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Does circle sentencing reduce Aboriginal offending?

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Circle sentencing is an alternative method of sentencing Aboriginal offenders which involves the offender's community in the sentencing process. This bulletin considers whether people who participate in circle sentencing (1) show a reduction in the frequency of their offending, (2) take longer to reoffend and/or (3) reduce the seriousness of their offending. The results suggest that circle sentencing has no effect on any of these outcomes. Circle sentencing participants offended less in the 15 months following their circle. However, the same was also true of Aboriginal people sentenced in a traditional court setting (the control group). After a range of offender and offence characteristics were controlled for, we found no difference between the circle sentencing group and the control group in time to reoffend. Finally, there was no difference between the circle sentencing group and the control group in the percentage of offenders whose next offence was less serious than the reference offence.

INTRODUCTION

Circle sentencing is an alternative sentencing process for adult Aboriginal offenders in New South Wales. It takes the sentencing process out of the traditional court setting and allows the involvement of the offender's community. In a circle sentence, the offender, magistrate, community elders and (on occasion) the victim and support people for the offender and/or victim sit in a circle to discuss the circumstances and impact of the offence and determine a sentence tailored to the offender. Circle sentencing has the full sentencing powers of the court (Crime Prevention Division 2007).

The first circle sentence in New South Wales was conducted in Nowra in February 2002. Since then, with the exception of an early review of the first 12 months of operation, a rigorous evaluation of circle sentencing has not been published. In 2006, the New South Wales Attorney General's Department commissioned a comprehensive review of the impact of all aspects of circle sentencing. As part of this review, the Bureau of Crime Statistics and Research was asked to analyse the rate of reoffending among circle sentencing participants. This bulletin reports the results of these analyses.

BACKGROUND

The circle sentencing process that operates in New South Wales was adapted from a program that originated in Canada in the early 1990s for the sentencing of Indigenous offenders (Potas et al. 2003). The Canadian program is based on a restorative model of justice, which seeks to reconcile the offender and the victim and actively engage community members in the rehabilitation of the accused (LaPrairie 1995).

All Australian jurisdictions, with the exception of Tasmania, now operate an Indigenous sentencing court of some type. The procedures in these courts generally follow the tenets of restorative justice, such as, improving communication between parties, applying procedural justice (that is, treating people respectfully and fairly), using persuasion and support to encourage offenders to be law-abiding and to avoid incarceration (Marchetti & Daly 2007). In addition, Indigenous sentencing courts endeavour to be culturally appropriate, being inclusive of both the Indigenous community and the offender (Marchetti & Daly 2007).

At the time of writing in New South Wales circle sentencing was operating in Armidale, Bourke, Brewarrina, Dubbo, Kempsey, Lismore, Mt Druitt and Nowra. Nearly half of all circle sentences involve an offence of common assault; the next most prevalent offences are unlicensed driving and breaching an apprehended violence order.

The eight objectives of circle sentencing in New South Wales are set out in Schedule 4 of the NSW Criminal Procedure Regulation 2005. They are:

a) To include members of Aboriginal communities in the sentencing process

b) To increase the confidence of Aboriginal communities in the sentencing process

This bulletin has been independently peer reviewed.

c) To reduce barriers between Aboriginal communities and the courts

d) To provide more appropriate sentencing options for Aboriginal offenders

e) To provide effective support to victims of offences by Aboriginal offenders

f) To provide for the greater participation of Aboriginal offenders and their victims in the sentencing process

g) To increase the awareness of Aboriginal offenders of the consequences of their offences on their victims and the Aboriginal communities to which they belong

h) To reduce recidivism in Aboriginal communities

This bulletin deals only with the last objective. It is also important to note this bulletin does not consider recidivism among Aboriginal communities as a whole. Rather it focuses specifically on recidivism among individuals who participated in circle sentencing.

Payne (2005) has raised several methodological problems afflicting speciality court evaluations in Australia. These include the use of non-comparable control groups and inadequate follow-up periods. While there have only been a few published evaluations of reoffending among Indigenous people participating in alternative court paradigms in Australia, the problems Payne cites are evident in these evaluations.

The first and, to date, only evaluation of circle sentencing in New South Wales was published in October 2003 by the New South Wales Judicial Commission (Potas et al. 2003) just 18 months after the first circle sentence was conducted. This review of the first 12 months of the circle sentencing pilot considered the impact of circle sentencing on a range of objectives, including recidivism. The evaluation found that 'circle sentencing at Nowra has succeeded on a number of levels … [including to] help break the cycle of recidivism' (p. iv).

The recidivism claim was based on the finding that 'At the time of writing, reports relating to the progress of those sentenced by the circle show that only one offender had reoffended' (p. 53).

It is worth noting, however, that the Commission's evaluation was based on only eight circle sentencing case studies. Furthermore, information about reoffending was available for only four of these eight cases. In addition, the follow-up periods for these four cases were very short - six months for two offenders and three months for the remaining two offenders. One person, followed-up for six months, reoffended within one month of his circle sentence hearing and this was the basis for the Commission's claim that only one offender had reoffended. There was no control group. It would seem premature to conclude on the basis of this evidence that circle sentencing helped 'break the cycle of recidivism'.

