

# Evaluation of the Bail Assessment Officer (BAO) intervention

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**Aim:** To determine whether the Bail Assessment Officer (BAO) intervention which was piloted in Central and Parramatta local courts in late 2016 had an impact on the proportion of defendants being granted bail at first court appearance and/or reducing time spent in custody.

**Method:** The impact of the BAO intervention on bail refusal and time spent in custody was assessed using a two-by-two design; with group (BAO intervention vs. control) and time (pre-intervention period vs. post-intervention period) as the two factors. The treatment group consisted of custody-based defendants from two local courts (Central and Parramatta) where the BAO intervention was operating. The control group consisted of defendants appearing at three local courts (Burwood, Campbelltown and Fairfield) where the BAO intervention was not operating. The pre-intervention period was September-December 2015 and the post-intervention period was September-December 2016. Outcomes compared in the analysis were percentage of defendants granted bail at first court appearance, mean bail refused days and mean time on remand.

**Results:** There was no significant change from pre-intervention to post-intervention in the percentage of defendants granted bail at first court appearance or the mean number of bail refused days or days on remand for defendants appearing in the BAO intervention courts. Similar results were also evident for defendants appearing in the control group courts and held even after controlling for a wide range of covariates.

**Conclusion:** There is no evidence from this aggregate-level analysis that the BAO intervention had an impact on the granting of bail at first appearance, bail refused days or time on remand. However, a rigorous assessment of program effectiveness was precluded because of the lack of clear, objective eligibility criteria for program entry and limited recording of essential program data.

**Keywords:** Remand, bail, length of stay, prison, regression, difference-in-differences

## INTRODUCTION

Since 2011 the size of the NSW adult prison population has increased markedly. Between 2011 and 2015, the total population increased by 18 per cent to be around 11,800. The growth in the remand population has been particularly strong with a 34 per cent increase over a 12 month period to be 3,597 in September 2015 (Weatherburn, Corben, Ramsey, & Fitzgerald, 2016). Weatherburn et al. (2016) identified a number of factors responsible for the increase in the remand prison population size. These include: increases in police proceeding against offenders for more serious offences (where bail refusal is likely); increases in breach of bail; increases in the amount of time spent on remand; and a possible increase in bail refusal.

In a bid to reduce the rate of bail refusal and thereby reduce the size of the remand population the NSW Department of Justice introduced the Bail Assessment Officer (BAO) program in mid-2016. The Bail Assessment Officer trial factsheet said “the role of the Officers is to provide the Court with information that may support bail being granted for those that would have received bail but for lack of information.” The Officers are not involved in any court proceedings and do not give legal advice. The BAOs interview defendants in custody to obtain relevant information for a bail application. They also attempt to locate family and close friends, assist with referrals to secure accommodation and arrange appointments with health and treatment providers. After consent has been obtained from the defendant, the BAO staff assist with formulation of appropriate bail conditions. This

involves liaising with Legal Aid NSW, Aboriginal Legal Service, NSW Police and legal representatives. The BAO intervention pilot commenced at Central Local Court and Parramatta Local Court on 15 August 2016. Subsequently, the pilot program was extended to include four additional local courts at Blacktown, Liverpool, Mount Druitt and Penrith. There were four staff who implemented the BAO intervention across the six local courts.<sup>1</sup>

This report presents the results of an evaluation of the BAO pilot and is designed to determine whether the program increased the percentage of defendants granted bail at their first court appearance and/or reduced time spent in custody. The specific questions of interest are as follows:

**Question 1:** Was there an increase in the percentage of eligible defendants who were granted bail at first appearance in a court where the BAO intervention took place?

**Question 2:** Was there a reduction in the mean number of bail refused days for all eligible defendants in a BAO court?

**Question 3:** Was there a reduction in the mean number of remand days for defendants remanded into custody by a BAO court?

**Question 4:** Among defendants remanded in custody by a BAO court but subsequently released to bail, was there a reduction in the mean number of remand days?

Question 1 is important as a general test of whether bail refusal rates declined following the introduction of the BAO intervention. Question 2 assesses whether the BAO intervention produced an overall reduction in time spent in custody for all bail refused defendants. Question 3 assesses whether the BAO intervention reduced the time spent in custody by defendants remanded by the courts. This is important because these defendants spend a great deal more time in custody than persons held in police or court cells. Question 4 is important because the effect of the BAO intervention on days spent on remand may be more pronounced among those initially refused and subsequently granted bail. Many of those who are always refused bail throughout their court proceedings will ultimately end up as sentenced prisoners.

## METHOD

### EVALUATION DESIGN

The overall evaluation strategy is to test whether the change in each outcome variable between pre-intervention and post-intervention was different for the BAO intervention group compared with the control group after adjusting for relevant covariates (Angrist & Pischke, 2009; Gertler, Martinez, Premand, Rawlings, & Vermeersch, 2016). This involves a two-by-two design with group (BAO intervention vs. control courts) and intervention time period (post-intervention vs. pre-intervention) as the two factors. The treatment (BAO intervention) group consisted of defendants held in Corrective Services NSW (CSNSW) custody whose first court appearance in that custodial

episode was before Central or Parramatta Local Courts (including Parramatta Bail Court) where the BAO intervention took place. The control group consisted of defendants held in CSNSW custody whose first court appearance was before one of three local courts (Burwood, Campbelltown and Fairfield) where the BAO intervention was not operating. The pre and post-intervention periods were defined as September-December 2015 and September-December 2016 respectively. This design enabled analysis of the impact of the intervention at BAO locations (pre vs. post) compared with control locations (pre v post). Defendants in the study were followed up for 90 days after the start date of their custodial episode and the outcomes defined below were measured.

To facilitate access to defendants in the BAO locations BAO staff often operated from CSNSW custodial locations in addition to the local courts. Typically defendants are transferred into CSNSW custody after being refused police-bail and are held in police/court cell locations managed by CSNSW. Police-bail refused defendants must be brought before a local court magistrate to determine bail within 24 hours of being taken into custody. CSNSW facilitates these first court appearances, some of which take place via video-link from within the police/court cell facilities. Defendants in this study are those held in CSNSW custody whose first court appearance following reception was one of the BAO or control court locations and took place during the pre or post intervention period defined above.

It is important to point out that a significant proportion of police-bail refused defendants transferred into CSNSW custody at police/court cell complexes are subsequently granted bail at first court appearance and are therefore released from custody. Many of these defendants, therefore, spend less than 24 hours in CSNSW custody. Those defendants refused bail at first court appearance and remanded into custody are then transferred to a CSNSW correctional centre as remand inmates.

The initial aim of the BAO intervention was to reduce the amount of time defendants spent on remand within a correctional centre and, as such, the evaluation design was confined to only those defendants remanded into custody. However, shortly after commencement of the intervention, there was strong evidence that BAO staff were approaching police-bail refused defendants held in CSNSW managed police/court cell complexes. For that reason the evaluation design was expanded to incorporate police-bail refused defendants managed by CSNSW in police/court cell complexes whose first court appearance was at one of the BAO intervention or control group locations.

During the period of study the BAO intervention expanded to four additional local courts: Blacktown, Liverpool, Mount Druitt and Penrith. Given that this roll out occurred later in the trial there was not the same potential to have sufficient follow-up to assess key outcomes across a large number of these defendants. Nevertheless analyses were conducted using all six local courts in the BAO group. These results are reported in Appendix A.

Another important factor to note is that the analysis was conducted on all eligible custody based defendants in the relevant courts over the two time periods. This meant that all eligible defendants in the BAO locations were included in the study, not just those approached by BAO staff during the intervention. No information on the number of defendants approached or the nature of any subsequent intervention by BAO staff was provided for this study.

**DATA SOURCE**

The data used was sourced from the CSNSW Offender Integrated Management System (OIMS). The OIMS data contains details of custodial episodes where defendants were under the management of CSNSW (Galouzis & Corben, 2016). OIMS also records location for the first court appearance within each episode. Data describing changes in legal status (from remand to sentenced inmate), reasons for discharge at the end of each episode and data for covariates such as age, gender, Indigenous status and prior completed prison sentences were also obtained from OIMS. Data on most serious current offence was extracted and was classified according to ANZSOC coding (Australian Bureau of Statistics, 2011). Episode type identified those defendants where the episode incorporated a period of time on remand in a correctional centre as distinct from those episodes where all custody days were spent in police/court cells only.

**Group definition**

**BAO intervention:** Central Local Court and Parramatta Local Court.<sup>2</sup>

**Control:** Burwood Local Court, Campbelltown Local Court, and Fairfield Local Court.<sup>3</sup>

**Intervention time periods**

**Pre-intervention:** CSNSW episodes with start dates between September and December 2015.

**Post-intervention:** CSNSW episodes with start dates between September and December 2016.

**Outcome variable definitions**

**Bail outcome at first appearance:** This was a binary variable (bail granted vs. bail refused/other) based on the first appearance in the custodial episode. By definition, those defendants remanded into custody were defined as *bail refused*. The exception to this rule was for a very small number of defendants remanded into custody and transferred to a correctional centre but released that same day (for example where the court grants bail but the defendant is unable to immediately meet all bail conditions). These defendants were classified as *bail granted*. For defendants held only in police/court cell locations (i.e. never transferred to a correctional centre during the episode) bail status was classified as *bail granted* where the discharge reason was recorded as *bail* and where the length of time in custody was less than 24 hours.

