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The long-term effect of the NSW Drug Court on recidivism

Don Weatherburn[a], Steve Yeong[b], Suzanne Poynton[b], Nikky Jones[a] and Michael Farrell[a]

[a] National Drug & Alcohol Research Centre [b] NSW Bureau of Crime Statistics and Research

AIM

To evaluate the long-term effectiveness of the NSW Drug Court in reducing recidivism.

METHOD

Offenders referred to the NSW Drug Court and accepted onto the program (the treatment group) were compared with offenders referred to but not accepted onto the program (the control group). Cox regression analyses were conducted to assess the impact of the NSW Drug Court on four outcomes: (1) time to the next proven offence (of any type); (2) time to the next proven person offence; (3) time to the next proven property offence; (4) time to the next proven drug offence. Negative Binomial regression was used to assess the effect of the NSW Drug Court on the total number of reconvictions. All analyses controlled for age, sex, Aboriginality, the principal offence associated with each case, whether the offender was previously convicted of a violent offence, number of concurrent offences, the number of prior convictions and time spent in custody.

RESULTS

Net of controls, offenders in the treatment group took 22 per cent longer to re-offend for a person offence than offenders in the control group. Offenders in the treatment group also had a 17 per cent lower re-offending rate than offenders in the control group. No differences between groups were found in relation to time to the next offence of any kind, time to the next property offence or time to the next drug offence.

CONCLUSION

The Drug Court appears to have long term beneficial effects on the total number of reconvictions and the risk of another person offence.

KEYWORDS Drug Court | recidivism | survival analysis

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INTRODUCTION

Drug Courts emerged in the United States in the 1980s in response to the twin problems of court and prison congestion and drug-related crime. They are premised on the assumption that if an offender's crime is drug-related, reducing their drug consumption should reduce their involvement in drug-related crime. Participants in Drug Court programs are typically subject to close monitoring, including frequent meetings with the Drug Court team and frequent testing for drug use. Progress toward abstinence is also usually rewarded in some way, while relapse or non-compliance with program conditions typically attracts a sanction (e.g. a short stay in prison). Beyond these common features there are many differences, including the point at which entry into the Drug Court program occurs (pre or post sentence), the length of the program, the eligibility requirements, the type(s) of treatment available and the sanctions imposed for non-compliance with program conditions (Collins, Agnew-Pauley & Soderholm, 2019).

Concerns have been raised about the ethics of coerced treatment programs such as the Drug Court (Christie & Anderson, 2003), and about the appropriateness of having judicial officers involved in the delivery of treatment (Butler, 2013). The available evidence nonetheless suggests that, over the short term, Drug Courts are effective in reducing re-offending. A review conducted for the Campbell Collaboration by Mitchell et al. (2012) concluded that Drug Courts reduce adult re-offending rates by up to 12 percentage points. Earlier reviews of Drug Court effectiveness have also been favourable (US Government Accountability Office, 2011; Wilson, Mitchell & MacKenzie, 2006; Belenko, 1998). In Australia, significant reductions in re-offending were found by Lind et al. (2002) in their evaluation of the NSW Drug Court program and by Weatherburn et al. (2008) in a follow-up evaluation of the same program. Kornhauser (2018) concluded in his review of Australian Drug Court programs that they reduce re-offending more than conventional sanctions, although he cautioned that certainty on this issue should be 'tempered by mixed results and methodological limitations' (Kornhauser 2018, p. 76).

Despite the large volume of research on Drug Courts, one issue about which we know very little is whether the reduction in re-offending among Drug Court participants is sustained over the long-term (e.g. 5-10 years). Most Drug Court evaluations have comparatively short follow-up periods. Only eight of the 92 adult Drug Court programs included in the systematic review carried out by Mitchell et al. (2012) had follow-up periods of more than 36 months. The majority had follow-up periods of two years or less. The follow-up periods in most Australian Drug Court evaluations have also typically been under three years (Kornhauser, 2018). This is unfortunate, as there are indications that the positive results found in Drug Court evaluations over the short-term sometimes disappear over the longer term (see, for example, Payne, 2008). This does not vitiate the claim that Drug Courts are effective, but the duration of their effects has a critical bearing on their cost-effectiveness relative to other forms of intervention, such as the expansion of voluntary treatment (Goodall, Norman & Haas, 2008).

We have only been able to locate three studies purporting to examine the long-term effect of Drug Court participation. The first of these (Krebs et al., 2007) actually had a follow-up period of only 30 months but is of interest in the present context because it found that the lower rate of re-offending among Drug Court participants did not appear until 12 months after placement on the program and ceased to be significant at 18 months. The second (DeVall et al., 2017) examined recidivism amongst Drug Court participants in a Midwest city in the United States over a five-year period. Instead of comparing the recidivism rate of Drug Court participants to a control (no treatment) group, they compared the recidivism rate of those who completed the Drug Court program to those who did not complete it. The results revealed, perhaps not surprisingly, that those who completed the program had a lower recidivism rate. Given the scope for selection bias in such comparisons, it is doubtful whether this finding tells us much about the long-term effectiveness of Drug Court programs.

