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Does the Custody-based Intensive Treatment (CUBIT) program for sex offenders reduce re-offending?

Imogen Halstead

APPENDIX

SAMPLE CHARACTERISTICS

Tables A1a-f present statistics describing the complete study sample (N= 386) in terms of the offenders' socio-demographic characteristics, characteristics of the index custodial episode, offenders' prior criminal offence history and penalties received, official risk-assessment results, and recorded characteristics of offenders' sex offending. These characteristics are compared across subsamples of treated (N=229) and untreated (N=157) offenders.

Table A1a presents data on offenders' socio-demographic characteristics. The offenders in the sample range in age at the time of release from custody from 19 years old to 74 years old, with a mean age of 41.4 years. Aboriginal and Torres Strait Islanders comprise 29.3 per cent of the sample. The available data suggest that roughly two-thirds of the sample (67.2 per cent) lived in parts of NSW with relatively high levels of socio-economic disadvantage (above the median according to the SEIFA IRSD index) prior to incarceration. There is no statistically significant difference on these characteristics according to treatment status.

Table A1b presents statistics relating to the sample index custodial episodes. The sample offenders' release dates span a period from February 2000 to June 2010. The mean release date differs by treatment status, reflecting higher completion rates in recent years. Offenders' sentences range in duration from 1 to 51 years, with a mean duration of 6.9 years. Offenders who completed CUBIT tend to have received longer sentences than those who are released untreated (7.6 years versus 5.7 years). Similar patterns arise in the duration of offenders' custodial episodes; these range from 6 months to over 24 years, with an average of 5.4 years. The vast majority (85.5 per cent) of offenders are expected to face SPA if parole is to be awarded, and there is no difference in this proportion by treatment status. A smaller majority (63.5 per cent) were ultimately released from custody onto parole by SPA; an additional 9.1 per cent were released onto court-ordered parole, and the remaining 27.3 per cent were not released onto parole (serving out their sentences in custody). A greater share of offenders who completed CUBIT were granted parole by the parole board (73.4 per cent versus 49.0 per cent; Chi-square = 25.6), and a commensurately smaller share were released with no parole supervision (18.3 per cent versus 40.1 per cent).

For 82.9 per cent of the sample, the Most Serious Offence at their index custodial episode was a sex offence; another 10.6 per cent recorded a violent (non-sex) offence as their Most Serious Offence. This distribution was similar for both treated and untreated offenders. At some stage during the index custodial episode, most (61.4 per cent) of the offenders in the sample were classified at one of the highest security classification levels (class A); the remaining offenders received either a maximum B-level classification (19.4 per cent), or the lower C-level classification (17.6 per cent), in roughly equal numbers. Security level classifications were again similar across groups by treatment status.

Table A1c describes the offender sample according to the offenders' age of first contact, and their recent offence-type history—specifically, the number of finalised court appearances (including youth justice conferences) during the index custodial episode or within five years prior to index custodial start date where one or more of a particular type of offence was proven. The offenders' age at first contact ranges from 12 years old to 70 years old, with an average age of 33.1 years. There is no difference in the profile of the offenders' age at first contact across treatment groups. The available data suggest that 6.1 per cent of the CUBIT-suitable offenders recorded no proven sex offences during or within the 5 years prior to the index episode; the majority (77.0 per cent) have one prior court appearance where a sex offence was proven, and 16.9 per cent have recorded two or more. Counts are naturally higher when

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Table A1a. Sample characteristics: Socio-demographics

		Total sample	By treatment status: Treated	By treatment status: Untreated	Chi2/t statistic
Age					
Mean		41.4	41.5	41.1	0.3
Minimum		19	22	19	
Maximum		74	70	74	
Composition	N	%	%	%	
Aged under 30	69	17.9	15.3	21.7	
Aged 30-39	120	31.1	34.9	25.5	
Aged 40-49	101	26.2	24.0	29.3	
Aged 50 plus	96	24.9	25.8	23.6	
Total (valid values)	386	100.0	100.0	100.0	6.0
Missing values	--	--	--	--	--
ATSI status					
Composition	N	%	%	%	
Non-indigenous	273	70.7	72.9	67.5	
Indigenous	113	29.3	27.1	32.5	
Total (valid values)	386	100.0	100.0	100.0	1.3
Missing values	--	--	--	--	--
SEIFA index					
Composition	N	%	%	%	
First quartile (most disadvantaged)	117	33.7	30.7	37.8	
Second quartile	106	30.5	30.2	31.1	
Third quartile	80	23.1	24.6	20.9	
Fourth quartile (least disadvantaged)	44	12.7	14.6	10.1	
Total (valid values)	347	100.0	100.0	100.0	3.1
Missing values	39	10.1	13.1	5.7	5.6*

Note. Chi-square and t-statistics are respectively based on tests of independence of distributions and differences in means by treatment status.
* $p<.05$, ** $p<.01$, *** $p<.001$. Symbol -- denotes none, or not applicable.

all violent (including sex) offences are considered. Around half (55.1 per cent) have recorded up to one court appearance where a violent offence was proven (only 1.7 per cent recorded none), 26.9 per cent have recorded two such court appearances; and 18.0 per cent, three or more. All offenders have at least one finalised court appearance during the index custodial episode or within the period five years prior with a proven offence of any type; 21.6 per cent have two, 14.4 per cent three, 8.9 per cent four and 21.6 per cent five or more. For both violent offences and general offences, the treatment group has slightly lower average number of prior court appearances with proven offences. There is no difference by treatment status for the number of prior proven sex offences (perhaps reflecting the fact that the study sample includes only the first custodial episode referenced in the SOTP database for any given individual).

Table A1d describes the offender sample according to the number of finalised court appearances (including youth justice conferences) during the index custodial episode, plus those within five years prior to index custodial start date, resulting in a particular type of penalty. As one would expect, the available data suggest that nearly all offenders in the sample (98.6 per cent) have at least one count of a court appearance where a prison penalty was handed down during the current custodial episode or within 5-years prior; 38.5 per cent had two or more. Other types of detention were received at least once by 3.6 per cent of the sample during the index episode or in the five years prior; suspended sentences by 6.6 per cent; and bonds by 26.6 per cent of the sample. There are no statistically significant differences in the past penalties received by treatment status.

