

# CRIME AND JUSTICE BULLETIN

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## Circle Sentencing, incarceration and recidivism

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**AIM** To examine the relationship between Circle Sentencing (CS) and the likelihood of incarceration and recidivism.

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**METHOD** We use two datasets. The first is an extract from the New South Wales (NSW) Bureau of Crime Statistics and Research's Reoffending Database (ROD). The second is an extract from the Aboriginal Services Unit's (Department of Communities and Justice) internal database. These data allow us to identify 656 court appearances finalised through CS, and over 90,000 appearances finalised through Traditional Sentencing (TS) between 1 March 2005 and 31 August 2018. Using these data, we compare outcomes for offenders participating in CS and TS, after controlling for defendant-case characteristics and time fixed effects. We then discuss the role of selection bias in our estimates.

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**RESULTS** Net of controls and fixed effects, offenders participating in CS are 9.3 percentage points less likely to receive a prison sentence. When compared to the rate at which offenders undergoing TS are incarcerated, this equates to a relative decrease of 51.7 per cent. Among offenders not sent to prison, offenders undergoing CS are 3.9 percentage points less likely to reoffend within 12 months. When compared to the 12 month reoffending rate of offenders undergoing TS, this equates to a relative decrease of 9.6 per cent. Finally, among offenders that do reoffend, those undergoing CS take an additional 55 days longer to reoffend than their traditionally sentenced counterparts. We are, unfortunately, unable to address the possibility that selection bias is driving our (associative, non-causal) estimates. As such, our estimates must be interpreted with caution.

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**CONCLUSION** CS is associated with lower levels of incarceration and recidivism.

### KEYWORDS

Circle sentencing    restorative justice    incarceration    recidivism  
Aboriginal overrepresentation    Reoffending    Indigenous

## INTRODUCTION

Over the 2016-17 financial year, Aboriginal and/or Torres Strait Islanders constituted 2.8 per cent of the Australian population (ABS, 2016) and 27.6 per cent of the prison population (Productivity Commission, 2018). Over this same period, governments around Australia collectively spent in excess of \$4 billion on the prison system, representing a real year-on-year increase of 7.2 per cent (Productivity Commission, 2018). Given the economic, financial and social costs of Aboriginal overrepresentation in custody, evaluating programs aimed at reducing Aboriginal incarceration rates is crucial for decision makers.

In Australia, Restorative Justice (RJ) programs became an increasingly popular alternative to the traditional criminal justice process in the late 1990s. RJ programs typically involve bringing the offender face-to-face with their victim(s) in order to repair harm, restore relationships and strengthen social bonds within a community (Larsen, 2014). To this end, the general consensus in both Australia (Larsen, 2014) and internationally (Latimer, Dowden, & Muise, 2005) is that RJ programs are beneficial for offenders and victims. Victims involved in RJ programs typically report high levels of satisfaction with the process, as they believe they are treated in a fair and respectful way (Latimer et al., 2005). Several studies also suggest that offenders are more likely to take responsibility for their actions and thus are more likely to comply with their sentencing conditions (Larsen, 2014; Latimer et al., 2005; Shapland et al., 2007; Strang et al., 2006).

Unfortunately, there is little evidence to suggest that RJ programs have any impact on reoffending rates when compared with the business-as-usual Criminal Justice System (CJS) response.<sup>1</sup> For instance in NSW, prior research indicates that youth justice conferencing (used to divert young offenders from court) is no better than the Children's Court in reducing recidivism (Smith & Weatherburn, 2012), and Forum Sentencing (an RJ informed approach to sentencing adult offenders) is no better than the Local Court in reducing recidivism (Jones, 2009; Poynton, 2013).

There is, however, almost no research investigating the impact of such programs on an important subset of the general population: Aboriginal Australians.<sup>2</sup> Following the recommendations of the Royal Commission into Aboriginal Deaths in Custody, RJ programs have become increasingly available for Aboriginal offenders in Australia (Marchetti & Daly, 2004). RJ programs directed toward Indigenous Australians generally aim to involve members of the local community in the sentencing process. This bulletin focuses on the largest RJ informed program for Aboriginal offenders in NSW, Circle Sentencing.

### Circle Sentencing in NSW

Circle Sentencing (CS) has been in operation in NSW since 2002.<sup>3</sup> CS is an alternative sentencing option, with the full sentencing power of a traditional court, for Aboriginal offenders that meet a specific set of conditions. The idea behind CS is to include the local Aboriginal community in the sentencing process. In practice, this typically involves the presiding magistrate working with a group of Aboriginal elders, victims, respected members of the community and the offender's family to determine the appropriate sentence.

CS was introduced with eight objectives. These objectives, outlined in the *Criminal Procedure Act 1986 (NSW)*, include: (1) to include members of Aboriginal communities in the sentencing process; (2) to increase the confidence of Aboriginal communities in the sentencing process; (3) to reduce barriers between Aboriginal communities and the courts; (4) to provide more appropriate sentencing options for Aboriginal offenders; (5) to provide effective support to victims of offences committed by Aboriginal

<sup>1</sup> One notable exception is a study conducted by McGarrell and Hipple (2007), who find some evidence of a (beneficial) relationship between a RJ intervention and reoffending in Indiana.

<sup>2</sup> A related but distinct branch of research compares the effect of RJ programs for Aboriginal and non-Aboriginal offenders. For example, Little, Stewart, and Ryan (2018) compare the recidivism rates of a matched group of Aboriginal and non-Aboriginal offenders. Little et al. (2018) find that the former of these groups had higher rates of post-conference recidivism, although this group may have been at a higher risk of reoffending irrespective of the intervention.

<sup>3</sup> Other Australian state and territories run similar programs. For example, the Koori courts in Victoria, the Murri courts in Queensland and the Nunga courts in South Australia.

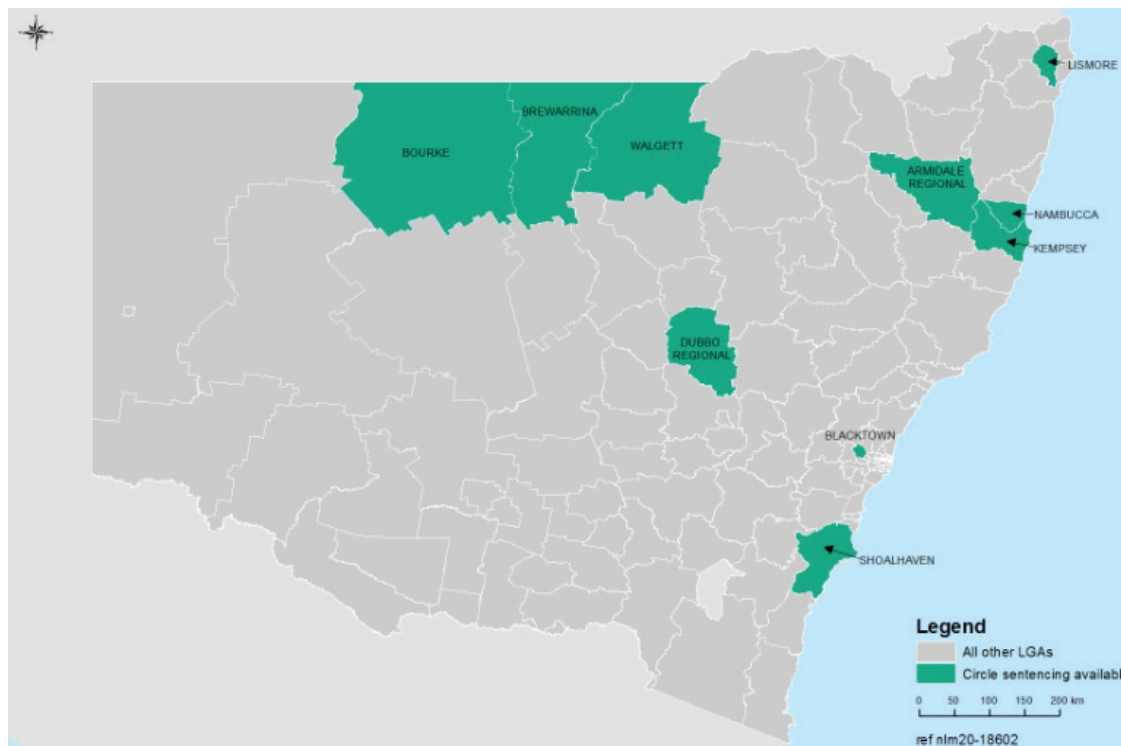
offenders; (6) to provide for the greater participation of Aboriginal offenders and their victims in the sentencing process; (7) to increase the awareness of Aboriginal offenders of the consequences of their offences on their victims and the Aboriginal communities to which they belong; (8) to reduce recidivism in Aboriginal communities.