Kearley and Gottfredson (2020) have published the most rigorous study to date on the long-term effect of Drug Court participants. They examined recidivism and incarceration outcomes in a 15-year follow-up of offenders randomly allocated to Baltimore City's Drug Treatment Court (BCDTC) or to traditional adjudication. The researchers found no difference between the treatment and comparison groups in total

days of sentenced incarceration or in the speed of desistance from crime (as measured by the annual average percentage reduction in recidivism). However they did find that, after adjusting for the effects of age, gender, race and prior convictions, participation in the BCDTC resulted in 32 per cent fewer arrests, 40 per cent fewer property charges and 25 per cent fewer drug charges than those in the comparison group across the 15 year follow-up period. They concluded that Drug Courts "have the potential to lead to sustained long-term effects on criminal offending for individuals with significant criminal history records and chronic substance abuse histories" (Kearley & Gottfredson 2020, p. 27).

It is unclear whether Australian Drug Court programs produce the same long-term benefits in terms of reduced offending as those found in Baltimore. The effectiveness of Drug Courts in reducing re-offending likely depends on a range of local factors, such as the availability of treatment and employment, the type(s) of substance abuse problem typically dealt with by the court and the level of supervision participants are under (see, for example, Jones, 2012). In this report we present the results of the first long-term evaluation of an Australian Drug Court. Our aim is to determine whether the positive results observed in the first and second evaluations of the NSW Drug Court are sustained over a period of more than ten years. In the next section of this report we describe the operation of the NSW Drug Court. The section that follows explains how the evaluation was conducted. The fourth section presents the study results, while the final section discusses the implications of the study for policy and for future Drug Court research.

The NSW Drug Court

Weatherburn et al. (2008) provide a brief description of the operation of the NSW Drug Court. The description below is an abridged and updated version of the account given by those authors. Under the original *Drug Court Act 1998 (NSW)*, a person was deemed to be eligible for the program if:

1. They had been charged with an offence that can be dealt with summarily and does not involve serious offences such drug supply, violence, or sexual assault; and
2. it was highly likely that the person would, if convicted, be sentenced to imprisonment; and
3. the person pleaded guilty or indicated an intention to plead guilty; and
4. the person appeared to be dependent on the use of prohibited drugs; and
5. the person satisfied other criteria prescribed by the regulations.

The other eligibility criteria set out in the regulations included the requirement that:

6. The offender's usual place of residence falls within prescribed Local Government Areas in western and south-western Sydney; and
7. the offender does not have a mental health condition that could prevent active participation in the program.

When the Drug Court commenced operation, offenders referred to the Drug Court were required to complete a preliminary health assessment to determine their eligibility for the program. During this time, further investigations were made to determine the offender's eligibility. Offenders still considered eligible after this preliminary screening were required to complete a detoxification assessment stage before acceptance onto the program. During the detoxification stage, an assessment was made of the individual's treatment needs and a treatment plan was formulated. After detoxification, the offender appeared before the Drug Court, where he or she entered or confirmed a guilty plea and was given an initial sentence of imprisonment. That sentence was then suspended upon the offender agreeing to abide by his or her program conditions. On termination (or graduation), the initial sentence was reviewed, and a final sentence imposed by the Drug Court.

The first evaluation of the NSW Drug Court program (Lind et al., 2002) capitalised on the fact that, whenever there was a surplus of eligible offenders relative to places on detoxification, entry into

detoxification (and therefore the program) was determined by random ballot. The basic structure of the Drug Court program has been preserved but several important changes have been made to Drug Court procedures and policy since the first evaluation. The Drug Court has, on equity grounds, kept the random ballot but changed its position in the sequence of procedures leading to selection for the Drug Court. During the first evaluation, eligibility assessment took place before participants were randomly allocated to treatment or control groups. Certain procedures in the eligibility assessment process now take place after the random ballot. The new procedure governing acceptance onto the Drug Court program is as follows.

If a referring court considers an offender to be prima facie eligible and willing to participate in the Drug Court program, it must refer the offender to the Drug Court for assessment. If there are sufficient places for those referred, the Drug Court assesses those referred to see if they are eligible and accepts those who are eligible onto the program. Those considered not eligible are dealt with in a normal court. If in any given week there are more referrals than places on the program, the Drug Court conducts a ballot among those referred to fill the available places. Following the ballot, it removes anyone deemed ineligible under the Drug Court Act and regulations. The remainder are accepted onto the program. In practice, those excluded have nearly always been either convicted of a violent offence or found to reside 'out of area'. However, the fact that the random ballot occurs prior to the removal of individuals deemed ineligible means that the allocation to 'treatment' and 'comparison' groups is no longer random. Consequently, it is necessary to adjust for differences between Drug Court and comparison group participants.

Aim

The study reported here addresses two related questions:

(1) Does the NSW Drug Court have any long-term positive effect on the likelihood of (a) an offence of any type (b) an offence against the person (c) a property offence or (d) a drug offence?

(2) Does the NSW Drug Court have any long-term positive effect on the number of reconvictions?

We pursue (2) as well as (1) because the treatment and control groups may not differ in the likelihood of a further offence, but could differ in the rate of further offending.

METHOD

Study sample

In the Drug Court re-evaluation conducted by Weatherburn et al. (2008), 645 offenders accepted onto the Drug Court program were compared with 329 offenders deemed eligible for the program but not accepted on it. As already noted, most of those deemed eligible for the program but excluded from it had been convicted of a violent offence or found to reside 'out of area'. Efforts were made to identify all post-referral court appearances for the 974 offenders included in this study but confirmed links were only able to be made with 910 offenders (i.e. 93 per cent of the original study participants).