Table A1b. Sample characteristics: Index custodial episode

	Total sample		By treatment status: Treated	By treatment status: Untreated	Chi2/t statistic
Custodial episode end date					
Mean		May 06	Aug 06	Dec 05	2.3*
Earliest		Feb 00	Feb 00	Dec 00	
Most recent		Jun 10	Jun 10	Jun 10	
Custodial episode sentence length (years)					
Mean		6.9	7.6	5.7	3.8***
Minimum		1.0	1.2	1.0	
Maximum		50.9	50.9	16.0	
Composition	N	%	%	%	
Less than 3 years	41	10.6	10.5	10.8	
3-4 years	115	29.8	22.7	40.1	
5-9 years	171	44.3	45.9	42.0	
10 or more years	59	15.3	21.0	7.0	
Total (valid values)	386	100.0	100.0	100.0	21.7***
Missing values	--	--	--	--	--
Custodial episode duration (years)					
Mean		5.4	5.7	4.8	2.4*
Minimum		0.5	0.7	0.5	
Maximum		24.4	24.4	16.0	
Composition	N	%	%	%	
Less than 3 years	105	27.2	26.2	28.7	
3-4 years	119	30.8	28.8	33.8	
5-9 years	124	32.1	33.2	30.6	
10 or more years	38	9.8	11.8	7.0	
Total (valid values)	386	100.0	100.0	100.0	3.3
Missing values	--	--	--	--	--
Parole prospects					
Composition	N	%	%	%	
Board-granted parole	330	85.5	86.0	84.7	
Court-ordered parole	51	13.2	12.2	14.6	
None	5	1.3	1.7	0.6	
Total (valid values)	386	100.0	100.0	100.0	1.3
Missing values	--	--	--	--	--
Parole supervision					
Composition	N	%	%	%	
Board-granted parole	245	63.5	73.4	49.0	
Court-ordered parole	36	9.3	8.3	10.8	
No parole supervision	105	27.2	18.3	40.1	
Total (valid values)	386	100.0	100.0	100.0	25.6***
Missing values	--	--	--	--	--
Most Serious Offence at index					
Composition	N	%	%	%	
Sex	320	82.9	82.1	84.1	
Other violent	41	10.6	10.9	10.2	
Other	25	6.5	7.0	5.7	
Total (valid values)	386	100.0	100.0	100.0	0.3
Missing values	--	--	--	--	--
Maximum security classification level during index episode					
Composition	N	%	%	%	
A-level (higest class)	237	61.4	63.8	58.0	
B-level	75	19.4	18.8	20.4	
C-level (lowest class)	68	17.6	17.0	18.5	
E-level (escape offenders)	6	1.6	0.4	3.2	
Total (valid values)	386	100.0	100.0	100.0	5.3
Missing values	--	--	--	--	--

Note. Chi-square and t-statistics are respectively based on tests of independence of distributions and differences in means by treatment status.
* $p<.05$, ** $p<.01$, *** $p<.001$. Symbol -- denotes none, or not applicable.

Table A1c. Sample characteristics: Prior criminal offence history

	Total sample		By treatment status: Treated	By treatment status: Untreated	Chi2/t statistic
Age of first contact					
Mean		33.1	33.0	33.3	-0.2
Minimum		12	12	12	
Maximum		70	66	70	
Composition	N	%	%	%	
Aged under 30	170	47.1	46.4	48.0	
Aged 30-39	75	20.8	22.0	19.1	
Aged 40-49	66	18.3	18.7	17.8	
Aged 50-59	50	13.9	12.9	15.1	
Total (valid values)	361	100.0	100.0	100.0	0.8
Missing values	25	6.5	0.4	0.5	4.7*
Sex offences					
Mean		1.1	1.1	1.1	0.3
Minimum		0	0	0	
Maximum		4	4	3	
Composition	N	%	%	%	
0	22	6.1	4.8	7.9	
1	278	77.0	78.9	74.3	
2+	61	16.9	16.3	17.8	
Total (valid values)	361	100.0	100.0	100.0	1.8
Missing values	25	6.5	8.7	3.2	4.7*
Violent (including sex) offences					
Mean		1.8	1.7	2.0	-2.3*
Minimum		0	0	0	
Maximum		9	7	9	
Composition	N	%	%	%	
0/1	199	55.1	58.4	50.7	
2	97	26.9	28.2	25.0	
3+	65	18.0	13.4	24.3	
Total (valid values)	361	100.0	100.0	100.0	7.1*
Missing values	25	6.5	8.7	3.2	4.7*
Any offence					
Mean		3.1	2.8	3.4	-2.3*
Minimum		1	1	1	
Maximum		16	16	15	
Composition	N	%	%	%	
1	121	33.5	34.0	32.9	
2	78	21.6	22.5	20.4	
3	52	14.4	17.2	10.5	
4	32	8.9	9.1	8.6	
5+	78	21.6	17.2	27.6	
Total (valid values)	361	100.0	100.0	100.0	7.4
Missing values	25	6.5	8.7	3.2	4.7*

Note. Chi-square and t-statistics are respectively based on tests of independence of distributions and differences in means by treatment status.
* $p<.05$, ** $p<.01$, *** $p<.001$.

Table A1d. Sample characteristics: Prior penalties received

	Total sample		By treatment status		Chi2/t statistic
			Treated	Untreated	
Imprisonment (full-time prison sentence, including juvenile control orders)					
Mean		1.7	1.7	1.8	-1.0
Minimum		0	0	0	
Maximum		9	8	9	
Composition	N	%	%	%	
0	5	1.4	1.0	2.0	
1	217	60.1	63.2	55.9	
2+	139	38.5	35.9	42.1	
Total (valid values)	361	100.0	100.0	100.0	2.3
Missing values	25	6.5	8.7	3.2	4.7*
Periodic detention, Intersive correction order (ICO) or home detention sentence					
Mean		0.0	0.0	0.0	1.0
Minimum		0	0	0	
Maximum		2	2	1	
Composition	N	%	%	%	
0	348	96.4	95.7	97.4	
1	13	3.6	4.3	2.6	
Total (valid values)	361	100.0	100.0	100.0	0.7
Missing values	25	6.5	8.7	3.2	4.7*
Suspended sentence					
Mean		0.1	0.1	0.1	-1.3
Minimum		0	0	0	
Maximum		2	2	2	
Composition	N	%	%	%	
0	337	93.4	94.7	91.4	
1	24	6.6	5.3	8.6	
Total (valid values)	361	100.0	100.0	100.0	1.5
Missing values	25	6.5	8.7	3.2	4.7*
Section 9 bond					
Mean		0.4	0.4	0.5	-1.2
Minimum		0	0	0	
Maximum		4	4	4	
Composition	N	%	%	%	
0	265	73.4	74.2	72.4	
1	62	17.2	18.2	15.8	
2+	34	9.4	7.7	11.8	
Total (valid values)	361	100.0	100.0	100.0	2.0
Missing values	25	6.5	8.7	3.2	4.7*

Note. Chi-square and t-statistics are respectively based on tests of independence of distributions and differences in means by treatment status.
* $p<.05$, ** $p<.01$, *** $p<.001$.

Table A1e describes the distribution of offenders' scores on official risk assessment instruments. Data on the Level of Service Inventory-Revised (LSI-R) are missing for a large share of the sample: 56.7 per cent (recall that the data include only LSI-R scores administered prior to 12-months before release from custody). Amongst the subsample with valid LSI-R records, scores range from 5 to 46, with a mean value of 27.4. The distribution is fairly symmetrical about the mean: 12.6 per cent are classified as 'Low' risk of general re-offending, 23.4 per cent as 'Medium-Low' risk; 32.3 per cent as 'Medium' risk; 21.6 per cent as 'Medium-High' risk; and 10.2 per cent as 'High' risk. LSI-R scores do not differ in any statistically significant way by treatment status.

As one might expect, the available data suggest offenders within the CUBIT-suitable sample tend to be assessed at relatively high risk of sexual recidivism. Static-99R results are missing for 30.8 per cent of the sample. Amongst the valid values, Static-99R scores range from the minimum score of -3 to the maximum of 10, and the mean value is 4.2. The distribution is skewed towards the high-risk categories; the records suggest that 13.5 per cent of the sample fall into the 'Low' risk category, 19.9 per cent in the 'Moderate-Low' risk category, 40.1 per cent in the 'Moderate-High' risk category, and 26.6 per cent of the sample are classified as being at a 'High' risk of sexual recidivism. There is no statistically significant difference in the mean Static-99R score, nor the distribution over riskband categories, by treatment status.

