants with longer follow-ups. The important implication of these dates is that many offenders were admitted to the drug court programs after the date of the last arrest data that we have. This leads to odd-looking numbers of participants in the follow-up period, especially in the small counties.

Subject Groups. Subjects are grouped by the following rules: Persons referred to the court, but who were never admitted, are classified as either *Ineligible* or *Opted Out*, depending on the particular reason for not being admitted. Ineligibles were persons who had passed an initial legal screen and were referred to the court, but who on closer examination were found to be not eligible due to either clinical or additional legal criteria. Opt Outs were persons who met all criteria, and were offered entry to the court, but who made personal decisions not to enter the drug court. Individuals who had entered drug court one or more times and had ever Graduated from a drug court program are classified as *Graduates*. Next, any other individuals who had ever been

admitted to a program and *Failed* (dropped by the program) or *Dropped Out* (the offender initiates the drop-out) are classified in those categories, and any other episodes ignored. For purposes of this analysis Failed and Drop-out cases are combined into a Did Not Finish group. Remaining cases that have ever been admitted are classified as *Active*.

In the previous analyses, subject groups with fewer than ten subjects were dropped from the graphs. In this case, for King, Pierce and Spokane counties groups smaller than five were not plotted. For Thurston, Skagit and Kitsap counties all groups of two or greater were plotted. The earlier rule was relaxed in order to include more follow-up points on the graphs, especially for the three newer, smaller counties. Sample sizes for each group for each time period are provided in tables with the graphs.

Removing the Incident Offense. Every subject had an incident offense that led to their referral to drug court. We want to focus on that aspect of the criminal history that identified differences among subjects, so we wanted the pre-drug court arrest history to reflect arrests other than the incident arrest that led to the drug court referral. However, we could not simply subtract 1 from every subject's arrest history, because some subjects appeared not to have an incident arrest reported in our data set (i.e., no arrest within 12 months prior to the drug court referral). We had no way of definitively identifying the incident arrests, so we approximated the adjustment by shifting the pre-drug court window six weeks earlier. We assumed that this six week time period would include most incident arrests and few other arrests. Thus we ignored all arrests that occur in the six weeks prior to drug court, and moved the one and two year pre-court periods to the two intervals of 1.5 to 13.5 and 13.5+ to 25.5 months pre. This procedure is not ideal, because any incident offenses that occurred earlier than six weeks are included, and any other arrests in addition to the incident arrest that occurred during the 6 weeks preceding drug court referral are deleted, but we examined patterns of arrests by weeks prior to drug court, and we think the compromise is acceptable.

Analyses. A series of analyses was performed for this report:

For each county we include a graph that shows the mean number of arrests annually for each group of participants for each of the five years of data (two years (adjusted for the six week period mentioned above) pre- and 3 years post-court referral). Note that, for program graduates and for some who did not finish, the first year post-referral amounts a year that they were active in the drug court program.

To supplement the graph of means, we also graphed the percent of subjects with at least one arrest in each group, using the same format.

Because of the differing referral dates and therefore different lengths of follow-up, numbers of subjects vary for these points, so a table of the numbers of participants in each group at each time point is included.

We also performed statistical tests (analysis of variance) to see whether there were statistically significant differences among the groups in the post-referral period, controlling for the pre-court arrest history (in these analyses we calculated a change score by subtracting the pre-referral mean annual number of arrests from the post-referral mean annual number of arrests). Since overall group differences were found for all three of the older courts, we also performed a series of tests to determine which groups differed significantly from which other groups, controlling for pre-court arrests.

RESULTS

The following discussion focuses on King, Pierce and Spokane counties. The follow-up periods for Thurston, Skagit and Kitsap counties were too short and the number of subjects too

small for their results to be very reliable (both Skagit and Thurston have some subjects with one completed year of follow-up, but the n's are very small), although we will comment on them briefly below. The findings on the graphs are nearly identical for mean number of arrests and percent arrested, so we will only discuss the mean number of arrests graphs.

Summary of Findings for Mean Number of Arrests:

1. Overall, mean arrests are higher for all groups in King County than in either of the other counties.

Groups of subjects who Graduated from drug court:

2. In all three counties the Graduate group had the lowest mean number of arrests in both the pre- and the post-court periods. The Graduate means were lower in the post period than the pre in all 3 counties. Further, the Graduate mean was lower in the first post year than in the first pre year in all three counties.