**Bail refused days:** This refers to the number of days between the start date when defendants were first supervised by Corrective Services NSW staff (typically in a police/court cell) and the earliest of either conviction date or supervision end date. This was a combined measure for both defendants held in police/court cells and those who ended up on remand in prison. Bail refused days greater than 90 in length were recoded as 90 (which was for almost 10% of police/court cell and remand defendants combined).

**Remand days:** The initial aim of the BAO intervention was to reduce time on remand in a correctional centre. Remand days is a measure of the number of days between reception of a remanded defendant into a correctional centre and the earliest of either the date of imposition of the first custodial sentence (conviction date) or release from custody (where no custodial sentence had yet been imposed). This does not include the time which defendants spent in police/court cells before they were remanded by court into a correctional centre. Again, for the purpose of contracting the follow-up period, remand times greater than 90 days in length were recoded as 90 days (which was for around 19% of remand defendants).

**Statistical analyses**

The approach to the analyses was to compare changes in the relevant outcome variable from pre-intervention to post-intervention between the BAO intervention group and the control group. As an example, the change in mean number of remand days from pre-intervention to post-intervention would be compared between the BAO intervention and the control groups. This approach is often referred to as difference-in-differences (Angrist & Pischke, 2009; Gertler et al., 2016). An advantage of this method is that important covariates that predict the number of remand days can also be adjusted for (using regression methods to control for potential confounding). This is important when the level(s) of measured covariates/confounders also change over time (in addition to the start of an intervention such as BAO).

The general approach is to estimate equations of the form:

$$Y_{ij} = \alpha + \beta t_{ij} + X_{t_{ij}} + \gamma T_{ij} + \delta (T_{ij} * t_{ij}) + e_{ij} \dots \dots \dots (1)$$

where  $Y_{ij}$  measures the outcome of interest,  $\beta t_{ij}$  captures any trend across measurement periods,  $X_{t_{ij}}$  is a vector of covariates designed to capture any differences between treatment (BAO) and comparison groups,  $\gamma T_{ij}$  measures treatment status,  $\delta (T_{ij} * t_{ij})$  (an interaction between treatment status and measurement period) captures the effect of BAO intervention on the outcome of interest and  $e_{ij}$  captures the effect of any other unmeasured factors. If the BAO program is effective we expect the coefficient  $\delta$  to be negative and significant. The covariates ( $X_{t_{ij}}$ ) included in all analyses that follow were age group, gender, Indigenous status, most serious offence and prior completed prison sentences. Episode type (remand vs. police/court cells) was also included for Questions 1 and 2.

A logistic regression implementation of (1) was used to test for an interaction between BAO intervention group and time period

in order to see whether the BAO increased the percentage of defendants granted bail at first supervised appearance (Question 1). A negative binomial regression was used to test for an interaction between BAO intervention group and time period to see whether there was a reduction in the mean number of bail refused days (Question 2). An ordinary least squares (OLS) regression was used to test for an interaction between BAO intervention group and time period to see whether there was any reduction in the mean number of remand days (Question 3). Finally, an OLS regression was used to see whether there was a reduction in remand days amongst those BAO remand defendants who were subsequently granted bail (Question 4).

It was not possible to restrict the analyses involved in answering questions (1) and (2) to only one record per defendant. A defendant may have had more than one episode of custody during each study period either due to having breached bail or a new offence. To identify these, a reference number is needed for the matter(s).<sup>4</sup> For all three control courts and four of the six BAO intervention courts no reference number was available in the data for over half of the *police/court cell defendants* at baseline and one-third at follow-up. Generally 90 per cent of defendants had only one custodial episode and eight per cent had two episodes during each four month Pre- or Post-intervention period. While there was only a minority of *repeated episodes* with a particular defendant, applying a multilevel analysis approach was not feasible. In what follows for Questions 1 and 2 we deal with this problem by applying a more stringent test for statistical difference (e.g.  $p < .01$  rather than  $p < .05$ ).

Questions (3) and (4) were restricted to analysing one record per remand defendant. This was done by randomly selecting one remand episode per defendant in each of the intervention group by pre/post time period combinations. As shown in Table 9, the number of multiple remand episodes for a given defendant was very small.

### Exclusion criteria

Defendants who had one or more strictly indictable (SI) offences were excluded from the study as they are more likely to be committed to Higher courts such as the District Court and, given the seriousness of the offence, are less likely to be granted bail at first appearance. It was assumed that these defendants would be unlikely to be approached by BAOs during the intervention. Also excluded were defendants whose custodial episode

commenced during the weekend, as the BAO staff were not initiating any interventions on weekends.

## RESULTS

### SAMPLE DESCRIPTION

Table 1 shows the number of custody episodes in the control and BAO intervention groups. There were 556 episodes among the controls at pre-intervention and 550 at post-intervention. There were 1,149 episodes among the BAO intervention group at pre-intervention and 1,282 at post-intervention.

Table 2 shows the characteristics of the control and BAO intervention groups at pre-intervention and post-intervention. There were no differences between the control and BAO intervention groups in gender or in age group at pre-intervention. At post-intervention the BAO intervention group were older, with almost half aged 35 years or more compared with 39 per cent of controls. Defendants in the BAO intervention group were more likely to be Indigenous (20% vs. 12%). They were also more likely to have assault/injury as their most serious offence (37% vs. 24%) and to have three or more prior completed prison sentences (25% vs. 13%). The BAO intervention group had a much higher percentage of defendants who were remanded into a correctional centre compared with the controls. At pre-intervention this was 54 per cent versus 34 per cent and at post-intervention it was 55 per cent versus 39 per cent.

### Changes in defendants granted bail at first appearance (Question 1)

Table 3 shows the bivariate relationship between each of the variables listed in the Method section and the percentage of defendants granted bail at first appearance following reception into custody. While there was no effect of age group, females were more likely to be granted bail (55% vs. 42%) as were non-Indigenous offenders (45% vs. 38%). Defendants with assault/injury as the most serious offence had the lowest percentage of defendants granted bail at first appearance (36%) while defendants with no prior completed prison sentences had the highest percentage compared with those with one or more priors (53% vs. 32%). For obvious reasons, the percentage granted bail at first appearance was substantially higher among defendants with police/court cells episode type compared with those defendants remanded to a correctional centre (85% vs. 1%).

**Table 1. Number of custody episodes and unique defendants in the control and BAO intervention groups during pre-intervention and post-intervention periods (n = 3,537 episodes; n = 3,214 defendants)**

	Pre-intervention (September - December 2015)	Post-intervention (September - December 2016)
<b>Control</b>	556 episodes	550 episodes
Burwood, Campbelltown and Fairfield	499 defendants	503 defendants
<b>BAO intervention</b>	1,149 episodes	1,282 episodes
Central and Parramatta	1,069 defendants	1,143 defendants

Table 2. Characteristics of episodes in control and BAO intervention groups # (n = 3,537)

		Pre-intervention		Post-intervention	
		Control	BAO intervention	Control	BAO intervention
		(3 local courts)	(2 local courts)	(3 local courts)	(2 local courts)
<b>Age group ##</b>	18-24	20.9%	19.5%	22.6%	18.1%
	25-34	40.0%	35.9%	38.7%	33.4%
	35-44	27.0%	28.2%	24.6%	30.8%
	45+	12.1%	16.4%	14.2%	17.7%
		$\chi^2_3 = 6.81, p = .078$		$\chi^2_3 = 15.03, p = .002^{**}$	
<b>Gender</b>	Male	83.1%	85.0%	83.6%	83.3%
	Female	16.9%	15.0%	16.4%	16.7%
		$\chi^2_1 = 1.07, p = .302$		$\chi^2_1 = 0.03, p = .862$	
<b>Indigenous status</b>	non-Indigenous	88.3%	78.6%	86.7%	81.1%
	Indigenous	11.7%	21.4%	13.3%	19.0%
		$\chi^2_1 = 23.73, p < .001^{**}$		$\chi^2_1 = 8.71, p = .003^{**}$	
<b>Episode type</b>	Police/court cells	66.6%	46.1%	61.1%	45.0%
	Remand	33.5%	53.9%	38.9%	55.0%
		$\chi^2_1 = 62.69, p < .001^{**}$		$\chi^2_1 = 39.82, p < .001^{**}$	
<b>Most serious offence</b>	Assault/injury	22.1%	36.6%	26.9%	38.4%
	Theft	6.1%	16.2%	11.6%	16.5%
	Other offences	28.8%	40.3%	41.1%	40.1%
	Not recorded	43.0%	6.9%	20.4%	5.0%
		$\chi^2_3 = 329.78, p < .001^{**}$		$\chi^2_3 = 115.38, p < .001^{**}$	
<b>Prior completed prison sentences</b>	0	68.7%	54.1%	64.4%	54.5%
	1	9.9%	13.1%	14.7%	11.9%
	2	7.9%	7.4%	7.8%	7.7%
	3+	13.5%	25.4%	13.1%	25.8%
		$\chi^2_3 = 41.84, p < .001^{**}$		$\chi^2_3 = 37.18, p < .001^{**}$	
<b>Total sample size</b>		556	1,149	550	1,282

