



# Assessing the impact of NSW's Safer Pathway Program on recorded crime outcomes – an aggregate-level analysis

Wai-Yin Wan, Hamish Thorburn, Suzanne Poynton and Lily Trimboli

**Aim:** To evaluate the effectiveness of the Safer Pathway program in reducing the incidence of domestic violence.

**Method:** Data was obtained from the NSW Police Force's COPS and CIDS databases. Each of the nine LACs where the Safer Pathway program had been implemented were matched with statistically similar control LACs where the program was not available. Seven different domestic violence (DV) outcomes were examined; the number of incidents of DV offences, DV assaults, persons of interest (POIs) proceeded against for DV offences, POIs proceeded against for DV assault, victims of DV incidents, victims of DV assault and police call-outs for DV. Each outcome was analysed separately using a fixed-effect negative binomial or Poisson panel model. This analysis was performed both at the pair level (the pair analysis) and pooling LACs based on stage of implementation (the stage analysis). The main variable of interest was the difference in the trend change between the Safer Pathway and control LACs.

**Results:** The stage analysis showed no significant results for any stage 1 LACs (where the program commenced in September 2014) for any of the outcomes examined. However, the stage 2 LACs (where the program commenced in July 2015) showed a significant decrease in three outcomes relative to the matched control LACs (all by 0.8% per month). In the pair analysis, downward differences in trend changes were found in three outcomes in Canobolas (of 2.2%, 1.6% and 2.2% per month) and one in Rose Bay (2.9% per month). Botany Bay however showed a significant upward difference in trend change in four different outcomes (ranging between 1.3 and 1.9% per month).

**Conclusion:** In stage 2 LACs, there is evidence for a small improvement in several DV indicators after the program was implemented. The results for stage 1 LACs are mixed.

**Keywords:** Domestic violence, Safer Pathway, panel data, count data

## INTRODUCTION

Domestic and family violence is broadly defined as 'any behaviour, in an intimate or family relationship, which is violent, threatening, coercive or controlling, causing a person to live in fear' (NSW Government 2014, p. 7). It has been strongly associated with a variety of serious adverse social, psychological and health outcomes for victims (Beydoun et al., 2012; Bonomi et al., 2006; Campbell, 2002; Coker et al., 2002; Dillon et al., 2013; Djikanovic, King, & Bjegovic-Mikanovic, 2013; Garcia-Moreno, 2013; Geffner, Spurling Igelman, & Zeller, 2003; Krug et al., 2002; Lacey et al., 2013; Lagdon, Armour, & Stringer, 2015; Pichta, 2004; Sarkar, 2008).

While there are male victims and female perpetrators of violence, research and surveys have consistently shown that

domestic violence is disproportionately perpetrated by men against women (ABS, 2013; People, 2005; Ramsey, 2015; WHO, 2010). For example, People (2005) found that, of the domestic violence assaults recorded by NSW Police between 1997 and 2004, the majority of victims were female (71.1%) and the majority of offenders were male (80.4%). Perhaps of even greater concern than the gendered nature of domestic violence is the fact that, generally, female victims of violence are in an intimate relationship with their male assailants. In the extreme case of homicide, an intimate male partner was the offender in 61 per cent of female domestic homicides in NSW between January 2003 and June 2008; by contrast, an intimate partner was the offender for 23 per cent of the male domestic homicides (Ringland & Rodwell, 2009). Globally, while the proportions are lower, the pattern is the same. Based on data from 66 countries,

Stockl and colleagues (2013) found that 39 per cent of murdered women were killed by an intimate partner; this is six times higher than the proportion of murdered men killed by a partner (6.3%). Even more disturbing is the high rate of a recorded prior history of domestic violence in domestic homicide incidents. For example, in their analysis of the domestic and family homicides that occurred in Australia over the ten-year period from July 2002 to June 2012, Cussen and Bryant (2015) found a history of domestic violence in 44 per cent of the intimate partner homicides.

According to the most recent *Personal Safety Survey* conducted by the Australian Bureau of Statistics (ABS, 2013), about one in three (2,943,200; 33.7%) Australian women aged 18 years or more experienced violence<sup>1</sup> (since the age of 15) from a man they knew. While the perpetrator could be her father, son, brother, boyfriend, male friend or acquaintance, for half (1,470,200, 50.0%) of these women, the perpetrator was either her current or former partner.<sup>2</sup> This means that about one in six, or 17 per cent, of all Australian women aged 18 years or more experienced violence from either a current or former partner since the age of 15 years. By contrast, a much smaller proportion of men experience violence from women they know. In fact, about one in nine (933,900; 11.0%) Australian men aged 18 years or more experienced violence from a woman they knew since the age of 15 years. The female perpetrator could be his mother, sister, girlfriend, female friend or acquaintance. However, for 46 per cent (427,900) of these men, the perpetrator was either his current or former partner.<sup>3</sup> This equates to one in 20 or five per cent, of all Australian men aged 18 years or more having experienced violence from a female partner since the age of 15 years.

In a recent study, Stavrou, Poynton and Weatherburn (2016) found a number of factors were associated with a higher risk of intimate partner violence for women, namely, being younger, Australian-born, having a long-term health condition, lacking social support (e.g. living in a one-parent household, not being able to access support outside the family in a time of crisis), experiencing financial stress (e.g. not being able to pay rent or mortgage payments on time) and having experienced physical and/or sexual abuse before the age of 15 years. However, the strongest association with risk of intimate partner violence was having experienced emotional abuse<sup>4</sup> since the age of 15 years from a current or former intimate partner. In fact, Stavrou et al. (2016) found that the odds of experiencing intimate partner violence was 19 times higher for women who had experienced emotional abuse from a partner compared with those women who did not have such history.

### SAFER PATHWAY PROGRAM

*Safer Pathway* is a service delivery model that is being implemented in stages across NSW. It represents a fundamentally different way of responding to the issue of family

and domestic violence by providing a coordinated and integrated response from government and non-government agencies to male and female victims who have been identified as being at risk of future domestic violence (both intimate partner and non-intimate violence). The program incorporates a number of new elements:

1. improved information sharing facilitated by the *Domestic Violence Information Sharing Protocol* under Part 13A of the *Crimes (Domestic and Personal Violence) Act 2007*;
2. the use of a common threat assessment tool (Domestic Violence Safety Assessment Tool or DVSAT) which enables police officers and service providers to accurately and consistently identify the degree of risk of future harm to domestic violence victims in both intimate partner and non-intimate relationships and to prioritise high-risk cases;
3. an electronic referral platform (Central Referral Point or CRP) that operates 24 hours a day, seven days a week providing a single, streamlined and efficient data collection and referral pathway for all domestic violence victims in NSW;
4. Local Co-ordination Points (LCPs) which are hosted by the Women's Domestic Violence Court Advocacy Service to provide assistance to female victims of domestic and family violence in the *Safer Pathway* Police Local Area Commands (LACs) and to refer victims assessed 'at serious threat' of future harm or injury to a Safety Action Meeting (SAM); and
5. fortnightly multi-agency meetings (SAMs) where senior staff of government and non-government agencies share information regarding domestic violence victims in the local area and where service responses for high-risk cases can be planned, co-ordinated and monitored.

To date, each of these elements has been implemented in 34 sites – Waverley (Eastern Suburbs, Eastern Beaches, Rose Bay and Botany Bay Police Local Area Commands (LACs)) and Orange (Canobolas LAC) began operation in mid-September 2014 (and will be referred to hereafter as stage 1 sites); Bankstown, Broken Hill, Parramatta and Tweed Heads/Byron LACs began operation on 1 July 2015 (stage 2 sites), and by September 2017, a further 28 sites commenced operation.<sup>5</sup> In addition, on 1 July 2015, all but two elements of the program became operational state-wide. The two elements that have not, as yet, been implemented state-wide are the LCPs and the SAMs with their associated processes. Trimboli (2017) provides a more detailed description of the operation of the *Safer Pathway* program.

The NSW Bureau of Crime Statistics and Research (BOCSAR) has previously undertaken two evaluations of the *Safer Pathway* program; a process and an outcome evaluation. The process evaluation (BOCSAR, 2015) involved interviews with 54 key stakeholders from stage 1 sites and set out to assess

how well the program was implemented in its early stages. All stakeholders reported that there was a clear need for the program and generally viewed the program as positive. However, stakeholders also identified several aspects of the program which could be improved; including the DVSAT’s accuracy in identifying victims at most serious threat of future harm, the CRP’s capacity to capture essential information, the need for clear direction and consistent decision-making by senior personnel at the local level, and greater resourcing for services in target areas.

In the second evaluation (Trimboli, 2017), structured telephone interviews were undertaken with two groups of female domestic violence victims assessed (via the DVSAT) as being 'at serious threat' of future harm or violence.<sup>6</sup> The first (intervention) group comprised 69 women from the nine LACs where all the elements of the *Safer Pathway* program had been implemented (including the DVSAT, the LCPs and SAMs). The second (control) group comprised 61 women from nine LACs where LCPs and SAMs were not operating, but that had been matched on a number of relevant criteria. It should be noted that, although the control group experienced some elements of the *Safer Pathway* program (namely the introduction of the DVSAT and CRP referral process) the SAMs are a key element in the *Safer Pathway* Program as they provide the means by which specific responses, tailored to the high risk victim needs, were devised and put into effect. Each LAC in the treatment group was matched with a LAC in the control group on a number of key criteria (see the Method section below for more detail). A repeated measures design was used to assess the impact of the program. Each woman in each group was interviewed on two occasions regarding her experiences of various proscribed behaviours in two four-week reference periods – prior to the index incident at which the DVSAT was administered by the police and after the program’s case co-ordination processes for the intervention group (or an equivalent period for the control group). The results showed that, in the weeks after the index domestic violence incident, the situation improved for most of the women who were interviewed. Overall, there was a statistically significant reduction in the negative behaviours that they had experienced from the defendant in the weeks after the index incident compared with the four weeks before. There were significant reductions in the frequency of stalking, physical assault, threats of physical assault, intimidation and verbal abuse (in person, by phone and by text messages). Contrary to expectations, however, these improvements occurred in equal measure in both the intervention and control groups.

Although the results of the first study are somewhat disappointing, the study itself had some limitations. Self-report is generally superior to officially recorded offending but the study’s sample size meant it was impossible to conduct separate analyses by LAC. The period over which outcome improvement was measured was also fairly short (viz. one month). Finally, it may take time for the benefits of the *Safer Pathway* program to become apparent. The current study is the second outcome evaluation of the *Safer Pathway* program undertaken by BOCSAR. This study compares and contrasts trends in officially recorded domestic violence related incidents at the LAC level for *Safer Pathway* LACs and control LACs to determine whether the *Safer Pathway* program has reduced the incidence of domestic violence.