3. In King county the means for the Graduate group continue to decline from the first year post through the third year post. For this same time period, Graduate means remain about the same in Pierce and Spokane (Pierce increased slightly in post year three)

Other groups of subjects:

4. In Spokane County, all groups except Graduates had *higher* mean numbers of arrests in the first year post than in the first year pre. Similarly, in King County all groups (except Graduates) had *higher or equivalent* means in the first year post than in the first year pre. In contrast, in Pierce County, *all* groups had *lower* means in the first year post, compared to the first year pre.

5. In King County, all groups show a substantial decline in mean arrests over the period from the first year post through the third year post. The other groups in Spokane County also show a decline, although not so pronounced. In Pierce, three groups show somewhat smaller reductions, and one group shows an increase.

To summarize the graphical impressions, in all three counties the Graduate group has a more favorable pattern of arrests (including fewer arrests) post drug court referral than pre, and a more favorable pattern than any of the other comparison groups. However, because they also have lower rates of arrests *before* drug court than the other groups, the question of whether the low arrest rate after is explained by the low rate before, rather than by the effect of drug court participation, must be addressed.

Thurston, Skagit and Kitsap Counties:

Interpretation of the results from these counties is severely limited by the short follow-ups and small sample sizes. However, the pre-court referrals group sizes from Thurston County are respectable, and they show a patterns of mean number of arrests across the groups that is different from the three older courts, namely very little difference among groups, a decline in mean arrests for some groups from pre year two to pre year one, and the Graduate group not being noticeably lower than the other groups. Also in Thurston, in the first year post there do not appear to be differences among groups, and the Graduate group does not have the lowest mean (although n's are very small). In Skagit County the patterns in the pre-court years are familiar, but the one year post data show slightly larger declines for the Did Not Finish group than for the Graduate group. Kitsap county has so little data that no comments are possible.

Statistical tests for group differences, controlling for pre-court differences.

To assess whether low pre-court arrest rates account for low post court rates in the Graduate group we performed an analysis of variance for each county that allowed us to determine whether the groups were statistically different from each other when only the *changes* in scores

from pre- to post-court were considered (based on the overall mean annual number of arrests per year before compared to the overall mean annual number of arrests after court referral). In all three counties, there were highly statistically significant differences in the changes in numbers of arrests for the groups. These results tell us that in each county at least one group was different from at least one other group. The real issue, however, is whether the Graduate groups do better than the other groups.

In order to address this issue two additional tests were performed. In the first all the groups were compared statistically with each other to determine which pairs were different. Since there are three counties and ten comparison of pairs in each county, the results are complex and hard to summarize. However, the following statements can be made:

1. The Graduate group had the most favorable change score in King and Spokane counties. This means that in King and Spokane counties, the Graduates showed a larger decline in mean number of arrests than any other group, even though they had the lowest arrest rate to begin with. They had the second best change score in Pierce County (the Actives were better).

2. The Graduates were significantly better than the Opt-Outs in all three counties.

3. The Graduates were significantly better than the Did Not Finish group in King and Spokane counties, but not in Pierce.

4. The Graduates were significantly better than the Ineligibles in Pierce, but not in King or Spokane.

5. The Graduates were significantly better than the Actives in King, but not in Pierce or Spokane.

The interpretation of these results is difficult. In our opinion, the clearest expectation before the analyses were that the Graduates would do better than the Did Not Finish group. This occurred in only two of the three counties. Since the Actives are a mix of future Graduates and future failures to finish, we would expect them to be in between these two groups. Yet in King, there was a significant difference between Graduates and Actives (along with Did Not Finish). After the fact it is easy to find reasons for both the Opt-Outs and the Ineligibles to be either similar to or different from the Graduates. In our data only the Opt-Outs have systematically worse outcomes than the Graduates across all three counties, with a mixed pattern for the Ineligibles. Based on these results the conclusion would be that the Opt-Out group is at definite risk for poor outcomes relative to the Graduates. The Did Not Finish group may be at similar risk. The case for Ineligibles having a poorer outcome than Graduates is less strong.

In the second set of additional analyses, and still within the context of the analysis of variance, we performed planned tests comparing the Graduate group with the Did Not Finish, Opt Out and Ineligible groups separately, and with them combined.