The Nowra Local Court was the first site to introduce CS. Since then CS has expanded to operate in a total of 12 Local Courts in NSW.<sup>4</sup> The timing and location of each participating court are detailed in Table 1 and Figure 1.

**Table 1. Local Courts with Circle Sentencing by date of commencement**

Local Court	CS available from
Nowra	February 2002
Dubbo	October 2003
Brewarrina	January 2005
Lismore	January 2006
Bourke	January 2006
Kempsey	January 2006
Armidale	April 2006
Walgett	July 2006
Mt Druitt	January 2007
Nambucca	April 2009
Blacktown	July 2010
Moree	October 2010

**Figure 1. Local Government Areas where Circle Sentencing is available**



<sup>4</sup> For context, between 2005 and 2019, 149 Local Courts were in operation in NSW.

## Selection criteria for Circle Sentencing in NSW

In order to participate in CS, a defendant must be:

1. Aboriginal;
2. found guilty of a non-excluded offence;<sup>5</sup>
3. appearing at a participating Local Court;
4. likely to receive a relevant sentence;<sup>6</sup>
5. agree to participate; and
6. be assessed as suitable by the local Aboriginal Community Justice Group (ACJG).<sup>7</sup>

In order to be deemed *suitable*, an offender undergoes the following process:

1. The presiding magistrate must decide to refer the offender for a suitability assessment. Offenders not referred for assessment undergo Traditional Sentencing (TS).
2. If referred for assessment, conditional on the offender's consent, the court's Program Officer (PO)<sup>8</sup> then convenes a meeting of the ACJG.
3. The ACJG then meet to conduct the assessment. Factors considered by the ACJG include: the defendant's connectedness to the local community; the impact of the offence on the community; the nature of the offence; and finally, the benefits of the circle to the offender, victim and community.
4. If the ACJG deem the offender suitable, then the magistrate makes a program participation order. If the ACJG deems the defendant unsuitable, then the offender undergoes TS.
5. After being deemed suitable, the PO then convenes the CS group and the circle takes place.

A CS group is typically made up of: four Aboriginal elders (usually two men and two women) selected on the basis of their experience with the offender, victim and/or nature of the offence; the presiding magistrate; the PO; a police prosecutor; the offender; the offender's legal representative; and finally, the victim and their support person. The presiding magistrate must approve all participants in the circle in order for the circle to go ahead. During the circle, participants sit in a circle and discuss: the background of the offender; the offence; the impact on the victim; how similar crimes have been affecting the community; what can be done to prevent further offending; and how all of this can be incorporated into a sentencing plan. While the presiding magistrate retains final say, it is generally by majority rule that members of the circle determine the penalty.

## Prior research on Circle Sentencing in NSW

Prior qualitative research (Cultural and Indigenous Research Centre, 2008; Daly & Proietti-Scifoni, 2009; Potas et al., 2003) has found CS to be generally beneficial. These studies report that CS reduces perceived barriers between Aboriginal people and the courts, increases the offender's awareness of the consequences of their actions, increases confidence in sentencing and results in more appropriate sentencing outcomes. However, several limitations of CS have also been noted by researchers, particularly in the early stages of implementation. Some of these limitations include: inadequate drug and alcohol support services in some locations; insufficient data collected on involvement of victims; and finally, the circle not proceeding as planned (e.g., defendants refusing to listen to or the follow advice of the elders). The only quantitative evaluation of CS was conducted by the NSW Bureau of Crime Statistics and Research

<sup>5</sup> Excluded offences include: assault occasioning grievous bodily harm; rape and other sexual offences; child pornography offences; offences involving the use of a firearm; and certain drug offences. Interested readers are directed to Section 348 of the Criminal Procedure Act 1986 (NSW) for the complete list of excluded offences.

<sup>6</sup> Such as a sentence of imprisonment, a suspended sentence, an intensive correction order, home detention, community service order, or good behaviour bond.

<sup>7</sup> The ACJG is a (court-specific) group of Aboriginal people appointed by the responsible portfolio minister on the recommendation of the Program Officer.

<sup>8</sup> The Program Officer is a NSW Department of Communities and Justice employee responsible for, among other things, coordinating CS at each site.

(BOCSAR) in 2008. Using court outcome data from 2002 to 2007, Fitzgerald (2008) employed a matching strategy to investigate the relationship between CS and recidivism. She found no statistically significant difference in recidivism rates between offenders undergoing CS and a (matched) control group who were sentenced in the usual way by the Local Court.

### The current study

The objective of the current study is to provide a follow-up evaluation more than a decade later. Specifically, the current study is concerned with answering the following three research questions:

1. Are offenders participating in CS less likely to receive a sentence of imprisonment than offenders undergoing TS?
2. Are offenders participating in CS less likely to reoffend than offenders undergoing TS?
3. Do offenders participating in CS take longer to reoffend than offenders undergoing TS?

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## METHOD

### Data

We use two datasets in the present study. The first dataset is an extract from the NSW BOCSAR's Reoffending Database (ROD). The ROD extract contains information relating to all criminal proceedings finalised in a NSW Local Court between 1 March 2005 and 31 July 2019. For each court appearance, we are able to observe: the courthouse where the matter was finalised; the bail hearing date; the date the matter was finalised (i.e., the date that the sentence was formally handed down); and the principal penalty associated with the finalisation. We are also able to observe each defendant's: age; gender; SEIFA percentile rank;<sup>9</sup> number of prior court appearances (with a proven offence); prior sentences of imprisonment; and finally, whether the defendant was granted bail at their first bail hearing for that matter. For each charge within a court appearance, we are able to observe: the date of each offence; the ANZSOC code associated with each offence;<sup>10</sup> as well as the plea to, and outcome of, each charge.

The second dataset is an extract from the Aboriginal Services Unit's (ASU's) internal database.<sup>11</sup> The ASU database contains information relating to all participating offender's first referral and subsequent circle between 1 March 2005 and 31 August 2018.<sup>12</sup> The ASU database allows us to observe: the date that the offender was referred for a suitability assessment; the outcome of the suitability assessment; the date of the circle; the sentencing date; and finally, an indicator for whether the circle was cancelled (e.g., because the offender reoffended prior to the circle).

The ASU database contains information relating to 976 unique offenders referred for a suitability assessment. We were able to match 972 of these offenders to individuals in ROD using their date of birth, first and last name. Of these 972 offenders, 242 (24.9%) were either deemed unsuitable, didn't consent to CS, or had their circle cancelled.<sup>13</sup> Hence, this left us with 730 circles (and 242 referrals that subsequently resulted in TS) that needed to be matched to court appearances in ROD. In order to match circles/referrals (recorded in the ASU database) to court appearances (in ROD), we employed the procedure illustrated in Figure 2.<sup>14</sup>

9 SEIFA scores are a measure of socioeconomic disadvantage based on the defendant's postcode of residence at the time of finalisation. Higher scores indicate lower levels of disadvantage. Interested readers are directed to ABS (2011a) for more information.

10 ANZSOC codes are used to group offences across Australian and New Zealand jurisdictions. Interested readers are directed to ABS (2011b) for more information.