The sample for the current study consisted of 604 Drug Court participants and 306 offenders deemed eligible for the program but not accepted on to it. Data on all offenders was drawn from ROD, a re-offending database maintained by the NSW Bureau of Crime Statistics and Research. Participants were followed up from the date of the court appearance resulting in their referral to the NSW Drug Court until their death or the end of the study period (31/10/2019). ROD contains information on deaths recorded in the NSW Registry of Births, Deaths and Marriages. A total of 85 offenders died in NSW during the follow up period but there was no significant difference between treatment and control groups in the number of deaths. Information on deaths in other jurisdictions or countries could not be obtained.

Dependent variables

For the purposes of this study we define the index court appearance as the court appearance that results in referral to the NSW Drug Court. We define a re-offence as any proven offence committed after the index court appearance. The outcome examined in responding to questions 1(a) to 1(d) is free days (days out of custody) until death, the end of the follow-up period or the date of a new offence, whichever comes first. Records were censored at the date of death or the end of the follow-up period (31/10/2019). For question 1(a), there was no restriction on the type of offence that constituted a further offence. For each of the questions 1(b) to 1(d), the definition of re-offending was limited to reconviction for either a personal (question 1b), property (question 1c) or drug offence (question 1d). A 'personal offence' is defined as any offence falling into Australian and New Zealand Standard Offence Classification (ANZSOC) categories 111 to 621. A 'property offence' is defined as any offence falling into the ANZSOC categories 711 to 841. A 'drug offence' is defined as any offence falling into ANZSOC categories 1011 to 1099 (for further details see: Australian Bureau of Statistics, 2011). The outcome examined for question (2) was the number of post index court appearances at which one or more offences (regardless of offence type) were proven.

Covariates

Following Weatherburn et al. (2008), the covariates included in the analysis were:

1. Treatment group (coded '1' if commenced treatment, '0' otherwise).
2. Catchment (coded '1' if in the Drug Court catchment area, '0' otherwise).
3. Age (coded '1' if aged 18-21, '2' if aged 22-26, '3' if aged 27-30 and '4' if aged 31 or older).
4. Sex (coded '1' if male, '0' otherwise).
5. Aboriginal status (coded '1' if Non-Aboriginal, '0' if Aboriginal).
6. Principal offence at the index court appearance (coded '1' if the principal offence was a violent offence, '2' if it was a theft offence, '3' if it was a drug offence and '4' if it was any other offence. The relevant definitions for each of these offences are: ('1' = ANZSOC codes 111 to 621, '2' = ANZSOC codes 711 to 841, '3' = ANZSOC codes 1011 to 1099, '4' = any other code).
7. Number of concurrent offences (coded '1' if 0-2, '2' if 3-5, '3' if '6-10', and '4' otherwise).
8. Prior violence (coded '1' if convicted in the last five years of an offence within ANZSOC categories 111 to 621, '0' otherwise).
9. Number of prior convictions (coded '1' if 0-4, '2' if 5-9, '3' if 10-14 and '4' if 15 or more).

Analysis techniques

Cox regression was used to address the question of whether participation in the Drug Court program reduced either the time to the first offence (of any type), the time to the first personal offence, the time to the first property offence and/or the time to the first drug offence. A global test of the proportional hazard assumption for each model was carried out by inspecting the Schoenfeld residuals. All tests were non-significant, indicating that the proportional hazards assumption was satisfied in each of the models.

The impact of participation in the Drug Court program on the rate of subsequent offending was addressed using Negative Binomial regression, using free days as an offset. This method was chosen over recurrent event survival analysis because the distribution of the number of subsequent court appearances was both highly skewed and very sparse. The mean number of free days was 3,864 (median = 4,187, iqr = 1,833, min = 69, max = 6,041). The development of a final model for the Negative Binomial regression followed the same pattern as for the Cox regression.

It is important to emphasise that the analysis which follows is based on the principle of Intention-To-Treat (ITT). In other words, the treatment group consists of all those accepted onto the Drug Court program,

regardless of whether they completed that program, left it of their own volition or were removed from the program by the Drug Court judge. We adhere to the ITT principle because it carries much less risk of selection bias than comparing those who complete the program with those who are not accepted on to it (Gupta, 2011). It is acknowledged that including those who do not complete the treatment program in the treatment group will inevitably result in a dilution of any treatment effect. We will return to this point in the discussion.

RESULTS

Descriptive statistics

Only about 40 per cent of the group who commenced treatment, completed it to the satisfaction of the Drug Court. The follow-up periods (in elapsed time) ranged from 122 days to 17.6 years, with an average follow-up period of 13.5 years and a median follow-up period of 13.8 years (s.d. 2.4 years). The average age of control group members was 29.9 years (CI: 29.1 to 30.8). The average age of treatment group members was 30.5 years (CI: 30.0 to 31.0). Table 1 provides descriptive statistics for the categorical variables included in the study.

Table 1. Descriptive statistics

Variable		Frequency	Per cent
Treatment group			
	No	306	33.6
	Yes	604	66.4
Catchment			
	No	139	15.3
	Yes	771	84.7
Sex			
	Female	156	17.1
	Male	754	82.9
Aboriginal status			
	Aboriginal	261	28.7
	Non-Aboriginal	649	71.3
Principal offence			
	Violent	65	7.1
	Theft	381	41.9
	Drug offence	95	10.4
	Other	369	40.6
Number of concurrent offences			
	0-2	180	19.8
	3-5	276	30.3
	6-10	258	28.4
	11+	196	21.5
Prior violence			
	No	603	66.3
	Yes	307	33.7
Number of prior convictions			
	0-4	156	17.1
	5-9	328	36.0
	10-14	255	28.0
	15+	171	18.8

Bi-variate analyses

Given our intention to compare outcomes for treated and untreated groups, it is of interest to see how they differ in terms of the study covariates. Table 2 shows the profile of the treatment and control groups in terms of those covariates. The final column shows the p-value of the Chi-square test for bi-variate significance.