# counting unit is an episode of supervision; ## Age group, missing: n = 2

\* p < .05; \*\* p < .01

Table 3. Bivariate associations between defendant characteristics and bail at first appearance # (n = 3,537)

Variable	Category	Sample size	Percentage bail at first appearance (%)	Significance
<b>Age group</b>	18-24	696	45.7	$\chi^2_3 = 2.20$ $p = .533$
	25-34	1,276	42.8	
	35-44	1,003	44.0	
	45+	560	45.7	
	missing	2	-	
<b>Gender</b>	Male	2,967	42.0	$\chi^2_1 = 35.04$ $p < .001^{**}$
	Female	570	55.4	
<b>Indigenous status</b>	non-Indigenous	2,910	45.4	$\chi^2_1 = 10.13$ $p = .001^{**}$
	Indigenous	627	38.4	
<b>Episode type</b>	Police/court cells	1,813	84.8	$\chi^2_1 = 2,494.98$ $p < .001^{**}$
	Remand	1,724	1.4	
<b>Most serious offence</b>	Assault/injury	1,184	36.2	$\chi^2_3 = 238.00$ $p < .001^{**}$
	Theft	496	41.3	
	Other offences	1,363	40.7	
	Not recorded	494	75.7	
<b>Prior completed prison sentences</b>	0	2,056	52.6	$\chi^2_3 = 142.85$ $p < .001^{**}$
	1	440	31.6	
	2	271	32.8	
	3+	770	32.7	

# counting unit is an episode of supervision

\* p < .05; \*\* p < .01

**Table 4. Percentage granted bail at first appearance for control and BAO intervention groups # (n = 3,537)**

	Pre-intervention	Post-intervention
<b>Control</b> (Burwood, Campbelltown, and Fairfield)	56.3% (95% CI: 52.1%, 60.5%) n = 556	54.4% (95% CI: 50.1%, 58.6%) n = 550
<b>BAO intervention</b> (Central and Parramatta)	39.0% (95% CI: 36.2%, 41.9%) n = 1,149	39.2% (95% CI: 36.5%, 41.9%) n = 1,282

# counting unit is an episode of supervision

**Table 5. Logistic regression: percentage granted bail at first appearance for control and BAO intervention groups # (n = 3,537)**

Covariates	Model 5.1		Model 5.2		Model 5.3		Model 5.4	
	Estimate	p-value	Estimate	p-value	Estimate	p-value	Estimate	p-value
<b>Intercept</b>	0.253	= .003 **	0.920	< .001 **	1.259	< .001 **	2.655	< .001 **
<b>BAO intervention vs. control</b>	-0.701	< .001 **	-0.683	< .001 **	-0.544	< .001 **	-0.101	= .579
<b>Post-intervention vs. pre-intervention</b>	-0.078	= .518	-0.080	= .514	-0.014	= .910	0.326	= .128
<b>BAO intervention by time period</b>	0.085	= .562	0.064	= .665	0.007	= .965	-0.169	= .525
<i>Socio-demographic characteristics</i>								
<b>18-24 years old vs. 45+</b>			-0.044	= .706	-0.305	= .012 *		
<b>25-34 years old vs. 45+</b>			-0.216	= .038 *	-0.299	= .005 **		
<b>35-44 years old vs. 45+</b>			-0.108	= .318	-0.066	= .549		
<b>Male vs. female</b>			-0.601	< .001 **	-0.489	< .001 **	-1.100	< .001 **
<b>Indigenous vs. non-Indigenous</b>			-0.289	= .002 **	-0.066	= .498		
<i>Most serious current offence</i>								
<b>Assault/injury vs. other/not recorded</b>					-0.471	< .001 **	0.126	= .395
<b>Theft vs. other/not recorded</b>					-0.143	= .187	0.536	= .014 *
<i>Prior completed prison sentences</i>								
<b>1 vs. 0</b>					-0.869	< .001 **	-0.638	= .001 **
<b>2 vs. 0</b>					-0.832	< .001 **	-0.234	= .365
<b>3+ vs. 0</b>					-0.801	< .001 **	-0.110	= .528
<i>Episode type</i>								
<b>Remand vs. police/court cells</b>							-6.133	< .001 **
<b>Akaike Information Criteria (AIC)</b>	4,781.4		4,738.1		4,596.2		1,761.4	
<b>Area under ROC curve</b>	0.572		0.606		0.661		0.942	

# counting unit is an episode of supervision; \* p < .05; \*\* p < .01

The percentage granted bail on first appearance for each of the four groups is shown in Table 4. Among the controls, the percentage of defendants granted bail was 56 per cent at pre-intervention and 54 per cent at post-intervention. For the BAO intervention group, it remained unchanged at around 39 per cent.

The results from the logistic regression analyses are shown in Table 5. Model 5.1 is unadjusted for covariates. At pre-intervention, defendants from the BAO intervention courts were significantly less likely to be granted bail at first appearance compared with defendants from the control courts (39% vs.

56%; p < .001\*\*). There was no significant change among the controls in the percentage who were granted bail between pre-intervention and post-intervention (p = .518). The interaction between BAO group and intervention period was not statistically significant (p = .562). This means that changes in the percentage of defendants granted bail at first appearance did not differ between the two groups during the BAO post-intervention period.

Model 5.2 shown in Table 5 includes the socio-demographic variables of age group, gender and Indigenous status. This showed lower bail rates for male compared with female

defendants and for Indigenous compared with non-Indigenous defendants. The interaction between BAO intervention group and time period was not statistically significant ( $p = .665$ ).

Model 5.3 shown in Table 5 includes the most serious current offence and the number of prior completed prison sentences added to the logistic regression. The proportion granted bail at first appearance is significantly lower for assault/injury compared with other offences ( $p < .001^{**}$ ) and for any prior completed prison sentences compared with none ( $p < .001^{**}$ ). Indigenous status was no longer statistically significant once prior prison and the most serious current offence had been taken into account ( $p = .498$ ). There was no significant interaction between BAO intervention and time period ( $p = .965$ ).

Model 5.4 includes episode type to the logistic regression which compared defendants remanded into a correctional centre with those in police/court cells. Not surprisingly, this was statistically significant showing a much lower proportion of defendants being granted bail at first appearance for the remand episode defendants ( $p < .001^{**}$ ). The inclusion of episode type resulted in the pre-intervention difference in percentage granted bail at first appearance between control and BAO intervention defendants to no longer be significant ( $p = .579$ ). Even after adjusting for the higher percentage of remand defendants in the BAO intervention group there was no significant interaction between BAO intervention and time period ( $p = .525$ ).<sup>5</sup>

### Changes in bail refused time spent in custody (Question 2)

Table 6 shows the relationships between the covariates and the mean number of bail refused days. These were significantly higher for males versus females (23 days vs. 14 days) and Indigenous versus non-Indigenous defendants (25 days vs. 21 days).

Defendants with assault/injury as their most serious offence had higher mean bail refused days (27 days) compared with theft and other offences (21-23 days). As the number of prior completed prison sentences increased so did mean number of bail refused days. Not surprisingly, remanded defendants had much higher bail refused days compared with those released from police/court cells (42 vs. 1.5 days).

The mean number of bail refused days for each of the four groups is shown in Table 7. Defendants in the control group had a mean of 15 bail refused days in custody during pre-intervention and of 18 days during post-intervention period. The BAO intervention group had a mean of 24 bail refused days in custody at pre-intervention and of 23 days at post-intervention. Prima facie, this suggests that there was no change in mean bail refused days in the BAO intervention locations after the pilot commenced.