The Victorian Koori Court has considerable similarities to circle sentencing in New South Wales. The Koori Court convenes around an oval table and, like circle sentencing, it aims to avoid the formal language of a traditional court and to allow contributions from elders, victims, support people and the offender. Sentences are determined by the magistrate after discussions around the table with elders.

Harris (2006) has published an evaluation of the Koori Courts pilot program. His evaluation included an assessment of reoffending by Koori Court participants. A key finding of the evaluation was that 'Koori Courts have reduced the levels of recidivism amongst Koori defendants' (p. 8). The report states that recidivism in the two Koori Court sites was 12.5 per cent and 15.5 per cent compared with a 'recidivism rate for all Victorian defendants … [of] 29.4%' (p. 85).

This claim is ill-founded. A fundamental problem with Harris's study was an inappropriate comparison group. Harris' reported recidivism figure of 29.4 per cent was neither the recidivism rate for all Victorian defendants nor the recidivism rate for Indigenous offenders who did not attend a Koori Court. Instead, it was derived from data published in the Report on Government Services (Productivity Commission 2004, Table C.3, p. C.15) for reoffending among people released from prison or placed under the supervision of Corrective Services. These offenders are more serious than those dealt with by Koori Courts and would, therefore, be expected to have higher rates of reoffending. Indeed, overseas research clearly shows that recidivism rates are higher among released prisoners than among offenders dealt with in the community (Cunliffe & Shepherd 2007). The reoffending figure for Harris' comparison group was also based on a longer follow-up period than the Koori Court group[1], thereby allowing the capture of more re-convictions. Marchetti and Daly (2007, p. 419) have also criticised Harris' evaluation for using inadequate follow-up periods and for counting court files rather than individual defendants. In light of these criticisms, the Harris study cannot be taken as evidence of the effectiveness of Koori Courts in reducing recidivism.

The Queensland sentencing court for Indigenous offenders, the Murri Court, is physically similar to a regular court and involves Indigenous elders in an advisory role. Parker and Pathe's (2006) Murri Court evaluation was quite circumspect in its findings about recidivism. While many stakeholders believed that the program was a success, the evaluation acknowledged that limited data and the absence of a suitable control group prevented an assessment of whether the Murri Court was meeting its objective of reducing reoffending.

AIMS AND METHOD

The current study sought to answer three questions:

1. Does participation in circle sentencing reduce the frequency of offending?
2. Does participation in circle sentencing increase the time to the next proven offence?
3. Does circle sentencing reduce the seriousness of any further offending?

Three sets of analyses were undertaken to answer these questions.

In each of the three analyses, recidivism is defined as re-conviction in court for an offence committed after the circle sentence (that is, a proven offence[2]). Time to reoffend is always based on the offence date of the individual's first subsequent proven offence, not the date that the matter was finalised in court.[3]

FREQUENCY OF OFFENDING

The first analysis considered whether participants demonstrate a reduction in offending after being circle sentenced. For this analysis, the number of proven offences was compared over equal periods before and after the circle. The same analysis was conducted for a matched control group before and after their appearance at court.

For those circle sentenced before January 2006, we counted the number of proven offences committed in the 15 months prior to the circle and in the 15 months after the circle.[4] Every proven charge was counted regardless of whether it was finalised in court at the same time as other offences. This part of the analysis was limited to people circle sentenced before January 2006, as everyone needed to be given 15 months to reoffend to allow an equivalent comparison.[5] Offences dealt with in the circle (or equivalent reference court appearance for the control group) were included in the 'prior' count if they occurred within 15 months of the circle sentence.[6]

The analysis was then repeated for a matched control group of offenders who did not participate in circle sentencing. The control group was matched on Indigenous status, age at reference court appearance (plus or minus three years and excluding juveniles), gender, reference offence (same principal offence type such as: Acts Intended to Cause Injury; Theft; or Road Traffic and Motor Vehicle Offences), date of reference court appearance (within 12 months and before January 2006), prior proven court appearances in the past five years (people with no priors were matched with others with no priors, otherwise plus or minus two of each other) and prior imprisonment since 1994 (yes or no). The circle sentencing participants included in this analysis were from Brewarrina, Nowra and Dubbo Local Courts. The control group was also selected from local courts outside Sydney. Apart from excluding people who received a prison sentence at their circle, this part of the analysis did not incorporate a control for time spent in custody.[7]

Eighty-one people participated in a circle sentence prior to January 2006. Of these, 13 were excluded from the analysis: six because they received a penalty of imprisonment at their circle (thereby reducing their capacity for reoffending in the follow-up period); and the remaining seven because an accurate match could not be found.[8] Thus the analysis was conducted on 68 circle sentencing participants and the equivalent 68 from the control group. Of the 68 circle sentencing participants, 40 were from Dubbo, 24 from Nowra and four from Brewarrina. Both the circle sentencing and control groups comprised 15 women and 53 men. The average age of people in both groups was 29 years. In the circle sentencing group the eldest person was 57 years and the youngest 18 years; in the control group the eldest person was 55 years and the youngest was 18 years.