Table A1f describes the sample in terms of characteristics relating to offenders' sex offending. Data on the gender and age profile of victims, and offenders' relationship with victims, are available for around 80 per cent of the sample. These available data suggest that sex offence victims were exclusively female for roughly three-quarters of the sample (74.6 per cent); for 20.0 per cent of the sample, victims were exclusively male; both male and female victims were recorded for 5.4 per cent of the offenders in the sample. Sex offence victims were exclusively adults for half the sample (49.8 per cent); there were exclusively child victims for 45.1 per cent of the sample; and there were both adult and child victims for 5.0 per cent of the sample. For each offender, just one relationship category is flagged to describe the extent

Table A1e. Sample characteristics: Official risk-assessment measures

	Total sample		By treatment status		Chi2/t statistic
			Treated	Untreated	
LSI-R score					
Mean		27.4	26.7	28.2	-0.9
Minimum		5	7	5	
Maximum		46	46	45	
Composition: LSI-R riskband	N	%	%	%	
Low	21	12.6	14.1	10.7	
Medium-Low	39	23.4	22.8	24.0	
Medium	54	32.3	32.6	32.0	
Medium-High	36	21.6	22.8	20.0	
High	17	10.2	7.6	13.3	
Total (valid values)	167	100.0	100.0	100.0	1.9
Missing values	219	56.7	59.8	52.2	2.2
Static-99R (standardised)					
Mean		4.2	4.2	4.2	-0.1
Minimum		-3	-3	-3	
Maximum		10	10	10	
Composition (riskband)	N	%	%	%	
Low	36	13.5	12.8	14.3	
Moderate-Low	53	19.9	19.6	20.2	
Moderate-High	107	40.1	43.2	36.1	
High	71	26.6	24.3	29.4	
Total (valid values)	267	100.0	100.0	100.0	1.6
Missing values	119	30.8	35.4	24.2	5.4*

Note. Chi-square and t-statistics are respectively based on tests of independence of distributions and differences in means by treatment status.
* p<.05, ** p<.01, *** p<.001.

to which victims were known to the offender prior to an offence. The available data suggest that 37.8 per cent of the CUBIT-suitable sample offended against strangers, 34.6 per cent against acquaintances, 8.0 per cent against extended family and 19.6 per cent against immediate family. None of these aspects of the offender victim profiles show any statistically significant correlation with treatment status.

For a number of variables in Tables A1a-f, the prevalence of missing data appears to be correlated with completion (or lack thereof). If this is because data collection and/or data entry improves as a consequence of an individual's participation in CUBIT, then the variables would not be exogenous to treatment, and therefore could not be used as controls in attempting to estimate the causal impact of treatment of recidivism. Nor would it be appropriate to exclude those individuals with missing data from the analysis. Those people who did not complete CUBIT, yet still had valid data may be unique in some (unobservable) way that is related to recidivism (for example, their offences may have had particular characteristics which motivated the collection of their data).

Fortunately, this does not appear be an issue with any of the variables under consideration here. In particular, curiously enough, a Static-99R score is more likely to be available for people who *did not* complete CUBIT than for people who did (and this difference is statistically significant). Of course, missing a Static-99R score may be evidence of otherwise-unobservable risk (the assessment might be more likely to be formally administered and/or recorded for individuals whom staff within Corrective Services NSW identify as at risk of sexual recidivism, for example); but this provides an added reason to consider the variable as a potential control in the re-offending models. The prevalence of missing data on prior offences, penalties and the age at first contact is also correlated with CUBIT completion. However, this is not a consequence of reverse causality; prior records are necessarily recorded as missing for offenders who entered custody prior to 1994 (ROD records date back to 1994 only), and completion rates for that particular cohort happened to be relatively high.

Table A1f. Sample characteristics: Sex offending profile

	Total sample		By treatment status		Chi2/t statistic
			Treated	Untreated	
Victim gender profile					
Composition	N	%	%	%	
Female	235	74.6	74.1	75.4	
Male	63	20.0	21.2	18.0	
Both	17	5.4	4.7	6.6	
Total (valid values)	315	100.0	100.0	100.0	0.9
Missing values	71	18.4	15.7	22.3	2.7
Victim age profile					
Composition	N	%	%	%	
Adult	158	49.8	47.4	53.7	
Child	143	45.1	47.9	40.7	
Both	16	5.0	4.6	5.7	
Total (valid values)	317	100.0	100.0	100.0	1.6
Missing values	69	17.9	15.3	21.7	2.6
Victim relationship profile					
Composition	N	%	%	%	
Stranger	118	37.8	37.7	38.0	
Acquaintance	108	34.6	34.6	34.7	
Extended family	25	8.0	9.4	5.8	
Immediate family	61	19.6	18.3	21.5	
Total (valid values)	312	100.0	100.0	100.0	1.6
Missing values	74	19.2	16.6	22.9	2.4

Note. Chi-square and t-statistics are respectively based on tests of independence of distributions and differences in means by treatment status.
* $p<.05$, ** $p<.01$, *** $p<.001$.

Table A2a-f present recidivism rates according to the same suite of offender characteristics. Very few variables are strongly correlated with sexual recidivism risk on a bivariate basis. The victim relationship profile is a rare exception; in particular, inmates who have committed sex offences against strangers are at higher risk of re-offending with a sex offence. Offenders whose parole prospects are decided by SPA are also less likely to re-offend with a sex offence than other offenders (in the absence of any controls for sentence length or time on parole). Risk of re-offending with a violent offence is generally higher for younger offenders, Indigenous offenders, offenders who had higher security levels in custody, who were younger at the time of their first contact with the criminal justice system, who had a greater number of prior court appearances (and a greater number with proven violent offences, or where they received a prison sentence, or a Section 9 bond), who were rated as high risk of recidivism according to the LSI-R or the Static-99, and who committed sex offences against females (rather than males, or both males and females), adults (rather than children, or all age profiles), and strangers (rather than family or acquaintances). These same variables are similarly correlated with general recidivism risk. In addition, general recidivism risk is higher for the few offenders in the CUBIT-suitable sample who have no prior court appearances with proven sex offences.

Table A2a. Re-offending rates by sample characteristics: Socio-demographics

	Re-offending within 5 years free time following release by offence type					
	Sex		Violent		General	
Treatment status	**subsample N**	**% offended**	**subsample N**	**% offended**	**subsample N**	**% offended**
Age						
Aged under 30	59	13.6	65	38.5	67	64.2
Aged 30-39	105	11.4	115	40.9	119	59.7
Aged 40-49	92	14.1	97	26.8	99	45.5
Aged 50 plus	91	8.8	92	12.0	94	21.3
Total (valid values)	347	11.8	369	29.5	379	47.2
Chi2 statistic (valid values)		1.5		23.6***		40.6***
ATSI status						
Non-indigenous	250	11.2	259	20.8	267	38.6
Indigenous	97	13.4	110	50.0	112	67.9
Total (valid values)	347	11.8	369	29.5	379	47.2
Chi2 statistic (valid values)		0.3		31.5***		27.1***
SEIFA index						
First quartile (most disadvantaged)	104	11.5	111	31.5	115	58.3
Second quartile	93	12.9	99	29.3	102	46.1
Third quartile	69	8.7	77	31.2	79	45.6
Fourth quartile (least disadvantaged)	42	16.7	43	30.2	44	40.9
Total (valid values)	308	12.0	330	30.6	340	49.4
Missing values	39	10.3	39	20.5	39	28.2
Chi2 statistic (valid values)		1.7		0.1		5.8
Chi2 statistic (missing values)		0.1		1.7		6.3*

Note. Chi-square statistics are based on tests of independence of distributions by re-offending status.
* $p<.05$, ** $p<.01$, *** $p<.001$. Symbol -- denotes none, or not applicable.