On these tests, in all three counties the Graduates were highly significantly different from the combined group of Opt Outs, Did Not Finish and Ineligible, and in all three counties the Graduates were significantly different from the Opt Outs. In two counties (King and Spokane) the Graduates were different from the Did Not Finish, and in two counties (Pierce and Spokane) the Graduates were different from the Ineligibles. This pattern is very similar to that reported just above: The Graduates are most different from the Opt Outs, and less consistently from the Did Not Finish and Ineligible groups.

Practical Significance.

In a statistical analysis, the larger the sample sizes, the more likely a given sized group difference is to be statistically significant. In the analyses reported above, all the group sizes (except for the Active group in Pierce, which is far too small for reliable analyses) range from being

acceptable (those in the 50 to 70 range) up to being quite large (several hundred and larger). With samples as large as these, very small differences between groups can be statistically significant, but not necessarily useful in a practical sense.

A measure of the importance of the difference between groups that is *independent* of the group sizes is the **effect size**, which is an index of the magnitude of the difference between groups that controls for variability and is not directly related to group size. Effect size is measured as a decimal fraction starting with zero and up. It can exceed 1.0, but in the behavioral and social sciences is rarely larger than about .4 or .5 and generally considerably smaller. According to one authority, a "small" effect size for this test would be one around .10, a "medium" effect size would be about .25, and a "large" effect would be around .4 or higher. Most social service interventions (and most medical services as well) can be expected to range in the small to medium range.

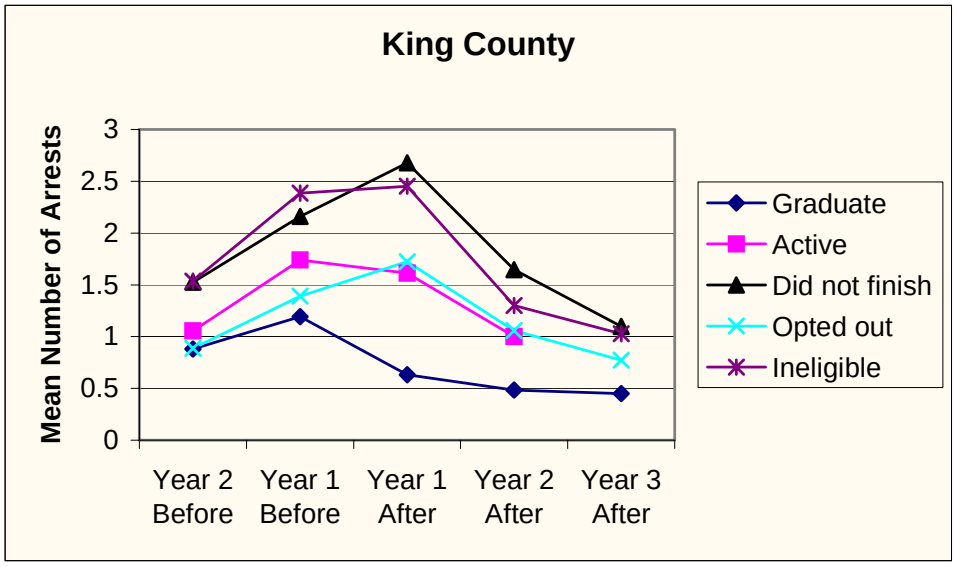
The effect sizes for the overall test for differences among means for the three counties range from .105 to .164. By the criteria mentioned above, these are "small" ranging up toward low-medium effect sizes. For the tests comparing Graduates with Did Not Finish, Opt Outs and Ineligibles described last above, the effect sizes for the statistically significant results range from .071 to .114, all in the small effect size range.