**Table 6. Bivariate associations between defendant characteristics and mean number of bail refused days # (n = 3,537)**

Variable	Category	Sample size	Mean bail refused days	95% CI	Significance
<b>Age group</b>	18-24	696	21.1	(18.8, 23.4)	$F_{3, 3531} = 2.09$ $p = .100$
	25-34	1,276	22.4	(20.6, 24.1)	
	35-44	1,003	21.8	(19.9, 23.7)	
	45+	560	18.6	(16.2, 20.9)	
	missing	2	-	-	
<b>Gender</b>	Male	2,967	22.8	(21.7, 23.9)	$F_{1, 3535} = 43.33$ $p < .001^{**}$
	Female	570	13.7	(11.7, 15.7)	
<b>Indigenous status</b>	non-Indigenous	2,910	20.6	(19.5, 21.7)	$F_{1, 3535} = 10.23$ $p = .001^{**}$
	Indigenous	627	24.9	(22.4, 27.4)	
<b>Episode type</b>	Police/court cells	1,813	1.5	(1.5, 1.6)	$F_{1, 3535} = 2812.31$ $p < .001^{**}$
	Remand	1,724	42.2	(40.6, 43.7)	
<b>Most serious offence</b>	Assault/injury	1,184	27.0	(25.1, 28.8)	$F_{3, 3533} = 75.10$ $p < .001^{**}$
	Theft	496	20.9	(18.3, 23.4)	
	Other offences	1,363	23.1	(21.4, 24.7)	
	Not recorded	494	3.6	(2.4, 4.7)	
<b>Prior completed prison sentences</b>	0	2,056	17.8	(16.6, 19.1)	$F_{3, 3533} = 22.76$ $p < .001^{**}$
	1	440	24.5	(21.6, 27.4)	
	2	271	27.5	(23.6, 31.5)	
	3+	770	26.7	(24.5, 29.0)	

# counting unit is an episode of supervision; \*  $p < .05$ ; \*\*  $p < .01$

The results from the negative binomial regression analyses are shown in Table 8 with Model 8.1 unadjusted for covariates. At pre-intervention the BAO intervention group had significantly higher mean bail refused days compared with the control group (24 days vs. 15 days;  $p < .001^{**}$ ). There was no significant increase in mean bail refused days among the control group between pre- and post-intervention ( $p = .061$ ). The interaction between BAO intervention and time period was not statistically significant ( $p = .105$ ). This means that changes in the mean bail refused days from pre to post-intervention did not differ between the two groups after the BAO intervention began.

Model 8.2 included socio-demographic variables and found significantly higher mean bail refused days for males ( $p < .001^{**}$ ), Indigenous defendants ( $p = .001^{**}$ ) and those aged 25-44 years. Model 8.3 included the most serious current offence and prior completed prison sentences and found higher bail refused days for assault/injury ( $p < .001^{**}$ ) and as the number of prior prison sentences increased ( $p < .001^{**}$ ). Indigenous status was no longer statistically significant at the 1 per cent level ( $p = .045^*$ ). There was no significant interaction between BAO intervention and time period in Model 8.3 ( $p = .136$ ).

**Table 7. Mean number of bail refused days for control and BAO intervention groups # (n = 3,537)**

	Pre-intervention	Post-intervention
<b>Control</b> (Burwood, Campbelltown, and Fairfield)	15.2 days (95% CI: 13.0, 17.5) n = 556	18.0 days (95% CI: 15.5, 20.4) n = 550
<b>BAO intervention</b> (Central and Parramatta)	23.6 days (95% CI: 21.8, 25.4) n = 1,149	23.4 days (95% CI: 21.7, 25.1) n = 1,282

# counting unit is an episode of supervision

**Table 8. Negative binomial regression: Bail refused days for control and BAO intervention groups # (n = 3,537)**

Covariates	Model 8.1		Model 8.2		Model 8.3		Model 8.4	
	Estimate	p-value	Estimate	p-value	Estimate	p-value	Estimate	p-value
<b>Intercept</b>	2.724	<.001**	1.998	<.001**	1.726	<.001**	-0.010	=.881
<b>BAO intervention vs. control</b>	0.436	<.001**	0.419	<.001**	0.377	<.001**	0.120	=.014*
<b>Post-intervention vs. pre-intervention</b>	0.165	=.061	0.157	=.071	0.189	=.029*	0.013	=.813
<b>BAO intervention by time period</b>	-0.171	=.105	-0.130	=.217	-0.156	=.136	-0.032	=.633
<i>Socio-demographic characteristics</i>								
<b>18-24 years old vs. 45+</b>			0.137	=.097	0.267	=.002**	0.107	=.039*
<b>25-34 years old vs. 45+</b>			0.256	=.001**	0.293	<.001**	0.081	=.079
<b>35-44 years old vs. 45+</b>			0.193	=.012*	0.177	=.020*	0.077	=.108
<b>Male vs. female</b>			0.584	<.001**	0.527	<.001**	0.299	<.001**
<b>Indigenous vs. non-Indigenous</b>			0.225	=.001**	0.133	=.045*	0.062	=.120
<i>Most serious current offence</i>								
<b>Assault/injury vs. other/not recorded</b>					0.350	<.001**	0.101	=.002*
<b>Theft vs. other/not recorded</b>					0.122	=.101	-0.033	=.468
<i>Prior completed prison sentences</i>								
<b>1 vs. 0</b>					0.315	<.001**		
<b>2 vs. 0</b>					0.477	<.001**		
<b>3+ vs. 0</b>					0.382	<.001**		
<i>Episode type</i>								
<b>Remand vs. police/court cells</b>							3.282	<.001**
<b>Akaike Information Criteria (AIC)</b>	27,421.8		27,339.8		27,250.2		22,044.6	

# counting unit is an episode of supervision

\*  $p < .05$ ; \*\*  $p < .01$



**Table 9. Number of remand episodes and unique defendants in the control and BAO intervention groups during pre-intervention and post-intervention periods (n = 1,724 episodes; n = 1,682 defendants)**

	Pre-intervention (September - December 2015)	Post-intervention (September - December 2016)
<b>Control</b> Burwood, Campbelltown and Fairfield	186 episodes 181 defendants	214 episodes 211 defendants
<b>BAO intervention</b> Central and Parramatta	619 episodes 609 defendants	705 episodes 681 defendants

**Table 10. Characteristics of remand defendants in control and BAO intervention groups # (n = 1,682)**

		Pre-intervention		Post-intervention	
		Control (3 local courts)	BAO intervention (2 local courts)	Control (3 local courts)	BAO intervention (2 local courts)
<b>Age group</b>	18-24	16.0%	18.6%	20.9%	17.6%
	25-34	42.0%	37.0%	44.1%	35.0%
	35-44	32.0%	28.1%	24.2%	30.7%
	45+	9.9%	16.4%	10.9%	16.7%
		$\chi^2_3 = 6.10, p = .107$		$\chi^2_3 = 10.46, p = .015^*$	
<b>Gender</b>	Male	85.1%	87.0%	89.6%	84.0%
	Female	14.9%	13.0%	10.4%	16.0%
		$\chi^2_1 = 0.45, p = .500$		$\chi^2_1 = 4.00, p = .045^*$	
<b>Indigenous status</b>	non-Indigenous	85.6%	77.3%	85.8%	78.4%
	Indigenous	14.4%	22.7%	14.2%	21.6%
		$\chi^2_1 = 5.84, p = .016^*$		$\chi^2_1 = 5.50, p = .019^*$	
<b>Most serious offence</b>	Assault/injury	35.4%	40.9%	31.3%	43.5%
	Theft	10.5%	16.8%	16.1%	16.5%
	Other offences	49.7%	41.7%	51.2%	38.6%
	Not recorded	4.4%	0.7%	1.4%	1.5%
		$\chi^2_3 = 19.70, p < .001^{**}$		$\chi^2_3 = 12.02, p = .007^{**}$	
<b>Prior completed prison sentences</b>	0	50.3%	45.8%	52.1%	46.0%
	1	17.1%	16.4%	19.0%	13.1%
	2	11.6%	8.2%	10.9%	10.0%
	3+	21.0%	29.6%	18.0%	31.0%
		$\chi^2_3 = 6.13, p = .106$		$\chi^2_3 = 15.00, p = .002^{**}$	
<b>Total sample size</b>	181	609	211	681	

# counting unit is an episode of supervision with maximum of one per defendant  
\* p < .05; \*\* p < .01

Model 8.4 includes episode type in the negative binomial regression. This was statistically significant, showing a much higher mean bail refused days for the remand defendants compared with the police/court cell defendants ( $p < .001^{**}$ ). This again is understandable as remand (bail refused) defendants are typically transferred to a correctional centre as soon as possible whilst the vast majority of those released from police/court cell complexes are released within 24 hours of reception. The inclusion of episode type resulted in the pre-intervention difference in mean bail refused days between control and BAO intervention defendants to remain statistically significant but

the estimate was lower in magnitude ( $p = .014^*$ ). There was no significant interaction between BAO intervention and time period ( $p = .633$ ).<sup>6</sup>

### Changes in time spent on remand (Question 3)

This section of the results examines the question of whether there is a reduction in the mean number of remand days for defendants placed on remand by courts in the BAO intervention group. Table 9 shows the number of both remand episodes and unique defendants in the control and BAO intervention groups during the pre-intervention and post-intervention periods. While

there were 186 remand episodes in the control group at pre-intervention and 214 during the intervention period, the number of unique defendants was only slightly smaller (181 and 211). There were 619 remand episodes in the BAO intervention group during the pre-intervention period and 705 during the post-intervention period, which corresponded to 609 and 681 unique defendants in each period. For the analyses that follow only one remand episode per defendant was used. Where there were multiple episodes per defendant one was selected at random.