Ideally, we would have liked to compare circle sentencing and control group defendants in terms of the size of any change in offending frequency between circle sentencing participants. The highly skewed nature of the offending distribution made this impossible. Instead, a non-parametric Wilcoxon signed-rank test was applied to the results from the circle sentencing group and the control group independently to determine whether, in each group, there was a significant difference between the number of proven offences before and after the reference court appearance.

TIME TO REOFFEND

The second analysis assessed whether, controlling for other factors, Aboriginal people who participated in circle sentencing take longer to reoffend than those sentenced through the normal court process. Time to reoffend was based on the offence date of the individual's first subsequent proven offence, not the date that the matter was finalised in court. The reference start date for time to reoffend was the circle sentencing date for the treatment group and the finalisation date of the reference court appearance for the control group. Note that there were four people in the sample who were circle sentenced more than once during the observation period. The date of the first circle sentence for these four people was taken as their reference court appearance. Reoffending was considered up to June 2007.[9] Time spent in prison was controlled for by subtracting any time spent in custody from the total time between reference court appearance and offence. Individuals whose reference court appearance was for an offence that was ineligible for circle sentencing were not included in the control group.

Cox regression was used to compare the time to first proven offence among offenders in the circle sentencing group with the time to first proven offence in a control group of Aboriginal offenders sentenced through the traditional court process.

Since Cox regression adjusts for unequal follow-up periods and allows us to control for pre-existing differences between treatment and control groups, we were able to include 153 individuals circle sentenced between February 2002 and June 2007 in this analysis.[10] Eligible for inclusion in the control group were 21,324 Aboriginal adults found guilty in NSW courts outside Sydney between February 2002 and June 2007 who did not participate in a circle sentence. Because all but two of the 153 circle sentencing participants were sentenced in courts outside Sydney[11], the control group only included people appearing in courts outside Sydney.

Since the large disparity between the size of the control group (21,324) and the circle sentencing group (153) could destabilise the Cox regression model, supplementary analyses were conducted on sub-samples of the control group to ensure that the findings for the entire control group were robust. Ten random sub-samples were selected from the control group, each comprising seven percent of the entire control group, or about 1,450 persons.[12]

The following factors were included as controls in the analysis because of their demonstrated impact on the time to first reconviction (Chen, Matruglio, Weatherburn & Hua 2005; Snowball & Weatherburn 2006): sex, age at reference court appearance, offence type, remand status, whether the person had concurrent offences, prior convictions in the past five years and prior prison episodes since 1994.

For both the complete control group and each of the ten random sub-samples, a Kaplan-Meier test was applied to each of the factors planned for the survival analysis to determine if it was associated with time to reoffend. The significant factors were then entered into a Cox regression analysis to determine whether the time to first proven offence was lower for those who were circle sentenced, after controlling for other factors.

OFFENCE SERIOUSNESS

The third analysis was designed to test for changes in offence seriousness (for both treatment and control groups) between the reference offence and the next offence, for those in the sample who had a further offence. Offence seriousness was measured using the offence seriousness index developed by the Crime Research Centre in Western Australia, in association with the South Australia Office of Crime Statistics (Ferrante 1998). The significance of any change in offence seriousness in the treatment and control groups was assessed using Chi-square and Fisher's exact test.

RESULTS

DID PARTICIPATION IN CIRCLE SENTENCING REDUCE THE FREQUENCY OF OFFENDING?

Table 1 shows the number of proven offences before and after the circle sentence or index court appearance for both the circle sentencing group and the control group.

Forty-six percent of the circle sentencing group committed at least one offence in the 15 months following the circle which was proven in court, compared with 38 percent of the control group.

In the 15 months prior to their reference court appearance, the circle sentencing group offended more often than did the control group (the median number of proven offences was 3 for the circle group versus 2 for the control group while the average number of proven offences was 4.2 versus 3.0 respectively). In the 15 months following the reference court appearance, the two groups were equivalent in terms of proven offences (the median number of proven offences were zero for both groups and the averages were 1.5).

Table 1. Comparison between offending 15 months before and after the reference court appearance by method of disposition – Circle sentencing group versus Control group

		Circle sentencing group		*Control group*	
Median no. of proven offences	15 months prior to court	3		2	
	15 months post court	0		0	
Mean no. of proven offences	15 months prior to court	4.2		3.0	
	15 months post court	1.5		1.5	
		No.	***%***	***No.***	***%***
% reoffending in 15 months post court		31	45.6	26	38.2
Comparison of no. of offences pre and post Court	Same number pre and post	6	8.8	4	5.9
	Fewer offences in 15 mths post	53	77.9	52	76.5
	More offences in 15 mths post	9	13.2	12	17.6
	Total	68	100.0	68	100.0
		Sig[a]		Sig[b]	

a Wilcoxon signed Ranks Test: Z= -4.992, p<0.001
b Wilcoxon signed Ranks Test: Z= -4.562, p<0.001

Most (53 of 68 or 78%) of the circle sentencing group had fewer proven offences in the 15 months following the circle than in the 15 months prior to the circle. Thirteen per cent offended more in the 15 months following the circle. A small proportion (9%) had the same number of offences before and after the circle sentence. The results are almost identical for the control group, with 77 percent having few proven offences, 18 percent having more proven offences and six percent having the same number of proven offences before and after the index court appearance. Both groups showed a significant reduction in offending after their reference court appearance.