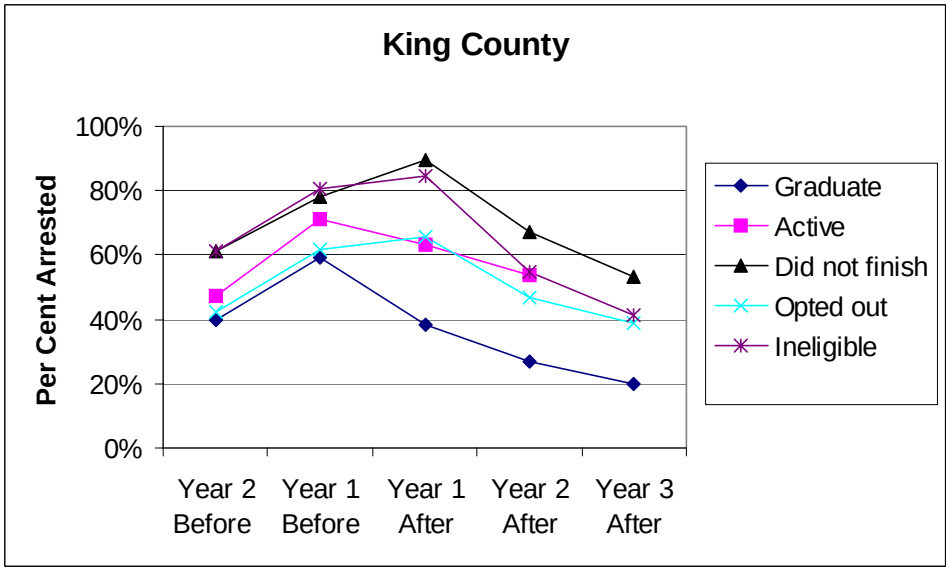
CONCLUSIONS

These results can be interpreted to mean that there is a positive effect of drug court on numbers of post-court arrests for Graduates of the courts, but that it is a small effect. In practical terms this means that the effect size of drug court is comparable to those of most social service programs.

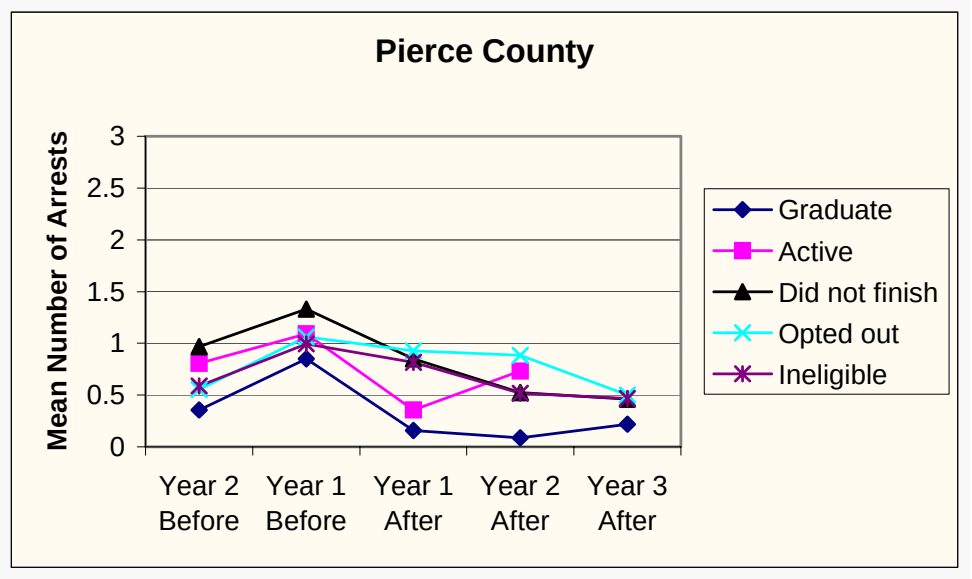
In comparing the Graduates with the comparison groups, the Graduates are different from the Opt Outs in all three counties; different from the Did Not Finish group in King and Spokane counties, and different from the Ineligibles in Pierce and Spokane counties.

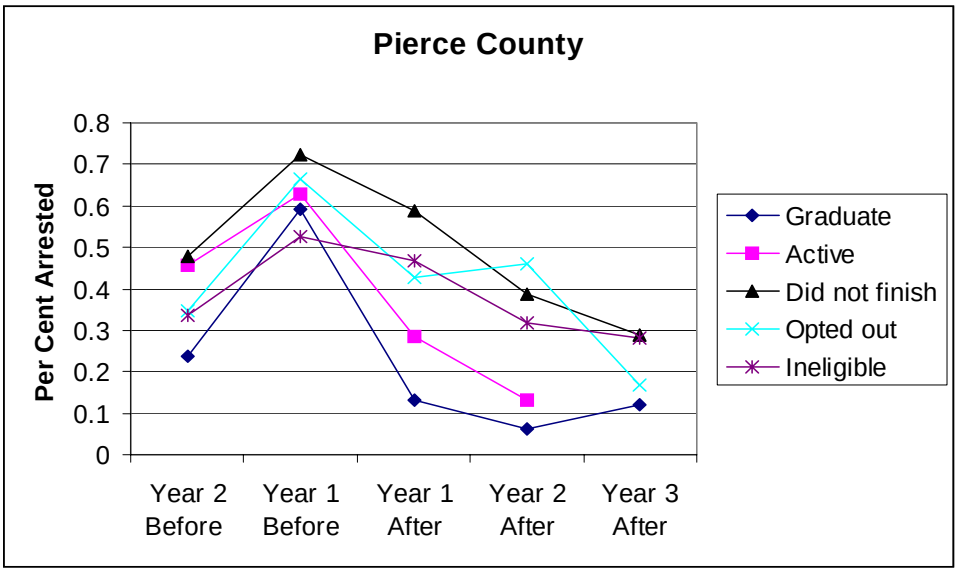
Visually, there is a tendency for the differences to become smaller over time.