11 The ASU is a business unit within the NSW Department of Communities and Justice.

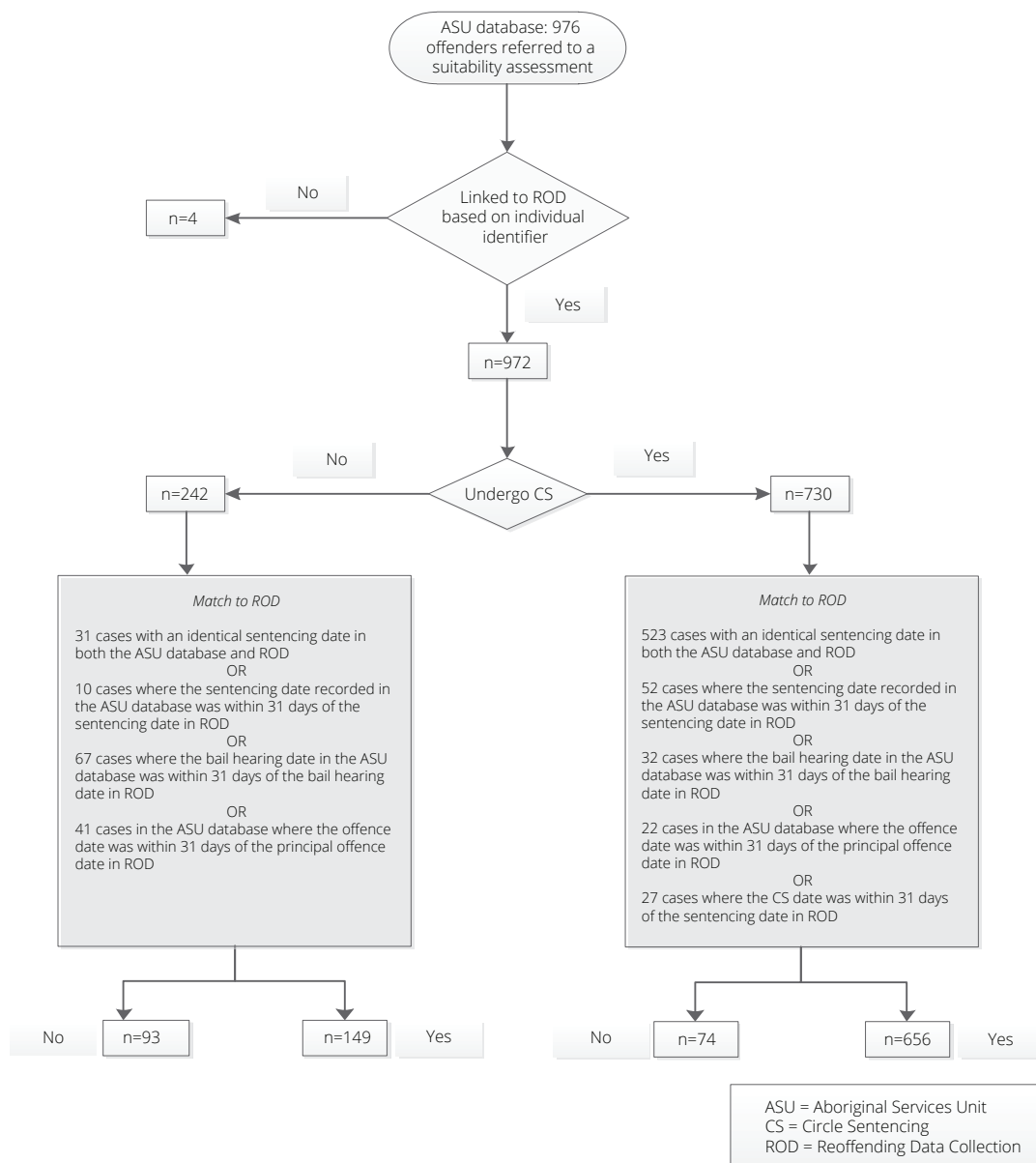
12 That is, if an offender has more than one referral/circle, only information relating to the first referral/circle is recorded.

13 These three categories cannot be disaggregated using the ASU database.

14 That is, because offenders participating in CS only show up once in the ASU database but (typically) multiple times in ROD, we employ the following five step procedure. In the first step we designate a case to be finalised through CS if the sentencing date is identical in ROD and the ASU database. In the second

In total, we were able to match 656 ASU circles to court appearances in ROD.<sup>15</sup> In order to avoid inadvertently designating a CS appearance as a TS appearance, we exclude unmatched individuals (and all of their appearances in ROD) from the sample. A similar issue relates to the fact that the ASU database only allows us to identify an offender’s first referral/circle. Once again, to avoid inadvertently designating a CS appearance as a TS appearance, we exclude from the sample non-CS appearances for offenders that have participated in at least one circle.

**Figure 2. Data matching process**



In order to make defendants undergoing Traditional Sentencing (TS) as comparable as possible to offenders undergoing CS, we employ five sample restrictions based on the eligibility criteria described under the legislation. First, we limit our sample to defendants found guilty of a non-excluded offence. Second, we limit our sample to offenders that identified as Aboriginal to the police when charged.<sup>16</sup> Third,

step we designate a case to be finalised through CS if the sentencing date in the ASU database is within a plus or minus 31 day interval of the sentencing date in ROD. Third, we designate a case to be finalised through CS if the date the circle was held both: differed from the sentencing date, and was within a plus or minus 31 day interval of the sentencing date in ROD. Fourth, we designate a case to be finalised through CS if the bail hearing date in the ASU database was within a plus or minus 31 day interval of the bail hearing date in ROD. And finally, we designate a case to be finalised through CS if the offence date in the ASU database is within a plus or minus 31 day interval of the (principal) offence date in ROD. If a case cannot be matched in any of these steps, we designate the case as “unmatched” and exclude all court appearances related to the individual from our estimation sample.

<sup>15</sup> As a robustness check, reported in Table A2 of the Appendix, we limit the estimation sample to the 523 perfectly matched cases and re-estimate our preferred analytical specification. We find no meaningful deviation from the main results.

<sup>16</sup> Whether a person identifies as Aboriginal can change over time. Interested readers are directed to Biddle and Markham (2018) for further information regarding the dynamics of Aboriginal self-identification. Changing self-identification over time does not, however, pose an issue for our analysis as, in our preferred analytical specification, we limit our comparison to offenders sentenced within the same month-year.

we limit our sample to offenders receiving a penalty that has been imposed by a CS group.<sup>17</sup> Fourth, we limit the sample to month-years with at least one circle (e.g., if there were zero circles held in July 2005, then we remove all appearances occurring in July 2005).<sup>18</sup> And finally, for appearances finalised through TS, we limit the sample to appearances finalised in courts without CS available at the time of finalisation. This is to ensure that defendants (implicitly) deemed unsuitable for CS by the presiding magistrate are not used as a control for CS participants.<sup>19</sup>

## Descriptive statistics

We begin our investigation by examining the principal (i.e., the most serious) offence committed by offenders in our sample. These offences include: violent crime (i.e., homicide; assault; sexual assault; dangerous or negligent acts; abduction, harassment; and robbery); property crime (i.e., break and enter; theft; fraud and deception offences; property damage and environmental pollution); drug offences (i.e., import; deal; manufacture; use or possess illicit drugs); traffic offences (i.e., offences involving the use of a motor vehicle); public order and miscellaneous offences (e.g., offensive conduct, public health and safety offences); and finally, offences against justice procedures (i.e., breaching a court order).

Table 2 reports the number and proportion of offenders in our sample undergoing TS and CS that have committed particular offences. From Table 2 we can see that offenders participating in CS are far more likely to have committed a violent offence than those participating in TS (47.7% vs. 28.5%), less likely to have committed a property offence (12.4% vs. 20.8%), drug offence (5.9% vs. 0.5%) or an offence against justice procedures (17.5% vs. 20.9%).

**Table 2. Index offences for traditional and circle sentenced groups**

	Traditional Sentencing		Circle Sentencing		Difference	Std Err
	N	%	N	%		
	(1)	(2)	(3)	(4)	(5)	(6)
<b>Baseline offence</b>						
Violent crime	26,272	28.47	313	47.71	0.192***	(0.020)
Property crime	19,224	20.83	81	12.35	-0.085***	(0.013)
Drug offences	5,449	5.90	3.00	0.46	-0.054***	(0.003)
Traffic offences	13,238	14.35	89	13.57	-0.008	(0.013)
Public order & miscellaneous offence	8,845	9.58	55	8.38	-0.012	(0.011)
Offences against justice procedures	19,256	20.87	115	17.53	-0.033*	(0.015)
Total	92,284	100.00	656	100.00		

Note. N=observations, Std Err = Standard Error, robust standard errors in parentheses, p<.001 \*\*\*, p<.01 \*, p<.05 \*.