DID PARTICIPATION IN CIRCLE SENTENCING INCREASE THE TIME TO THE NEXT PROVEN OFFENCE?

The first stage of this part of the analysis involved applying a Kaplan-Meier test to each of the factors planned for the survival analysis to determine if it was associated with time to re-offend. The results of these tests for the whole control group are shown in Table 2. To ensure the findings for the complete control group are robust, the analysis was also performed on ten random sub-samples from the control group. The results for the ten control group sub-samples are shown in the notes at the bottom of Table 2.

Each of the variables listed in Table 2 had a significant association with the time to reoffend when the circle sentencing group was compared with the entire control group. The results for the ten control group sub-samples were slightly different. The results were consistent with respect to circle sentencing, with time to reoffend being significantly shorter for the circle sentencing group than for each of the control sub-samples. However, one of the ten sub-samples gave a non-significant result for sex, one gave a non-significant result for remand and four gave non-significant results for offence.

Table 2 also shows the characteristics of the control group compared with the circle sentence group. It can be seen that the offenders who were circle sentenced were generally more serious offenders than those in the control group. Members of the circle sentence group were more likely to have multiple concurrent charges, more likely to be appearing for a violent offence,

Table 2. Characteristics of the circle sentencing and control groups and the relationship between characteristics and time to reoffend

	Circle sentencing group		*Control group*		*Total*	
Factor	*No.*	*%*	*No.*	*%*	*No.*	*Median survival time (days)*
Group						
Circle sentencing	153		-		153	618
Control	-		21324		21324	1433
						Sig[a]
Gender						
Female	40	26.1	5893	27.6	5933	n.c.
Male	113	73.9	15431	72.4	15544	1175
						Sig[b]
Age at reference appearance (years)						
18 to 24	49	32	7070	33.2	7119	959
25 to 33	55	35.9	6726	31.5	6781	1247
34 or more	49	32	7528	35.3	7577	n.c.
						Sig[a]
Remand status						
On bail/ bail dispensed with	142	92.8	18561	87.1	18703	1600
In custody	11	7.2	2761	12.9	2772	605
						Sig[b]
Reference offence						
Driving	24	15.7	6069	28.5	6093	n.c.
Justice	20	13.1	2283	10.7	2303	986
Theft	14	9.2	2665	12.5	2679	996
Violence	72	47.1	4988	23.4	5060	1731
Other	23	15	5319	24.9	5342	1182
						Sig[c]
Concurrent offences						
None	53	34.6	12192	57.2	12245	1759
One	39	25.5	4590	21.5	4629	1318
Two or more	61	39.9	4542	21.3	4603	938
						Sig[a]
Prior proven court appearances in past 5 years						
None	15	9.8	6457	30.3	6472	n.c.
One	21	13.7	4552	21.3	4573	n.c.
Two to three	67	43.8	5381	25.2	5448	1091
Four or more	50	32.7	4934	23.1	4984	400
						Sig[a]
Prior prison episodes since 1994						
None	94	61.4	15502	72.7	15596	n.c.
One to two	34	22.2	3320	15.6	3354	751
Three or more	25	16.3	2502	11.7	2527	334
						Sig[a]

a. Significant at 0.05 for the complete control group and in each of the 10 control group samples.
b. Significant at 0.05 for the complete control group and in 9 of the 10 control group samples.
c. Significant at 0.05 for the complete control group and in 6 of the 10 control group samples.
n.c. Median survival time is not calculated if less than 50 percent of the group reoffended.

generally had more prior convictions and were more likely to have spent time in prison. These factors all reduce the average time to reoffend.

Table 2 shows five categories of offence type. It can be seen that median survival time is similar for justice offences, theft offences and other offences. In order to reduce the number of variable combinations in the survival analysis, these three offence types were combined in the Cox regression analyses described below.

The factors listed in Table 2 were entered into a Cox regression analysis for both the complete control group and each of the ten sub-samples to determine whether the time to first proven offence was longer for those who were circle sentenced. The hazard ratios produced from the Cox regression models for the complete control group are shown in Table 3. The table also shows the bounds of the associated 95 per cent confidence intervals. Note that where the confidence interval includes one, the comparison is not significant. Model 1 includes circle sentencing participation and offender sex and age. Model 2 considers these variables as well as features of the reference offence – bail status, the number of concurrent offences and the reference offence type. Model 3 adds prior court appearances and prior prison episodes.