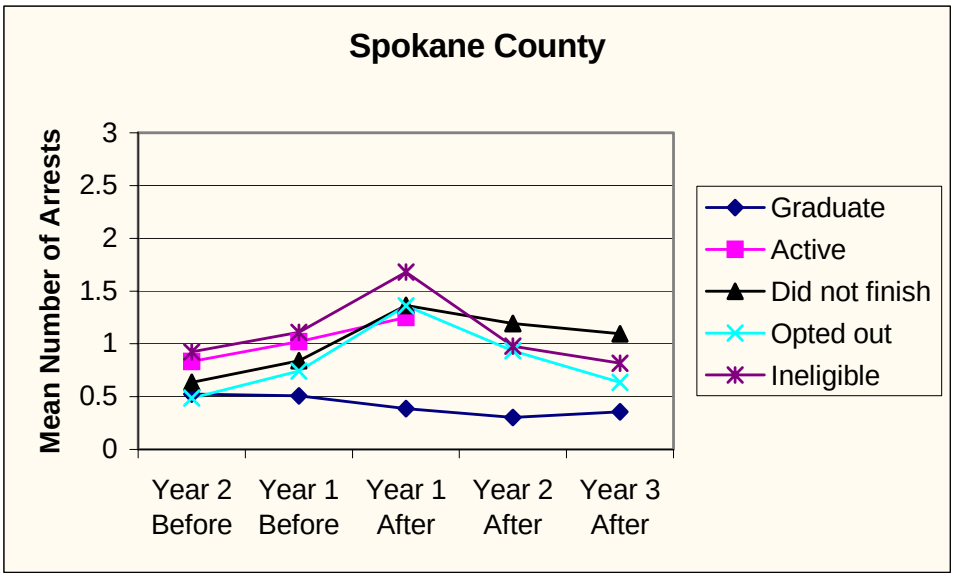


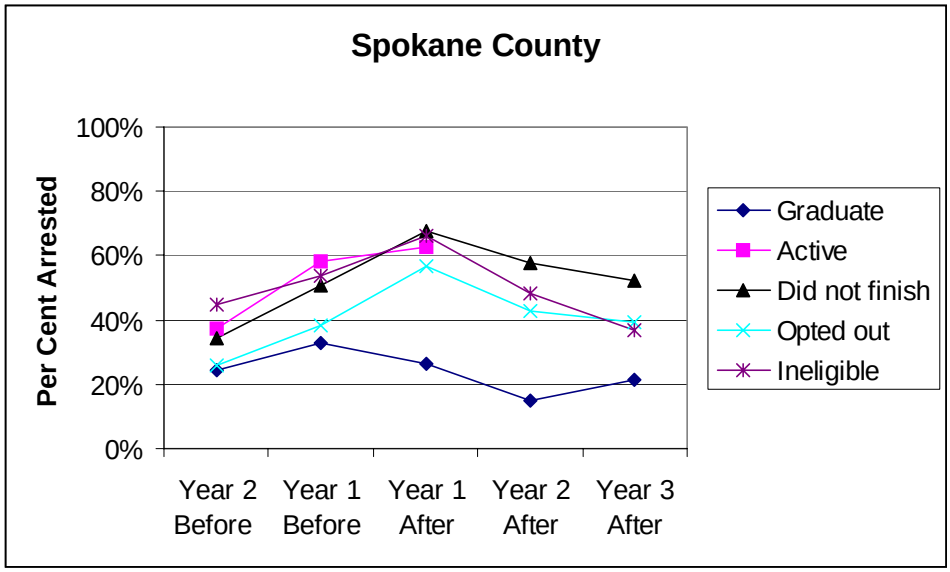
	King County				
GROUP	**Year 2 before**	**Year 1 before**	**Year 1 after**	**Year 2 after**	**Year 3 after**
Graduate	217	217	211	169	120
Active	278	278	90	39	
Did not finish	667	667	575	438	301
Opted out	1850	1850	1537	1257	757
Ineligible	331	331	223	154	104