Table 3 reports descriptive statistics for all variables used in our study.<sup>20</sup> Table 3 contains three panels. Panel A provides information for the outcome variables of interest. These outcome measures include:

1. **Prison:** A binary variable equal to one if the defendant receives a sentence of imprisonment, zero otherwise.
2. **Reoffend within 12 months:** Among (the 82.1% of) offenders that do not receive a prison sentence,<sup>21</sup> this variable is equal to one if the offender has at least one (proven) offence within 12 months of sentencing, zero otherwise. We exclude offenders receiving a prison sentence from our measure of recidivism in order to avoid the effect of being incarcerated from contaminating the estimates.<sup>22</sup>

17 That is, we remove appearances resulting in a penalty that has never been imposed through CS. For example, CS has never resulted in juvenile detention since only adult offenders are eligible to participate.

18 In Table A2 of the Appendix we relax this sample restriction.

19 In Table A2 of the Appendix we relax this sample restriction (with and without court fixed effects).

20 We do not include the set of offence fixed effects in Table 2 in any of our regressions because of the relatively small number of offenders within each category. Instead we use a continuous measure of offence severity, the Median Sentencing Ranking, which is described shortly.

21 It is also worth mentioning that this, if anything, should produce a conservative estimate of the program's benefit on recidivism if CS lowers the probability of a prison sentence.

22 That is, prior research has consistently found a causal link between incarceration and increased rates of post-release recidivism (see for example Rahman, 2019).

3. **Days until next re-offence:** Among (the 58.8% of) offenders that do not receive a prison sentence and re-offend at least once prior to 31 July 2019, this variable is equal to the number of days between the offender's sentencing date and their first (proven) re-offence.<sup>23</sup>

The t-test from Panel A indicates that defendants participating in CS are 11.7 percentage points less likely to receive a prison sentence. In relative terms, expressed as a fraction of the incarceration rate for offenders undergoing TS, this equates to approximately a two-thirds reduction. Panel A also indicates that offenders undergoing CS are 5.5 percentage points less likely to reoffend within 12 months (13.6% less likely in relative terms). Finally, we can also see that when they do reoffend, offenders undergoing CS take about four months longer to reoffend (23.5% longer in relative terms).

It is, however, important to bear in mind that offenders undergoing CS are likely to systematically differ from their traditionally sentenced counterparts. Not only are offenders undergoing CS more likely to have committed a violent offence, they have also consented to CS and passed the suitability assessment. The defendant-case characteristics reported in Panel B allow us to examine this proposition in more detail. Panel B provides descriptive statistics for all control variables used in our study.

These control variables include:

- **Age:** Offender's age at the time of sentencing;
- **Age at first contact:** Offender's age at first known contact with the CJS;
- **Sex:** A binary variable equal to one if the offender is male, zero if the offender is female;
- **SEIFA:** The SEIFA percentile rank for the offender's place of residence, which we have recoded into five indicator variables, one for each quartile of the distribution and one for those with a missing SEIFA rank;
- **Remoteness:** A set of binary variables indicating whether the defendant's place of residence is in a Major City, Inner regional, Outer regional or Remote/Very remote area. We also have a binary variable indicating whether this information is missing;
- **Concurrent charges:** Number of (proven) concurrent charges at the court appearance;
- **Prior court appearances:** Number of prior court appearances (with at least one proven offence);
- **Prior prison sentences:** Number of prior prison sentences;
- **Median Sentencing Ranking (MSR):** MSR of the defendant's principal offence;<sup>24</sup>
- **Plea:** A set of binary variables indicating whether the defendant entered into a plea of: not guilty; guilty, or no plea entered.

Table 2 and Panel B of Table 3 tell two competing stories regarding offenders undergoing CS. On one hand, offenders participating in CS have: fewer prior court appearances; fewer prison sentences; are more likely to have entered into a plea of guilty; and have been granted bail. This suggests that they are, on average, of a lower risk profile than offenders undergoing TS. On the other hand, however, offenders participating in CS are: younger; have more concurrent charges; have committed more serious (violent) offences; and finally, made first contact with the CJS at an earlier stage in life. We are, therefore, unable to sign the bias associated with CS (i.e., to know whether offenders participating in CS are of a higher or lower risk profile than offenders participating in TS).

<sup>23</sup> In Table A2 of the Appendix we limit the estimation sample to appearances finalised on or before 31 July 2018 in order to leave a 12 month follow-up window for all observations.

<sup>24</sup> The MSR is a measure of offence severity constructed from the penalty associated with a given offence. MacKinnell et al. (2010) provide further information regarding how the MSR is constructed.



Table 3. Descriptive statistics

	Full sample			Traditionally sentenced			Circle sentenced			Difference	
	Obs (1)	Mean (2)	Std. Dev. (3)	Obs (4)	Mean (5)	Std. Dev. (6)	Obs (7)	Mean (8)	Std. Dev. (9)	Estimate (10)	Std. Err. (11)
<b>Panel A. Outcome variables</b>											
Prison	92,940	0.179	0.383	92,284	0.180	0.384	656	0.063	0.242	-0.117***	(0.010)
Reoffend within 12 months given no prison	76,303	0.404	0.491	75,688	0.405	0.491	615	0.350	0.477	-0.055**	(0.019)
Violent offence	76,303	0.113	0.316	75,688	0.112	0.316	615	0.154	0.362	0.042**	(0.015)
Property offence	76,303	0.100	0.300	75,688	0.100	0.300	615	0.070	0.255	-0.030**	(0.010)
Drug offence	76,303	0.043	0.202	75,688	0.043	0.202	615	0.021	0.144	-0.022***	(0.006)
Weapon offence	76,303	0.007	0.084	75,688	0.007	0.085	615	0.005	0.070	-0.002	(0.003)
Traffic offence	76,303	0.079	0.270	75,688	0.079	0.270	615	0.049	0.216	-0.031***	(0.009)
Public order & miscellaneous offences	76,303	0.038	0.191	75,688	0.038	0.191	615	0.039	0.194	0.001	(0.008)
Offences against justice procedures	76,303	0.025	0.156	75,688	0.025	0.156	615	0.011	0.106	-0.014**	(0.004)
Reoffend for selected crime	92,940	0.078	0.269	92,284	0.079	0.269	656	0.040	0.195	-0.039***	(0.008)
Selected violent crime	92,940	0.004	0.063	92,284	0.004	0.063	656	0.003	0.055	-0.001	(0.002)
Selected property crime	92,940	0.074	0.262	92,284	0.075	0.263	656	0.037	0.188	-0.038***	(0.007)
Days until first reoffence	54,674	534.887	658.516	54,226	533.863	657.752	448	658.853	735.547	124.990***	(34.828)
<b>Panel B. Control variables</b>											
Age	92,933	31.355	9.933	92,277	31.364	9.936	656	30.140	9.488	-1.223***	(0.372)
Age at first contact with justice system	92,790	20.894	8.649	92,134	20.902	8.659	656	19.739	7.068	-1.163***	(0.277)
Male	92,940	0.718	0.450	92,284	0.718	0.450	656	0.697	0.460	-0.021	(0.018)
SEIFA Q1 (Lowest SES)	92,940	0.359	0.480	92,284	0.357	0.479	656	0.723	0.448	0.366***	(0.018)
SEIFA Q2	92,940	0.285	0.451	92,284	0.285	0.452	656	0.168	0.374	-0.118***	(0.015)
SEIFA Q3	92,940	0.195	0.396	92,284	0.196	0.397	656	0.088	0.284	-0.107***	(0.011)
SEIFA Q4 (Highest SES)	92,940	0.056	0.230	92,284	0.056	0.231	656	0.006	0.078	-0.050***	(0.003)
Missing SEIFA	92,940	0.105	0.307	92,284	0.106	0.307	656	0.015	0.123	-0.090***	(0.005)
Inner regional	92,940	0.283	0.451	92,284	0.282	0.450	656	0.494	0.500	0.212***	(0.020)
Major cities	92,940	0.390	0.488	92,284	0.392	0.488	656	0.169	0.375	-0.223***	(0.015)
Outer regional	92,940	0.181	0.385	92,284	0.181	0.385	656	0.134	0.341	-0.047***	(0.013)
Remote	92,940	0.041	0.199	92,284	0.040	0.197	656	0.188	0.391	0.147***	(0.015)

Table 3. Descriptive statistics (continued)