Table 2. Treatment and control group profiles

Variable	Control %	Treatment %	*p*-value
Catchment			0.001
No	20.9	12.4	
Yes	79.1	87.6	
Sex			0.078
Female	14.1	18.7	
Male	86.0	81.3	
Aboriginal status			0.007
Aboriginal	34.3	25.8	
Non- Aboriginal	65.7	74.2	
Principal offence			0.019
Violent	10.1	5.6	
Theft	36.3	44.7	
Drug offence	10.5	10.4	
Other	43.1	39.2	
Number of concurrent offences			<0.001
0-2	27.1	16.1	
3-5	35.0	28.0	
6-10	24.8	30.1	
11+	13.1	25.8	
Prior violence			<0.001
No	49.7	74.7	
Yes	50.3	25.3	
Number of prior convictions			0.113
0-4	19.0	16.2	
5-9	34.0	37.1	
10-14	24.8	29.6	
15+	22.2	17.1	

There are several significant differences between the treatment and control groups. Some of these are to be expected. Treatment group members, for example, are more likely to come from the catchment area of the Drug Court. They are also less likely to have a violent offence as their principal offence (violent offenders are technically not eligible for the Drug Court program, although the Court does exercise some discretion on this issue). Treatment group members tend to be older, are less likely to be Aboriginal, more likely to have a theft offence as their principal offence, more likely to have multiple concurrent offences and much less likely to have a prior conviction for a violent offence.

Figures 1 to 4 show the Kaplan-Meier curves for the treatment and control groups and for each of the re-offending outcomes: any offence (Figure 1), an offence against the person (Figure 2), a property offence (Figure 3) and a drug offence (Figure 4). The y-axis in each figure shows the percentage that have been reconvicted of the focal offence. The x-axis shows free days since the index court appearance where the offender was accepted onto or rejected from the Drug Court program. The number at risk of re-offending at 2,000, 4,000 and 6,000 days is shown under each graph. Log rank tests reveal that, prior to adjustment for any other factors, there were no significant differences in the survival curves for the treatment and control groups for any offence ($\chi^2 = 0.43$, $p = 0.51$); a property offence ($\chi^2 = 0.44$, $p = 0.43$); or a drug offence ($\chi^2 = 2.25$, $p = 0.14$). There was, however, a significant difference between treatment and control groups for a person offence ($\chi^2 = 12.84$, $p = 0.0003$).

Figure 1. Cumulative proportion re-offending for any offence, by treatment status

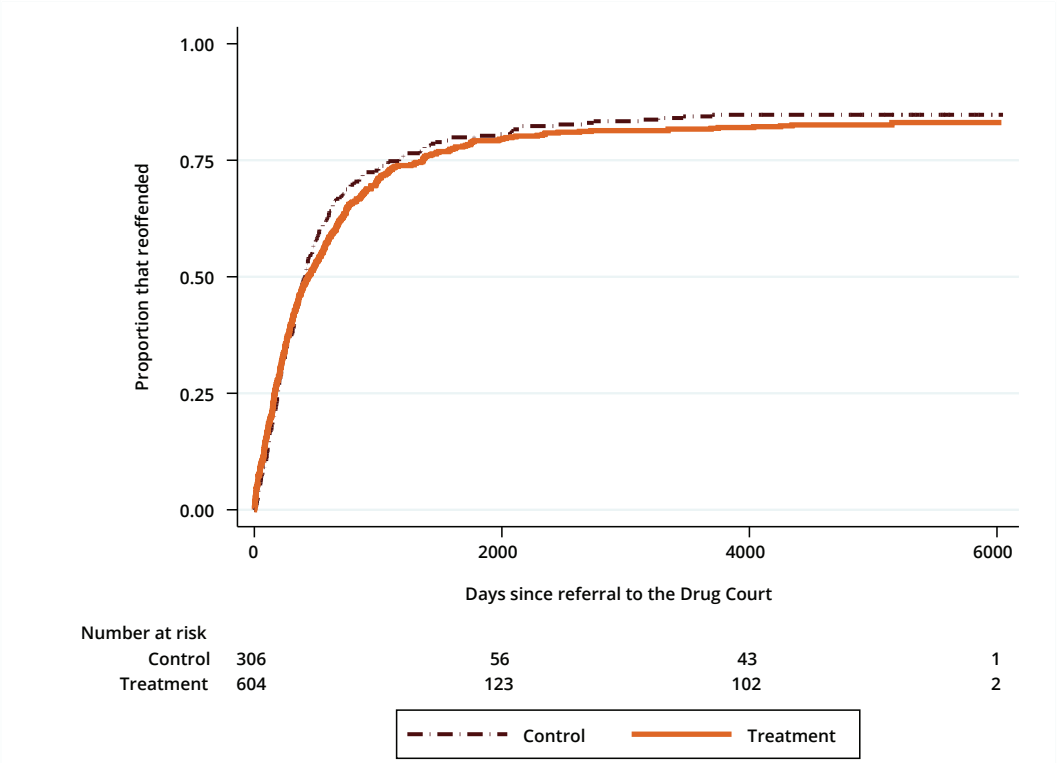


Figure 2. Cumulative proportion re-offending for person offences, by treatment status