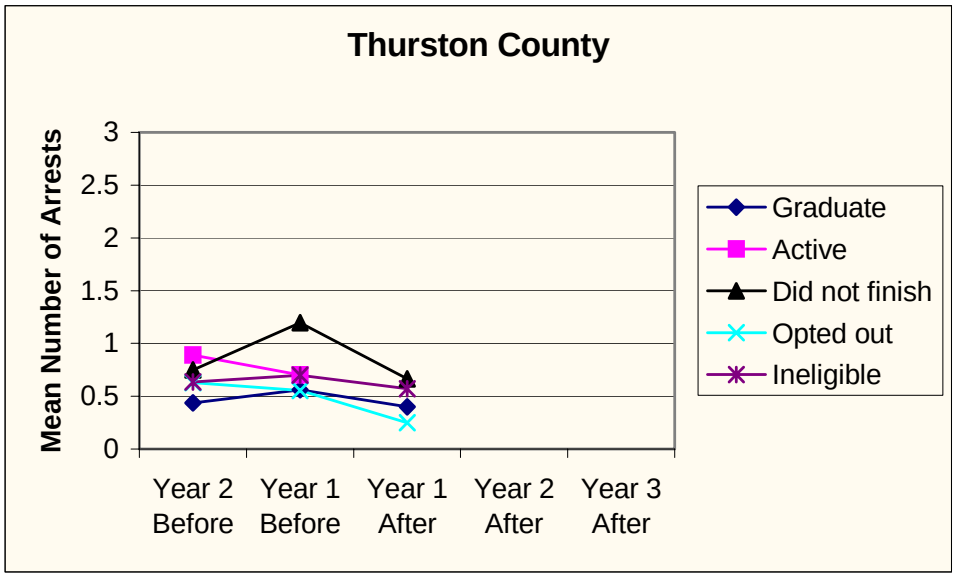


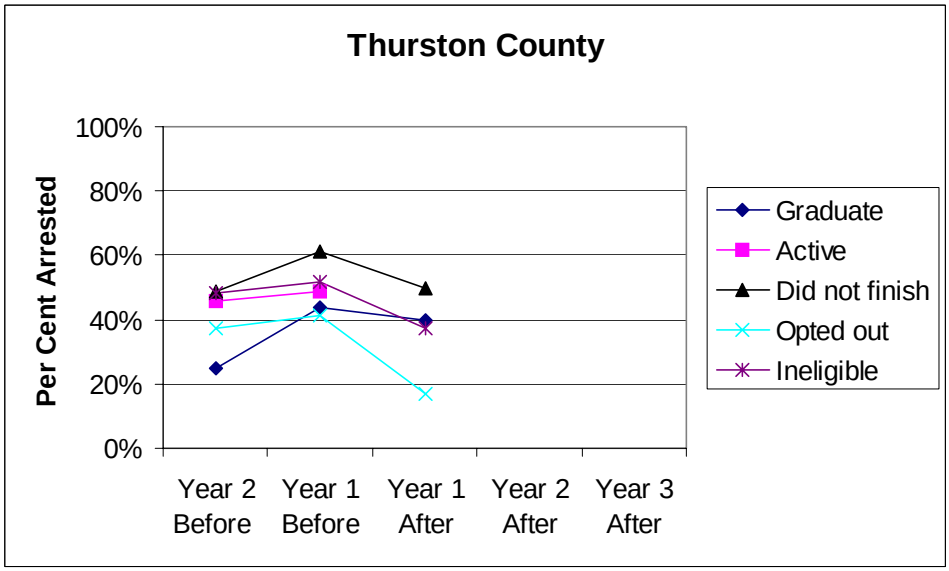
	Pierce County				
GROUP	**Year 2 before**	**Year 1 before**	**Year 1 after**	**Year 2 after**	**Year 3 after**
Graduate	200	200	191	128	51
Active	300	300	70	15	
Did not finish	325	325	293	199	52
Opted out	81	81	54	26	6
Ineligible	975	975	893	789	709