Table A2b. Re-offending rates by sample characteristics: Index custodial episode

	Re-offending within 5 years free time following release by offence type					
	Sex		Violent		General	
Treatment status	subsample N	% offended	subsample N	% offended	subsample N	% offended
Custodial episode sentence length (years)						
Less than 3 years	36	25.0	37	35.1	40	50.0
3-4 years	108	8.3	112	26.8	113	48.7
5-9 years	151	10.6	164	32.3	168	48.8
10 or more years	52	13.5	56	23.2	58	37.9
Total (valid values)	347	11.8	369	29.5	379	47.2
Chi2 statistic (valid values)		7.6		2.6		2.4
Custodial episode duration (years)						
Less than 3 years	97	12.4	99	24.2	102	41.2
3-4 years	109	11.0	116	31.9	119	52.1
5-9 years	109	11.9	118	33.1	121	51.2
10 or more years	32	12.5	36	25.0	37	35.1
Total (valid values)	347	11.8	369	29.5	379	47.2
Chi2 statistic (valid values)		0.1		2.7		5.6
Most Serious Offence at index						
Sex	291	12.4	309	30.4	314	46.2
Other violent	35	2.9	39	28.2	41	53.7
Other	21	19.0	21	19.0	24	50.0
Total (valid values)	347	11.8	369	29.5	379	47.2
Chi2 statistic (valid values)		3.8		1.3		0.9
Maximum security classification level during index episode						
A-level (higest class)	212	11.3	227	32.6	232	51.7
B-level	66	15.2	70	30.0	74	48.6
C-level (lowest class)	66	10.6	67	16.4	67	26.9
E-level (escape offenders)	3	0.0	5	60.0	6	83.3
Total (valid values)	347	11.8	369	29.5	379	47.2
Chi2 statistic (valid values)		1.2		8.8*		16.2**
Chi2 statistic (missing values)		--		--		--
Parole prospects						
Board-granted parole	299	10.0	319	28.2	325	47.1
Court-ordered parole	44	20.5	45	35.6	49	46.9
No parole supervision	4	50.0	5	60.0	5	60.0
Total (valid values)	347	11.8	369	29.5	379	47.2
Chi2 statistic (valid values)		9.7**		3.3		0.3
Parole supervision						
Board-granted parole	224	9.4	235	27.7	240	46.7
Court-ordered parole	33	15.2	34	32.4	35	42.9
No parole supervision	90	16.7	100	33.0	104	50.0
Total (valid values)	347	11.8	369	29.5	379	47.2
Chi2 statistic (valid values)		3.7		1.1		0.6

Note. Chi-square statistics are based on tests of independence of distributions by re-offending status.
* $p<.05$, ** $p<.01$, *** $p<.001$. Symbol -- denotes none, or not applicable.

Table A2c. Re-offending rates by sample characteristics: Prior criminal offence history

	Re-offending within 5 years free time following release by offence type					
	Sex		Violent		General	
Treatment status	subsample N	% offended	subsample N	% offended	subsample N	% offended
Age first contact						
Aged under 30	142	14.1	159	0.4	166	65.1
Aged 30-39	72	12.5	75	29.3	75	45.3
Aged 40-49	65	7.7	65	12.3	65	27.7
Aged 50 plus	46	8.7	47	10.6	49	18.4
Total (valid values)	325	11.7	346	29.5	355	47.6
Missing values	22	13.6	23	30.4	24	41.7
Chi2 statistic (valid values)		2.2		29.5***		47.6***
Chi2 statistic (missing values)		0.1		0.0		0.3
Sex offences						
0	18	22.2	20	45.0	22	77.3
1	251	10.4	267	28.5	272	44.9
2+	56	14.3	59	28.8	61	49.2
Total (valid values)	325	11.7	346	29.5	355	47.6
Missing values	22	13.6	23	30.4	24	41.7
Chi2 statistic (valid values)		2.7		2.5		8.6*
Chi2 statistic (missing values)		0.1		0.0		0.3
Violent (including sex) offences						
0/1	189	12.2	193	21.2	196	36.2
2	85	11.8	93	30.1	95	55.8
3+	51	9.8	60	55.0	64	70.3
Total (valid values)	325	11.7	346	29.5	355	47.6
Missing values	22	13.6	23	30.4	24	41.7
Chi2 statistic (valid values)		0.2		25.1***		26.0***
Chi2 statistic (missing values)		0.1		0.0		0.3
Any offence						
1	115	8.7	118	15.3	119	27.7
2	75	10.7	76	18.4	77	37.7
3	46	17.4	51	33.3	51	49.0
4	28	17.9	30	46.7	31	77.4
5+	61	11.5	71	54.9	77	75.3
Total (valid values)	325	11.7	346	29.5	355	47.6
Missing values	22	13.6	23	30.4	24	41.7
Chi2 statistic (valid values)		3.6		42.7***		56.7***
Chi2 statistic (missing values)		0.1		0.0		0.3

Note. Chi-square statistics are based on tests of independence of distributions by re-offending status.
* $p<.05$, ** $p<.01$, *** $p<.001$. Symbol -- denotes none, or not applicable.

Table A2d. Re-offending rates by sample characteristics: Prior penalties received

	Re-offending within 5 years free time following release by offence type					
	Sex		Violent		General	
Treatment status	subsample N	% offended	subsample N	% offended	subsample N	% offended
Imprisonment (full-time prison sentence, including juvenile control orders)						
0	4	0.0	4	0.0	4	25.0
1	206	11.2	213	23.9	214	37.9
2+	115	13.0	129	39.5	137	63.5
Total (valid values)	325	11.7	346	29.5	355	47.6
Missing values	22	13.6	23	30.4	24	41.7
Chi2 statistic (valid values)		0.8		11.1**		22.9***
Chi2 statistic (missing values)		0.1		0.0		0.3
Periodic detention, Intersive correction order (ICO) or home detention sentence						
0	313	11.8	333	29.1	342	47.4
1	12	8.3	13	38.5	13	53.8
Total (valid values)	325	11.7	346	29.5	355	47.6
Missing values	22	13.6	23	30.4	24	41.7
Chi2 statistic (valid values)		0.1		0.5		0.2
Chi2 statistic (missing values)		0.1		0.0		0.3
Suspended sentence						
0	306	11.1	325	27.7	333	45.3
1	19	21.1	21	57.1	22	81.8
Total (valid values)	325	11.7	346	29.5	355	47.6
Missing values	22	13.6	23	30.4	24	41.7
Chi2 statistic (valid values)		1.7		8.2**		11.0***
Chi2 statistic (missing values)		0.1		0.0		0.3
Section 9 bond						
0	245	11.0	256	24.6	261	41.4
1	52	11.5	60	40.0	61	62.3
2+	28	17.9	30	50.0	33	69.7
Total (valid values)	325	11.7	346	29.5	355	47.6
Missing values	22	13.6	23	30.4	24	41.7
Chi2 statistic (valid values)		1.1		12.2**		15.8***
Chi2 statistic (missing values)		0.1		0.0		0.3

Note. Chi-square statistics are based on tests of independence of distributions by re-offending status.
* $p<.05$, ** $p<.01$, *** $p<.001$. Symbol -- denotes none, or not applicable.