Table 10 shows the characteristics of remanded defendants appearing during the pre-intervention and post-intervention periods in the BAO intervention and control groups. There was no difference between BAO intervention and control groups in defendant's age at pre-intervention. At post-intervention the BAO group had more defendants over the age of 35 years (47% vs. 35%). No difference was found between the groups in gender at pre-intervention but at post-intervention the BAO group had more females (16% vs. 10%). Compared with the control group, the BAO intervention group had more Indigenous defendants (22% vs. 14%), were more likely to have assault/injury as the most serious offence overall (42% vs. 33%) and to have three or more prior completed prison sentences at post-intervention (31% vs. 18%).

Table 11 shows the covariates of the mean number of remand days. Males had higher remand days compared with females (42 days vs. 29 days) while defendants with assault/injury as their most serious offence had the highest mean remand days (43 days).

The mean number of days on remand for each of the four groups is shown in Table 12. Defendants in the control group during the

pre-intervention period had a mean of 41 remand days whilst those during post-intervention period had a mean of 43 days. Defendants in BAO intervention group at pre-intervention had a mean of 40 remand days at pre-intervention and of 39 days at post-intervention.

The results from the linear regression analyses are shown in Table 13 with Model 13.1 unadjusted for covariates. At pre-intervention there was no statistically significant difference between the control and BAO intervention groups in mean remand days (41 days vs. 40 days;  $p = .781$ ). The interaction between BAO intervention and time period was not statistically significant ( $p = .452$ ). Model 13.2 includes socio-demographic variables in the linear regression. Males had higher mean remand days compared with females ( $p < .001^{**}$ ) and defendants 45 years and older had significantly shorter mean remand days compared with each of the three younger age groups. Indigenous status was not predictive of mean remand days ( $p = .100$ ). The interaction between BAO intervention and time period was not statistically significant ( $p = .634$ ).

Model 13.3 included extra terms for most serious offence and prior completed prison sentences while Model 13.4 only included extra terms for the most serious offence as this produced a better fit with a lower value of the Akaike Information Criteria (AIC). The interaction between BAO intervention group and time period in Model 13.4 remained not statistically significant ( $p = .536$ ). There is no evidence that the defendants in the BAO intervention group during the post-intervention period recorded, on average, fewer remand days compared with the control group.<sup>7</sup>

**Table 11. Bivariate associations between defendant characteristics and mean number of remand days # (n = 1,682)**

Variable	Category	Sample size	Mean remand days	95% CI	Significance
<b>Age group</b>	18-24	306	42.3	(38.4, 46.1)	$F_{3, 1678} = 2.07$ $p = .103$
	25-34	632	40.3	(37.6, 43.0)	
	35-44	489	40.2	(37.3, 43.1)	
	45+	255	35.5	(31.5, 39.4)	
<b>Gender</b>	Male	1,445	41.7	(39.9, 43.4)	$F_{1, 1680} = 29.24$ $p < .001^{**}$
	Female	237	29.1	(25.2, 33.1)	
<b>Indigenous status</b>	non-Indigenous	1,341	39.5	(37.7, 41.3)	$F_{1, 1680} = 0.85$ $p = .355$
	Indigenous	341	41.4	(37.9, 44.9)	
<b>Most serious offence</b>	Assault/injury	675	42.8	(40.3, 45.3)	$F_{2, 1679} = 7.37$ $p < .001^{**}$
	Theft	267	33.6	(29.9, 37.4)	
	Other offences or not recorded	740	39.5	(37.0, 42.0)	
<b>Prior completed prison sentences</b>	0	793	40.5	(38.1, 42.8)	$F_{3, 1678} = 0.84$ $p = .475$
	1	260	37.2	(33.3, 41.1)	
	2	162	41.9	(36.7, 47.0)	
	3+	467	39.8	(36.8, 42.8)	

# counting unit is an episode of supervision with maximum of one per defendant  
\*  $p < .05$ ; \*\*  $p < .01$

**Table 12. Mean number of remand days for defendants from control and BAO intervention groups # (n = 1,682)**

	Pre-intervention	Post-intervention
<b>Control</b> (Burwood, Campbelltown, and Fairfield)	40.5 days (95% CI: 35.6, 45.4) n = 181	42.8 days (95% CI: 38.2, 47.3) n = 211
<b>BAO intervention</b> (Central and Parramatta)	39.7 days (95% CI: 37.1, 42.3) n = 609	39.1 days (95% CI: 36.5, 41.6) n = 681

# counting unit is an episode of supervision with maximum of one per defendant

**Table 13. Linear regression: Mean number of remand days for defendants from control and BAO intervention groups # (n = 1,682)**

Covariates	Model 13.1		Model 13.2		Model 13.3		Model 13.4	
	Estimate	p-value	Estimate	p-value	Estimate	p-value	Estimate	p-value
<b>Intercept</b>	40.481	<.001**	23.898	<.001*	24.774	<.001**	24.693	<.001**
<b>BAO intervention</b> vs. control	-0.788	=.781	-1.002	=.722	-0.853	=.762	-0.870	=.757
<b>Post-intervention</b> vs. pre-intervention	2.273	=.502	1.663	=.620	2.163	=.519	2.088	=.534
<b>BAO intervention</b> by time period	-2.904	=.452	-1.824	=.634	-2.600	=.498	-2.370	=.536
<i>Socio-demographic characteristics</i>								
<b>18-24 years old</b> vs. 45+			6.426	=.023*	6.445	=.028*	6.096	=.031*
<b>25-34 years old</b> vs. 45+			5.456	=.027*	5.328	=.033*	5.116	=.038*
<b>35-44 years old</b> vs. 45+			5.063	=.048*	4.851	=.058	4.864	=.058
<b>Male</b> vs. female			13.127	<.001**	11.996	<.001**	11.937	<.001**
<b>Indigenous</b> vs. non-Indigenous			3.279	=.110	3.340	=.112	3.451	=.092
<i>Most serious current offence</i>								
<b>Assault/injury</b> vs. other/not recorded					2.696	=.129	2.637	=.137
<b>Theft</b> vs. other/not recorded					-4.661	=.052	-4.569	=.056
<i>Prior completed prison sentences</i>								
<b>1</b> vs. 0					-3.535	=.136		
<b>2</b> vs. 0					2.059	=.473		
<b>3+</b> vs. 0					0.468	=.824		
<b>Akaike Information Criteria (AIC)</b>	16,580.0		16,552.2		16,549.6		16,547.2	

# counting unit is an episode of supervision with maximum of one per defendant

\* p < .05; \*\* p < .01

**Table 14. Mean number of remand days for defendants from control and BAO intervention groups who were subsequently released on bail # (n = 462)**

	Pre-intervention	Post-intervention
<b>Control</b> (Burwood, Campbelltown, and Fairfield)	30.3 days (95% CI: 20.8, 39.9) n=45	22.7 days (95% CI: 15.4, 30.1) n=47
<b>BAO intervention</b> (Central and Parramatta)	24.7 days (95% CI: 20.6,28.8) n=174	20.5 days (95% CI: 16.9, 24.1) n=196

# counting unit is an episode of supervision with maximum of one per defendant

## Changes in remand time for remand defendants subsequently released on bail (Question 4)

Table 14 shows the changes in remand days for a subset of defendants who were remanded in custody by the local court but were subsequently released on bail. It is notable how small the denominators are for this sub-group of remand defendants. Among the control group the mean remand days declined from 30 days at pre-intervention to 23 days at post-intervention which was not statistically significant ( $p = .203$ ). For defendants appearing in the BAO intervention group, the mean remand days declined from 25 days at pre-intervention to 21 days during the post-intervention which was not statistically significant ( $p = .125$ ). The unadjusted interaction between BAO intervention and time period was not statistically significant ( $p = .588$ ). Using linear regression to adjust for gender and the most serious offence type this interaction remained non-significant ( $p = .737$ ). In summary, the BAO intervention has not reduced remand days for remand defendants who were subsequently released on bail.<sup>8</sup>

## DISCUSSION

The aim of this evaluation was to assess whether the BAO program, which was piloted in Central and Parramatta Local Courts, had a beneficial impact for eligible defendants by: (i) increasing the likelihood of being granted bail at first appearance; (ii) reducing bail refused days and; (iii) reducing remand days. Unfortunately no increase in the proportion granted bail at first appearance or decrease in mean number of bail refused days or remand days was found for defendants appearing in the BAO intervention group during the post-intervention period.

There are, however, a number of considerations which militate against drawing any definite conclusions about the effectiveness or otherwise of the BAO intervention program. Since these considerations highlight the difficulties involved in evaluating programs that lack certain basic but critical features, we will go through them in some detail. The central problem in the present case is that the study provided no information that could be used to reliably identify which defendants were approached with an offer of bail assistance, which defendants accepted that offer and (where assistance was given) what form that assistance took. Thus while the present results provide no evidence that the BAO intervention program achieved its objective, there is no way of knowing whether this is because: (a) too few offers of assistance were made; (b) too few offers of assistance were accepted; (c) the assistance offered was ineffective, or: (d) the assistance offered would have been effective but it was targeted at the wrong group.