## METHOD

Having a control and treatment group measured before and after an intervention (the *Safer Pathway* program) permits the use of a quasi-experimental design. This study’s basic strategy is to examine the temporal change across a number of domestic violence indicators in nine-matched pairs of LACs, where one member of each pair received the full *Safer Pathway* program and the other member received only the DVSAT and CRP referrals.

### MATCHED CONTROL SITES

To select the matched control sites, LACs with similar predicted rates of domestic violence re-victimisation (according to recorded crime data) to the intervention sites were, in the first instance, the preferred options. Predicted 12-month re-victimisation rates in each LAC were estimated using a regression model. A wide range of covariates potentially relevant to domestic violence outcomes were considered for inclusion in the model as independent variables. The final model included those variables that together were most closely correlated (either positively or negatively) with re-victimisation rates, after controlling for the

**Table 1. Matched pairs for the Safer Pathway program evaluation**

Pair	Stage of implementation	Intervention LACs	Control LACs
1	2	Bankstown (LAC 1)	Liverpool (LAC 10)
2	2	Tweed-Byron (LAC 2)	The Hume (LAC 11)
3	2	Barrier/Broken Hill (LAC 3)	Barwon (LAC 12)
4	1	Canobolas (LAC 4)	Griffith (LAC 13)
5	2	Parramatta (LAC 5)	Holroyd (LAC 14)
6	1	Eastern Beaches (LAC 6)	Miranda (LAC 15)
7	1	Eastern Suburbs (LAC 7)	Northern Beaches (LAC 16)
8	1	Rose Bay (LAC 8)	Ku-ring-gai (LAC 17)
9	1	Botany Bay (LAC 9)	Albury (LAC 18)

age-structure of the local resident population. The three LACs with the smallest absolute deviation from the predicted value for each relevant *Safer Pathway* site were recommended as control LACs. The three recommendations for each site were then reviewed by key stakeholders and a final matched-pair selected. The nine matched-pairs of intervention and control LACs are listed in Table 1 and are the same as those used by Trimboli (2017) in BOCSAR’s study on victim experiences. Further details on the regression model used to select control sites are provided in the Appendix.

**OUTCOME DATA**

For the purposes of this evaluation, changes in a number of different domestic violence (DV) indicators are examined. Trends in all police-recorded domestic violence incidents, all persons of interest (POIs) proceeded against for domestic violence offences and all victims of domestic violence are considered. These incident, POI and victim recorded crime data are further disaggregated to differentiate between all domestic violence offences and more serious domestic violence events – those where an assault occurred. Police calls for service data are also considered. Police call-outs to domestic violence incidents cover a more comprehensive range of situations where the safety of domestic violence victims may be compromised and are potentially a more sensitive measure of shifts in the risk environment. If consistent results are observed across multiple indicators and data sources then we can be more confident that any reductions in the level of domestic violence are due to implementation of the program and not the result of other time-varying factors.

The seven specific outcome measures used in the analysis were;

- (1) number of domestic violence (DV) related incidents<sup>7</sup>;
- (2) number of DV related assault incidents;
- (3) number of POIs proceeded against by the NSW Police Force for a DV related incident;
- (4) number of POIs proceeded against<sup>8</sup> by the NSW Police Force for a DV related assault incident;
- (5) number of victims of DV related incidents;
- (6) number of victims of DV related assaults; and
- (7) number of police call-outs to DV related incidents.

Data for the first six series were extracted from the NSW Police Force’s Computerised Operational Policing System (COPS) database. ‘Calls for service’ data (the seventh series) were sourced from the NSW Police Force’s Computerised Incident Dispatch System (CIDS) database. All data were recorded at the LAC level to form a panel dataset. For each LAC, there are seven time series. Each time series contains 96 monthly observations from January 2009 to December 2016. These observations span a period in which no elements of *Safer Pathway* were operating in either the intervention or control

LACs, a period in which some elements of the program were operating in the control LACs and a period when all elements of the program were operating in the intervention LACs. The timing of these periods varied across LAC pairs.

**ANALYSIS**

Two different analyses were conducted. Firstly, the treatment and control LACs were pooled based on stage of implementation; with stage 1 intervention LACs being those where the full *Safer Pathways* program was implemented in September 2014 and stage 2 intervention LACs implemented in July 2015. Pooling the different sites means there are more observations available to estimate treatment effects. This increases the power of the analysis and therefore our ability to detect smaller effect sizes. It also allows for overall effect estimates to be calculated (which can more justifiably be assumed to hold if the program were to be extended state-wide). The two stages of implementation were separated in this analysis to ensure that the time period in the pre- and post-intervention periods were constant across all LACs. One limitation of pooling our analysis in this way is that it assumes that the effect of the *Safer Pathway* program did not vary across the intervention LACs (as well as assuming identical effects of covariates, such as time trends). However, the process evaluation undertaken by BOCSAR (2015) indicated that, at least in the early stages of roll-out, there were important differences in the implementation of the program across different sites. Assuming homogeneity in the relationship between the introduction of *Safer Pathway* and changes in DV outcomes may be therefore inappropriate. To address this, we undertook a second analysis in which the outcomes for each LAC-pair are modeled separately. In both these analyses (hereafter referred to as the stage analysis/models and the pair analysis/models), different models were fitted for each of the seven DV indicators. This resulted in 14 different models in the stage analysis (7 different DV outcomes for 2 different stages) and 63 models for the pair analysis (7 different DV outcomes for 9 different LAC-pairs).

The models were fit in a very similar manner for both levels of analysis. All outcome variables were count data. This suggested the use of a Poisson or negative binomial model. To determine which of these two model families to use, we performed a likelihood ratio test. Given the large number of different models, we allowed for different stages/pairs to be modeled using either Poisson or negative binomial models. Model specification and interpretation are, however, the same for both and the specification is represented by the equation below;

$$E[Y_{it}] = \exp(Z_{it})$$

Where:

$$Z_{it} = \beta_0 + \beta_1 t + \beta_2 I_i + \beta_3 P_t + \beta_4 I_i \times P_t + \beta_5 I_i \times t + \beta_6 P_t \times t + \beta_7 I_i \times P_t \times t + \beta_8 m_{2t} + \dots + \beta_{18} m_{12t} + \beta_{19} L_{2t} + \dots + \beta_{34} L_{18t} + u_{it}$$

and:

$i$  is the LAC indicator within the stage/pair.

$t = 1, \dots, 96$  is the indicator for the time period.

$Y_{it}$  is the DV outcome in LAC  $i$  at time  $t$ .

$E[Y_{it}]$  is the expected value (i.e. the mean) of  $Y_{it}$

$I_i = 1$  if LAC  $i$  is a site where *Safer Pathway* was fully implemented and 0 if LAC  $i$  is a control site. This is to account for any pre-existing differences between *Safer Pathway* and control LACs.

$P_t = 1$  if at time  $t$  the *Safer Pathway* program has commenced in the intervention LAC within the stage/pair. This variable is constant during the post-implementation period for both the intervention and the control LACs to capture any pair-wide time-based effects that influence the DV outcome.

$I_i \times P_t$  is the interaction effect between site and  $P_t$ . This is incorporated to capture the difference in the 'level change' in outcomes between the *Safer Pathway* and control LACs after the commencement of the program.

$I_i \times t$  is the interaction between site and time. This captures any differences in pre-'treatment' outcome trends for the *Safer Pathway* and control LACs.

$P_t \times t$  is the interaction between  $P_t$  and time. This is incorporated to detect if there is a stage/pair-wide change in the outcome trend in the period after *Safer Pathway* commenced in the intervention LAC.

$I_i \times P_t \times t$  is the three-way interaction between  $I_i$ ,  $P_t$  and  $t$ . This assesses whether the trend change after the treatment period commences is different for the intervention and control.

$m_{2t}, \dots, m_{12t}$  are seasonal dummy variables to indicate the month of the year. For example,  $m_{2t} = 1$  if  $t$  is the month of February, 0 otherwise.

$L_{2i}, \dots, L_{18i}$  are fixed-effect dummy variables that indicate the different LACs. For example,  $L_{2i} = 1$  if  $i$  is LAC 2, 0 otherwise. Note that for the stage models, we are only including the necessary LACs for each stage (i.e. only fixed effects for stage 1 LACs are included in the stage 1 model, stage 2 LACs in the stage 2 model). In addition, when modeling each pair separately, the relevant LAC fixed-effect dummy variables will be perfectly co-linear with  $I_i$ . Therefore, the LAC fixed-effect dummy variables are not included in the pair models.

$u_{it}$  is the error term.

In the stage models, standard errors were clustered within LACs (so they are robust to any unobserved heterogeneity within the LACs). This is not necessary in the pair models, due to there being only two clusters in each model (Wooldridge, 2002). However, given that each panel is a time-series, there is the possibility of serial autocorrelation within the errors. This was checked by fitting the models with both independent and autoregressive errors using generalized estimating equations

and checking the Quasi-likelihood Information Criterion (QIC) to both. The model with the lesser QIC was selected as more appropriate (Cui, 2007).

All analyses were performed using STATA statistical software, version 13.

## INTERPRETATION

The aim of this analysis was to determine whether the introduction of the *Safer Pathway* program leads to a (more negative) change in the trend and/or level of DV in the intervention LACs compared to the control LACs. The change in the level of the DV outcomes for the control LACs is represented in the model by the coefficient of the variable  $P_t$ , which is  $\beta_3$ . The change for the intervention LACs is the sum of the coefficients of the variables  $P_t$  and  $I_i \times P_t$ , namely  $\beta_3 + \beta_4$ . Therefore, the *difference* in the level-change between the control and intervention LACs is  $\beta_3 + \beta_4 - \beta_3 = \beta_4$ . If this term is significant, then it shows that the change in level of the DV outcome was significantly different in the control LAC to the intervention LAC, suggesting that *Safer Pathway* had an effect on the level of the outcome. Similarly, to calculate the change in the trend in the intervention and control LACs, we sum the coefficients of all terms in the model which feature  $t$  and  $P_t$  for the control LAC, and all terms which feature  $t$ ,  $P_t$  and  $I_i$  for the intervention LAC. Therefore, the change in the trend for the intervention LAC is the sum of the coefficients of  $P_t \times t$  and  $I_i \times P_t \times t$ , which is  $\beta_6 + \beta_7$ . The change in the trend for the control LAC is simply the coefficient of  $P_t \times t$  ( $\beta_6$ ). Therefore, the difference in the trend change between the control and intervention LAC is  $\beta_6 + \beta_7 - \beta_6 = \beta_7$ . A significant value of this parameter indicates that there was a significant change in the trend after the introduction of the *Safer Pathway* program compared to the control LAC, suggesting that *Safer Pathway* had an effect on the trend. We hypothesize that *Safer Pathways* would have a gradual impact (rather than an immediate shock) on aggregate-level measures of DV incidence as more victims experience the SAM process over time. The value of  $\beta_7$  is therefore our main coefficient of interest.