Note that bail status, added in Model 2, was found not to be significant in the final model and was subsequently removed. The contrast between one concurrent offence and no concurrent offences was not significant in the final model. The contrast between two or more concurrent offences and no concurrent offences was significant (p=0.005), but it was felt that, overall, this variable did not contribute much and, in the interests of creating a parsimonious model, it was removed (note that removal of the concurrent offences variable did not affect the significance of any of the other variables).

Comparison of the hazard ratios for the circle sentencing variable across the different models reveals that it is significant in the first two models but not significant in the final model when all the additional variables are taken into account. When the only other control variables are age and sex (Model 1),

Table 3. Cox regression model for time to reoffend: Circle sentence group versus entire control group (n=21,477)

Comparison	*Model 1*	*Model 2*	*Model 3*
Circle sentence vs control group	1.448 (1.125-1.863)	1.465 (1.138-1.886)	1.162 (0.903-1.496)[a]
Male vs female	1.412 (1.340-1.487)	1.429 (1.356-1.505)	1.161 (1.100-1.225)
18 to 24 years vs 34 years or more	1.546 (1.465-1.631)	1.512 (1.433-1.596)	1.436 (1.363-1.519)
25 to 33 years vs 34 years or more	1.347 (1.275-1.423)	1.335 (1.264-1.410)	1.187 (1.123-1.254)
Justice offence vs driving offence		1.106 (1.038-1.178)	1.040 (0.976-1.108)
Other[b] offence vs driving offence		1.348 (1.279-1.421)	1.183 (1.122-1.248)
One prior in past 5 years vs none			1.484 (1.379-1.597)
Two to three priors in past 5 years vs none			1.959 (1.830-2.096)
Four or more priors in past 5 years vs none			3.037 (2.828-3.261)
One to two prior prison episodes since 1994 vs none			1.147 (1.078-1.220)
Three or more prior prison episodes since 1994 vs none			1.447 (1.351-1.550)

a: not significant

b: Includes justice offences, theft offences and 'other' offences

Note: The reference category is the second category for each variable

Table 4. Summary of the final Cox regression models from the 10 random sub-samples from the control group

	Sub-sample										
Factors	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*Summary*
Circle sentencing	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	Not significant 10/10
Age	sig	sig	sig	sig	sig	sig	sig	sig	sig	sig	Significant 10/10
Sex	-	sig	-	sig	-	-	sig	sig	sig	-	Significant 5/10
Remand	-	-	-	-	-	-	-	-	-	-	Not significant 10/10
Offence type	-	sig	-	sig	sig	-	-	-	-	-	Not significant 7/10
Concurrent offences	-	-	sig	-	sig	-	-	-	-	sig	Not significant 7/10
Priors	sig	sig	sig	sig	sig	sig	sig	sig	sig	sig	Significant 10/10
Prison	sig	sig	sig	sig	-	-	-	sig	sig	-	Significant 6/10

Notes: '-' means the variable was omitted from the final model because it was not significant; 'n.s.' means the variable was included in the final model but was not significant; 'sig' means the variable was significant in the model

the circle sentencing group appears to reoffend faster than the control group. The same is true when offence type is added (Model 2). However, when information about prior offending is introduced (Model 3), the circle sentencing variable shows no relationship with time to offend.

Table 4 shows the composition of the final models for each of the ten control grooup sub-samples. The hazard ratios for these models are shown in the Appendix. From Table 4 it can be seen that, while there were some differences in the composition of the final models for the ten sub-samples, participation in circle sentencing was not a significant predictor of time to reoffend in any of the ten models.

Did circle sentencing reduce the seriousness of any further offending?

Of the 153 people circle sentenced, 61 (or 40%) had reoffended by June 2007. Of the 21,324 people in the control group, 8,250 (or 39%) had reoffended.[13] Table 5 shows the relative seriousness of the next offence after the circle sentence or reference appearance for reoffenders. For 56 percent of the circle sentence group who reoffended, the next offence was less serious than the reference offence, compared with 45 percent of the control group. This difference was not statistically significant.

DISCUSSION

The aim of this study was to determine whether Aboriginal offenders who participate in circle sentencing (1) show a reduction in the frequency of their offending, (2) take longer to reoffend, and/or (3) reduce the seriousness of their offending, relative to Aboriginal defendants who proceed through a conventional court process.

The answer to the first question is that circle sentencing participants offended less frequently in the 15 months after the circle than they did in the 15 months prior to the circle. However, the same was true of a matched control group who were sentenced in a traditional court setting. The answer to the second question is that, after controlling for age, gender,

Table 5. Change in offence seriousness by method of disposition – Circle sentencing group versus Control group

Seriousness of subsequent offence	*Circle sentencing group*		*Control group*	
	No.	*%*	*No.*	*%*
Less serious	34	55.7	3690	44.7
More serious or the same	27	44.3	4560	55.3
Total	61	100	8250	100
			n.s.[a]	

a. Not significant: χ^2= 2.968, d.f. = 1, p=0.085, Fisher's Exact Test p=0.056

offence, prior convictions and prior incarceration, there was no significant difference between circle sentencing participants and the control group in time to reoffend. The answer to the third question is that there was no significant difference between the treatment and the control group in the percentage of offenders whose next offence was less serious than the reference offence.