A second problem, related to the first, is that the current investigation was forced to define the BAO intervention group in terms of the local courts where they first appeared before a magistrate rather than in terms of whether or not they received assistance in applying for bail. As an example, one of our outcome measures was the change in remand days across all eligible defendants in the BAO intervention group. This included

defendants who were not interviewed by the BAO staff member (and could well have been ineligible for the program in any case). Had we been able to identify BAO participants and link them to BOCSAR's own database, it would have been possible to compare outcomes for matched pairs of defendants where one defendant received assistance and the other did not. This would have resulted in a more powerful test of the effectiveness of the BAO program.

A third and related problem was that the criteria used to determine who should be provided with bail assistance were never made explicit. Had this been the case, it would have been possible to more precisely identify the group of *eligible* defendants who should serve as controls for the study. The failure to lay out clear criteria exacerbated what might be thought of as the *signal to noise* problem. In other words, it led to a situation where many of those included in the BAO intervention group may not in fact have been eligible to receive bail assistance, thereby creating *noise* that may have obscured the *signal* (treatment) effect.

It is becoming increasingly accepted that all Government programs should be subjected to rigorous evaluation. In light of this and the difficulties associated with the current investigation, it would seem prudent in future when introducing any new program requiring evaluation to ensure:

1. clear (and preferably objective) criteria for entry into the program
2. a fidelity/quality assurance review, that is, a means of ensuring that the program is implemented as intended
3. a database recording: (i) the identifying details and date of each person referred to (or approached to participate in) the program; (ii) an indication of whether they were placed on the program; (iii) an indication of the reason(s) for non-acceptance, and; (iv) an indication of what treatment/support they received and for how long.

Discussions with program evaluators prior to a trial of the program to ensure that an adequate control group can be identified or created for comparative purposes is also essential. This is important when there are general trends in the custodial outcomes of interest which are occurring across the whole jurisdiction irrespective of a particular program. For example, more recent data has shown that throughout NSW the rate of growth of the adult remand population has slowed. While in the 12 months to March 2017 the remand population increased by 6.3 per cent, in the 12 months to June 2017 it only increased by 1.7 per cent. Further, in the six months to June 2017 the adult remand population decreased by 6.6 per cent from 4,614 to 4,309 (NSW Bureau of Crime Statistics and Research, 2017). Carefully designing and implementing process evaluation criteria for a program is critical as is including the identification of appropriate controls with which program participants can be compared. This will be helpful in trying to identify program specific benefits when general underlying trends in the size of the remand population over time are apparent.

## ACKNOWLEDGEMENTS

We would like to thank Mat Campbell, Manager Organisational Improvement, Performance and System Design, Department of Justice for providing useful information about the BAO intervention. Jennifer Galouzis from Corrective Services NSW is thanked for feedback about the evaluation design.

Dr Suzanne Poynton and Dr Don Weatherburn from the Bureau of Crime Statistics and Research are thanked for contributing to the evaluation design and report structure as is Lily Trimboli for detailed proof reading. Two external peer reviewers are greatly acknowledged for critically reviewing the report and providing important suggestions for improvement.

## NOTES

- 1 BAO staff also conducted the BAO intervention in Amber Laurel Correctional Centre and Surry Hills Court Cells. These are transient sites where newly arrested defendants or those refused bail are initially taken. Due to the transient nature, details of court appearances are not always recorded in the Offender Integrated Management System (OIMS). In these cases it was not possible to identify if defendants were in a BAO intervention court, control court or other court location. BAO staff were also present at the Metropolitan Remand and Reception Centre (MRRRC) and Parklea. The number of inmates at these locations with no information about the location of the first court appearance was small. These cases were excluded from the study.
- 2 Also includes: Central Court Cells; Video Central Local Court; Parramatta Bails Court; Parramatta Court Cells. For the analyses reported in Appendix A the BAO intervention was expanded to six locations by also including Blacktown Local Court, Liverpool Local Court, Mount Druitt Local Court and Penrith Local Court. This also includes Blacktown Court Cells; Liverpool Court Cells; Mount Druitt Court Cells; Penrith Court Cells; Video Penrith Local Court.
- 3 Also includes: Burwood Court Cells; Campbelltown Police Cells.
- 4 This is a Justice Link number.
- 5 For percentage receiving bail at first appearance the same pattern of results were found when expanding the BAO intervention to include six local courts. See Tables A3, A4 and A5 in Appendix A.
- 6 Some different results were found for mean bail refused days when comparing the BAO group in the expanded trial (six local courts) with the control group (the original three local courts). These results are shown in Tables A7 and A8 in Appendix A. In Table A7 the same increase is shown for the control group from 15.2 bail refused days in custody at pre-intervention to 18.0 days at post-intervention. For the six local courts in the BAO intervention group mean bail refused days decreases from 21.6 days at pre-intervention to 19.3 days at post-intervention. Table A8 reports results from the four negative binomial regressions. Model A8.1 shows results from the unadjusted negative binomial regression. At pre-intervention the BAO intervention group had a significantly higher mean bail refused days compared with the controls ( $p < .001^{**}$ ). There was a significant interaction between BAO intervention and time period ( $p = .006^{**}$ ). This showed an unadjusted difference-in-differences between the control and BAO intervention group in mean bail refused days. Model A8.2 included terms for socio-demographic variables and Model A8.3 also included terms for the most serious current offence and prior completed prison sentences. In each model the adjusted interaction between BAO intervention and time period remained statistically significant ( $p = .014^*$ ;  $p = .005^{**}$ , respectively). Model A8.4 included the variable for episode type which compares defendants remanded into a correctional centre with those released from police/court cell complexes. The pre-intervention difference in the mean bail refused days between the BAO intervention and control groups was not statistically significant ( $p = .063$ ). The interaction between BAO intervention and time period was not statistically significant ( $p = .512$ ). As summarised in Table A2 there was a significantly higher percentage of remanded defendants in the BAO intervention group at pre-intervention (48% vs. 34%) and at post-intervention (45% vs. 39%). Controlling for this imbalance in the percentage of remanded defendants in the BAO intervention and control groups found that there was not a significant difference-in-differences effect for bail refused days in custody.
- 7 For mean number of remand days the same pattern of results was found when expanding the BAO intervention to include six local courts. See Tables A11, A12 and A13 in Appendix A.
- 8 For mean number of remand days among remand defendants subsequently released to bail a very similar pattern of results was found when expanding the BAO intervention to include six local courts. See Table A14 in Appendix A.

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## APPENDIX A:

### RESULTS DEFINING BAO INTERVENTION AS SIX LOCAL COURTS

**Table A1. Number of custody episodes and unique defendants in the control and BAO intervention groups during pre-intervention and post-intervention periods (n = 5,393 episodes; n = 4,814 defendants)**

	Pre-intervention (September - December 2015)	Post-intervention (September - December 2016)
<b>Control</b>	556 episodes	550 episodes
Burwood, Campbelltown and Fairfield	499 defendants	503 defendants
<b>BAO intervention</b>	1,978 episodes	2,309 episodes
Central, Parramatta, Blacktown, Liverpool, Mount Druitt and Penrith	1,790 defendants	2,022 defendants

**Table A2. Characteristics of episodes in control and BAO intervention groups # (n = 5,393)**

		Pre-intervention		Post-intervention	
		Control (3 local courts)	BAO intervention (6 local courts)	Control (3 local courts)	BAO intervention (6 local courts)
<b>Age group ##</b>	18-24	20.9%	21.5%	22.6%	20.5%
	25-34	40.0%	35.6%	38.7%	34.8%
	35-44	27.0%	27.7%	24.6%	29.2%
	45+	12.1%	15.2%	14.2%	15.5%
			$\chi^2_3 = 5.26, p = .154$		$\chi^2_3 = 6.75, p = .080$
<b>Gender ###</b>	Male	83.1%	83.3%	83.6%	82.0%
	Female	16.9%	16.7%	16.4%	18.0%
			$\chi^2_1 = 0.02, p = .901$		$\chi^2_1 = 0.81, p = .367$
<b>Indigenous status</b>	non-Indigenous	88.3%	78.7%	86.7%	81.0%
	Indigenous	11.7%	21.3%	13.3%	19.0%
			$\chi^2_1 = 25.77, p < .001^{**}$		$\chi^2_1 = 9.82, p = .002^{**}$
<b>Episode type</b>	Police/court cells	66.6%	51.6%	61.1%	55.5%
	Remand	33.5%	48.4%	38.9%	44.5%
			$\chi^2_1 = 39.07, p < .001^{**}$		$\chi^2_1 = 5.61, p = .018^*$
<b>Most serious offence</b>	Assault/injury	22.1%	33.6%	26.9%	35.4%
	Theft	6.1%	12.8%	11.6%	13.5%
	Other offences	28.8%	36.5%	41.1%	38.3%
	Not recorded	43.0%	17.1%	20.4%	12.8%
		$\chi^2_3 = 170.05, p < .001^{**}$		$\chi^2_3 = 29.59, p < .001^{**}$	
<b>Prior completed prison sentences</b>	0	68.7%	58.4%	64.4%	59.3%
	1	9.9%	13.0%	14.7%	11.3%
	2	7.9%	6.7%	7.8%	7.6%
	3+	13.5%	21.9%	13.1%	21.7%
		$\chi^2_3 = 27.40, p < .001^{**}$		$\chi^2_3 = 22.79, p < .001^{**}$	
<b>Total sample size</b>		556	1,978	550	2,309

