



Estimating the effectiveness of a misdemeanor drug diversion program using propensity score matching and survival analyses

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ABSTRACT

This study analyzes three years of data on misdemeanor drug offenders in Winnebago County, Wisconsin. A portion of these offenders opted into a Misdemeanor Drug Diversion Program (MDDP) offered instead of traditional adjudication. Recidivism in the treatment and comparison groups is estimated using standard binary response techniques augmented with propensity score matching to address selection bias. Results show that the MDDP reduces the probability of re-offense by 16%, after adjusting for possible selection bias. Cox proportional hazard modeling is also used to assess time-to-re-offense differentials between the treatment and comparison groups. The survival analysis indicates that the hazard rate of re-offense is 60% lower per day among those treated with the MDDP program than those who did not complete the program. The average number of days to re-offense among those that do re-offend is 297 days in the treatment group and 203 days in the comparison group.

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1. Introduction and motivation

Since their introduction in Florida in 1989, drug courts of various types have become increasingly popular (NAPSA, 2006; Nolan, 2001). Their expansion has been driven by several factors, among them the increasing number of drug-abuse offenders in state and federal courts and the linkages between more drug use and more crime (Spohn, Piper, Martin, & Frenzel, 2001). Drug court programs are designed to offer intervention beyond or instead of traditional adjudication and incarceration, with the purpose

of reducing recidivism rates, usually defined as fewer re-arrests or reconvictions, through treatment and supervision. An allied benefit realized in many well-designed programs is a reduction in proximal and distal judicial and socio-economic costs, a positive net social benefit (Zarkin et al., 2012).

Drug courts are often described as being theoretically grounded in Therapeutic Jurisprudence (TJ), a concept first espoused in the literature by Wexler and Winick (1991) and later tailored to drug courts by Hora, Schma, & Rosenthal (1999). An excellent survey of the latter relationship can be found in Senjo and Leip (2011). TJ advocates for a more inclusive, data driven approach to the administration of drug courts; Hora et al. (p. 445–446) write:

Therapeutic jurisprudence allows, in fact requires, legislators, judges, and practitioners to make legal policy

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determinations based on empirical studies and not on uninformed hunches. [¶] Therapeutic jurisprudence relies on the social sciences to guide its analysis of the law and, therefore, represents a departure from traditional legal jurisprudence.

Thus, TJ, in the context of this paper, is a call to include a broad set of analyses to navigate the treatment and adjudication of those with budding or ongoing drug use. This also underscores the importance of studies that apply appropriately sophisticated statistical methods to the analysis of drug court outcomes; to wit, unanalyzed or poorly analyzed programs may not be any better than a hunch.

While there are some mixed results regarding the efficacy of drug court programs (Bowers, 2007; Wilson, Mitchell, & MacKenzie, 2006), there nonetheless appears to be a growing consensus that drug courts are effective at reducing recidivism (Gottfredson, Najaka, & Kearley, 2006; Mitchell, Wilson, Eggers, & MacKenzie, 2012; Peters & Murrin, 2000; Somers, 2011) and relieving cost pressure on jails and prisons (Marlowe, 2010). This, however, should not be taken to mean that all such programs are effective, nor should one assume that the same program is effective for different subgroups; for instance, adults typically respond better than juveniles (Mitchell et al., 2012). Moreover, Wilson et al. (2006) advance caution about the “weak methodological nature of the research in this area” and Marlowe (2010) reminds us that the average success reported in various meta-analyses can mask substantial variability across programs.

These prior analyses need rigorous study of hitherto unevaluated drug diversion programs for their actual effectiveness. The purpose of this paper is to do exactly this by assessing a recent misdemeanor-level drug diversion program implemented by the District Attorney’s Office (DAO) in Winnebago County, a populous county in Wisconsin.

The remainder of the paper is organized into four sections. The next section describes the drug diversion program used in Winnebago County. Section 3 describes the data set for this study; a description of the estimation strategies and the concomitant results appear in Section 4. Section 5 contains the conclusions along with a brief list of prospects for future research.

2. The misdemeanor drug diversion program

Winnebago County is located in Northeastern Wisconsin. It is the seventh most populated county of the state’s 72 counties,² and one of the counties constituting the Fox Valley metropolitan area. It has a population of approximately 168,000 (as of 2011) and a median household income of approximately \$47,000 (as of 2009).³

The Winnebago County DAO handles hundreds of misdemeanor drug offenders each year. As in many jurisdictions, the DAO is experiencing tight budgets and a heavy

flow of drug offenders, which accordingly induce many of the costs described earlier.⁴ In the hope of alleviating some of these pressures, the DAO instituted a drug court program, described as follows:⁵

This program is designed for non-violent offenders whose crimes are associated with drug addiction. The target population is those who are committing crimes to support their addiction. The focus of the program is to reduce recidivism, change offenders’ lives, and save tax dollars. Within the program, participants are randomly and frequently given urine analysis and are intensely supervised. They are asked to find full time jobs, and are congratulated when their goals are met.⁶

This drug court contains several diversion programs designed to treat and supervise drug-based offenders. Among these programs is the Misdemeanor Drug Diversion Program (MDDP), which provides guidance, education, drug testing, and deferred adjudication instead of traditional prosecution. The DAO describes the MDDP as follows:

The Winnebago County District Attorney’s Misdemeanor Drug Diversion Program was implemented in March 2010. All individuals, residing in Winnebago County and of ages 17 and older, who were referred from a Law Enforcement Agency to the Winnebago County District Attorney’s Office with either a misdemeanor drug charge or a misdemeanor charge in which drugs were suspected as an underlying issue or reason for the commitment of the crime, were given the option to complete the Diversion Program.

Apart from age, county of residency, and underlying charge, no other criteria was in place to determine eligibility for this Program. By accepting the Diversion Program, all offenders would plead either no contest or guilty to their charge, the court would withhold adjudicating the offender guilty and accept the Deferred Adjudication Agreement, and the offender would enter into the Misdemeanor Drug Diversion Program.

The Deferred Adjudication Agreements ranged in length between 12 to 18 months. During that time period, the offenders [participants] were to remain crime free, accumulate 6 consecutive months of clean time, and complete an AODA assessment and all recommended treatment, among other conditions. All participants were required to pay a \$250 fee which helped offset treatment and urinalysis testing costs. Participants were tested approximately 1–3 times each month, based upon their AODA results.

Participants were considered successful upon completion of all conditions and/or with prosecutor approval

⁴ Discussions with the DAO confirmed our intuition that tight budgets tend to claim programs that cannot clearly display their benefits.

⁵ <http://www.co.winnebago.wi.us/district-attorney/alternative-programs>.

⁶ While not our focus in this paper, it is worth noting that the DAO also offers the Safe Streets Treatment Options Program (SSTOP) program for second and third time OWI (drunk driving) offenders.

² <http://quickfacts.census.gov/qfd/states/55000.html>.

³ http://www.city-data.com/county/Winnebago_County-WI.html.

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