After determining the significance of both  $\beta_4$  (the difference in level change) and  $\beta_7$  (the difference in trend change), we can use their parameter values to quantify the impact of the intervention on the outcomes of interest by  $E[Y_{it}]$  (the mean of the outcome in LAC  $i$  and time  $t$ ). Consider first  $\beta_4$  and recall that  $I_i \times P_t$  takes the value of 1 if  $i$  is an intervention LAC and  $t$  is after the introduction of the *Safer Pathway* program; 0 otherwise. Therefore, if  $I_i \times P_t$  takes the value of 1, then  $Z_{it}$  is increased by  $\beta_4 \times I_i \times P_t = \beta_4 \times 1 = \beta_4$ . If  $Z_{it}$  is increased by  $\beta_4$  then  $\exp(Z_{it})$  is *multiplied* by  $\exp(\beta_4)$ . Therefore  $\exp(\beta_4) - 1$  gives the proportional change in the level of the mean of the DV outcome post-intervention for the *Safer Pathway* LAC, all else being equal. For example, if  $\beta_4 = -0.29$  then  $\exp(\beta_4) = -0.75$ , which means that the introduction of *Safer Pathway* in the relevant LAC(s) reduced the baseline level of the DV outcome by 25%

( $0.75 - 1 = -0.25$ ), holding all other effects equal. This is known as the incident rate ratio (IRR).

We also have to take into account the difference in the trend, captured by  $\beta_7$ . This is analogous to the difference in the level change outlined above, except that  $\exp(\beta_7) - 1$  gives the proportional change in the DV outcome in the intervention LAC over and above the trend change in the intervention LAC per month.

## RESULTS

### DESCRIPTIVE STATISTICS

Table 2 presents the mean and standard deviation for the seven DV indicators before and after the introduction of the *Safer Pathway* program for the combined intervention LACs and the combined control LACs. As shown in Table 2, there was no consistent pattern across the key indicators when the intervention and control LACs are compared at the aggregate-level before and after program implementation. For instance, the number of DV related incidents remained at a similar level in the intervention LACs after the introduction of the *Safer Pathway* program but rose in the control LACs over the same period. The number of DV related assaults dropped in the intervention LACs in the post-intervention period but remained stable in the control LACs. For the POI outcomes, both indicators increased in the intervention and control LACs during the post-intervention period.

On the other hand, the number of victims of all DV incidents decreased in the intervention LACs but increased in the control LACs in the post-intervention period while the number of victims of DV assault declined more in the intervention LACs relative to the control LACs during the post-intervention period. Also there was a larger reduction in the number of police call-outs to DV related incidents in the intervention LACs relative to the control LACs.

However, these aggregate-level results do not consider time trends or LAC-level variations over time. We now turn to the results of the fixed effects model; this accounts for any heterogeneity across LACs in domestic violence trends.

### EXPLORATORY ANALYSIS

Figures 1.a) – i) show the monthly number of DV incidents recorded by police for each of the nine matched-pair LACs. The vertical line indicates when the all elements of the *Safer Pathway* program were implemented in the relevant treatment sites (i.e. September 2014 for Stage 1 LACs and July 2015 for Stage 2 LACs; note also that the DVSAT/CRP was rolled-out state-wide in July 2015 but this is not indicated on these graphs). The points to the right of the line are the post-*Safer Pathway* implementation period in which trend changes are compared. For brevity, these time series data are graphed only for DV incident counts but similar plots were also generated for the remaining six DV indicators. These plots are available from the authors.

**Table 2. Mean and standard deviation of the seven outcome measures in the pre-intervention and post-intervention periods**

Outcome	Measure	Intervention LACs		Control LACs	
		pre-intervention period	post-intervention period	pre-intervention period	post-intervention period
Incidents of DV offences	Mean	55.3	56	58.2	64.8
	SD	37.9	42.2	23.5	28.1
Incidents of DV assault offences	Mean	27.7	26.3	27.5	28.9
	SD	18.3	19.1	11.2	12.3
POIs charged with DV offences	Mean	33	38.1	37.3	44.6
	SD	23.7	32	17.6	21.3
POIs charged with DV assault offences	Mean	17.1	18	18.5	19.8
	SD	11.8	15.1	8.5	9.5
Victims of DV offences	Mean	59.3	58.1	62.8	68.6
	SD	41.5	44.8	25.4	30.2
Victims of DV assault offences	Mean	30.6	28	30.6	30.9
	SD	20.6	20.7	12.6	13.3
Police call-outs for DV related incidents	Mean	125.2	114.9	128	127.8
	SD	72	66.3	42.9	42.4