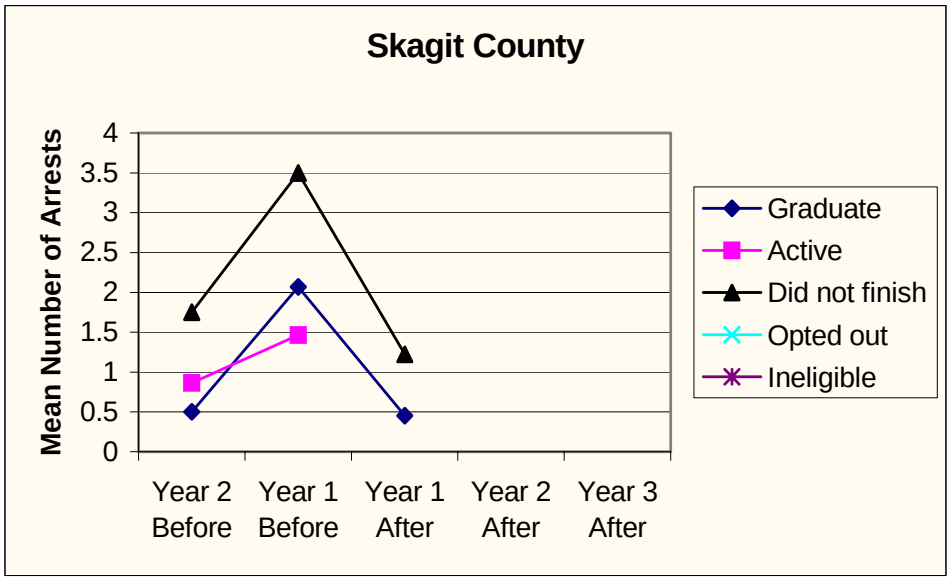


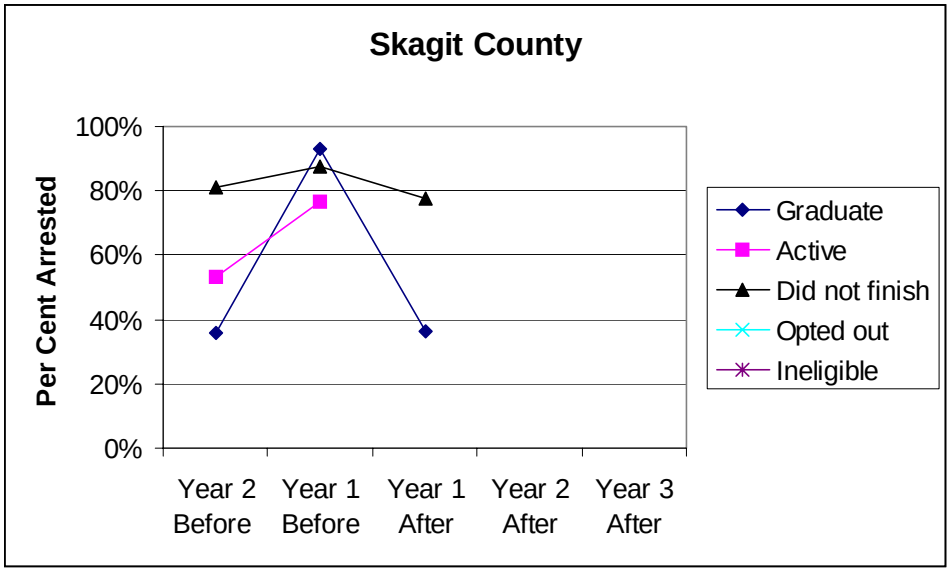
	Spokane County				
GROUP	**Year 2 before**	**Year 1 before**	**Year 1 after**	**Year 2 after**	**Year 3 after**
Graduate	61	61	57	33	14
Active	48	48	8	1	
Did not finish	99	99	80	52	21
Opted out	360	360	261	119	33
Ineligible	1317	1317	805	405	140