Taken as a whole, the evidence presented here suggests that circle sentencing has no effect on the frequency, timing or seriousness of offending. It could be argued that these results may have been different with a more extensive set of controls. However, this is unlikely for at least two reasons: the findings are consistent and an extensive set of controls were employed in analysing time to reoffend. The only positive effect for circle sentencing that even approached significance was the change in offence seriousness for circle sentencing participants, relative to Aboriginal people dealt with in a conventional court proceeding (p=0.056 in the one-tailed Fisher Exact test). Even this effect, however, might be just a reflection of regression to the mean.

It should not be concluded that circle sentencing has no value simply because it does not appear to have any short-term impact on reoffending. Reducing recidivism is just one of several objectives of the process. There is nothing in this analysis to suggest that circle sentencing is not meeting the other objectives. If it strengthens the informal social controls that exist in Aboriginal communities, circle sentencing may have a crime prevention value that cannot be quantified through immediate changes in the risk of reoffending for individuals.

Given the high priority attached by the Government to reducing reoffending (see NSW Government 2006), however, it would seem prudent to begin considering ways in which the effectiveness of circle sentencing in reducing reoffending might be improved. MacKenzie (2002, p. 385) argues that, to be effective, rehabilitation programs must change the characteristics of offenders that are associated with their criminal activity (e.g. association with criminal peers, poor impulse control, alcohol and drug abuse, unemployment). The circle sentencing process is not designed to do this. Instead, it seeks to, amongst other things, reduce reoffending by giving Aboriginal people direct involvement in the sentencing of Aboriginal offenders. The results reported here suggest that such direct involvement is not enough, by itself, to produce a reduction in reoffending. Consideration should perhaps be given to combining circle sentencing with other programs (e.g. cognitive behavioural therapy, drug and alcohol treatment, remedial education) that have been shown to alter the risk factors for further offending (MacKenzie 2002; Aos, Miller & Drake 2006).

NOTES

1. Another problem is that, from the Productivity Commission's published table, it is unclear how Harris derived an overall reoffending rate of 29.4% which he cites for the comparison group.
2. Offences which were brought to court but for which the person was not convicted were not counted. It should be noted that offences proven in court are not a precise measure of recidivism as they exclude crimes for which the offender is not apprehended. Alternative indicators, such as police mentions or self-reported offending, however, have as many, if not more, problems. Offenders asked to report on their own offending may not answer truthfully. Police contacts that do not result in a conviction may reflect biases in the exercise of police discretion.
3. Information on proven offences was obtained from the Reoffending Database of the Bureau of Crime Statistics and Research. See Hua & Fitzgerald 2006 for details.
4. A 15-month follow-up period was chosen to balance the benefits of a reasonable follow-up period with the need for a reasonable sample size. A longer follow-up period would give a better indication of a person's offending patterns. However, it would also restrict the analysis to a small number of people circle sentenced in the early days of the program. For instance, a 30-month follow-up period would include only 49 individuals who participated in a circle sentence between 2002 and 2004. Eighty-one individuals participated in a circle sentence prior to January 2006.
5. At the time the analysis was conducted information was only available on court appearances finalised up to 30 June 2007. As a result, individuals in both the circle sentencing group and the control group may have committed offences in the 15 month follow-up period which had not yet been finalised in court by 30 June 2007. The effect of this on the circle sentencing group and the control group should be the same.
6. Offences committed before the circle sentence (or equivalent reference court appearance) but finalised in court after it were counted as prior convictions.
7. Twenty five percent of both the circle sentencing group and the control group had spent time in prison in the five years prior to the reference court appearance.
8. An alternative to omitting the seven individuals for whom an accurate control group member could not be found, would have been to relax the matching criteria. It was decided that it was preferable to have a slightly smaller sample size with a control group that precisely represented the circle sentencing group rather than additional subjects with a less representative control group.
9. Only offences *proven in court* up to June 2007 were included.