Figure 1.a) Monthly number of DV incidents by LAC

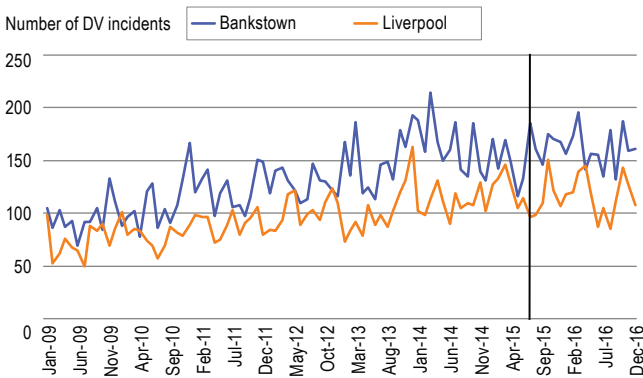


Figure 1.b) Monthly number of DV incidents by LAC

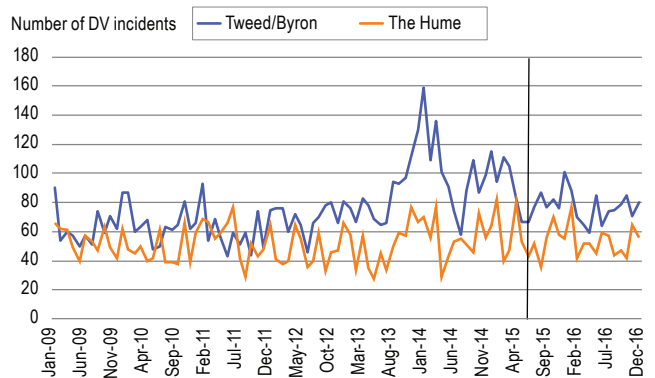


Figure 1.c) Monthly number of DV incidents by LAC

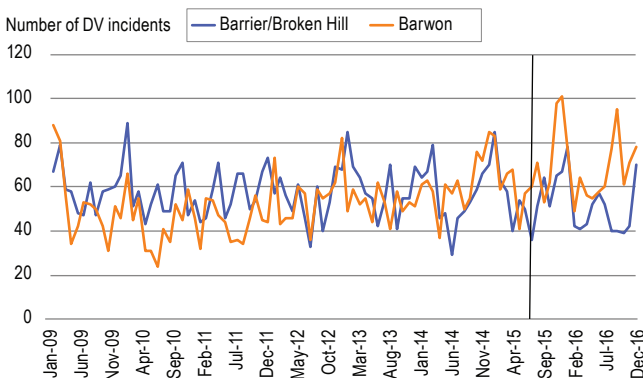


Figure 1.d) Monthly number of DV incidents by LAC

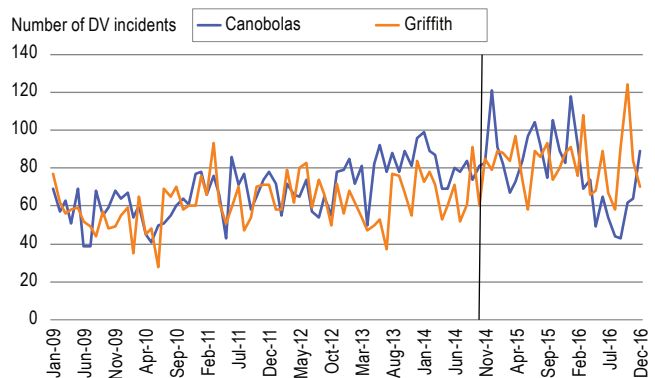


Figure 1.e) Monthly number of DV incidents by LAC

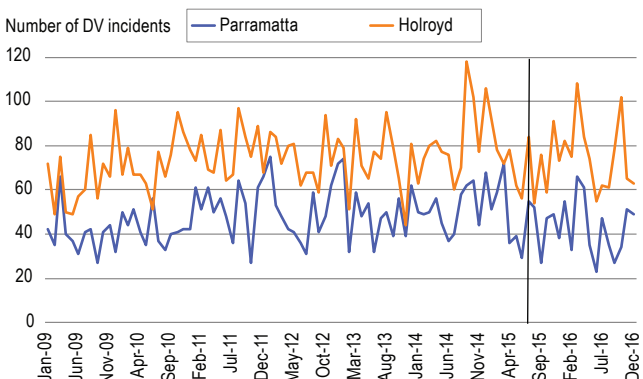


Figure 1.f) Monthly number of DV incidents by LAC

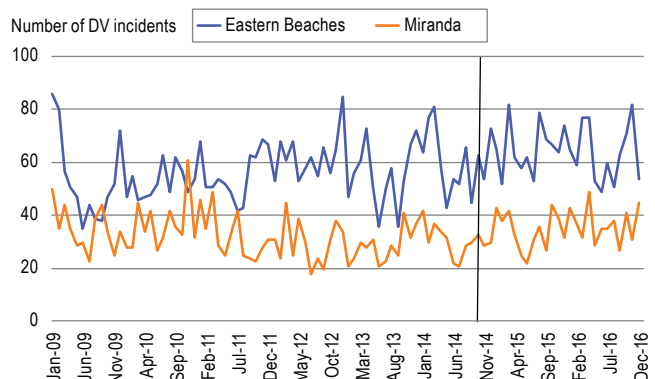


Figure 1.g) Monthly number of DV incidents by LAC

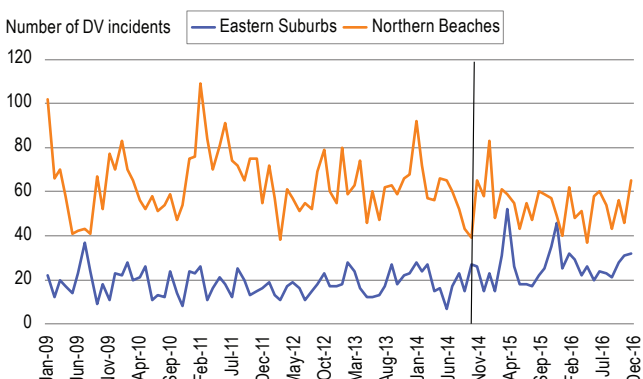


Figure 1.h) Monthly number of DV incidents by LAC

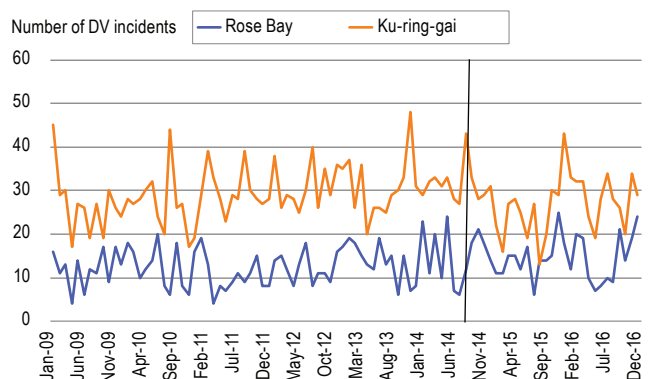
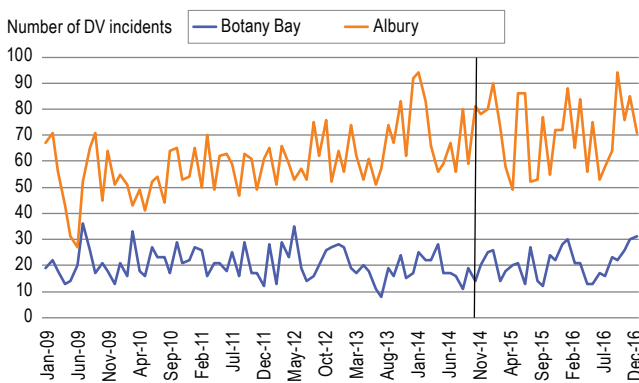


Figure 1.i) Monthly number of DV incidents by LAC



**FIXED-EFFECT PANEL ANALYSIS**

Given the large number of models fitted, full details of the model selection criteria and full results of each individual model are not included in this report. The model selection results (along with the appropriate models used) are included in the Appendix. Full results for each specific model are available from the authors upon request.

**STAGE ANALYSIS**

In the first analysis, 14 separate models were fitted – one for each of the seven different outcomes for both stage 1 and stage 2 sites. As described in the *Interpretation* section, our primary

interest is the difference in the trend change between intervention LACs and control LACs, which is captured by the term  $\beta_7$ , and our secondary interest is the difference in level change, represented by  $\beta_4$ . Table 3 reports these effects for each stage and outcome, as well as the standard error for each term, the p-value of significance and the Incidence Rate Ratio (IRR).

A negative difference in the level or trend change shows that the level/trend of the DV outcome has decreased more (or increased less) in the intervention LAC than the control LAC during the post-intervention period and a p-value less than .05 indicates that the change is significant. Looking first at the p-values for the level change, it can be seen that the level change is not significant for any of the outcomes in either stage. However, the difference in trend change is significant and negative in stage 2 sites for three indicators (incidents of DV offences, POIs charged with DV offences and DV victims) suggesting that the *Safer Pathway* program had a beneficial effect on these outcomes. The size of this effect can be determined using the IRR. For all three listed outcomes, the IRR is 0.992. This indicates that after accounting for all other variables (including pre-existing trends), the expected level of the DV outcome reduced by 0.8 per cent each month in the period after *Safer Pathway* commenced. There were not significant differences between the stage 1 intervention and control LACs in the change in trend during the post-intervention period for any outcome.

Table 3. Difference in level and trend change for each stage and outcome

Stage	Outcome	Level change				Trend change			
		$\beta_4$	Std. Error	p-value	IRR	$\beta_7$	Std. Error	p-value	IRR
1	Incidents of DV offences	0.108	0.084	.197	1.114	-0.005	0.007	.498	0.995
	Incidents of DV assault offences	0.113	0.085	.182	1.120	-0.002	0.006	.771	0.998
	POIs proceeded against for DV offences	0.118	0.078	.129	1.126	-0.006	0.007	.392	0.994
	POIs proceeded against for DV assault	0.110	0.097	.256	1.117	-0.004	0.007	.555	0.996
	Victims of DV offences	0.077	0.086	.370	1.080	-0.003	0.007	.646	0.997
	Victims of DV assault offences	0.076	0.090	.395	1.079	0.000	0.006	.954	1.000
	Police call-outs for DV related incidents	0.019	0.051	.702	1.020	0.001	0.003	.687	1.001
2	Incidents of DV offences	-0.057	0.058	.318	0.944	-0.008	0.002	<.001	0.992
	Incidents of DV assault offences	-0.070	0.088	.427	0.932	-0.008	0.005	.115	0.992
	POIs proceeded against for DV offences	-0.052	0.105	.617	0.949	-0.008	0.003	.005	0.992
	POIs proceeded against for DV assault	-0.052	0.118	.656	0.949	-0.009	0.005	.056	0.991
	Victims of DV offences	-0.047	0.051	.361	0.954	-0.008	0.002	.001	0.992
	Victims of DV assault offences	-0.049	0.090	.585	0.952	-0.007	0.006	.240	0.993
	Police call-outs for DV related incidents	-0.050	0.028	.076	0.952	0.002	0.003	.566	1.002

Note: Blue indicates a negative trend change in the *Safer Pathway* sites relative to the control site (i.e. a beneficial treatment effect) whereas orange indicates a positive trend change in favour of the *Safer Pathway* site relative to the control site (i.e. an adverse effect).



**PAIR MODELS**

We also fit a separate model for each unique pair and DV outcome combination, resulting in 63 unique models (7 different outcomes for 9 different pairs). Again, the full results of all models are not reported here but can be obtained from the authors upon request. Table 4 shows the estimated coefficients for the difference in level and trend change  $\beta_4$  and  $\beta_7$  respectively, along with the standard errors, p-values and IRRs for these estimates.

There are a few things to note from Table 4. Firstly, within each outcome, there is a wide spread of estimates for both  $\beta_4$  and  $\beta_7$  across the different pairs within each stage. This suggests some variation in treatment effects at the LAC-level and supports a more disaggregated approach where separate models are estimated for each pair (rather than pooling estimates as in the

stage analysis). Secondly, for the majority of DV indicators, there was no significant difference in either the level or the change in trend when comparing LACs offering *Safer Pathway* with their paired control LAC. Of the 63 pair-outcome combinations, only eight showed a significant difference in the level change between the intervention and control sites. These were:

- Negative differences in the level change of DV assault incidents and POIs proceeded against for DV assault in Tweed-Byron vs. The Hume (pair 2), of 29 per cent and 33 per cent, respectively.
- Positive differences in the level change of DV incidents, DV victims, DV assaults and DV assault victims in the Eastern Suburbs vs. Northern Beachers LAC (pair 7), of 52 per cent, 67 per cent, 52 per cent and 59 per cent, respectively.

**Table 4. Difference in level and trend change for each pair and outcome**

Outcome	Pair	Difference in level change				Difference in trend change			
		$\beta_4$	Std. Error	p-value	IRR	$\beta_7$	Std. Error	p-value	IRR
Incidents of DV offences	1	0.091	0.113	.421	1.095	-0.007	0.010	.482	0.993
	2	-0.196	0.144	.173	0.822	-0.010	0.012	.429	0.990
	3	-0.138	0.162	.395	0.871	-0.005	0.014	.707	0.995
	4	0.023	0.120	.845	1.024	-0.022	0.007	.001	0.978
	5	-0.041	0.146	.777	0.960	-0.010	0.012	.446	0.991
	6	-0.076	0.118	.518	0.927	-0.011	0.006	.086	0.989
	7	0.419	0.151	.006	1.520	0.008	0.008	.332	1.008
	8	0.345	0.165	.037	1.412	-0.003	0.009	.711	0.997
	9	-0.102	0.136	.453	0.903	0.017	0.007	.017	1.018
Incidents of DV assault offences	1	0.166	0.120	.165	1.181	-0.019	0.010	.065	0.982
	2	-0.342	0.166	.039	0.710	0.004	0.014	.771	1.004
	3	-0.090	0.168	.592	0.914	-0.019	0.014	.174	0.981
	4	-0.005	0.112	.966	0.995	-0.011	0.006	.068	0.989
	5	-0.166	0.162	.306	0.847	0.009	0.014	.520	1.009
	6	-0.135	0.145	.351	0.874	-0.014	0.008	.075	0.986
	7	0.514	0.199	.010	1.671	0.003	0.011	.755	1.003
	8	0.177	0.219	.418	1.194	0.006	0.012	.597	1.006
	9	-0.052	0.184	.779	0.950	0.019	0.010	.053	1.019
POIs proceeded against for DV offences	1	0.208	0.151	.168	1.231	-0.008	0.013	.516	0.992
	2	-0.280	0.173	.105	0.756	-0.012	0.015	.407	0.988
	3	-0.157	0.188	.403	0.855	-0.001	0.016	.957	0.999
	4	-0.002	0.140	.990	0.998	-0.016	0.008	.033	0.984
	5	-0.141	0.197	.475	0.869	-0.011	0.017	.498	0.989
	6	-0.106	0.165	.521	0.900	-0.016	0.009	.064	0.984
	7	0.373	0.242	.123	1.452	0.010	0.013	.432	1.010
	8	0.522	0.234	.026	1.686	-0.030	0.013	.022	0.971
	9	-0.017	0.187	.930	0.984	0.017	0.010	.087	1.018

Table 4. Difference in level and trend change for each pair and outcome (..... continued)