Table A2e. Re-offending rates by sample characteristics: Official risk-assessment measures

	Re-offending within 5 years free time following release by offence type					
	Sex		Violent		General	
Treatment status	subsample N	% offended	subsample N	% offended	subsample N	% offended
LSI-R score						
Low	20	10.0	20	15.0	20	15.0
Medium-Low	36	2.8	37	8.1	37	24.3
Medium	45	8.9	51	29.4	52	50.0
Medium-High	30	13.3	33	33.3	36	72.2
High	14	28.6	17	64.7	17	76.5
Total (valid values)	145	10.3	158	27.2	162	47.5
Missing values	202	12.9	211	31.3	217	47.0
Chi2 statistic (valid values)		7.6		21.1***		31.1***
Chi2 statistic (missing values)		0.5		0.7		0.0
Static-99R (standardised)						
Low	36	5.6	36	8.3	36	11.1
Moderate-Low	48	6.3	50	20.0	50	36.0
Moderate-High	89	15.7	98	37.8	106	58.5
High	60	16.7	68	39.7	70	64.3
Total (valid values)	233	12.4	252	30.6	262	49.2
Missing values	114	10.5	117	27.4	117	42.7
Chi2 statistic (valid values)		5.1		16.1**		34.4***
Chi2 statistic (missing values)		0.3		0.4		1.4

Note. Chi-square statistics are based on tests of independence of distributions by re-offending status.
* $p<.05$, ** $p<.01$, *** $p<.001$. Symbol -- denotes none, or not applicable.

Table A2f. Re-offending rates by sample characteristics: Sex offending profile

	Re-offending within 5 years free time following release by offence type					
	Sex		Violent		General	
Treatment status	subsample N	% offended	subsample N	% offended	subsample N	% offended
Victim gender profile						
Female	204	11.8	224	34.4	230	53.5
Male	57	17.5	59	22.0	62	41.9
Both	17	5.9	17	11.8	17	11.8
Total (valid values)	278	12.6	300	30.7	309	48.9
Missing values	69	8.7	69	24.6	70	40.0
Chi2 statistic (valid values)		2.1		6.4*		12.5**
Chi2 statistic (missing values)		0.8		1.0		1.8
Victim age profile						
Adult	135	11.1	150	39.3	157	63.7
Child	130	14.6	136	22.1	137	32.8
Both	14	7.1	15	20.0	16	37.5
Total (valid values)	279	12.5	301	30.6	310	48.7
Missing values	68	8.8	68	25.0	69	40.6
Chi2 statistic (valid values)		1.1		10.9**		28.7***
Chi2 statistic (missing values)		0.7		0.8		1.5
Victim relationship profile						
Stranger	101	19.8	111	39.6	116	63.8
Acquaintance	96	8.3	102	28.4	105	46.7
Extended family	24	12.5	25	28.0	25	32.0
Immediate family	54	3.7	59	16.9	59	28.8
Total (valid values)	275	12.0	297	30.3	305	48.5
Missing values	72	11.1	72	26.4	74	41.9
Chi2 statistic (valid values)		10.6*		9.8*		22.9***
Chi2 statistic (missing values)		0.0		0.4		1.1

Note. Chi-square statistics are based on tests of independence of distributions by re-offending status.
* $p<.05$, ** $p<.01$, *** $p<.001$. Symbol -- denotes none, or not applicable.

ROBUSTNESS CHECKS

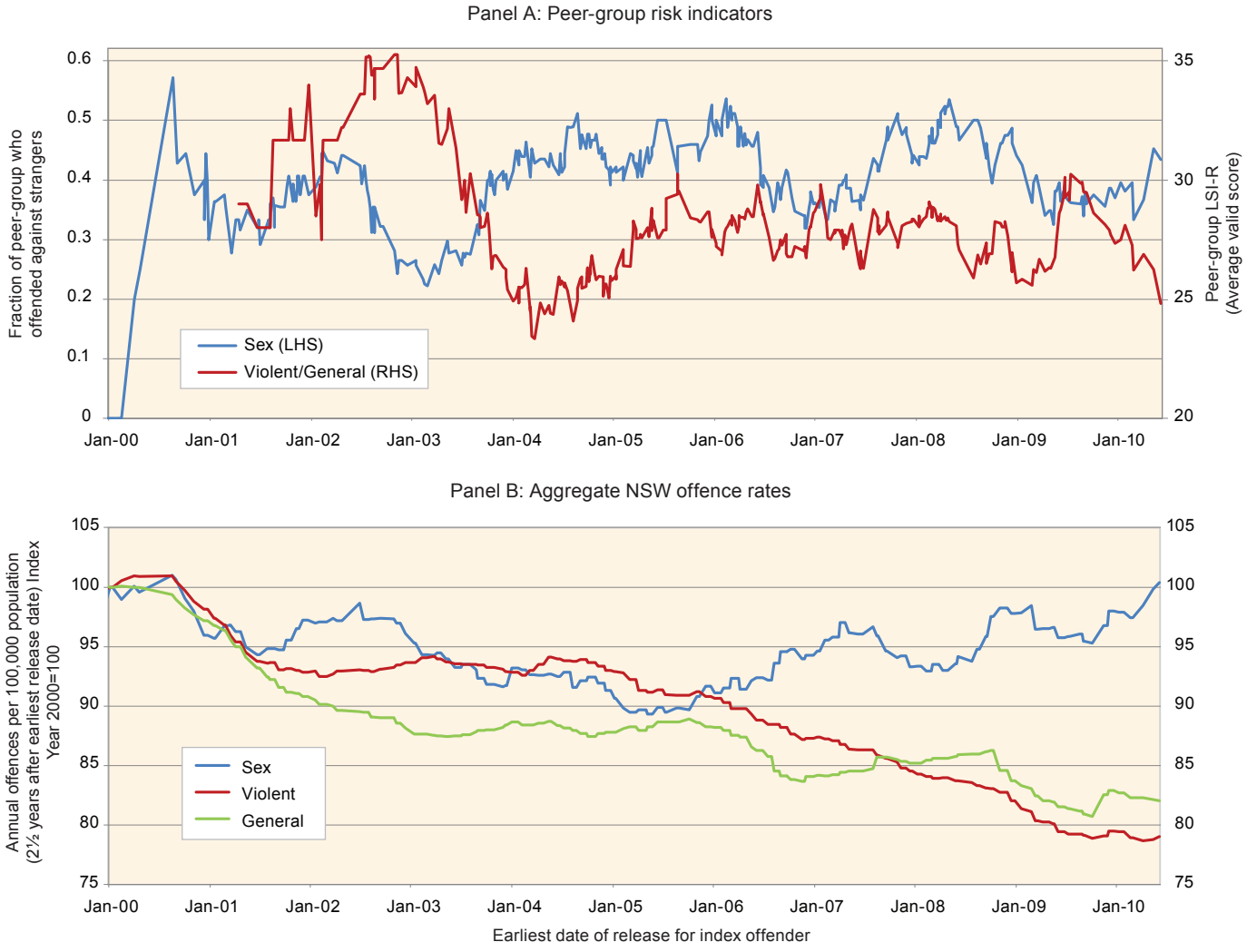
IV models

In order to test the robustness of the results, I re-estimate each preferred 2SLS IV model using a minimal set of control variables, and bootstrap standard errors over 500 replications (Chiburis et al., 2011, strongly recommend using bootstrap standard errors in applications with small samples). Results for the sex, violent and general offending models are presented in Tables A3, A4, and A5, respectively, in Column A.