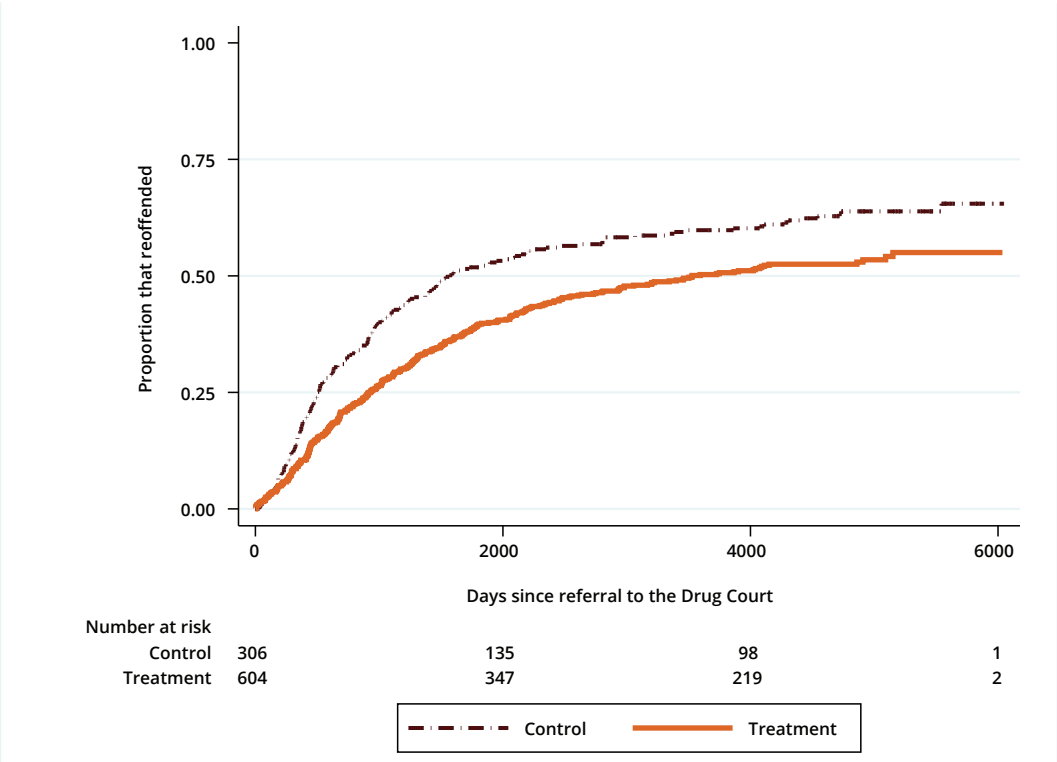


Figure 3. Cumulative proportion re-offending for property offences, by treatment status

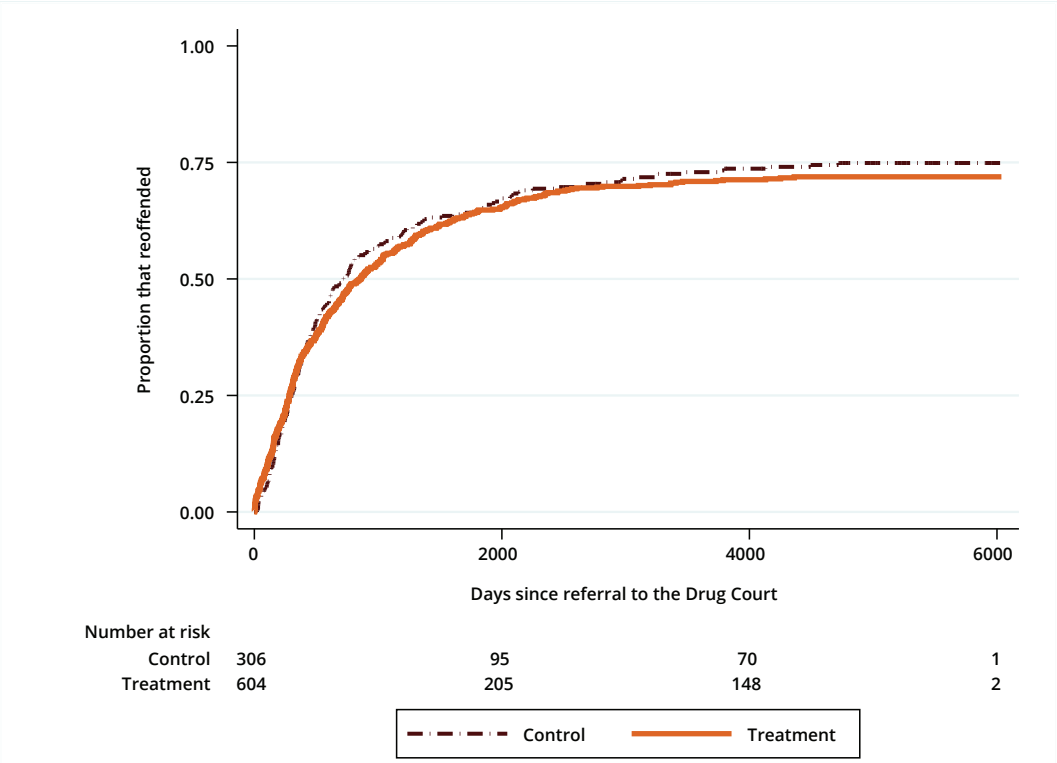
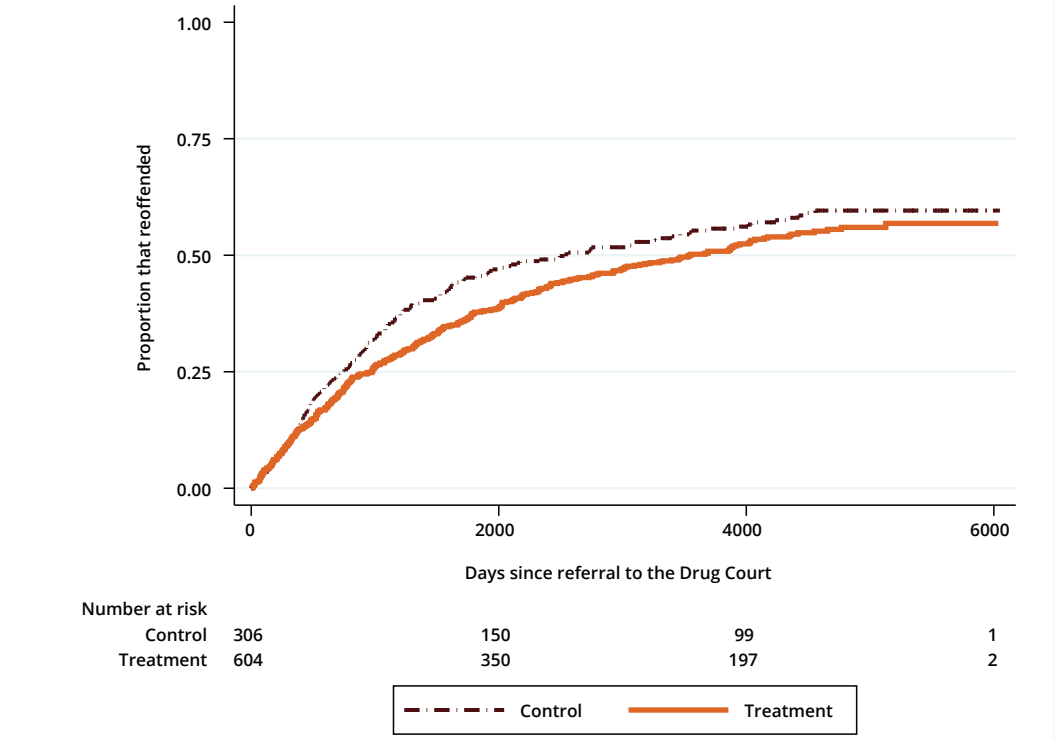