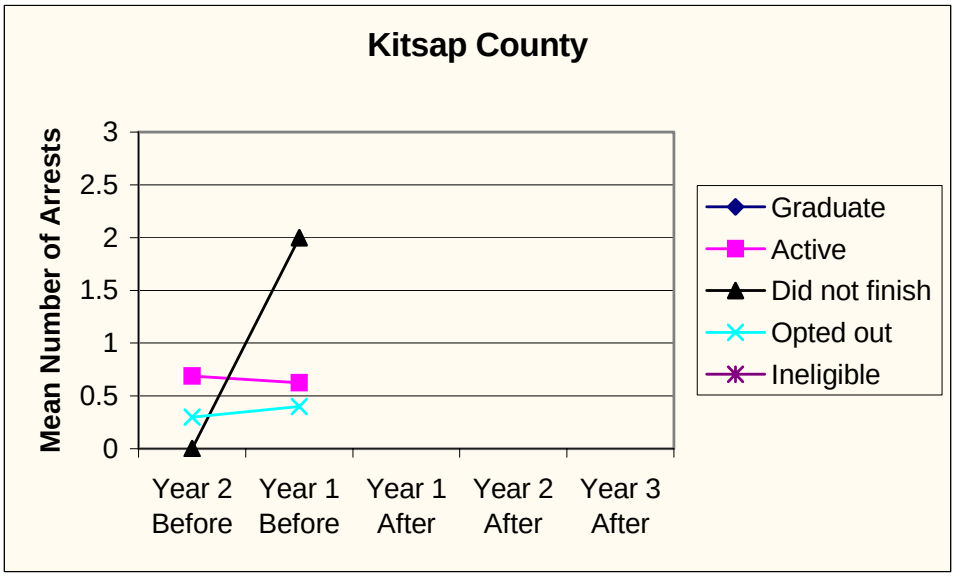


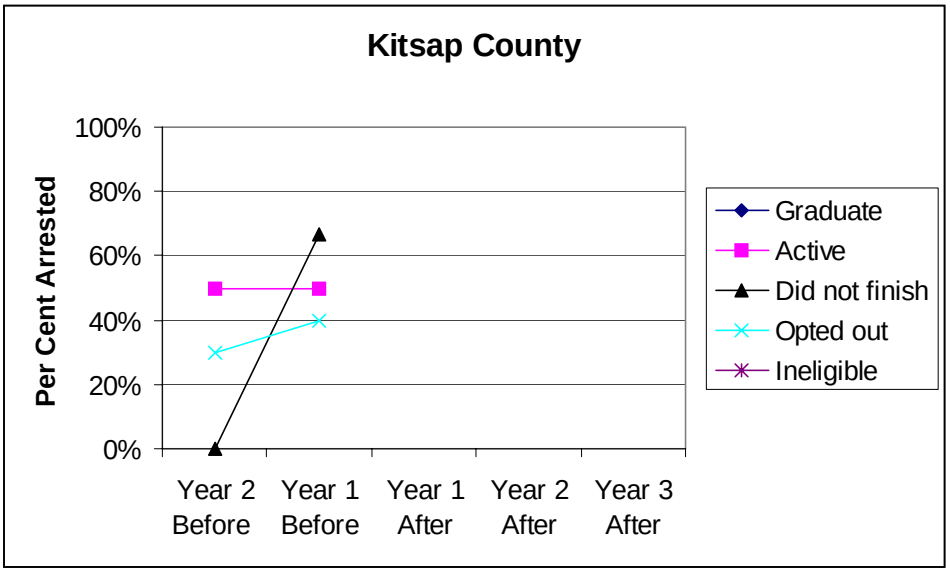
		Thurston County			
GROUP	**Year 2 before**	**Year 1 before**	**Year 1 after**	**Year 2 after**	**Year 3 after**
Graduate	16	16	5		
Active	37	37			
Did not finish	72	72	6		
Opted out	175	175	12		
Ineligible	30	30	7		





Skagit County					
GROUP	**Year 2 before**	**Year 1 before**	**Year 1 after**	**Year 2 after**	**Year 3 after**
Graduate	14	14	11		
Active	30	30			
Did not finish	16	16	9	1	
Opted out					
Ineligible					





	Kitsap County				
GROUP	**Year 2 before**	**Year 1 before**	**Year 1 after**	**Year 2 after**	**Year 3 after**
Graduate					
Active	16	16			
Did not finish	3	3			
Opted out	10	10			
Ineligible	1	1			