Outcome	Pair	Difference in level change				Difference in trend change			
		$\beta_4$	Std. Error	p-value	IRR	$\beta_7$	Std. Error	p-value	IRR
POIs proceeded against for DV assault	1	0.216	0.166	.194	1.241	-0.018	0.014	.200	0.982
	2	-0.405	0.204	.047	0.667	-0.001	0.017	.970	0.999
	3	-0.022	0.224	.923	0.979	-0.020	0.019	.287	0.980
	4	-0.169	0.139	.224	0.845	-0.008	0.008	.301	0.992
	5	-0.249	0.215	.246	0.779	0.008	0.018	.681	1.008
	6	-0.097	0.200	.628	0.908	-0.020	0.011	.054	0.980
	7	0.518	0.281	.065	1.679	0.005	0.015	.742	1.005
	8	0.337	0.272	.215	1.401	-0.027	0.015	.071	0.973
	9	0.001	0.233	.996	1.001	0.019	0.013	.123	1.020
Victims of DV offences	1	0.074	0.120	.540	1.076	-0.008	0.010	.460	0.993
	2	-0.120	0.145	.406	0.887	-0.014	0.012	.262	0.986
	3	-0.157	0.162	.333	0.855	0.000	0.014	.973	1.000
	4	-0.009	0.115	.935	0.991	-0.023	0.006	<.001	0.978
	5	-0.007	0.145	.961	0.993	-0.013	0.012	.295	0.987
	6	-0.070	0.117	.547	0.932	-0.011	0.006	.083	0.989
	7	0.416	0.193	.031	1.515	0.011	0.011	.321	1.011
	8	0.203	0.175	.245	1.226	0.004	0.010	.697	1.004
	9	-0.148	0.138	.283	0.862	0.017	0.007	.022	1.017
Victims of DV assault offences	1	0.194	0.127	.125	1.214	-0.021	0.011	.055	0.980
	2	-0.298	0.174	.087	0.742	0.005	0.015	.715	1.005
	3	-0.089	0.174	.608	0.915	-0.015	0.015	.320	0.985
	4	-0.056	0.108	.604	0.946	-0.011	0.006	.070	0.989
	5	-0.131	0.162	.421	0.878	0.009	0.014	.503	1.009
	6	-0.147	0.158	.355	0.864	-0.009	0.009	.271	0.991
	7	0.461	0.206	.025	1.585	0.009	0.011	.455	1.009
	8	0.156	0.226	.492	1.168	0.007	0.012	.572	1.007
	9	-0.120	0.196	.540	0.887	0.017	0.011	.103	1.017
Police call-outs for DV related incidents	1	0.041	0.062	.503	1.042	0.010	0.005	.054	1.010
	2	-0.075	0.086	.382	0.928	-0.007	0.007	.300	0.993
	3	-0.057	0.094	.545	0.945	-0.001	0.008	.890	0.999
	4	0.029	0.072	.682	1.030	-0.005	0.004	.188	0.995
	5	-0.132	0.080	.098	0.876	0.001	0.007	.938	1.001
	6	0.064	0.064	.316	1.066	0.000	0.004	.989	1.000
	7	0.027	0.083	.741	1.028	0.005	0.004	.306	1.005
	8	0.141	0.094	.134	1.152	-0.001	0.005	.817	0.999
	9	-0.135	0.072	.060	0.874	0.013	0.004	.001	1.013

Note: Blue indicates a negative difference in change (either level or trend) in the *Safer Pathway sites* relative to the control site (i.e. a beneficial treatment effect) whereas orange indicates a positive difference in change in favour of the *Safer Pathway site* relative to the control site (i.e. an adverse effect).

- Positive differences in the level change of DV incidents and POIs charged with DV offences in Rose Bay vs. Ku-ring-gai LAC (pair 8), of 41 per cent and 69 per cent, respectively.

In addition, the following significant differences in the change in trend were observed for the following pair-outcome combinations.

- Negative differences in the trend changes for DV incidents, POIs proceeded against for DV and DV victims in Canobolas vs. Griffith (pair 4), of 2.2 per cent, 1.6 per cent and 2.2 per cent per month, respectively.
- A negative difference in the trend change for POIs proceeded against for DV related incidents in Rose Bay vs. Ku-ring-gai LAC (pair 8) of 2.9 per cent per month.
- Positive differences in the trend change for incidents and victims of DV offences, DV victims, DV assaults and police call-outs for DV in Botany Bay vs. Albury LAC (pair 9), of 1.8 per cent, 1.9 per cent, 1.7 per cent and 1.3 per cent per month respectively.

Note that Table 4 does not present any information about the level/trend in the treatment and control LACs after implementation of the *Safer Pathway* program; only the difference in the levels/trends during the follow-up period within each pair. The absolute changes in level and trend for each stage/pair can be found in Tables A4 and A5 in the Appendix.

## DISCUSSION

This is the second of two outcome evaluations assessing whether case co-ordination via the *Safer Pathway* process enhances victim safety. It examines trends in the incidence of domestic violence, as measured by officially recorded crime data, in nine intervention LACs where all elements of the *Safer Pathway* program were operational and nine control LACs. Using an interrupted time-series approach, trends in seven domestic violence indicators were examined over a 96 month-period from January 2009 to December 2016. Two approaches were adopted to estimate treatment effects; (1) observations were pooled across stage 1 intervention/control sites (where the program commenced in September 2014) and stage 2 intervention/control sites (where the program commenced in July 2015) and (2) observations were disaggregated and outcomes compared for each individual intervention LAC and their matched control. When observations were pooled across stage 1 sites, we found no significant differences between the control and the intervention sites after *Safer Pathway* commenced on any of the seven DV indicators examined. Amongst stage 2 sites, however, there was evidence for significant decreasing trends in the intervention LACs compared with the controls on three DV outcomes (DV incidents, POIs proceeded against for DV and DV

victims) during the post intervention period. When the data were disaggregated and outcomes analysed for each matched pair, there was no evidence across the vast majority of intervention sites for any significant reduction in the incidence of DV after the *Safer Pathway* program was implemented. The exceptions are for the stage 1 sites of Canobolas and Rose Bay, which showed negative differences in trend changes for three and one outcomes respectively, and Botany Bay, where several of the DV indicators showed a significant positive difference in the trend change during the post intervention period.

Focusing initially on the stage 1 LACs, the results from the stage and pair analyses appear to provide mixed evidence for a treatment effect of the *Safer Pathway* program. Pooling observations revealed no statistically significant change in trend or levels of DV incidence. The pair analysis, however, revealed important variations in outcomes across different LACs. In Canobolas LAC, three of the seven DV indicators (those measuring total DV incidents, POIs proceeded against for DV incidents and DV victims) exhibited a faster drop than Griffith LAC (the matched control LAC). In contrast, in each of the four LACs that comprise the Waverley site, not only was there very little evidence for a beneficial effect of the intervention on domestic violence during the post-program implementation period (only a decreasing trend for POIs proceeded against for DV in Rose Bay over Ku-ring-gai), in Botany Bay the measured upward trend *increased* relative to Albury (the matched control LAC) for four out of the nine outcomes (DV incidents, DV assaults, DV victims and police call-outs). It is worth noting at this point that the consistently negative (beneficial) effects in the Canobolas matched pair and the consistently positive (unfavourable) effects in the Botany Bay LAC matched pair therefore had the potential to cancel each other out when observations were pooled across these stage 1 LACs.

The reasons for variations in outcomes across the different stage 1 intervention LACs are difficult to identify from the work undertaken here. One possibility is that some of the strategies deployed by the police and/or other agencies to reduce repeat domestic violence were more effective in Canobolas than Waverley. It is also possible that the way in which Safety Action Plans were developed and implemented across these LACs varied. The effectiveness of Safety Action Plans could have been affected by how well SAMs are governed at the local level and/or which agencies were consistently represented and engaged with the processes. The earlier BOCSAR process evaluation of the stage 1 sites, for example, revealed some concerns amongst stakeholders regarding the rotation of SAM chairpersons in the Waverley site which were not apparent in the Canobolas site. Personnel involved in SAMs and/or Local Coordination Points in certain intervention LACs may be more adept or proactive in dealing with domestic violence cases and perhaps more effective

in securing victim safety through their Safety Action Plans. Yet another possibility is that LACs within the Waverley site did not have the resources or victim support services required to mount effective prevention strategies while simultaneously dealing with the high volume of referrals received at this early stage.

None of the LACs involved in stage 2 implementation showed any significant improvement in the incidence of DV in the pair level analysis but when intervention and control LAC observations were pooled, significant downward trend changes emerge for the *Safer Pathway* LACs on three of the seven outcomes (DV incidents, POIs charged with DV offences and DV victims). Again, these results seem somewhat contradictory. However, the estimated differences in the trend change on DV incidents, POIs proceeded against for DV and DV victims were negative for all stage 2 sites (but not significantly different from the control LAC). When these intervention sites are pooled together, we have observations from four LACs instead of one which improves the precision of our standard errors and, therefore, our chances of detecting smaller treatment effects (where they exist).

These results are therefore suggestive of some small beneficial effects of *Safer Pathways* in specific LACs but their significance should be interpreted with some caution. The validity of our quasi-experimental design relies heavily on our control sites being a valid counterfactual; that is, a measure of what would have happened in the absence of the intervention. It is therefore unfortunate that the decision was made to roll out some elements of the *Safer Pathway* process in the control sites before sufficient follow-up for this evaluation was complete. In doing so, our ability to identify the 'true' treatment effect in the intervention sites was significantly diminished. This is underscored by the fact that when we account for the introduction of the DVSAT and CRP in the control sites in our fixed effects models, all but one of the significant findings disappear (see the Appendix for further details and results from this supplementary analysis).

The final caveat relates to the use of only recorded crime data to measure domestic violence outcomes. An increase in the number of domestic violence incidents or calls for police assistance might indicate a program failure. However, it could also result from an increase in victim willingness to report to, or call, police in response to domestic violence. A reduction in reports of domestic violence, on the other hand, might arise because victims have retreated from the justice process, believing that it offers little relief. For example, victims might be more reluctant to contact police if procedures under the *Safer Pathway* reforms are seen as overly intrusive. This study used multiple measures of domestic violence in an attempt to overcome these problems but future studies should explore trends in other non-crime service-data, such as hospitalisations for domestic assault, to confirm these results.