Figure 4. Cumulative proportion re-offending for drug offences, by treatment status



Multivariable analyses: Cox models

Tables 3-6 show the Cox regression model results for time to the first offence of any type (Table 3), time to the first person offence (Table 4), time to the first property offence (Table 5) and time to the first drug offence (Table 6). A hazard ratio of one indicates no difference in the time to the first offence for treatment and comparison groups. A hazard ratio less than one indicates a longer time to the first offence by the group with the relevant characteristic. A hazard ratio greater than one indicates a shorter time to the first offence for the group with the relevant characteristic. Looking at Table 3, for example, the hazard ratio for the treatment group is close to one and non-significant. The time to the next offence is therefore not significantly different between treatment and control groups. Those with larger numbers of prior convictions, on the other hand, have hazard ratios greater than one and are significant, indicating that they are quicker to re-offend.

Table 3. Effect of Drug Court treatment on time to any offence

Covariate	Haz. Ratio	Std. Err.	z	P>z	Lower 95 CI	Upper 95 CI
Treatment group	0.95	0.08	-0.67	0.50	0.81	1.11
Catchment area	1.01	0.10	0.05	0.96	0.82	1.23
Age	0.99	0.01	-2.63	0.01	0.97	1.00
Male	1.07	0.11	0.67	0.50	0.88	1.30
Aboriginal	0.86	0.07	-1.89	0.06	0.73	1.01
Principal offence (Ref = Violent offence)						
Theft	0.89	0.17	-0.64	0.52	0.61	1.28
Drugs	0.63	0.14	-2.06	0.04	0.41	0.98
Driving	0.84	0.17	-0.88	0.38	0.56	1.25
Other	0.83	0.18	-0.84	0.40	0.54	1.28
Number of concurrent offences (Ref = 0-2)						
3-5	1.05	0.12	0.45	0.66	0.85	1.31
6-10	1.10	0.13	0.87	0.39	0.88	1.38
11+	1.14	0.15	1.04	0.30	0.89	1.47
Prior violence	1.06	0.10	0.57	0.57	0.87	1.28
Number of prior convictions (Ref = 0-4)						
5-9	1.44	0.17	3.19	0.00	1.15	1.81
10-14	1.51	0.18	3.46	0.00	1.20	1.91
15+	1.97	0.25	5.29	0.00	1.53	2.54

Table 4. Effect of Drug Court treatment on time to the first person offence

Covariate	Haz. Ratio	Std. Err.	z	P>z	Lower 95 CI	Upper 95 CI
Treatment group	0.78	0.08	-2.57	0.01	0.64	0.94
Catchment area	0.99	0.13	-0.04	0.97	0.77	1.28
Age	0.97	0.01	-4.15	0.00	0.96	0.98
Male	1.80	0.24	4.32	0.00	1.38	2.34
Aboriginal	0.62	0.06	-5.01	0.00	0.51	0.75
Principal offence (Ref = Violent offence)						
Theft	0.71	0.14	-1.70	0.09	0.47	1.05
Drugs	0.45	0.12	-3.04	0.00	0.27	0.75
Driving	0.69	0.16	-1.62	0.11	0.44	1.08
Other	0.65	0.15	-1.84	0.07	0.41	1.03
Number of concurrent offences (Ref = 0-2)						
3-5	0.95	0.13	-0.40	0.69	0.72	1.24
6-10	1.16	0.16	1.08	0.28	0.88	1.53
11+	0.95	0.15	-0.32	0.75	0.70	1.30
Prior violence	1.35	0.15	2.67	0.01	1.08	1.69
Number of prior convictions (Ref = 0-4)						
5-9	1.64	0.24	3.41	0.00	1.23	2.18
10-14	1.56	0.24	2.96	0.00	1.16	2.10
15+	1.96	0.31	4.25	0.00	1.44	2.67