Next, two variations are estimated to test whether the results are affected by the inclusion of additional controls designed to assuage concerns about whether or not the exclusion restriction is satisfied for the preferred IV (the peer group completion rate amongst commencements). I extend the minimal set of control variables to include:

1. A proxy risk indicator for an offender's peer group. For the sex offending models, the proxy indicator measures the fraction of peers whose sex offences were committed against strangers. For the violent and general re-offending models, the proxy indicator measures the average (valid) LSI-R score amongst an offender's peer group. The time-variation in these variables is illustrated in Figure A1, Panel A. As noted in the method section, these variables were selected based on their bivariate correlation with re-offending risk at the individual level (Tables 3) (though variables for which the prevalence of missing values were correlated with treatment status, such as the Static-99R score per Table A2e, were excluded from contention). It is worth acknowledging that the average (valid) LSI-R score is less useful as an indicator of peer-group risk than one might hope, since the score is missing for more than half of the offenders in the study sample.

Figure A1. Conditioning variables



Note. Peer group sub-sample captures offenders found suitable for CUBIT with earliest release dates 6 months either side of an particular offender
LHS = Left-hand-side axis; RHS = Right-hand-side axis

2. A measure of the sexual, violent or general crime rate amongst the NSW population, two and a half years after the offender's earliest release date (mid-way through the offender's earliest possible 5-year recidivism follow-up window). These data are illustrated in Figure A1, Panel B.[1]

The results from the robustness checks including covariates described in i) and ii) above are presented in Columns B and C, respectively.

Lastly, I also estimate a bivariate probit model, again with bootstrapped standard errors (following Chiburis et al., 2011), to test the robustness of the results to the LPM functional form. The bivariate models assume and estimate a constant Average Treatment Effect for the sample. The extent to which conclusions can be drawn from these models for this paper is limited, since the bivariate probit maximum likelihood estimation procedure requires the first-stage model be correctly specified (as Baum et al., 2012, note, "a 2SLS approach will lose efficiency if an appropriate instrument is not included, but a [maximum likelihood] or control function estimator will generally become inconsistent", p. 23). However, they are presented as a cross-check against the 2SLS LPM. Results from a Chi-square goodness-of-fit test (Murphy, 2007) are also reported to ensure the bivariate probit model is not obviously misspecified (I employ the user-written command 'scoregof' to conduct this test; Chiburis, 2009). The results from this exercise are presented in Tables A3, A4, and A5, Column D.

Consider first the robustness checks for the sex re-offending models (Table A3). The coefficient on treatment completion is slightly smaller in magnitude in the parsimonious specification with bootstrapped standard errors (Table A3, Column A, relative to Table 4, Column D), and remains insignificantly different from zero. The IV is still a relevant predictor of completion

Table A3. Robustness checks: Re-offending with a sex offence

	Column A		Column B		Column C		Column D	
Dependent variable: Re-offence with a sex offence within 5 years of free time following release	2SLS: Second-stage regression							
	Benchmark refined		Including peer group risk indicator		Including aggregate offending rate		Bivariate probit model	
Independent variables	Coeff.	(st.err.)	Coeff.	(st.err.)	Coeff.	(st.err.)	Coeff.	(st.err.)
Completed CUBIT	0.197	(0.159)	0.181	(0.165)	0.143	(0.614)	0.876	(0.503)
Exclusion restriction robustness controls								
Peer prevalence of sex offending against strangers			-0.169	(0.250)				
NSW sex offence rate (after release)					0.010	(0.019)		
Victim relationship profile: Stranger	0.100 *	(0.045)	0.100 *	(0.043)	0.104 *	(0.047)	0.419 *	(0.172)
Most Serious Offence at index: Sex offence	0.093 *	(0.042)	0.090 *	(0.044)	0.094	(0.081)	0.522	(0.329)
Prior break and enter offence	0.138 *	(0.061)	0.138 *	(0.064)	0.136	(0.105)	0.531 *	(0.225)
SPA parole prosepct	-0.131 *	(0.065)	-0.131	(0.069)	-0.116	(0.114)	-0.493	(0.256)
Constant	-0.010	(0.120)	0.071	(0.178)	-0.926	(1.513)	-1.852 ***	(0.444)
N	347		347		347		347	
Dependent variable: Completed CUBIT	2SLS: First-stage regression							
IV: peer completion rate amongst commencements	0.730 ***	(0.200)	0.643 ***	(0.185)	0.719 ***	(0.203)	2.217 ***	(0.548)
Exclusion restriction robustness controls								
Peer prevalence of sex offending against strangers			-0.169	(0.250)				
NSW sex offence rate (after release)					0.001	(0.011)		
Victim relationship profile: Stranger	-0.002	(0.059)	0.152 **	(0.058)	0.077	(0.059)	0.162	(0.164)
Most Serious Offence at index: Sex offence	-0.048	(0.071)	0.067	(0.070)	-0.076	(0.075)	0.019	(0.201)
Prior break and enter offence	0.133	(0.076)	0.077	(0.081)	-0.096	(0.072)	-0.174	(0.216)
SPA parole prosepct	0.104	(0.086)	-0.009	(0.077)	0.043	(0.091)	0.131	(0.244)
Constant	-0.042	(0.220)	0.453 *	(0.228)	-0.090	(1.031)	-1.599 **	(0.555)
Chi-square statistic on misspecification							7.0	
F-statistic on excluded instrument	19.8 ***		19.0 ***		16.4 ***		16.3 ***	
Chi-square statistic on endogenity	2.033	(p=.153)	1.618	(p=.203)	1.08	(p=.298)	1.9	(p=.168)

Notes. 2SLS = Two-stage least squares; IV = Instrumental variable; st.err. = standard error; SPA = State Parole Authority.
* p<.05, ** p<.01, *** p<.001.
Standard errors are bootstrapped over 500 replications.