	Full sample			Traditionally sentenced			Circle sentenced			Difference	
	Obs (1)	Mean (2)	Std. Dev. (3)	Obs (4)	Mean (5)	Std. Dev. (6)	Obs (7)	Mean (8)	Std. Dev. (9)	Estimate (10)	Std. Err. (11)
Missing Area	92,940	0.104	0.305	92,284	0.105	0.306	656	0.015	0.123	-0.090***	(0.005)
No. concurrent charges	92,940	1.647	1.019	92,284	1.645	1.019	656	1.974	0.878	0.329***	(0.034)
MSR of principal offence	92,940	74.994	29.080	92,284	75.037	29.117	656	68.980	22.564	-6.057***	(0.886)
Bail at first court appearance	92,896	0.919	0.273	92,240	0.919	0.273	656	0.953	0.212	0.034***	(0.008)
Plead guilty	92,940	0.613	0.487	92,284	0.612	0.487	656	0.863	0.344	0.251***	(0.014)
No plea entered	92,940	0.240	0.427	92,284	0.241	0.428	656	0.099	0.299	-0.142***	(0.012)
Plead not guilty	92,940	0.147	0.354	92,284	0.148	0.355	656	0.038	0.192	-0.109***	(0.008)
No. prior court appearances (with proven offences)	92,940	8.050	7.535	92,284	8.059	7.542	656	6.845	6.305	-1.214***	(0.247)
No. prior prison sentences	92,940	1.902	3.452	92,284	1.907	3.457	656	1.201	2.521	-0.706***	(0.099)
<b>Panel C. Sentencing outcomes</b>											
Bond with supervision	92,940	0.100	0.300	92,284	0.099	0.298	656	0.313	0.464	0.214***	(0.018)
Bond without conviction with supervision	92,940	0.002	0.039	92,284	0.001	0.036	656	0.030	0.172	0.029***	(0.007)
Bond without conviction without supervision	92,940	0.045	0.207	92,284	0.044	0.206	656	0.079	0.270	0.035***	(0.011)
Bond without supervision	92,940	0.132	0.338	92,284	0.132	0.338	656	0.082	0.275	-0.050***	(0.011)
Conviction only	92,940	0.025	0.156	92,284	0.025	0.156	656	0.003	0.055	-0.022***	(0.002)
Fine	92,940	0.248	0.432	92,284	0.250	0.433	656	0.027	0.163	-0.222***	(0.007)
Home detention	92,940	0.001	0.028	92,284	0.001	0.028	656	0.002	0.039	0.001	(0.002)
Imprisonment	92,940	0.179	0.383	92,284	0.180	0.384	656	0.063	0.242	-0.117***	(0.010)
No conviction recorded	92,940	0.016	0.125	92,284	0.016	0.126	656	0.008	0.087	-0.008*	(0.003)
No penalty	92,940	0.118	0.323	92,284	0.119	0.324	656	0.014	0.116	-0.105***	(0.005)
Other penalties	92,940	0.021	0.144	92,284	0.021	0.145	656	0.009	0.095	-0.012**	(0.004)
Intensive Correction Order	92,940	0.007	0.086	92,284	0.007	0.086	656	0.009	0.095	0.002	(0.004)
Community Service Order	92,940	0.036	0.185	92,284	0.035	0.184	656	0.114	0.318	0.079***	(0.012)
Suspended sentence with supervision	92,940	0.045	0.207	92,284	0.044	0.204	656	0.207	0.406	0.164***	(0.016)
Suspended sentence without supervision	92,940	0.026	0.159	92,284	0.026	0.159	656	0.040	0.195	0.014	(0.008)

Note. N=observations, robust standard errors in parentheses, p<.001 \*\*\*, p<.01 \*\*, p<.05\*.

Panel C provides the distribution of penalties imposed on offenders in our sample. From Panel C we can see that the most commonly imposed penalties are: a bond (10.0% with supervision and conviction, 13.2% without supervision with conviction); a fine (24.8%); imprisonment (17.9%); and finally, no penalty (11.8%). Interestingly, when compared with their traditionally sentenced counterparts, offenders undergoing CS are: 21.4, 7.9, and 16.4 percentage points more likely to receive a bond (with supervision), a Community Service Order or a suspended sentence (with supervision). This appears to be driven mostly by large reductions in the probability of CS participants receiving a fine, no penalty or imprisonment.

## Empirical approach

From Tables 2 and 3 we know that offenders participating in CS systematically differ from offenders participating in TS. As such, we should approach a simple comparison of outcomes with caution. For concreteness, but without loss of generality to other outcome measures, suppose that we're interested in identifying the causal effect of CS on the probability that an offender re-offends within 12 months of sentencing.<sup>25</sup>

This relationship is given by the Logistic regression in Equation 1 below.

$$y_{it} = \Lambda(\beta_0 + \beta_1 CS_{it} + \gamma X'_{it} + \lambda_t + \epsilon_{it}) \quad (1)$$

Where  $i$  indexes a case and  $t$  indexes a month-year.<sup>26</sup>  $y_{it}$  is a binary variable taking value one if the defendant in a given case reoffends within 12 months of their sentencing date, zero otherwise.  $CS_{it}$  is a binary variable equal to one for defendants sentenced through CS, zero for defendants sentenced through TS.  $X'_{it}$  represents the set of control variables described in Panel B of Table 3.  $\lambda_t$  represents a set of month-by-year Fixed Effects (FEs). These FEs limit our comparison to offenders sentenced within the same month-year. This renders our estimates robust to time varying factors that influence crime across NSW (e.g., changes to the unemployment rate, seasonality and advances in security technology).  $\epsilon_{it}$  is the error term and all other terms are coefficients to be estimated. The coefficient of interest is  $\beta_1$ , which characterises the relationship between CS and the probability of at least one reoffence.

In order for  $\beta_1$  to have a causal interpretation, participation in CS would have to be, net of controls and FEs, unrelated to all other factors that influence recidivism. There is, however, good reason to expect that this is not the case. For example, remorse and connectedness to the local community are explicitly considered by the ACJG when assessing an offender's suitability. These factors are also likely to be associated with lower levels of recidivism. As such, any regression of Equation 1 may cause us to overestimate the benefit of CS on recidivism. To the best of our knowledge, there is no way to completely address this issue given available data.<sup>27</sup> We, therefore, recommend caution when interpreting the (associative, non-causal) estimates reported in this bulletin.

25 We use a Zero-Truncated Negative Binomial regression to estimate the relationship between CS and the number of days between sentencing and the offender's first reoffence.

26 With  $\Lambda(z) = 1/(1+e^{-z})$ .

27 We did, however, consider two alternative identification strategies. The first was an Instrumental Variables (IV) strategy designed to exploit variation in each magistrate's propensity to refer an offender for CS as an instrument for participation. Unfortunately, the first stage relationship was too weak to support the use of this instrument. The second was an IV strategy designed to exploit variation in the timing of the rollout of CS. Specifically, this strategy involves limiting the estimation sample to matters finalised in courts that will (at some point) have CS available, creating an indicator variable for whether the defendant's matter was finalised in a court with CS available (in the corresponding month-year), and then using this indicator as an instrument for participation. We elected not to employ this strategy for three reasons. First, the fact that we have so few treated units means we would be unlikely to detect a statistically significant effect (even if one was present) under Two-Stage Least Squares. Second, inspection of each court's aggregate pre-policy trends in incarcerations and recidivism revealed diverging trends in many sites. And finally, in our view, the exclusion restriction is particularly hard to justify. If for example, some sites were prioritised for CS because of an increasing rate of Aboriginal recidivism, then the rollout cannot be used as an instrument for participation.

## RESULTS

### Incarceration and recidivism

Table 4 reports the main results and consists of three panels, one for each outcome measure. Panel A examines the relationship between CS and the probability of a prison sentence.<sup>28</sup> Column 1 reports estimates from a simple (unconditional) comparison analogous to the t-test in Table 3. Columns 2 and 3 include control variables and month-by-year FEs, respectively. Columns 2 and 3 indicate that offenders undergoing CS are 9.3 percentage points less likely to receive a prison sentence. In relative terms, expressed as a fraction of the rate at which offenders undergoing TS are sent to prison, this equates to a decrease of 51.7 per cent. These reductions, both absolute and relative, are striking. While at least some of this reduction is likely due to selection bias, our view is that the practical significance of these results cannot be taken lightly.