## ACKNOWLEDGEMENTS

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## NOTES

1. Violence is defined as 'any incident involving the occurrence, attempt or threat of either physical or sexual assault experienced by a person since the age of 15. Includes physical violence or sexual violence' (ABS, 2013: retrieved from <http://www.abs.gov.au/AUSSTATS/abs@.nsf/Latestproducts/4906.0Glossary12012?opendocument&tabname=Notes&prodno=4906.0&issue=2012&num=&view=>).
2. *Source*: Table 6, 4906DO002\_2012 (ABS, 2013).
3. *Source*: Table 6, 4906DO002\_2012 (ABS, 2013).
4. This included if the current or former partner monitored her whereabouts, controlled or tried to control where she went or who she saw, stopped or tried to stop her from working or earning money, stopped or tried to stop her from contacting family/friends/community, deprived her of basic needs such as food/shelter/sleep/assistive aids (*Source*: ABS, 2012).
5. These were Albury, Armidale, Coffs Harbour, Dubbo, Mount Druitt, Nowra, Wyong, Blacktown, Deniliquin, Newcastle, Taree, Wollongong, Far South Coast, Campbelltown, Griffith, Northern Beaches, Lismore, Tamworth, Bourke, Queanbeyan, Hunter Valley, St George, Illawarra, Liverpool, Newtown, Penrith, Port Macquarie and Wagga Wagga.
6. A victim is assessed as being 'at serious threat' either on the basis of professional judgement or if she/he answers 'yes' to 12 or more of the 25 DVSAT questions.
7. Domestic violence offences show offences which the NSW Police Force choose to flag as 'domestic violence related'. 'Domestic violence related' results are available for selected offences against the person including assault, murder, attempted murder, manslaughter, murder accessory/conspiracy, sexual offences, harassment/threatening behaviour, abduction/kidnapping and malicious damage to property.
8. Persons of interest (POIs) are suspected offenders recorded by police in connection with a criminal incident. Some POIs are formally proceeded against to court and some are proceeded against other than to court whilst others are not proceeded against. The POIs included in the analysis have all been proceeded against. POIs are not a count of unique offenders. Where an individual is involved

in multiple criminal incidents throughout the year, he/she will appear as a POI multiple times. Correspondingly, no 'person of interest' information will be recorded for criminal incidents in which there is no known suspect; this is very common among incidents of property crime which have a low clear-up rate.

9. These included
  - i. DV-specific variables (sourced from BOCSAR databases):
    - a) Percentage of DV assault victims Indigenous; Percentage of DV assault victims aged: under 30, 30-59, 60+; Percentage of DV assault victims female;
    - b) Percentage of DV assaults in DV incidents; Percentage of DV assaults with grievous/actual bodily harm; Percentage of DV incidents with grievous/actual bodily harm; Percentage of DV assault incidents where a person of interest (POI) is identified; DV assault incidents where person of interest (POI) is proceed against to court relative to total DV assault incidents with an identified POI;
    - c) Ratio of Apprehended Domestic Violence Orders (ADVOs) in place to DV victims (indicator).
  - ii. population-level socio-economic variables (sourced from the ABS—primarily the 2011 census):
    - a) Resident population;
    - b) Percentage of population living in: lone-person households, group households, one-parent family households, couple/one-parent families with children, couple families with no children; Percentage of families with 4+ children; Percentage of population in dwellings with 5+ residents;
    - c) Percentage of population: in registered marriage, de facto marriage, divorced/separated;
    - d) Percentage of population with: less than a Year 12 formal education; a bachelor/post-grad degree; Percentage of population with weekly personal income under \$1,000; Male unemployment rates; Female unemployment rate; Percentage of males not in labour force; Percentage of females not in labour force; Gender gap in percentage of males and females not in the labour force;
    - e) Percentage of population needing assistance with core activities;
    - f) Percentage of population who speak English at home; Percentage of population who speak English: not well or not at all; Percentage of population who speak English: not at all;
    - g) Home ownership rate; Percentage of dwellings public housing;
  - iii. Region remoteness indicators (ABS area remoteness categories):
    - a) Indicators for: Major Cities of Australia; Inner Regional Australia; Outer Regional Australia; Remote Australia; Very Remote Australia.

10. Variables were included to capture (at the LAC level) the percentage of the population aged: under 5, 5-14, 15-29, 30-44, 45-59, 60-74, 75 and over.

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## APPENDIX

### METHOD FOR SELECTING CONTROL LACS

In the first instance, quantitative data were considered as follows. A statistical regression model was developed to predict rates of domestic violence (DV) re-victimisation (according to official records) at each police Local Area Command (LAC) in NSW. A wide range of covariates potentially relevant to DV outcomes were considered for inclusion in the model as independent variables.<sup>9</sup> The final model included those variables that were collectively most closely correlated (either positively or negatively) with re-victimisation rates, after controlling for the age-structure of the local resident population.<sup>10</sup>

Specifically, the model included independent variables measuring for each LAC:

- the share of Indigenous persons amongst victims of DV assaults;
- the percentage the local population with a formal education less than Year 12;
- the percentage of DV assault victims aged under 30;
- the share of public housing in total dwellings;
- the percentage of DV assault incidents where a Person of Interest (POI) is identified;
- an indicator of the ratio of Apprehended Domestic Violence Orders (ADVOs) in place to victims of DV incidents;
- the percentage of the population who do not speak English well, or at all;
- the percentage of DV incidents involving grievous or actual bodily harm.

LACs with predicted re-victimisation rates similar to those evident in the intervention sites were in the first instance considered preferred options for respective control LACs. The model suggests top three recommendations for each intervention LAC as listed in Table A1. Similarities in the predicted

re-victimisation rates are then tempered by an assessment of similarities across the very characteristics shown in the model to be uniquely relevant predictors of re-victimisation outcomes. In combination with intuition provided through consultation with key stakeholders, final control LACs were selected from amongst the top recommendations.

### QIC AND MODEL SELECTION CRITERIA

As stated in the methods section, the appropriate models needed to be selected for the different stage/pair and outcome combinations. This involved two major decisions; whether to use a Poisson or negative binomial model, and whether to assume the errors (within each LAC) were independent or serially correlated. The decision of which model to use was made by fitting both a Poisson and a negative binomial model and performing a likelihood ratio test to determine if the negative binomial model significantly improved the fit. To determine the correlation structure of the errors, the appropriate model (either Poisson or negative binomial) was fitted with both independent and autoregressive errors and the QIC for both models was compared. The correlation structure with the lower QIC was chosen. The model families and correlation structures chosen are displayed in table A2 for the stage models and table A3 for the pair models.

### TREND AND LEVEL CHANGE FOR INTERVENTION AND CONTROL LACS

The results section above reports estimated differences in the level and trend change for the pair level analysis. Tables A4 and A5 below provide additional information on the absolute trend/level change in each stage/ LAC matched pair combination respectively.

Of particular interest are intervention LACs which showed a significant decreasing trend or level change in the post-intervention period but were not significantly different when compared with their matched control. For changes in the level, this occurred in:

- Both intervention and control LACs in pair 4 (Canobolas/Griffith) showed a significant increase in the level for POIs proceeded against for DV offences.
- The intervention LAC in pair 2 (Tweed-Byron/The Hume) showed a significant reduction in the level for victims of DV assault offences.
- The control LAC in pair 1 (Liverpool) showed a significant reduction in the level for police call-outs.
- The intervention LAC in pair 4 (Canobolas) showed a significant increase in the level for police call-outs.
- The intervention LAC in pair 5 (Parramatta) showed a significant reduction in the level for police call-outs.

Similarly for the trend changes, we observed the following significant trend changes but no significant difference between the control and the intervention LACs:

- The intervention LAC for pair 1 (Bankstown/Liverpool) showed significant reductions in the trend for incidents of DV offences, incidents of DV assault offences, POIs proceeded against for DV assault, DV victims and DV assault victims. These all showed negative trend changes. A positive trend change in police call-outs was also observed.
- The intervention LAC in pair 2 (Tweed-Byron) showed a significant reduction in the trend for DV victims
- The control LAC in pair 6 (Miranda) showed significant increases in the trend for DV incidents, POIs proceeded against for DV offences and DV victims, as well as DV assaults and POIs proceeded against for DV assault.

### FOREST PLOTS OF DIFFERENCES IN TREND CHANGE ESTIMATES FOR EACH PAIR

Figures A1. a) – g) show the forest plots for the estimated difference in trend change ( $\beta_7$ ) for each different pair from the pair level models. The markers show the estimates for  $\beta_7$  for each pair and the error bars show the 95% confidence intervals for each estimate. The labels next to each marker indicate which pair of LACs the estimate is for. Blue markers indicate pairs that were included in the stage 1 rollout and red indicates pairs that were included in the stage 2 rollout. Each different panel shows a different outcome variable.

### SUPPLEMENTARY ANALYSES ACCOUNTING FOR DVSAT/CRP STATEWIDE ROLL-OUT

Given that elements of the *Safer Pathway* program (namely the DVSAT and CRP) were implemented in the control sites during the intervention, a supplementary analysis was undertaken to account for this statewide rollout in the pair level models. This was done by changing  $P_t$  in control sites so that now  $P_t = 1$  when the DVSAT and CRP were implemented in that LAC, rather than when *Safer Pathway* was implemented in the intervention LAC for that pair (in practise, this was only necessary for the stage 1 sites).

Table A6 shows the results from this additional analysis. As seen here, none of the level changes are significant and only the trend change for police call-outs in pair 9 is significant but positive.