10. BOCSAR was provided with details of 167 circle sentences from courts operating the program. Six of these individuals were excluded as their circle court appearance could not be located in the database of Local Court finalisations maintained by the Bureau of Crime Statistics and Research. This could be because many of the courts in which circle sentencing operates are not computerised and the practice in these courts is to mail the details of court finalisations on paper forms. It is possible that forms were not received for the circle sentencing appearances that could not be located. The remaining people could not be included because their date of birth was either missing or obviously incorrect.
11. The 153 people in the circle sentencing group were circle sentenced in the following locations: Armidale – 12, Bourke – 10, Brewarrina – 11, Dubbo – 63, Kempsey – 14, Lismore – 15, Mt Druitt – 2 and Nowra – 26. The two individuals in Mt Druitt (1.3% of the sample) were the only Sydney circle sentences.
12. Smaller-sized samples (of 5%) were also tested but were not used because of their larger variance in median time to reoffend. Ten of the 7% samples were tested to ensure that they gave broadly consistent results in the Cox regression.
13. The fact that the overall rate of reoffending among the circle sentencing group and the control group is very similar (40% and 39% respectively) may appear, on the surface, to contradict the result in Table 2 that circle sentencing participants reoffend faster than the control group. This is not actually the case. The two groups have similar overall rates of reoffending because the number of circle sentencing participants has increased each year so there are proportionally more from recent years. The control group, on the other hand, contains equal numbers from each year so, compared to the circle sentencing group, has proportionally more individuals appearing in the earlier years of 2002, 2003 and 2004. Since the earlier individuals have had longer to reoffend this has increased the overall reoffending rate for the control group. This result does not impact upon the findings in the Cox regression analyses as this method controls for unequal follow-up periods. It also does not effect the seriousness analysis as time to reoffend is not a factor.

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Appendix 1. Hazard ratios for Cox regression for time to reoffend for random samples from the control group (continued next page)

	Sample 1		Sample 2			Sample 3		
Comparison	**Model 1**	**Model 2**	**Model 1**	**Model 2**	**Model 3**	**Model 1**	**Model 2**	**Model 3**
Circle sentence vs control	1.546 (1.184-2.018)	1.203 (0.920-1.574)[a]	1.388 (1.063-1.811)	1.384 (1.058-1.812)	1.103 (0.841-1.447)[a]	1.518 (1.162-1.982)	1.366 (1.042-1.792)	1.092 (0.830-1.437)[a]
Male vs female			1.575 (1.307-1.900)	1.621 (1.343-1.955)	1.237 (1.016-1.505)			
18 to 24 years vs 34 years or more	1.584 (1.305-1.921)	1.547 (1.272-1.881)	1.475 (1.213-1.793)	1.370 (1.128-1.665)	1.235 (1.016-1.502)	1.574 (1.293-1.918)	1.569 (1.288-1.911)	1.424 (1.166-1.740)
25 to 33 years vs 34 years or more	1.242 (1.015-1.521)	1.083 (0.883-1.328)[a]	1.381 (1.137-1.677)	1.438 (1.182-1.749)	1.408 (1.155-1.716)	1.279 (1.042-1.571)	1.261 (1.026-1.551)	1.105 (0.898-1.360)[a]
Justice offence vs driving offence				1.341 (1.061-1.695)	1.287 (1.018-1.627)			
Other[b] offence vs driving offence				1.702 (1.388-2.087)	1.545 (1.259-1.896)			
One concurrent offence vs none							1.119 (0.907-1.381)[a]	1.002 (0.812-1.236)[a]
Two or more concurrent offences vs none							1.557 (1.284-1.887)	1.315 (1.081-1.599)
One prior in past 5 years vs none		1.862 (1.405-2.467)			1.139 (0.868-1.495)[a]			1.755 (1.339-2.301)
Two to three priors in past 5 years vs none		2.415 (1.866-3.126)			1.623 (1.274-2.069)			1.905 (1.466-2.474)
Four or more priors in past 5 years vs none		3.446 (2.613-4.545)			2.642 (2.047-3.408)			3.390 (2.594-4.429)
One to two prior prison episodes since 1994 vs none		1.258 (1.007-1.570)			1.293 (1.042-1.606)			1.157 (0.917-1.460)[a]
Three or more prior prison episodes since 1994 vs none		1.362 (1.065-1.741)			1.589 (1.254-2.013)			1.513 (1.184-1.935)

a: not significant

b: includes justice offences, theft offences and 'other' offences

Notes: The reference category is the second category for each variable.

For each sample, variables which were not significant in the final model were removed from previous models (with the exception of circle sentencing participation). For some samples this meant that the model was only built twice as none of the offence characteristics (remand, offence type and concurrent offences) remained significant after the inclusion of prior convictions (and in some cases, prior prison).

Appendix 1. Hazard ratios for Cox regression for time to reoffend for random samples from the control group (continued)