# counting unit is an episode of supervision; ## Age group, missing: n = 2; ### Gender, missing: n = 3  
\* p < .05; \*\* p < .01

**Table A3. Bivariate associations between defendant characteristics and bail at first appearance # (n = 5,393)**

Variable	Category	Sample size	Percentage bail at first supervised appearance (%)	Significance
<b>Age group</b>	18-24	1,139	51.9	$\chi^2_3 = 5.14$ $p = .162$
	25-34	1,943	48.1	
	35-44	1,506	48.5	
	45+	803	50.7	
	missing	2	-	
<b>Gender</b>	Male	4,461	47.1	$\chi^2_1 = 51.37$ $p < .001^{**}$
	Female	929	60.1	
	missing	3	-	
<b>Indigenous status</b>	non-Indigenous	4,396	50.6	$\chi^2_1 = 14.62$ $p < .001^{**}$
	Indigenous	997	43.9	
<b>Episode type</b>	Police/court cells	3,009	87.0	$\chi^2_1 = 3,844.75$ $p < .001^{**}$
	Remand	2,384	2.0	
<b>Most serious offence</b>	Assault/injury	1,753	40.5	$\chi^2_3 = 452.28$ $p < .001^{**}$
	Theft	664	41.9	
	Other offences	1,991	44.7	
	Not recorded	985	79.8	
<b>Prior completed prison sentences</b>	0	3,261	57.8	$\chi^2_3 = 235.58$ $p < .001^{**}$
	1	654	37.3	
	2	395	37.5	
	3+	1,083	35.6	

# counting unit is an episode of supervision

\*  $p < .05$ ; \*\*  $p < .01$

**Table A4. Percentage granted bail on first appearance for control and BAO intervention groups # (n = 5,393)**

	Pre-intervention	Post-intervention
<b>Control</b> (Burwood, Campbelltown and Fairfield)	56.3% (95% CI: 52.1%, 60.5%) n = 556	54.4% (95% CI: 50.1%, 58.6%) n = 550
<b>BAO Intervention</b> (Central, Parramatta, Blacktown, Liverpool, Mount Druitt and Penrith)	45.5% (95% CI: 43.3%, 47.7%) n = 1,978	49.9% (95% CI: 47.8%, 52.0%) n = 2,309

# counting unit is an episode of supervision

**Table A5. Logistic regression: percentage granted bail at first appearance for control and BAO intervention groups # (n = 5,393)**

Covariates	Model A5.1		Model A5.2		Model A5.3		Model A5.4	
	Estimate	p-value	Estimate	p-value	Estimate	p-value	Estimate	p-value
<b>Intercept</b>	0.253	= .003 **	0.854	< .001 **	1.255	< .001 **	2.463	< .001 **
<b>BAO intervention</b> vs. control	-0.434	< .001 **	-0.419	< .001 **	-0.278	= .006 **	0.182	= .268
<b>Post-intervention</b> vs. pre-intervention	-0.078	= .518	-0.081	= .509	0.006	= .962	0.304	= .150
<b>BAO intervention</b> by time period	0.254	= .061	0.242	= .077	0.178	= .205	-0.164	= .496
<i>Socio-demographic characteristics</i>								
<b>18-24 years old</b> vs. 45+			0.059	= .528	-0.237	= .017 *		
<b>25-34 years old</b> vs. 45+			-0.150	= .077	-0.258	= .004 **		
<b>35-44 years old</b> vs. 45+			-0.122	= .168	-0.088	= .336		
<b>Male</b> vs. female			-0.573	< .001 **	-0.445	< .001 **	-0.916	< .001 **
<b>Indigenous</b> vs. non-Indigenous			-0.310	< .001 **	-0.063	= .413		
<i>Most serious current offence</i>								
<b>Assault/injury</b> vs. other/not recorded					-0.614	< .001 **	0.172	= .155
<b>Theft</b> vs. other/not recorded					-0.454	< .001 **	0.357	= .051
<i>Prior completed prison sentences</i>								
<b>1</b> vs. 0					-0.824	< .001 **	-0.384	= .018 *
<b>2</b> vs. 0					-0.828	< .001 **	-0.194	= .356
<b>3+</b> vs. 0					-0.893	< .001 **	-0.215	= .127
<i>Episode type</i>								
<b>Remand</b> vs. police/court cells							-5.906	< .001 **
<b>Akaike Information Criteria (AIC)</b>	7,455.2		7,379.7		7,085.3		2,753.9	
<b>Area under ROC curve</b>	0.539		0.576		0.656		0.935	

# counting unit is an episode of supervision;  
 \* p < .05; \*\* p < .01

**Table A6. Bivariate associations between defendant characteristics and number of bail refused days # (n = 5,393)**

Variable	Category	Sample size	Mean bail refused days	95% CI	Significance
<b>Age group</b>	18-24	1,139	18.4	(16.8, 20.1)	F <sub>3, 5387</sub> = 2.76 p = .041 *
	25-34	1,943	20.4	(19.1, 21.8)	
	35-44	1,506	20.5	(18.9, 22.0)	
	45+	803	17.6	(15.6, 19.5)	
	missing	2	-	-	
<b>Gender</b>	Male	4,461	21.1	(20.2, 22.0)	F <sub>1, 5388</sub> = 70.40 p < .001 **
	Female	929	12.2	(10.7, 13.7)	
	missing	3	-	-	
<b>Indigenous status</b>	non-Indigenous	4,396	19.2	(18.3, 20.1)	F <sub>1, 5391</sub> = 4.44 p = .035 *
	Indigenous	997	21.4	(19.5, 23.3)	
<b>Episode type</b>	Police/court cells	3,009	1.4	(1.4, 1.4)	F <sub>1, 5391</sub> = 4768.18 p < .001 **
	Remand	2,384	42.5	(41.2, 43.8)	
<b>Most serious offence</b>	Assault/injury	1,753	25.7	(24.1, 27.2)	F <sub>3, 5389</sub> = 142.88 p < .001 **
	Theft	664	21.0	(18.8, 23.2)	
	Other offences	1,991	22.0	(20.7, 23.4)	
	Not recorded	985	2.9	(2.2, 3.6)	
<b>Prior completed prison sentences</b>	0	3,261	16.1	(15.1, 17.0)	F <sub>3, 5389</sub> = 39.92 p < .001 **
	1	654	23.4	(21.1, 25.8)	
	2	395	25.3	(22.2, 28.5)	
	3+	1,083	25.8	(23.9, 27.7)	

# counting unit is an episode of supervision  
 \* p < .05; \*\* p < .01



**Table A7. Mean number of bail refused days for control and BAO intervention groups # (n = 5,393)**

	Pre-intervention	Post-intervention
<b>Control</b> (Burwood, Campbelltown and Fairfield)	15.2 days (95% CI: 13.0, 17.5) n = 556	18.0 days (95% CI: 15.5, 20.4) n = 550
<b>BAO intervention</b> (Central, Parramatta, Blacktown, Liverpool, Mount Druitt and Penrith)	21.6 days (95% CI: 20.2, 23.0) n = 1,978	19.3 days (95% CI: 18.1, 20.5) n = 2,309