**Table A1. Recommended comparison LACs for Safer Pathway sites**

Pair	Intervention LACs	Top three recommended control LACs
1	Bankstown	Holroyd; Brisbane Water; Burwood
2	Tweed-Byron	Rosehill; The Hume; Far South Coast
3	Barrier (Broken Hill)	Barwon; Orana; Lachlan
4	Canobolas (Orange)	Cootamundra; Griffith; Redfern
5	Parramatta	Burwood; Brisbane Water; Holroyd
6	Eastern Beaches	Campsie; Harbourside; Miranda
7	Eastern Suburbs	Cabramatta; Northern Beaches; Campsie
8	Rose Bay	Ku-ring-gai; Ryde; Flemington
9	Botany Bay	Tuggerah Lakes; Albury; Hawkesbury

**Table A2. Models selected for the stage analysis**

Stage	Outcome	Family	LR test p-value	Correlation Structure	QIC AR model	QIC Ind. model
1	Incidents of DV offences	Negative Binomial	< .001	AR	89.806	90.811
	Incidents of DV assault offences	Negative Binomial	< .001	AR	66.147	66.909
	POIs charged with DV offences	Negative Binomial	< .001	AR	63.208	63.569
	POIs charged with DV assault offences	Negative Binomial	< .001	AR	59.969	60.930
	Victims of DV offences	Negative Binomial	< .001	AR	89.970	90.917
	Victims of DV assault offences	Negative Binomial	< .001	AR	71.811	72.310
	Police call-outs for DV related incidents	Negative Binomial	< .001	AR	65.049	65.829
2	Incidents of DV offences	Negative Binomial	< .001	AR	121.412	123.130
	Incidents of DV assault offences	Negative Binomial	< .001	AR	87.877	88.046
	POIs charged with DV offences	Negative Binomial	< .001	AR	178.997	183.215
	POIs charged with DV assault offences	Negative Binomial	< .001	AR	152.845	154.671
	Victims of DV offences	Negative Binomial	< .001	AR	122.368	123.826
	Victims of DV assault offences	Negative Binomial	< .001	Independent	88.524	88.509
	Police call-outs for DV related incidents	Negative Binomial	< .001	AR	101.079	103.168

Note: AR = autoregressive correlation structure of order 1. Ind/Independent = independent correlation structure



Table A3. Models selected for the pair analysis

Measure	LAC	Model Family chosen	LR test p-value	Correlation Structure	QIC AR model	QIC Ind. model
Incidents of DV offences	1	Negative Binomial	<.001	AR	42.80	42.95
	2	Negative Binomial	<.001	Independent	39.60	39.54
	3	Negative Binomial	<.001	AR	16.73	16.84
	4	Negative Binomial	<.001	AR	39.33	39.44
	5	Negative Binomial	<.001	AR	43.55	43.55
	6	Negative Binomial	<.001	Independent	26.56	26.33
	7	Negative Binomial	<.001	Independent	59.86	59.74
	8	Negative Binomial	.029	AR	73.73	73.74
	9	Negative Binomial	<.001	Independent	36.11	35.91
Incidents of DV assault offences	1	Negative Binomial	.003	AR	27.23	27.31
	2	Negative Binomial	.003	AR	44.08	44.08
	3	Negative Binomial	.001	Independent	14.15	13.95
	4	Poisson	.989	Independent	14,254.90	14,252.94
	5	Negative Binomial	<.001	AR	25.22	25.41
	6	Poisson	.243	Independent	21,633.20	21,632.99
	7	Negative Binomial	0.01	AR	31.41	31.59
	8	Poisson	0.29	AR	47,959.63	47,969.74
	9	Poisson	.066	AR	30,242.19	30,246.55
POIs charged with DV offences	1	Negative Binomial	<.001	Independent	59.46	59.37
	2	Negative Binomial	<.001	Independent	55.48	55.22
	3	Negative Binomial	<.001	AR	33.00	33.08
	4	Negative Binomial	<.001	Independent	38.90	38.61
	5	Negative Binomial	<.001	Independent	48.52	48.38
	6	Negative Binomial	<.001	Independent	50.72	50.66
	7	Negative Binomial	<.001	AR	112.33	112.44
	8	Negative Binomial	.005	AR	165.45	165.52
	9	Negative Binomial	<.001	Independent	75.02	74.88
POIs charged with DV assault offences	1	Negative Binomial	<.001	Independent	54.49	54.46
	2	Negative Binomial	<.001	Independent	47.74	47.40
	3	Negative Binomial	<.001	AR	29.91	29.94
	4	Poisson	.084	Independent	10,627.82	10,626.72
	5	Negative Binomial	.002	Independent	23.61	23.24
	6	Poisson	.101	AR	16,911.88	16,935.99
	7	Negative Binomial	<.001	AR	78.64	78.91
	8	Poisson	.126	AR	35,405.48	35,413.55
	9	Negative Binomial	.008	Independent	54.97	54.85
Victims of DV offences	1	Negative Binomial	<.001	AR	40.70	40.86
	2	Negative Binomial	<.001	Independent	40.11	40.10
	3	Negative Binomial	<.001	AR	21.42	21.72
	4	Negative Binomial	<.001	Independent	42.23	42.12
	5	Negative Binomial	<.001	AR	46.56	46.58
	6	Negative Binomial	<.001	Independent	35.10	34.96
	7	Negative Binomial	<.001	AR	73.73	73.92
	8	Negative Binomial	<.001	AR	140.03	140.11
	9	Negative Binomial	<.001	Independent	41.75	41.69

Table A3. Models selected for the pair analysis (..... continued)

Measure	LAC	Model Family chosen	LR test p-value	Correlation Structure	QIC AR model	QIC Ind. model
Victims of DV assault offences	1	Negative Binomial	<.001	AR	38.85	38.95
	2	Negative Binomial	<.001	AR	49.89	49.92
	3	Negative Binomial	<.001	Independent	17.46	17.28
	4	Poisson	.114	Independent	16,107.35	16,104.65
	5	Negative Binomial	<.001	AR	29.55	29.62
	6	Negative Binomial	.002	Independent	45.22	45.22
	7	Negative Binomial	<.001	AR	44.92	45.20
	8	Negative Binomial	.001	Independent	138.25	138.15
	9	Negative Binomial	.008	AR	39.20	39.21
Police call-outs for DV related incidents	1	Negative Binomial	<.001	Independent	17.42	17.40
	2	Negative Binomial	.003	AR	19.11	19.11
	3	Negative Binomial	<.001	Independent	18.69	18.06
	4	Negative Binomial	<.001	Independent	42.41	42.39
	5	Negative Binomial	.046	AR	41.06	41.24
	6	Poisson	>.999	AR	59,472.27	59,475.35
	7	Negative Binomial	.021	Independent	24.78	24.34
	8	Poisson	.176	AR	192,852.10	192,853.70
	9	Poisson	.299	Independent	93,655.56	93,624.19

Note: AR = autoregressive correlation structure of order 1. Ind/Independent = independent correlation structure

Table A4. Trend and Level changes for each LAC from stage models

Stage	Outcome	Level Changes			Trend Changes		
		Control	Intervention	Difference	Control	Intervention	Difference
1	Incidents of DV offences	-0.026	0.082	0.108	0.001	-0.004	-0.005
	Incidents of DV assault offences	-0.050	0.064	0.113	-0.001	-0.003	-0.002
	POIs charged with DV offences	0.056	0.174 ***	0.118	0.001	-0.005 ***	-0.006
	POIs charged with DV assault offences	-0.022	0.089	0.110	0.001	-0.004	-0.004
	Victims of DV offences	-0.034	0.042	0.077	0.000	-0.003	-0.003
	Victims of DV assault offences	-0.053	0.023	0.076	-0.002	-0.002	0.000
	Police callouts for DV related incidents	0.032	0.051	0.019	-0.001	0.000	0.001
2	Incidents of DV offences	-0.004	-0.061	-0.057	-0.005 ***	-0.012	-0.008 ***
	Incidents of DV assault offences	0.016	-0.054	-0.070	-0.003	-0.011	-0.008
	POIs charged with DV offences	0.041	-0.011	-0.052	-0.004 **	-0.012	-0.008 **
	POIs charged with DV assault offences	0.068	0.015	-0.052	-0.002	-0.012	-0.009
	Victims of DV offences	-0.006	-0.053	-0.047	-0.005 ***	-0.013	-0.008 ***
	Victims of DV assault offences	0.001	-0.048	-0.049	-0.005	-0.012	-0.007
	Police callouts for DV related incidents	-0.037	-0.087 ***	-0.050	-0.001	0.001 ***	0.002

Table A5. Trend and Level changes for each LAC from pairwise models

Outcome	Pair	Level Changes			Trend Changes		
		Control	Intervention	Difference	Control	Intervention	Difference
Incidents of DV offences	1	-0.073	0.018	0.091	-0.007	-0.014 *	-0.007
	2	0.025	-0.171	-0.196	-0.005	-0.014	-0.010
	3	0.105	-0.033	-0.138	-0.002	-0.007	-0.005
	4	0.119	0.143	0.023	0.000	-0.022 ***	-0.022 ***
	5	-0.060	-0.101	-0.041	-0.005	-0.014	-0.010
	6	0.103	0.026	-0.076	0.010 *	-0.001	-0.011
	7	-0.139	0.280 *	0.419 **	-0.002	0.006	0.008
	8	-0.317 **	0.028	0.345 *	0.004	0.000	-0.003
	9	0.003	-0.100	-0.102	-0.005	0.013 *	0.017 *
Incidents of DV assault offences	1	-0.093	0.074	0.166	0.002	-0.017 *	-0.019
	2	0.076	-0.266 *	-0.342 *	-0.007	-0.003	0.004
	3	0.079	-0.012	-0.090	0.004	-0.015	-0.019
	4	0.110	0.107	-0.003	-0.005	-0.016 ***	-0.012
	5	0.051	-0.115	-0.166	-0.014	-0.005	0.009
	6	0.130	-0.003	-0.134	0.014 *	0.000	-0.014
	7	-0.166	0.348 *	0.514 **	-0.006	-0.002	0.003
	8	-0.224	-0.021	0.202	0.001	0.006	0.005
	9	-0.082	-0.133	-0.051	-0.003	0.016 *	0.019 *
Incidents of DV offences	1	-0.073	0.018	0.091	-0.007	-0.014 *	-0.007
	2	0.025	-0.171	-0.196	-0.005	-0.014	-0.010
	3	0.105	-0.033	-0.138	-0.002	-0.007	-0.005
	4	0.119	0.143	0.023	0.000	-0.022 ***	-0.022 ***
	5	-0.060	-0.101	-0.041	-0.005	-0.014	-0.010
	6	0.103	0.026	-0.076	0.010 *	-0.001	-0.011
	7	-0.139	0.280 *	0.419 **	-0.002	0.006	0.008
	8	-0.317 **	0.028	0.345 *	0.004	0.000	-0.003
	9	0.003	-0.100	-0.102	-0.005	0.013 *	0.017 *
Incidents of DV assault offences	1	-0.093	0.074	0.166	0.002	-0.017 *	-0.019
	2	0.076	-0.266 *	-0.342 *	-0.007	-0.003	0.004
	3	0.079	-0.012	-0.090	0.004	-0.015	-0.019
	4	0.110	0.107	-0.003	-0.005	-0.016 ***	-0.012
	5	0.051	-0.115	-0.166	-0.014	-0.005	0.009
	6	0.130	-0.003	-0.134	0.014 *	0.000	-0.014
	7	-0.166	0.348 *	0.514 **	-0.006	-0.002	0.003
	8	-0.224	-0.021	0.202	0.001	0.006	0.005
	9	-0.082	-0.133	-0.051	-0.003	0.016 *	0.019 *
POIs charged with DV offences	1	-0.044	0.164	0.208	-0.008	-0.016	-0.008
	2	0.103	-0.177	-0.280	-0.005	-0.017	-0.012
	3	0.168	0.012	-0.157	-0.003	-0.004	-0.001
	4	0.201 *	0.199 *	-0.002	-0.004	-0.020 ***	-0.016 *
	5	-0.046	-0.187	-0.141	-0.002	-0.013	-0.011
	6	0.204	0.098	-0.106	0.014 *	-0.002	-0.016
	7	-0.156	0.217	0.373	-0.001	0.009	0.010
	8	-0.193	0.329	0.522 *	0.011	-0.018	-0.030 *
	9	0.141	0.124	-0.017	-0.006	0.011	0.017