Table A4. Robustness checks: Re-offending with a violent (including sex) offence

	Column A		Column B		Column C		Column D	
Dependent variable: Re-offence with a violent offence within 5 years of free time following release	2SLS: Second-stage regression						Bivariate probit model	
	Benchmark refined		Including peer group risk indicator		Including aggregate offending rate			
Independent variables	Coeff.	(st.err.)	Coeff.	(st.err.)	Coeff.	(st.err.)	Coeff.	(st.err.)
Completed CUBIT	0.086	(0.222)	0.121	(0.231)	0.281	(9.219)	0.274	(0.553)
Exclusion restriction robustness controls								
Peer average LSI-R score			-0.009	(0.009)				
NSW violent offence rate (after release)					0.006	(0.206)		
LSI-R riskband: High	0.278 *	(0.137)	0.293 *	(0.138)	0.317	(2.903)	0.765 *	(0.363)
Prior violent offence finalisations: 3+	0.211 *	(0.089)	0.217 *	(0.088)	0.254	(2.078)	0.582 **	(0.224)
Aboriginal and/or Torres Strait Islander	0.207 ***	(0.058)	0.198 **	(0.064)	0.206	(0.381)	0.584 ***	(0.164)
Aged 50+	-0.140 **	(0.049)	-0.129 *	(0.051)	-0.132	(0.817)	-0.515 *	(0.210)
Constant	0.170	(0.146)	0.405	(0.291)	-0.467	(24.457)	-0.929 **	(0.357)
N	369		348		369		369	
Dependent variable: Completed CUBIT	2SLS: First-stage regression							
IV: peer completion rate amongst commencements	0.951 ***	(0.179)	0.817 ***	(0.176)	0.755 *	(0.327)	2.163 ***	(0.520)
Exclusion restriction robustness controls								
Peer average LSI-R score			-0.009	(0.009)				
NSW violent offence rate (after release)					-0.007	(0.008)		
LSI-R riskband: High	-0.182	(0.138)	-0.241	(0.125)	-0.233	(0.134)	0.765 *	(0.363)
Prior violent offence finalisations: 3+	-0.235 ***	(0.067)	-0.224 ***	(0.067)	-0.228 **	(0.071)	0.582 **	(0.224)
Aboriginal and/or Torres Strait Islander	-0.079	(0.057)	-0.115 *	(0.058)	0.051	(0.056)	0.584 ***	(0.164)
Aged 50+	-0.166 **	(0.061)	-0.003	(0.058)	-0.021	(0.056)	-0.515 *	(0.210)
Constant	-0.040	(0.142)	0.724 *	(0.339)	0.726	(0.980)	-0.929 **	(0.357)
Chi-square statistic on misspecification							5.9	
F-statistic on excluded instrument	20.6 ***		18.9 ***		2.2		17.3 ***	
Chi-square statistic on endogenity	.409	(*p*=.522)	.633	(*p*=.426)	.349	(*p*=.554)	0.4	(*p*=.514)

Notes. 2SLS = Two-stage least squares; IV = Instrumental variable; st.err. = standard error; SPA = State Parole Authority.
* *p*<.05, ** *p*<.01, *** *p*<.001.
Standard errors are bootstrapped over 500 replications.

in the first-stage equation (F-statistic = 19.8), however the endogeneity test (evaluating the necessity of IV methods to control for unobservable selection effects) is less convincingly rejected in this specification (p-value = .153). The IV remains statistically significant in the first-stage regression with the addition of each of the additional controls described in i) and ii) (Columns B and C, respectively). Neither of the controls are statistically significant at the .05 level in either equation, and the estimated coefficient on completion in the sexual re-offending model is slightly smaller and remains insignificantly different from zero. The bivariate probit specification also yields a positive but statistically insignificant coefficient on treatment completion (Column D). The model implies an average treatment effect of 0.189 (derived from the coefficients shown in the table), which is comparable to the linear estimate of the LATE (0.197) from the 2SLS LPM (Column A). Again, the test of endogeneity of treatment completion is not as clear as the original specifications (the null is rejected with *p*-value=.168). Under the bivariate probit assumptions, the error terms in the completion and sex re-offending equations are estimated to be negatively correlated (*rho* = -0.595; not reported in the table), suggesting that offenders with unobservable characteristics associated with lower sexual re-offending risk are more likely to complete treatment (conditional on the other covariates).

Results from the parsimonious violent re-offending model with bootstrapped errors (Table A4, Column A) are comparable to the original IV specifications (Table 5, Columns D and E). The IV remains relevant in specification that controls for the indicative risk level of an offender's peer group (Table A4, Column B). However, the IV is no longer sufficiently relevant in the first-stage regression (F-statistic = 2.2) after controlling for the aggregate NSW violent offending rate at around the time of the offender's

Table A5. Robustness checks: Re-offending with a general offence

	Column A			Column B			Column C			Column D		
Dependent variable: Re-offence with a general offence within 5 years of free time following release	2SLS: Second-stage regression									Bivariate probit model		
	Benchmark refined			Including peer group risk indicator			Including aggregate offending rate					
Independent variables	Coeff.		(st.err.)	Coeff.		(st.err.)	Coeff.		(st.err.)	Coeff.		(st.err.)
Completed CUBIT	-0.032		(0.198)	-0.017		(0.183)	0.110		(0.318)	-0.123		(0.764)
Exclusion restriction robustness controls												
Peer average LSI-R score				-0.011		(0.010)						
NSW offence rate (after release)							0.008		(0.011)			
LSI-R riskband: High or Medium-High	0.169	*	(0.070)	0.173	*	(0.075)	0.190	*	(0.080)	0.502	*	(0.217)
Victim age profile: Children only	-0.105		(0.057)	-0.108	*	(0.053)	-0.109		(0.057)	-0.294		(0.170)
Prior property offence	0.220	***	(0.060)	0.214	***	(0.063)	0.239	***	(0.068)	0.635	**	(0.207)
Prior suspended sentence	0.252	*	(0.102)	0.254	**	(0.097)	0.291	*	(0.130)	0.800		(0.731)
Aboriginal and/or Torres Strait Islander	0.113		(0.059)	0.112		(0.061)	0.106		(0.062)	0.321		(0.165)
Aged 50+	-0.192	**	(0.059)	-0.177	**	(0.059)	-0.186	**	(0.062)	-0.554	**	(0.190)
Constant	0.445	***	(0.127)	0.740	*	(0.327)	-0.387		(1.087)	-0.133		(0.481)
N	379			358			379			379		
Dependent variable: Completed CUBIT	2SLS: First-stage regression											
IV: peer completion rate amongst commencements	0.601	***	(0.177)	0.940	***	(0.174)	0.829	***	(0.240)	2.360	***	(0.612)
Exclusion restriction robustness controls												
Peer average LSI-R score				-0.011		(0.010)						
NSW offence rate (after release)							-0.016		(0.009)			
LSI-R riskband: High or Medium-High	0.013		(0.080)	-0.092		(0.079)	-0.092		(0.071)	-0.189		(0.216)
Victim age profile: Children only	0.014		(0.055)	0.009		(0.057)	0.039		(0.053)	0.230		(0.151)
Prior property offence	-0.196	**	(0.062)	-0.216	**	(0.066)	-0.098		(0.061)	-0.292		(0.177)
Prior suspended sentence	-0.035		(0.099)	-0.063		(0.102)	-0.290	**	(0.104)	-0.503		(0.322)
Aboriginal and/or Torres Strait Islander	-0.041		(0.061)	-0.049		(0.062)	-0.160	*	(0.063)	0.007		(0.171)
Aged 50+	-0.073		(0.061)	-0.142	*	(0.066)	-0.070		(0.060)	-0.163		(0.188)
Constant	0.229		(0.140)	0.005		(0.302)	1.417		(0.938)	-1.477	**	(0.465)
Chi-square statistic on misspecification										11.9		
F-statistic on excluded instrument	23.9	***		22.8	***		13.2	***		14.9	***	
Chi-square statistic on endogenity	.193		(p=.660)	.251		(p=.616)	1.015		(p=.313)	0.1		(p=.755)

Notes. 2SLS = Two-stage least squares; IV = Instrumental variable; st.err. = standard error; SPA = State Parole Authority.
* p<.05, ** p<.01, *** p<.001.
Standard errors are bootstrapped over 500 replications.

recidivism window (Table A4, Column C). The escalation in the CUBIT completion rate from around 2005 onwards, coincided with a marked decline in violent offending rates from around mid-2007. This could make it difficult to disentangle any impact of treatment on re-offending from a general downward trend in violent offending using the peer completion rate as an IV (breaching the exclusion restriction), *if* the aggregate violent crime rate was a relevant predictor of an individual's own propensity to re-offend with a violent offence. The results from the second-stage regression suggest that this is not the case, conditional on the other control variables included in the model. Bivariate analysis and a standard OLS regression (not shown here) also reveal no link between the aggregate violent crime rate and re-offending amongst this sample. The results from the bivariate probit specification (Table A4, Column D) are also qualitatively unchanged from the 2SLS LPM IV specification (Column A); the coefficient on CUBIT completion is statistically insignificant in the violent re-offending model, and the endogeneity test suggests IV methods may be unnecessary in this context.