**Table 4. Relationship between Circle Sentencing, incarceration and recidivism**

	(1) Naive	(2) Controls	(3) Time FE	(4) Penalty FE
<b>Panel A. Prison</b>	-0.117*** (0.010)	-0.093*** (0.010)	-0.093*** (0.009)	
Observations	92,940	92,746	92,746	
Pseudo R <sup>2</sup>	0.001	0.373	0.381	
AUC	0.503	0.894	0.897	
<b>Panel B. Reoffend within 12 months</b>	-0.055** (0.019)	-0.044* (0.018)	-0.039* (0.018)	-0.030 (0.019)
Observations	76,303	76,159	76,159	76,159
Pseudo R <sup>2</sup>	0.000	0.079	0.082	0.086
AUC	0.501	0.690	0.694	0.697
<b>Panel C. Days to reoffence</b>	124.661*** (34.742)	120.721*** (34.775)	63.431* (28.079)	55.171* (28.007)
Observations	54,674	54,569	54,569	54,569
Pseudo R <sup>2</sup>	0.000	0.006	0.013	0.013
Controls	N	Y	Y	Y
Time FE	N	N	Y	Y
Penalty FE	N	N	N	Y

Note. Panels A and B report average marginal effects derived from a Logistic regression. Panel C reports average marginal effects derived from a Zero-Truncated Negative Binomial regression, AUC= Area Under the receiver operating characteristic Curve, FE = Fixed Effects, standard errors obtained using the Delta method in parentheses, p<.001\*\*\*, p<.01\*\*, p<.05\*.

Panel B examines the relationship between CS and the probability of at least one re-offence within 12 months of sentencing. Column 3 indicates that CS is associated with a 3.9 percentage point reduction in the probability of at least one re-offence within 12 months. In relative terms, expressed as a fraction of the recidivism rate of offenders undergoing TS, this equates to a decrease of 9.6 per cent. In column 4 we include a set of penalty FEs. That is, we constrain our comparison to offenders receiving the same penalty and then re-estimate Equation 1. Interestingly, the coefficient is now about one-quarter smaller in (absolute) size and is statistically insignificant. This suggests that at least some of the reduction in recidivism associated with CS can be attributed to defendants receiving different penalties. One

<sup>28</sup> Panels A and B report average marginal effects derived from a Logistic regression. Panel C reports average marginal effects derived from a Zero-Truncated Negative Binomial regression. Interested readers are directed to Table A4 in the Appendix, which reports the full set of estimates corresponding to these regressions.

interpretation of this finding is that circle groups, which include a magistrate, are able to assign more effective penalties than a magistrate working in isolation. This is discussed further in the final section of the bulletin.

Panel C examines the relationship between CS and the number of days between sentencing and the offender's first re-offence. Column 3 indicates that CS is associated with an additional 55 days before the offender's first reoffence. In relative terms, expressed as a fraction of the number of days before offenders undergoing TS reoffend, this equates to an increase of 10.3 per cent. Inclusion of the magistrate FEs in column 4 generates a reduction in size and statistical precision, although the coefficient remains marginally significant at the five per cent level.

## Recidivism for specific offences

Our inability to address the selection bias issues outlined earlier means we are unable to make any causal claims regarding the effect of CS on incarcerations or recidivism. That said, the (significant) negative association between CS and recidivism represents a substantive departure from prior research on CS (Fitzgerald, 2008) and RJ programs more generally (Bergseth and 2007; Poynton, 2013; Strang et al., 2013; Smith & Weatherburn, 2012). As such, these estimates warrant further investigation.

In order to unpack what may be driving this association further, we divide our measure of recidivism into seven binary variables. That is, we recode "Reoffend within 12 months" into seven binary variables. Each of these binary variables takes value one if the offender reoffends within 12 months and their first reoffence is a particular type of offence.<sup>29</sup> For example, one of the seven new outcome variables takes value one if the offender both reoffends within 12 months and their first reoffence is a violent offence. We then re-estimate Equation 1 over these seven outcomes (i.e., one regression/outcome) and report the estimates in Table 5. From the first row in Table 5 we can see that offenders undergoing CS are 3.2 percentage points more likely to reoffend for a violent offence. From Table 5 we can also see that this increase is more than offset by decreases in reoffending for property crime (2.2 percentage points), drug offences (1.6 percentage points), traffic offences (3.2 percentage points) and offences against justice procedures (1.1 percentage points).

**Table 5. Relationship between Circle Sentencing and reoffending by reoffence type**

Crime category	Estimate	Standard error
<b>Panel A. All crime</b>		
Violent crime	0.032*	(0.014)
Property crime	-0.022*	(0.011)
Drug offences	-0.016*	(0.007)
Weapon offences	-0.001	(0.004)
Public order & miscellaneous	0.000	(0.008)
Traffic offences	-0.032***	(0.009)
Offences against justice procedures	-0.011*	(0.005)
<b>Panel B. Crimes unaffected by reporting/detection bias</b>		
Selected violent and property crime	-0.020*	(0.010)
Selected violent crime	0.005	(0.005)
Selected property crime	-0.025**	(0.009)

Note. This table reports average marginal effects derived from a Logistic regression, standard errors obtained using the Delta method in parentheses, p<.001\*\*\*, p<.01\*\*, p<.05\*.

<sup>29</sup> In this analysis the method used to classify offences into crime categories was consistent with the classifications for the principal offence type (see previous section on descriptive statistics). Descriptive statistics for these variables are reported in Table A3 of the Appendix.

One issue we are yet to address is the possibility of reporting and detection bias contaminating our measures of recidivism. Recall from Panel C of Table 3 that offenders undergoing CS are more likely to receive some form of supervision (e.g., a bond or suspended sentence) than offenders undergoing TS. It is reasonable, therefore, to question whether the apparent increase in violent crime (or decrease in other crime categories) is a reflection of enhanced detection of offences, rather than an increase (or decrease) in the actual level of offending. In order to better understand this problem, in Panel B of Table 5 we limit our analysis to specific types of violent and property crime considered to be less susceptible to reporting and detection bias.<sup>30</sup> These violent crimes include: homicide; assault occasioning grievous bodily harm; and robbery. The property crimes include: break and enter; theft; and motor vehicle theft. We then re-estimate Equation 1 using a binary variable equal to one if the offender re-offends within 12 months and their first reoffence is one of these selected crimes. From Panel B of Table 5 we can see that CS has no (statistically significant) association with violent recidivism, while the association between CS and reoffending for property crime is largely consistent with its counterparts in Table 4 and Panel A of Table 5.

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## DISCUSSION

In this study we set out to examine the relationship between Circle Sentencing (CS) and likelihood of incarceration and recidivism. We found that net of controls and fixed effects, offenders participating in CS are 9.3 percentage points less likely to receive a prison sentence. In relative terms, this equates to a reduction of 51.7 per cent.

The question, therefore, is whether this reduction in incarcerations was accompanied by an increase in recidivism for offenders not sent to prison. We used two measures of recidivism to answer this question. First, the probability of at least one re-offence within 12 months; and second, the number of days between sentencing and the offender's first re-offence. With respect to the former, we found that offenders participating in CS are 3.9 percentage points less likely to reoffend (9.6% in relative terms). With respect to the latter, we found that offenders participating in CS take 55 days longer to reoffend when they do commit a new offence (a relative increase of 10.3%).

There are, however, two caveats that need to be considered when interpreting our estimates. The first is that our estimates cannot be interpreted causally (i.e., selection bias may be responsible for our results). The second is that, even if our (recidivism) estimates could be interpreted causally, we also found some (limited) evidence indicating that CS may be associated with an increase in violent recidivism; although this increase is more than offset by reductions in non-violent crime. Whether the benefit of a net reduction in (non-violent) crime exceeds the cost of an increase in violent crime is beyond the scope of this paper but is an important avenue for future research.<sup>31</sup>

In any event, our recidivism estimates meaningfully depart from those reported by Fitzgerald (2008). One explanation for this departure is teething issues during the early years of the program. For example, Daly and Proietti-Scifoni (2009) identified a number of limitations regarding the early implementation of CS, including inadequate drug and alcohol support services in some locations. Therefore, it's possible that CS was not operating as intended until after Fitzgerald's evaluation. Another related explanation is sample size. Our sample is substantially larger than the sample available to Fitzgerald (2008). As such, Fitzgerald may have lacked sufficient power to detect an effect (even if one was present).