Comparison	Sample 4			Sample 5			Sample 6	
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2
Circle sentence vs control	1.412 (1.082-1.841)	1.444 (1.103-1.891)	1.145 (0.872-1.503)[b]	1.474 (1.130-1.924)	1.348 (1.026-1.770)	1.129 (0.859-1.485)[a]	1.512 (1.159-1.973)	1.213 (0.927-1.588)[a]
Male vs female	1.535 (1.274-1.849)	1.539 (1.277-1.855)	1.343 (1.111-1.624)					
18 to 24 years vs 34 years or more	1.824 (1.498-2.222)	1.787 (1.466-2.177)	1.770 (1.448-2.163)	1.486 (1.224-1.805)	1.429 (1.172-1.742)	1.384 (1.135-1.688)	1.512 (1.247-1.834)	1.387 (1.142-1.685)
25 to 33 years vs 34 years or more	1.700 (1.390-2.080)	1.683 (1.375-2.059)	1.558 (1.272-1.907)	1.467 (1.204-1.788)	1.472 (1.211-1.788)	1.386 (1.141-1.685)	1.242 (1.015-1.518)	1.095 (0.894-1.341)[a]
Justice offence vs driving offence		1.081 (0.861-1.357)[a]	1.047 (0.835-1.314)[a]		1.154 (0.918-1.451)[a]	1.083 (0.862-1.362)[a]		
Other[b] offence vs driving offence		1.402 (1.159-1.697)	1.224 (1.009-1.484)		1.378 (1.128-1.683)	1.247 (1.020-1.525)		
One concurrent offence vs none					1.221 (0.997-1.495)	1.148 (0.937-1.407)[a]		
Two or more concurrent offences vs none					1.498 (1.241-1.808)	1.230 (1.016-1.490)		
One prior in past 5 years vs none			1.323 (1.015-1.724)			1.218 (0.918-1.616)[a]		1.266 (0.973-1.647)[a]
Two to three priors in past 5 years vs none			1.799 (1.412-2.293)			2.176 (1.715-2.761)		1.839 (1.458-2.319)
Four or more priors in past 5 years vs none			2.696 (2.097-3.465)			2.949 (2.322-3.745)		2.939 (2.353-3.671)
One to two prior prison episodes since 1994 vs none			1.135 (0.913-1.411)[a]					
Three or more prior prison episodes since 1994 vs none			1.452 (1.137-1.854)					

a: *not significant*

b: *includes justice offences, theft offences and 'other' offences*

Notes: *The reference category is the second category for each variable.*

For each sample, variables which were not significant in the final model were removed from previous models (with the exception of circle sentencing participation). For some samples this meant that the model was only built twice as none of the offence characteristics (remand, offence type and concurrent offences) remained significant after the inclusion of prior convictions (and in some cases, prior prison).

Appendix 1. Hazard ratios for Cox regression for time to reoffend for random samples from the control group (continued)

	Sample 7		Sample 8		Sample 9		Sample 10		
Comparison	*Model 1*	*Model 2*	*Model 1*	*Model 2*	*Model 1*	*Model 2*	*Model 1*	*Model 2*	*Model 3*
Circle sentence vs control	1.427 (1.093-1.861)	1.131 (0.865-1.479)[a]	1.397 (1.071-1.823)	1.097 (0.838-1.434)[a]	1.397 (1.071-1.823)	1.097 (0.838-1.434)[a]	1.414 (1.084-1.844)	1.306 (0.998-1.709)[a]	1.083 (0.825-1.422)[a]
Male vs female	1.568 (1.289-1.908)	1.338 (1.098-1.631)	1.602 (1.323-1.940)	1.255 (1.030-1.530)	1.602 (1.323-1.940)	1.255 (1.030-1.530)			
18 to 24 years vs 34 years or more	1.543 (1.274-1.868)	1.436 (1.184-1.741)	1.250 (1.029-1.518)	1.126 (0.926-1.369)[a]	1.341 (1.106-1.626)	1.362 (1.121-1.656)	1.574 (1.298-1.909)	1.539 (1.269-1.867)	1.454 (1.197-1.766)
25 to 33 years vs 34 years or more	1.410 (1.160-1.713)	1.262 (1.037-1.536)	1.341 (1.106-1.626)	1.362 (1.121-1.656)	1.250 (1.029-1.518)	1.126 (0.926-1.369)[a]	1.375 (1.129-1.674)	1.339 (1.099-1.631)	1.250 (1.025-1.523)
Justice offence vs driving offence									
Other[b] offence vs driving offence									
One concurrent offence vs none								1.098 (0.896-1.345)[a]	1.096 (0.894-1.343)[a]
Two or more concurrent offences vs none								1.449 (1.205-1.743)	1.286 (1.067-1.551)
One prior in past 5 years vs none		1.681 (1.282-2.203)		1.275 (0.967-1.682)[a]		1.275 (0.967-1.682)[a]			1.295 (0.997-1.681)[a]
Two to three priors in past 5 years vs none		2.301 (1.797-2.948)		1.823 (1.422-2.337)		1.823 (1.422-2.337)			1.535 (1.211-1.945)
Four or more priors in past 5 years vs none		3.538 (2.772-4.515)		3.162 (2.449-4.083)		3.162 (2.449-4.083)			2.986 (2.376-3.752)
One to two prior prison episodes since 1994 vs none				1.234 (0.996-1.529)[a]		1.234 (0.996-1.529)[a]			
Three or more prior prison episodes since 1994 vs none				1.400 (1.102-1.779)		1.400 (1.102-1.779)			

a: *not significant*

b: *includes justice offences, theft offences and 'other' offences*

Notes: *The reference category is the second category for each variable.*

For each sample, variables which were not significant in the final model were removed from previous models (with the exception of circle sentencing participation). For some samples this meant that the model was only built twice as none of the offence characteristics (remand, offence type and concurrent offences) remained significant after the inclusion of prior convictions (and in some cases, prior prison).

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