For the general offending models (Table A5), the IV remains a relevant predictor of treatment completion in each specification, including after controlling for a proxy measure of the peer-group risk level, and a general crime trend (the F-statistic on the excluded instrument is smaller in the latter case, however, at 13.2). Again, the results are qualitatively unchanged upon assuming a bivariate probit specification (Column D). The coefficient on treatment completion is nowhere near statistically significant in the re-offending equation, and unobservable selection effects do not appear to be particularly important.

General re-offending regression models

Table A6. Robustness checks: Re-offending with a general offence (including parole supervision controls)

	Column A		Column B		Column C		Column D	
Dependent variable: Re-offence with a general offence within 5 years of free time following release	Simplified model				Including parole supervision controls			
	Benchmark probit		Benchmark OLS		Benchmark probit		Benchmark OLS	
Independent variables	Coeff.	(st.err.)	Coeff.	(st.err.)	Coeff.	(st.err.)	Coeff.	(st.err.)
Completed CUBIT	-0.407 **	(0.149)	-0.133 **	(0.046)	-0.331 *	(0.167)	-0.106 *	(0.051)
Parole length (years): Relative to none								
<1 year					0.160	(0.243)	0.041	(0.077)
1-2 years					-0.365	(0.262)	-0.102	(0.080)
2-3 years					-0.345	(0.270)	-0.105	(0.084)
4+ years					-0.348	(0.328)	-0.106	(0.099)
LSI-R riskband: Relative to High								
Low	-0.920	(0.510)	-0.281	(0.146)	-0.753	(0.541)	-0.208	(0.147)
Medium-Low	-1.102 *	(0.434)	-0.355 **	(0.124)	-1.067 *	(0.452)	-0.321 **	(0.123)
Medium	-0.266	(0.407)	-0.093	(0.125)	-0.247	(0.425)	-0.073	(0.123)
Medium-High	0.095	(0.427)	0.030	(0.126)	0.154	(0.441)	0.052	(0.126)
Missing	-0.397	(0.369)	-0.133	(0.111)	-0.205	(0.398)	-0.067	(0.111)
Victim age profile: Relative to adults only / adults and children								
Children only	-0.342 *	(0.168)	-0.120 *	(0.057)	-0.370 *	(0.180)	-0.122 *	(0.059)
Missing	-0.320	(0.202)	-0.102	(0.062)	-0.383	(0.209)	-0.115	(0.063)
Prior property offence	0.634 ***	(0.184)	0.216 ***	(0.060)	0.547 **	(0.195)	0.180 **	(0.066)
Prior suspended sentence	0.901 **	(0.347)	0.272 **	(0.091)	0.736 *	(0.364)	0.226 *	(0.098)
Missing prior history data	-0.004	(0.299)	0.006	(0.090)	0.291	(0.426)	0.071	(0.115)
Minimum non-parole period (years): Relative to less than 3 years								
3-4 years					0.227	(0.250)	0.061	(0.065)
5-9 years					0.143	(0.296)	0.049	(0.086)
10+ years					-0.895	(0.541)	-0.203	(0.145)
Sentence length (years): Relative to less than 3 years								
3-4 years					-0.291	(0.401)	-0.083	(0.112)
5-9 years					-0.421	(0.467)	-0.107	(0.127)
10+ years					-0.068	(0.589)	-0.005	(0.169)
Parole prospects: Relative to court-ordered parole								
SPA parole prosepct					0.305	(0.370)	0.070	(0.090)
No parole prospects					0.320	(0.733)	0.098	(0.220)
Aboriginal and/or Torres Strait Islander					0.274	(0.176)	0.094	(0.056)
Age category: Relative to group aged under 30								
Aged 30-39	0.199	(0.220)	0.067	(0.070)	0.136	(0.231)	0.035	(0.076)
Aged 40-49	-0.143	(0.232)	-0.052	(0.075)	-0.193	(0.245)	-0.076	(0.080)
Aged 50+	-0.541 *	(0.251)	-0.186 *	(0.082)	-0.646 *	(0.268)	-0.213 *	(0.086)
Constant	0.640	(0.422)	0.712 ***	(0.129)	0.610	(0.512)	0.699 ***	(0.161)
N	379		379		379		379	
F/Chi^2-statistic on model	105.7 ***		11.3 ***		123.7 ***		8.2 ***	
AIC	448.5		469.6		456.6		478.6	

Notes. OLS = Ordinary Least Squares; st.err. = standard error; AIC = Akaike Information Criterion; SPA = State Parole Authority.
* p<.05, ** p<.01, *** p<.001..

Table A6 presents results of two robustness tests relating to the probit and OLS models of general re-offending that assume treatment completion is exogenous, conditional on the observable control variables (the original specifications were presented in Table 5, Columns A and B). Columns A and B present results from a more parsimonious version of the original probit and OLS models, respectively. The coefficient on treatment completion is broadly unchanged and remains statistically significant.

In Columns C and D, an additional set of control variables is added to the original specification to reflect the length of time during which an offender was subject to parole following their release from custody (the difference between the date of their sentence expiry, and the date of their release from custody). As discussed earlier, this variable is not exogenous to CUBIT completion, since offenders who have completed CUBIT are more likely to be released early, and hence be subject to a longer period of parole (all else being equal). For that reason, parole outcomes were excluded from the main specifications developed to calculate the IV estimate of the treatment impact. There is also a possibility that parole outcomes could be endogenous to re-offending risk; treatment outcomes aside, the parole board may have access to information on recidivism risk that is unobservable with our limited data. Nonetheless, it is somewhat encouraging to note that the key results in the re-offending model treating completion as exogenous are robust to the inclusion of a parole duration variable (the coefficient on treatment completion remains negative and statistically significant in these specifications, with the point-estimate just slightly reduced).

NOTES

1 These rates are derived from monthly offence records from BOCSAR's recorded crime database (see NSW Bureau of Crime Statistics and Research [BOCSAR], 2015). Sex offences include sexual assault, indecent assault, acts of indecency and other sexual offences; violent offences include murder, domestic and non-domestic violence related assault, assault police, sexual assault, indecent assault, act of indecency, and robbery (without a weapon, with a firearm, with a weapon not a firearm). Quarterly population data are sourced from the Australian Bureau of Statistics (2015), and linearly interpolated across months. To reduce seasonal volatility, monthly data are annualised (to reflect crime rates during the six months up to and including the month of interest, and the six months following). The raw time-series for total offences includes a significant breakpoint in December 2000 (due to a change in the way driving offences were recorded; see notes to Table 2.3 in NSW Bureau of Crime Statistics and Research [BOCSAR], 2001) and this was removed for the purposes of this analysis.

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NSW Bureau of Crime Statistics and Research - Level 1, Henry Deane Building, 20 Lee Street, Sydney 2000
bcsr@justice.nsw.gov.au • www.bocsar.nsw.gov.au • Ph: (02) 8346 1100 • Fax: (02) 8346 1298
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