Despite its limitations, our study does have several important implications for researchers and policy makers. The first of which is to better understand why circle groups assign different penalties when compared to a magistrate working in isolation. Recall that once we limited our comparison to offenders

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<sup>30</sup> These crimes are considered to be less susceptible to reporting and detection bias because victims have more incentive to report such offences to police. Descriptive statistics for these variables are reported in Table A3 of the Appendix.

<sup>31</sup> Mayhew (2003) provides the most recent estimates of the costs of crime in Australia. We do not, however, use these estimates to conduct a cost-benefit analysis as the information is likely to be out of date for the majority of our estimation sample

receiving a similar penalty, the association between CS and recidivism reduced in magnitude and statistical precision. This suggests that at least some of the association between CS and recidivism is due to circle groups assigning different, potentially more effective, penalties. This could be because circle groups have a deeper insight into the circumstances of the offender and are therefore able to identify more appropriate penalties (e.g., offenders participating in CS are both more disadvantaged than offenders participating in TS, and less likely to receive monetary fine). The second is to investigate the link between CS and health outcomes. Given that drug and alcohol issues are prevalent among CS participants (Cultural and Indigenous Research Centre, 2008; Daly & Proietti-Scifoni, 2009), future research could investigate the relationship between CS and health outcomes by linking (drug and alcohol related) emergency department presentations and hospitalisations data with BOCSAR's Reoffending Database. The third is to determine if, and under what conditions, CS can be introduced in other localities. Expansion of the Circle Sentencing program to other locations would require (1) local support from magistrates and police prosecutors, (2) available and accessible legal aid and health services (e.g. drug and alcohol treatment facilities), and (3) a relatively large Indigenous population.

To summarise, CS clearly has the potential to lower the Indigenous incarceration rate. If CS can achieve this goal, without adversely affecting recidivism, the net benefit to society is difficult to overstate. For example, over the 2016-17 financial year, the cost to the NSW government of incarcerating an individual was \$253 per day.<sup>32</sup> Over this same period, there were 3,141 Indigenous Australian held in custody each day. Hence, even a one-percentage point decrease equates to 31 fewer incarcerations per day. This implies a saving of \$7,843 per day or \$2,862,695 per year. On these grounds alone further research, ideally in the form of a long running randomised controlled trial, to determine the true causal effect of CS on reoffending is certainly justified.

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<sup>32</sup> The NSW government's total net operating expenditure (including depreciation) on the incarceration system was \$1.1 billion. An average of 11,916 individuals were held in custody each day, 3,141 of which were Indigenous. All information used in these calculations is derived from the Report on Government Services (Productivity Commission, 2018).

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## APPENDIX

Table A1. Characteristics of those referred to Circle Sentencing, by participation status

	Everyone referred			Referred but traditionally sentenced			Circle sentenced			Difference	
	Obs (1)	Mean (2)	Std. Dev. (3)	Obs (4)	Mean (5)	Std. Dev. (6)	Obs (7)	Mean (8)	Std. Dev. (9)	Estimate (10)	Std. Err. (11)
<b>Panel A. Outcome variables</b>											
Prison	805	0.097	0.296	149	0.248	0.433	656	0.063	0.242	-0.186***	(0.037)
Reoffend within 12 months given no prison	727	0.369	0.483	112	0.473	0.502	615	0.350	0.477	-0.124*	(0.051)
Violent offence	727	0.157	0.364	112	0.170	0.377	615	0.154	0.362	-0.015	(0.038)
Property offence	727	0.072	0.258	112	0.080	0.273	615	0.070	0.255	-0.010	(0.028)
Drug offence	727	0.025	0.155	112	0.045	0.207	615	0.021	0.144	-0.024	(0.020)
Weapon offence	727	0.007	0.083	112	0.018	0.133	615	0.005	0.070	-0.013	(0.013)
Traffic offence	727	0.058	0.233	112	0.107	0.311	615	0.049	0.216	-0.058	(0.031)
Public order & miscellaneous offences	727	0.039	0.193	112	0.036	0.186	615	0.039	0.194	0.003	(0.019)
Offences against justice procedures	727	0.012	0.111	112	0.018	0.133	615	0.011	0.106	-0.006	(0.013)
Days until first reoffence	607	629.468	702.367	125	503.432	556.604	482	662.154	732.431	158.722**	(59.842)
<b>Panel B. Control variables</b>											
Age	805	30.181	9.414	149	30.362	9.108	656	30.140	9.488	-0.222	(0.832)
Age at first contact with justice system	805	19.770	7.125	149	19.906	7.393	656	19.739	7.068	-0.167	(0.664)
Male	805	0.704	0.457	149	0.738	0.441	656	0.697	0.460	-0.042	(0.040)
SEIFA Q1 (Lowest SES)	805	0.713	0.453	149	0.671	0.471	656	0.723	0.448	0.051	(0.042)
SEIFA Q2	805	0.163	0.369	149	0.141	0.349	656	0.168	0.374	0.027	(0.032)
SEIFA Q3	805	0.093	0.291	149	0.114	0.319	656	0.088	0.284	-0.026	(0.028)
SEIFA Q4 (Highest SES)	805	0.005	0.070	149	0.000	0.000	656	0.006	0.078	0.006*	(0.003)
Missing SEIFA	805	0.026	0.159	149	0.074	0.262	656	0.015	0.123	-0.059**	(0.022)
Inner regional	805	0.477	0.500	149	0.403	0.492	656	0.494	0.500	0.091*	(0.045)
Major cities	805	0.159	0.366	149	0.114	0.319	656	0.169	0.375	0.055	(0.030)
Outer regional	805	0.145	0.353	149	0.195	0.397	656	0.134	0.341	-0.060	(0.035)
Remote	805	0.193	0.395	149	0.215	0.412	656	0.188	0.391	-0.027	(0.037)
Missing Area	805	0.026	0.159	149	0.074	0.262	656	0.015	0.123	-0.059**	(0.022)
No. concurrent charges	805	1.954	0.899	149	1.866	0.984	656	1.974	0.878	0.108	(0.087)

Table A1. Characteristics of those referred to Circle Sentencing, by participation status (continued)

	Everyone referred			Referred but traditionally sentenced			Circle sentenced			Difference	
	Obs (1)	Mean (2)	Std. Dev. (3)	Obs (4)	Mean (5)	Std. Dev. (6)	Obs (7)	Mean (8)	Std. Dev. (9)	Estimate (10)	Std. Err. (11)
MSR of principal offence	805	68.853	23.011	149	68.295	24.954	656	68.980	22.564	0.685	(2.222)
Bail at first court appearance	805	0.954	0.210	149	0.960	0.197	656	0.953	0.212	-0.007	(0.018)
Plead guilty	805	0.848	0.359	149	0.785	0.412	656	0.863	0.344	0.078*	(0.036)
No plea entered	805	0.107	0.309	149	0.141	0.349	656	0.099	0.299	-0.042	(0.031)
Plead not guilty	805	0.045	0.207	149	0.074	0.262	656	0.038	0.192	-0.036	(0.023)
No. prior court appearances (with proven offences)	805	7.142	6.698	149	8.450	8.107	656	6.845	6.305	-1.605*	(0.707)
No. prior prison sentences	805	1.407	2.757	149	2.315	3.488	656	1.201	2.521	-1.114***	(0.302)
<b>Panel C. Sentencing outcomes</b>											
Bond with supervision	805	0.306	0.461	149	0.275	0.448	656	0.313	0.464	0.037	(0.041)
Bond without conviction with supervision	805	0.029	0.167	149	0.020	0.141	656	0.030	0.172	0.010	(0.013)
Bond without conviction without supervision	805	0.071	0.257	149	0.034	0.181	656	0.079	0.270	0.046*	(0.018)
Bond without supervision	805	0.077	0.267	149	0.054	0.226	656	0.082	0.275	0.029	(0.021)
Conviction only	805	0.004	0.061	149	0.007	0.082	656	0.003	0.055	-0.004	(0.007)
Fine	805	0.037	0.190	149	0.081	0.273	656	0.027	0.163	-0.053*	(0.023)
Home detention	805	0.001	0.035	149	0.000	0.000	656	0.002	0.039	0.002	(0.002)
Imprisonment	805	0.097	0.296	149	0.248	0.433	656	0.063	0.242	-0.186***	(0.037)
No conviction recorded	805	0.006	0.079	149	0.000	0.000	656	0.008	0.087	0.008*	(0.003)
No penalty	805	0.021	0.144	149	0.054	0.226	656	0.014	0.116	-0.040*	(0.019)
Other penalties	805	0.009	0.093	149	0.007	0.082	656	0.009	0.095	0.002	(0.008)
Intensive Correction Order	805	0.011	0.105	149	0.020	0.141	656	0.009	0.095	-0.011	(0.012)
Community Service Order	805	0.108	0.311	149	0.081	0.273	656	0.114	0.318	0.034	(0.026)
Suspended sentence with supervision	805	0.184	0.388	149	0.081	0.273	656	0.207	0.406	0.127***	(0.027)
Suspended sentence without supervision	805	0.040	0.195	149	0.040	0.197	656	0.040	0.195	-0.001	(0.018)

Note. N=observations, robust standard errors in parentheses, p<.001 \*\*\*, p<.01 \*\*, p<.05\* .