# counting unit is an episode of supervision

**Table A8. Negative binomial regression: Bail refused days for control and BAO intervention groups # (n = 5,393)**

Covariates	Model A8.1		Model A8.2		Model A8.3		Model A8.4	
	Estimate	p-value	Estimate	p-value	Estimate	p-value	Estimate	p-value
<b>Intercept</b>	2.724	< .001 **	2.041	< .001 **	1.730	< .001 **	-0.012	= .847
<b>BAO intervention vs. control</b>	0.349	< .001 **	0.342	< .001 **	0.299	< .001 **	0.084	= .063
<b>Post-intervention vs. pre-intervention</b>	0.165	= .069	0.163	= .070	0.193	= .030 *	0.007	= .897
<b>BAO intervention by time period</b>	-0.277	= .006 **	-0.248	= .014 *	-0.279	= .005 **	-0.041	= .512
<i>Socio-demographic characteristics</i>								
<b>18-24 years old vs. 45+</b>			0.043	= .538	0.184	= .009 **	0.060	= .153
<b>25-34 years old vs. 45+</b>			0.197	= .002 **	0.233	< .001 **	0.067	= .078
<b>35-44 years old vs. 45+</b>			0.175	= .007 **	0.148	= .021 *	0.063	= .111
<b>Male vs. female</b>			0.594	< .001 **	0.522	< .001 **	0.272	< .001 **
<b>Indigenous vs. non-Indigenous</b>			0.180	= .001 **	0.063	= .246	0.002	= .954
<i>Most serious current offence</i>								
<b>Assault/injury vs. other/not recorded</b>					0.440	< .001 **	0.101	< .001 **
<b>Theft vs. other/not recorded</b>					0.282	< .001 **	-0.013	= .733
<i>Prior completed prison sentences</i>								
<b>1 vs. 0</b>					0.363	< .001 **		
<b>2 vs. 0</b>					0.475	< .001 **		
<b>3+ vs. 0</b>					0.446	< .001 **		
<i>Episode type</i>								
<b>Remand vs. police/court cells</b>							3.371	< .001 **
<b>Akaike Information Criteria (AIC)</b>	40,541.3		40,407.9		40,213.8		31,750.0	

# counting unit is an episode of supervision

\* p < .05; \*\* p < .01

**Table A9. Number of remand episodes and unique defendants in the control and BAO intervention groups during pre-intervention and post-intervention periods (n = 2,384 episodes; n = 2,315 defendants)**

	Pre-intervention	Post-intervention
	(September - December 2015)	(September - December 2016)
<b>Control</b>	186 episodes	214 episodes
Burwood, Campbelltown, Fairfield	181 defendants	211 defendants
<b>BAO intervention</b>	957 episodes	1,027 episodes
Central, Parramatta, Blacktown, Liverpool, Mount DrUITt and Penrith	933 defendants	990 defendants

**Table A10. Characteristics of remand defendants in control and BAO intervention groups # (n = 2,315)**

		Pre-intervention		Post-intervention	
		Control (3 local courts)	BAO intervention (6 local courts)	Control (3 local courts)	BAO intervention (6 local courts)
<b>Age group</b>	18-24	16.0%	19.9%	20.9%	18.6%
	25-34	42.0%	36.4%	44.1%	35.7%
	35-44	32.0%	28.3%	24.2%	30.8%
	45+	9.9%	15.3%	10.9%	15.0%
		$\chi^2_3 = 6.23, p = .101$		$\chi^2_3 = 8.38, p = .039^*$	
<b>Gender</b>	Male	85.1%	86.3%	89.6%	83.8%
	Female	14.9%	13.7%	10.4%	16.2%
		$\chi^2_1 = 0.18, p = .670$		$\chi^2_1 = 4.45, p = .035^*$	
<b>Indigenous status</b>	non-Indigenous	85.6%	77.5%	85.8%	78.0%
	Indigenous	14.4%	22.5%	14.2%	22.0%
		$\chi^2_1 = 6.02, p = .014^*$		$\chi^2_1 = 6.46, p = .011^*$	
<b>Most serious offence</b>	Assault/injury	35.4%	41.3%	32.2%	43.3%
	Theft	10.5%	15.4%	16.1%	15.7%
	Other offences	49.7%	42.3%	50.2%	39.4%
	Not recorded	4.4%	1.0%	1.4%	1.6%
		$\chi^2_3 = 17.60, p < .001^{**}$		$\chi^2_3 = 10.20, p = .017^*$	
<b>Prior completed prison sentences</b>	0	50.3%	48.1%	52.1%	46.8%
	1	17.1%	16.4%	19.0%	13.6%
	2	11.6%	7.6%	10.9%	10.6%
	3+	21.0%	27.9%	18.0%	29.0%
		$\chi^2_3 = 5.80, p = .122$		$\chi^2_3 = 12.19, p = .007^{**}$	
<b>Total sample size</b>		181	933	211	990

# counting unit is an episode of supervision with maximum of one per defendant  
 \*  $p < .05$ ; \*\*  $p < .01$

**Table A11. Bivariate associations between defendant characteristics and mean number of remand days # (n = 2,315)**

Variable	Category	Sample size	Mean remand days	95% CI	Significance
<b>Age group</b>	18-24	443	41.4	(38.3, 44.5)	$F_{3, 2311} = 1.65$ $p = .175$
	25-34	862	41.1	(38.9, 43.4)	
	35-44	678	40.8	(38.3, 43.3)	
	45+	332	36.7	(33.2, 40.3)	
<b>Gender</b>	Male	1,978	42.4	(40.9, 43.8)	$F_{1, 2313} = 44.60$ $p < .001$ **
	Female	337	29.3	(26.0, 32.7)	
<b>Indigenous status</b>	non-Indigenous	1,831	40.8	(39.3, 42.3)	$F_{1, 2313} = 0.96$ $p = .326$
	Indigenous	484	39.1	(36.2, 42.0)	
<b>Most serious offence</b>	Assault/injury	946	43.0	(40.9, 45.1)	$F_{2, 2312} = 8.31$ $p < .001$ **
	Theft	352	34.6	(31.3, 37.8)	
	Other offences or not recorded	1,017	40.1	(38.0, 42.2)	
<b>Prior completed prison sentences</b>	0	1,113	41.2	(39.2, 43.2)	$F_{3, 2311} = 0.98$ $p = .399$
	1	359	37.8	(34.5, 41.1)	
	2	220	41.1	(36.8, 45.4)	
	3+	623	40.4	(37.8, 43.0)	

# counting unit is an episode of supervision with maximum of one per defendant

\*  $p < .05$ ; \*\*  $p < .01$

**Table A12. Mean number of remand days for defendants from control and BAO intervention groups # (n = 2,315)**

	Pre-intervention	Post-intervention
<b>Control</b> (Burwood, Campbelltown and Fairfield)	40.5 days (95% CI: 35.6, 45.4) n = 181	42.8 days (95% CI: 38.2, 47.3) n = 211
<b>BAO intervention</b> (Central, Parramatta, Blacktown, Liverpool, Mount Druitt and Penrith)	40.4 days (95% CI: 38.2, 42.5) n = 933	40.0 days (95% CI: 37.9, 42.1) n = 990

# counting unit is an episode of supervision with maximum of one per defendant

**Table A13. Linear regression: Mean number of remand days for defendants from control and BAO intervention groups # (n = 2,315)**

Covariates	Model A13.1		Model A13.2		Model A13.3		Model A13.4	
	Estimate	p-value	Estimate	p-value	Estimate	p-value	Estimate	p-value
<b>Intercept</b>	40.481	< .001 **	24.891	< .001 **	25.973	< .001 **	25.532	< .001 **
<b>BAO intervention</b> vs. control	-0.091	= .973	0.033	= .990	0.103	= .969	0.129	= .962
<b>Post-intervention</b> vs. pre-intervention	2.301	= .497	1.703	= .612	2.122	= .527	2.059	= .539
<b>BAO intervention</b> by time period	-2.678	= .471	-1.760	= .633	-2.336	= .526	-2.175	= .555
<i>Socio-demographic characteristics</i>								
<b>18-24 years</b> old vs. 45+			5.048	= .037 *	5.010	= .047 *	4.890	= .043 *
<b>25-34 years</b> old vs. 45+			5.233	= .015 *	5.284	= .015 *	5.122	= .017 *
<b>35-44 years</b> old vs. 45+			4.407	= .047*	4.312	= .052	4.349	= .050
<b>Male</b> vs. female			13.179	< .001 **	12.307	< .001 **	12.195	< .001 **
<b>Indigenous</b> vs. non-Indigenous			-0.286	= .869	-0.326	= .853	-0.236	= .892
<i>Most serious current offence</i>								
<b>Assault/injury</b> vs. other/not recorded					2.008	= .183	2.067	= .170
<b>Theft</b> vs. other/not recorded					-4.414	= .033 *	-4.306	= .037 *
<i>Prior completed prison sentences</i>								
<b>1</b> vs. 0					-3.669	= .070		
<b>2</b> vs. 0					0.049	= .984		
<b>3+</b> vs. 0					0.268	= .882		
<b>Akaike Information Criteria (AIC)</b>	22,821.9		22,781.8		22,778.5		22,776.4	

# counting unit is an episode of supervision with maximum of one per defendant  
 \* p < .05; \*\* p < .01

**Table A14. Mean number of remand days for defendants from control and BAO intervention groups who were subsequently released on bail # (n = 631)**

	Pre-intervention	Post-intervention
<b>Control</b> (Burwood, Campbelltown and Fairfield)	30.3 days (95% CI: 20.8, 39.9) n = 45	23.2 days (95% CI: 15.6, 30.8) n = 45
<b>BAO intervention</b> (Central, Parramatta, Blacktown, Liverpool, Mount Druitt and Penrith)	27.6 days (95% CI: 24.0, 31.2) n = 263	22.2 days (95% CI: 18.9, 25.4) n = 278

# counting unit is an episode of supervision with maximum of one per defendant