Table 5. Effect of Drug Court Treatment on time to the first property offence

Covariate	Haz. Ratio	Std. Err.	z	P>z	Lower 95 CI	Upper 95 CI
Treatment group	0.94	0.08	-0.71	0.48	0.79	1.12
Catchment area	0.95	0.10	-0.50	0.62	0.77	1.17
Age	0.98	0.01	-3.11	0.00	0.97	0.99
Male	1.04	0.11	0.39	0.70	0.85	1.29
Aboriginal	0.91	0.08	-1.04	0.30	0.77	1.08
Principal offence (Ref = Violent offence)						
Theft	0.94	0.19	-0.33	0.74	0.63	1.39
Drugs	0.47	0.12	-3.04	0.00	0.29	0.76
Driving	0.64	0.14	-1.98	0.05	0.41	0.99
Other	0.85	0.20	-0.72	0.47	0.54	1.33
Number of concurrent offences (Ref = 0-2)						
3-5	1.16	0.14	1.20	0.23	0.91	1.47
6-10	1.21	0.15	1.53	0.13	0.95	1.55
11+	1.32	0.18	2.02	0.04	1.01	1.73
Prior violence	1.02	0.10	0.22	0.83	0.84	1.25
Number of prior convictions (Ref = 0-4)						
5-9	1.51	0.19	3.23	0.00	1.18	1.94
10-14	1.65	0.22	3.77	0.00	1.27	2.14
15+	2.18	0.30	5.60	0.00	1.66	2.87

Table 6. Effect of Drug Court treatment on time to the first drug offence

Covariate	Haz. Ratio	Std. Err.	z	P>z	Lower 95 CI	Upper 95 CI
Treatment group	0.86	0.09	-1.49	0.14	0.70	1.05
Catchment area	0.87	0.11	-1.11	0.27	0.68	1.11
Age	0.98	0.01	-2.72	0.01	0.97	0.99
Male	1.47	0.20	2.89	0.00	1.13	1.91
Aboriginal	0.89	0.09	-1.12	0.26	0.73	1.09
Principal offence (Ref = Violent offence)						
Theft	0.93	0.22	-0.32	0.75	0.58	1.48
Drugs	1.12	0.31	0.41	0.68	0.65	1.92
Driving	1.05	0.27	0.18	0.86	0.63	1.75
Other	0.82	0.23	-0.71	0.48	0.48	1.41
Number of concurrent offences (Ref = 0-2)						
3-5	0.91	0.12	-0.72	0.47	0.69	1.18
6-10	1.10	0.15	0.68	0.50	0.83	1.45
11+	1.10	0.17	0.60	0.55	0.81	1.50
Prior violence	0.92	0.11	-0.68	0.50	0.72	1.17
Number of prior convictions (Ref = 0-4)						
5-9	1.59	0.24	3.05	0.00	1.18	2.14
10-14	1.77	0.28	3.63	0.00	1.30	2.40
15+	2.54	0.41	5.77	0.00	1.85	3.49

Looking across the row for 'Treatment group' in each table, it is evident that, although the hazard ratios for the treatment group are less than one for each of the offences, most of them are close to one and only one of them (person offences) is statistically significant. The treatment hazard ratio for the person model is 0.78 (shown in Table 4); indicating that, net of controls, the time to the next offence against the person is about 22 per cent longer for the treatment group than for the control group. The median survival time for the control group is 1,567 free days, whereas the corresponding median survival time for the treatment group is 3,530 free days.

The effects of the other covariates are as one would expect from past research (Stavrou & Poynton, 2016). The model for any offence (Table 3) reveals that those with multiple prior convictions offend sooner than those with fewer prior convictions. The model for person offences (Table 4) reveals that male offenders, those with a prior conviction for a violent offence and those with more prior convictions also offend sooner, while those who are non-Aboriginal and those whose principal offence is a drug offence take longer to their first drug offence than the offenders in their corresponding referent categories. The results for property offences (Table 5) reveal more rapid re-offending among those with multiple concurrent or multiple prior offences, while the drug offence model (Table 6) shows faster re-offending among those with multiple prior convictions.

Multivariable analyses: Negative Binomial Model

Table 7 shows the results of the Negative Binomial regression model. The incident rate ratio (IRR) is 0.83, which indicates that the treatment group offending rate is about 17 per cent lower than the rate of offending in the control group; a difference that is statistically significant. In practical terms we expect the control group to accumulate an average of about 3.05 new court appearances every 1,000 free days compared with 2.36 new court appearances per 1,000 free days for the treatment group.