Table A2. Robustness checks

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Perfect matches	All periods	All courts	Full sample	Court FE	Rolling	Practical	ITT	Reoffending cutoff	PSM
<b>Panel A. Prison</b>										
Observations	-0.103*** (0.011)	-0.092*** (0.009)	-0.098*** (0.009)	-0.097*** (0.009)	-0.100*** (0.009)	-0.074*** (0.019)	-0.087*** (0.011)	-0.090*** (0.009)	-0.093*** (0.009)	-0.113*** (0.018)
Pseudo R2	92,613	102,292	116,081	126,937	126,831	3,702	52,219	92,762	91,958	1,310
AUC	0.381	0.384	0.383	0.386	0.406	0.421	0.355	0.381	0.381	
	0.897	0.899	0.898	0.899	0.906	0.913	0.886	0.897	0.897	
<b>Panel B. Reoffending</b>										
Observations	-0.051* (0.020)	-0.039* (0.018)	-0.034 (0.018)	-0.034 (0.018)	-0.022 (0.019)	-0.016 (0.040)	-0.049* (0.020)	-0.035 (0.018)	-0.039* (0.018)	-0.037 (0.027)
Pseudo R2	76,041	84,103	94,467	103,439	103,434	3,335	43,366	76,171	75,526	1,230
AUC	0.0822	0.0818	0.0805	0.0802	0.0841	0.115	0.0811	0.0822	0.0822	
	0.694	0.694	0.692	0.692	0.696	0.727	0.693	0.694	0.694	
<b>Panel C. Days until next offence</b>										
Observations	70,331* (31,260)	66,501* (29,047)	56,500* (27,734)	59,192* (28,595)	44,453 (28,576)	113,521 (89,389)	92,165** (33,947)	61,055* (27,671)	61,866* (28,218)	63,402* (28,172)
Pseudo R2	54,474	60,750	67,489	74,433	74,430	2,680	30,193	54,581	54,359	896
Controls	0.013	0.012	0.013	0.013	0.013	0.001	0.012	0.013	0.012	
Time FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Court FE	N	N	N	N	Y	N	N	N	N	N

Note: N = observations, AUC = Area Under the receiver operating characteristic Curve, FE = Fixed Effects. Among offenders undergoing CS, column 1 restricts the estimation sample to offenders with identical sentencing dates in both ROD and the ASU database. Column 2 allows offenders participating in TS in month-years without CS to be included in the estimation sample. Column 3 allows offenders participating in TS in courts with CS available to be included in the estimation sample. Column 4 imposes no sample restriction regarding courts or month-years. Column 5 employs court FEs. Column 6 limits the estimation sample to courts that will eventually have CS, and then compares offenders undergoing CS to offenders undergoing TS in courts yet to introduce CS. Column 7 limits the estimation sample to offenders that plead guilty and were granted bail at their first court appearance. Column 8 reports Intention-to-treat estimates. Column 9 limits the estimation sample to offenders with a baseline sentencing date on or before 31 July 2018. Column 10 reports the difference-in-means between participants undergoing CS and a matched group of controls. These offenders were matched using propensity score matching on the set of control variables described in Panel B of Table 3, standard errors in parentheses, \*\*\* p<.001, \*\* p<.01, \* p<.05.

**Table A3. Descriptive statistics for reoffending variables**

	Full sample			Traditionally sentenced			Circle sentenced			Difference	
	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	Estimate	Std. Err.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Reoffend within 12 months for:											
Violent offence	76,303	0.113	0.316	75,688	0.112	0.316	615	0.154	0.362	0.042**	-0.015
Property offence	76,303	0.100	0.300	75,688	0.100	0.300	615	0.070	0.255	-0.030**	-0.010
Drug offence	76,303	0.043	0.202	75,688	0.043	0.202	615	0.021	0.144	-0.022***	-0.006
Weapon offence	76,303	0.007	0.084	75,688	0.007	0.085	615	0.005	0.070	-0.002	-0.003
Traffic offence	76,303	0.079	0.270	75,688	0.079	0.270	615	0.049	0.216	-0.031***	-0.009
Public order & miscellaneous offences	76,303	0.038	0.191	75,688	0.038	0.191	615	0.039	0.194	0.001	-0.008
Offences against justice procedures	76,303	0.025	0.156	75,688	0.025	0.156	615	0.011	0.106	-0.014**	-0.004
Reoffend within 12 months (selected crime)	76,303	0.071	0.257	75,688	0.071	0.257	615	0.042	0.201	-0.029***	(0.008)
Selected violent crime	76,303	0.005	0.070	75,688	0.005	0.070	615	0.008	0.090	0.003	(0.004)
Selected property crime	76,303	0.066	0.249	75,688	0.066	0.249	615	0.034	0.182	-0.032***	(0.007)

Note. N=observations, robust standard errors in parentheses, p<.001 \*\*\*, p<.01 \*\*, p<.05\*.

Table A4. Raw maximum likelihood coefficients

	(1) Prison	(2) Reoffend	(3) Days
Circle Sentencing	-1.348*** (0.182)	-0.183* (0.089)	0.113* (0.047)
SEIFA Q2	-0.083** (0.030)	0.000 (0.020)	-0.009 (0.012)
SEIFA Q3	-0.202*** (0.035)	-0.028 (0.023)	-0.022 (0.014)
SEIFA Q4	-0.220*** (0.057)	-0.018 (0.036)	-0.046* (0.022)
Missing SEIFA	0.001 (0.531)	-0.164 (0.272)	0.227 (0.171)
Major cities	0.066* (0.029)	0.135*** (0.019)	-0.069*** (0.011)
Outer regional	-0.124*** (0.037)	-0.043 (0.024)	-0.005 (0.014)
Remote	-0.421*** (0.071)	-0.033 (0.041)	-0.000 (0.022)
Missing Area	1.754*** (0.532)	-0.264 (0.274)	-0.065 (0.172)
Age	0.010*** (0.003)	-0.031*** (0.002)	0.016*** (0.001)
Age at first contact with justice system	-0.027*** (0.003)	-0.011*** (0.002)	-0.004*** (0.001)
Male	0.420*** (0.028)	0.118*** (0.017)	-0.051*** (0.010)
No. concurrent charges	1.053*** (0.013)	0.137*** (0.009)	-0.047*** (0.005)
MSR of principal offence	-0.025*** (0.000)	0.004*** (0.000)	-0.002*** (0.000)
Bail at first court appearance	-1.171*** (0.037)	-0.250*** (0.039)	0.079*** (0.021)
No plea entered	-0.876*** (0.030)	0.327*** (0.019)	-0.144*** (0.011)
Plead not guilty	-0.401*** (0.039)	0.172*** (0.025)	-0.069*** (0.014)
No. prior court appearances (with proven offences)	0.041*** (0.003)	0.081*** (0.002)	-0.030*** (0.001)
No. prior prison sentences	0.113*** (0.005)	0.016*** (0.005)	-0.010*** (0.003)
Constant	-1.353*** (0.154)	-0.211* (0.105)	6.640*** (0.066)
Observations	92,746	76,159	54,569

Note. Columns 1 and 2 report the raw coefficients from a Logistic regression. Column 3 reports the raw coefficients from a Zero-Truncated Negative Binomial regression. Robust standard errors in parentheses,  $p < .001$ \*\*\*,  $p < .01$ \*\* ,  $p < .05$ \*.