Table 7. Effect of Drug Court treatment on total number of offences

Covariate	IRR	Std. Err.	z	P>z	Lower 95 CI	Upper 95 CI
Treatment group	0.83	0.06	-2.53	0.01	0.72	0.96
Catchment area	1.03	0.09	0.35	0.72	0.86	1.24
Age	0.98	0.00	-4.64	0.00	0.97	0.99
Male	1.30	0.11	3.00	0.00	1.10	1.55
Aboriginal	0.74	0.05	-4.19	0.00	0.64	0.85
Principal offence (Ref = Violent offence)						
Theft	0.81	0.14	-1.18	0.24	0.58	1.15
Drugs	0.58	0.12	-2.67	0.01	0.39	0.87
Driving	0.64	0.12	-2.32	0.02	0.44	0.93
Other	0.74	0.14	-1.56	0.12	0.50	1.08
Number of concurrent offences (Ref = 0-2)						
3-5	1.08	0.11	0.79	0.43	0.89	1.31
6-10	1.19	0.12	1.66	0.10	0.97	1.45
11+	1.19	0.14	1.50	0.14	0.95	1.49
Prior violence	1.16	0.10	1.75	0.08	0.98	1.38
Number of prior convictions (Ref = 0-4)						
5-9	1.41	0.14	3.48	0.00	1.16	1.71
10-14	1.51	0.16	4.01	0.00	1.24	1.85
15+	2.43	0.27	8.00	0.00	1.95	3.01

DISCUSSION

This study sought answers to two related questions:

(1) Does the NSW Drug court have any long-term positive effect on the likelihood of: (a) an offence of any type; (b) an offence against the person; (c) a property offence; (d) a drug offence?

(2) Does the NSW Drug Court have any long-term positive effect on the number of subsequent offences?

The Cox regression model results indicate that participation in the Drug Court program reduces the time to the next offence against the person. The same models, however, provide no evidence that participation in the Drug Court program reduces the time to an offence of any type, a property offence, or a drug offence. The Negative Binomial regression results indicate that participation in the Drug Court program has a positive long-term effect on the overall frequency of offending.

It is difficult to be sure of the reason for these null results, but there are two possibilities. The first is that the benefits of Drug Court participation may have faded over time. Many of the offenders who entered the NSW Drug Court program in the first few years after its establishment (when the cohort in the current study entered it) would have been dependent on heroin. Heroin dependence has been described as a chronic relapsing condition. In one study of 581 subjects admitted to the California Civil Addict Program between 1962 and 1964, almost half were still using heroin 30 years later (Hser, 2007). In a study of

patients placed on methadone maintenance treatment (MMT) in British Columbia, Canada, between 1996 and 2008, the median number of treatment episodes was two, but the number ranged up to 15 (Ministry of Healthy Living and Sport, 2010). Similar results have been obtained in Australia by Bell et al. (2006). In circumstances like these it would not be surprising if Drug Court participants, whose crime is driven by a need to purchase heroin, gradually returned to property or drug crime after the support, structure and surveillance provided by the Drug Court program was no longer a feature of their lives.

A second possibility is that the use of Intention-to-Treat (ITT) could have diluted any treatment effect that exists. As noted earlier, only about 40 per cent of the group who commenced treatment completed it to the satisfaction of the Drug Court. If completion of the program is necessary for any reduction in re-offending to occur, the reduction in re-offending that occurred amongst the 40 per cent who completed the program may have been obscured by the lack of any effect among the 60 per cent who failed to complete the program. Had we been able to identify some exogenous source of variation in who completed treatment and who did not, we could have compared those who completed the Drug Court program to those who failed to complete it. Unfortunately, we were unable to identify a suitable source of exogenous variation. It is also worth remembering in this context that those who fund the Drug Court program must pay for those who fail as well as those who succeed.

The positive results found here are consistent with the findings of earlier Drug Court studies both here and overseas (Belenko, 2019). We would be remiss, however, if we did not point out that the positive and the null results should both be treated with some degree of caution. Although the controls employed and the decision to analyse based on ITT are important defences against omitted variable bias, it remains possible that some unobserved difference between treatment and control groups is responsible for the results. The only way to be completely sure about the positive results would be to conduct a further randomised trial. This might strike some as excessive, given the fact that this is the third evaluation of the NSW Drug Court undertaken since its inception — and yet significant changes have occurred in Australian drug markets over the two decades, including a substantial growth in the use of crystal methamphetamine; a drug for which, unlike heroin, there is no proven pharmacotherapy (Darke, Lappin & Farrell, 2019). That said, the Drug Court is an expensive form of intervention (Goodall, Norman & Haas, 2008) and ongoing evaluation is one way of ensuring that the Government is getting value for money out of its investment.

If a further evaluation is undertaken, it may be useful to expand the scope of the enquiry to consider other Government initiatives that are designed to have an effect or may be influencing drug related crime. In addition to the NSW Drug Court program, the NSW Government also funds a program known as MERIT (Magistrates' Early Referral Into Treatment), which is available to defendants appearing in Local Courts who have a demonstrated drug or alcohol problem and who meet certain criteria (NSW Department of Communities and Justice, 2020). The first is that it is not restricted to offenders at risk of receiving a prison sentence. The second is that it does not involve the same intense level of offender supervision and surveillance as the Drug Court. The third is that clinicians manage the treatment process rather than the court. These differences may make the MERIT program less expensive than the Drug Court program, but the relative cost-effectiveness of the MERIT and Drug Court programs is completely unknown. This gap in our knowledge should be addressed.

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NSW BUREAU OF CRIME STATISTICS AND RESEARCH - LEVEL 1, HENRY DEANE BUILDING, 20 LEE STREET, SYDNEY 2000
bcsr@justice.nsw.gov.au • www.bocsar.nsw.gov.au • Ph: (02) 8346 1100 • Fax: (02) 8346 1298
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