Table A5. Trend and Level changes for each LAC from pairwise models (..... continued)

Outcome	Pair	Level Changes			Trend Changes		
		Control	Intervention	Difference	Control	Intervention	Difference
POIs charged with DV assault offences	1	-0.018	0.198	0.216	-0.001	-0.019 *	-0.018
	2	0.164	-0.241	-0.405 *	-0.006	-0.006	-0.001
	3	0.083	0.061	-0.022	0.007	-0.013	-0.020
	4	0.190	0.020	-0.170	-0.009	-0.017 **	-0.008
	5	0.085	-0.164	-0.249	-0.012	-0.004	0.008
	6	0.196	0.075	-0.122	0.020 *	0.001	-0.019
	7	-0.208	0.311	0.518	-0.007	-0.002	0.005
	8	-0.157	0.185	0.342	0.015	-0.012	-0.027
	9	-0.085	-0.084	0.001	-0.001	0.018	0.019
Victims of DV offences	1	-0.049	0.025	0.074	-0.008	-0.015 *	-0.008
	2	-0.026	-0.146	-0.120	-0.003	-0.017 *	-0.014
	3	0.120	-0.037	-0.157	-0.004	-0.005	0.000
	4	0.126	0.117	-0.009	-0.001	-0.024 ***	-0.023 ***
	5	-0.074	-0.081	-0.007	-0.004	-0.017	-0.013
	6	0.062	-0.008	-0.070	0.010 *	-0.001	-0.011
	7	-0.124	0.292	0.416 *	-0.003	0.007	0.011
	8	-0.287 **	-0.084	0.203	0.001	0.005	0.004
	9	-0.001	-0.149	-0.148	-0.005	0.012 *	0.017 *
Victims of DV assault offences	1	-0.099	0.095	0.194	0.002	-0.019 **	-0.021
	2	0.025	-0.273 *	-0.298	-0.007	-0.001	0.005
	3	0.047	-0.042	-0.089	0.001	-0.013	-0.015
	4	0.107	0.054	-0.053	-0.005	-0.017 ***	-0.011
	5	0.062	-0.069	-0.131	-0.018 *	-0.009	0.009
	6	0.139	-0.007	-0.147	0.009	-0.001	-0.009
	7	-0.156	0.305	0.461 *	-0.008	0.001	0.009
	8	-0.230	-0.075	0.156	-0.002	0.005	0.007
	9	-0.090	-0.210	-0.120	-0.002	0.015	0.017
Police callouts for DV related incidents	1	-0.091 *	-0.050	0.041	-0.003	0.007 *	0.010
	2	-0.004	-0.079	-0.075	0.009	0.001	-0.007
	3	-0.062	-0.118	-0.057	-0.003	-0.004	-0.001
	4	0.099	0.129 **	0.029	0.000	-0.005 *	-0.005
	5	0.015	-0.119 *	-0.134	-0.003	-0.003	0.000
	6	-0.068	-0.007	0.061	0.000	0.000	0.000
	7	0.052	0.079	0.027	0.001	0.005	0.005
	8	-0.033	0.108	0.140	0.002	0.001	-0.001
	9	0.079	-0.057	-0.135	-0.005 *	0.008 *	0.013 **

Note: \* indicates the level of significance for the difference in the trend changes; \* p<0.05 \*\* p<0.01 \*\*\* p<0.001

**Table A6. Difference in level and trend change for each pair and outcome when accounting for the state-wide DVSA and CRP implementation**

Outcome	LAC	Difference in level change				Difference in trend change			
		$\beta_4$	SE	p-value	IRR	$\beta_7$	SE	p-value	IRR
Incidents of DV offences	1	0.612	0.830	.461	1.845	-0.007	0.010	.482	0.993
	2	0.557	1.065	.601	1.745	-0.010	0.012	.429	0.990
	3	0.264	1.196	.825	1.302	-0.005	0.014	.707	0.995
	4	0.760	0.847	.370	2.138	-0.013	0.010	.198	0.987
	5	0.700	1.088	.520	2.014	-0.010	0.012	.446	0.991
	6	0.227	0.847	.788	1.255	-0.005	0.010	.595	0.995
	7	0.027	0.983	.978	1.027	0.005	0.011	.634	1.005
	8	0.499	1.099	.650	1.647	-0.004	0.013	.744	0.996
	9	-0.119	0.797	.881	0.888	0.004	0.009	.631	1.004
Incidents of DV assault offences	1	1.617	0.878	.065	5.038	-0.019	0.010	.065	0.982
	2	-0.664	1.234	.590	0.515	0.004	0.014	.771	1.004
	3	1.428	1.248	.253	4.169	-0.019	0.014	.174	0.981
	4	-0.299	0.787	.704	0.742	0.001	0.009	.923	1.001
	5	-0.862	1.211	.476	0.422	0.009	0.014	.520	1.009
	6	0.145	1.035	.889	1.156	-0.005	0.012	.656	0.995
	7	-0.011	1.313	.993	0.989	0.006	0.015	.719	1.006
	8	-1.100	1.395	.430	0.333	0.015	0.016	.375	1.015
	9	0.065	0.997	.948	1.067	0.003	0.012	.781	1.003
POIs charged with DV offences	1	0.852	1.108	.442	2.344	-0.008	0.013	.516	0.992
	2	0.667	1.277	.602	1.948	-0.012	0.015	.407	0.988
	3	-0.090	1.381	.948	0.914	-0.001	0.016	.957	0.999
	4	0.466	0.964	.629	1.594	-0.008	0.011	.480	0.992
	5	0.748	1.466	.610	2.114	-0.011	0.017	.498	0.989
	6	-0.379	1.155	.743	0.685	0.000	0.013	.984	1.000
	7	-0.604	1.567	.700	0.547	0.012	0.018	.500	1.012
	8	2.151	1.520	.157	8.590	-0.026	0.018	.150	0.975
	9	-0.177	1.152	.878	0.838	0.007	0.014	.620	1.007
POIs charged with DV assault offences	1	1.608	1.213	.185	4.992	-0.018	0.014	.200	0.982
	2	-0.353	1.509	.815	0.702	-0.001	0.017	.970	0.999
	3	1.558	1.660	.348	4.751	-0.020	0.019	.287	0.980
	4	-0.924	0.984	.348	0.397	0.007	0.012	.531	1.007
	5	-0.839	1.602	.601	0.432	0.008	0.018	.681	1.008
	6	-0.581	1.382	.674	0.559	0.002	0.016	.924	1.002
	7	-0.754	1.824	.679	0.471	0.014	0.022	.516	1.014
	8	2.056	1.728	.234	7.817	-0.025	0.020	.212	0.975
	9	0.345	1.402	.806	1.411	0.001	0.016	.967	1.001

**Table A6. Difference in level and trend change for each pair and outcome when accounting for the state-wide DVSA and CRP implementation (..... continued)**

Outcome	LAC	Difference in level change				Difference in trend change			
		$\beta_4$	SE	p-value	IRR	$\beta_7$	SE	p-value	IRR
Victims of DV offences	1	0.660	0.887	.456	1.935	-0.008	0.010	.460	0.993
	2	0.956	1.072	.372	2.601	-0.014	0.012	.262	0.986
	3	-0.120	1.197	.920	0.887	0.000	0.014	.973	1.000
	4	0.639	0.789	.418	1.894	-0.012	0.009	.198	0.988
	5	1.007	1.083	.352	2.738	-0.013	0.012	.295	0.987
	6	0.226	0.830	.785	1.254	-0.005	0.010	.579	0.995
	7	-0.247	1.266	.845	0.781	0.009	0.015	.542	1.009
	8	-0.317	1.180	.788	0.728	0.005	0.014	.717	1.005
	9	-0.040	0.885	.964	0.961	0.003	0.010	.768	1.003
Victims of DV assault offences	1	1.793	0.933	.055	6.009	-0.021	0.011	.055	0.980
	2	-0.718	1.290	.578	0.488	0.005	0.015	.715	1.005
	3	1.060	1.291	.412	2.886	-0.015	0.015	.320	0.985
	4	-0.666	0.729	.361	0.514	0.004	0.009	.604	1.004
	5	-0.862	1.218	.479	0.422	0.009	0.014	.503	1.009
	6	0.134	1.143	.907	1.143	-0.004	0.013	.740	0.996
	7	-0.753	1.372	.583	0.471	0.014	0.016	.374	1.014
	8	-1.012	1.604	.528	0.363	0.013	0.019	.474	1.014
	9	-0.018	1.167	.988	0.982	0.003	0.014	.831	1.003
Police call-outs for DV related incidents	1	-0.741	0.455	.103	0.477	0.010	0.005	.054	1.010
	2	0.505	0.628	.421	1.658	-0.007	0.007	.300	0.993
	3	0.029	0.696	.966	1.030	-0.001	0.008	.890	0.999
	4	-0.289	0.513	.574	0.749	0.003	0.006	.644	1.003
	5	-0.173	0.590	.769	0.841	0.001	0.007	.938	1.001
	6	0.368	0.483	.445	1.445	-0.004	0.006	.475	0.996
	7	-0.803	0.487	.099	0.448	0.011	0.006	.066	1.011
	8	0.219	0.567	.699	1.245	-0.001	0.007	.838	0.999
	9	-0.925	0.518	.074	0.396	0.012	0.006	.047	1.012

Note: Blue indicates a negative trend change in the *Safer Pathway sites* relative to the control site (i.e. a beneficial treatment effect) whereas orange indicates a positive trend change in favour of the *Safer Pathway site* relative to the control site (i.e. an adverse effect).

Figure A1. a) Incidents of DV offences

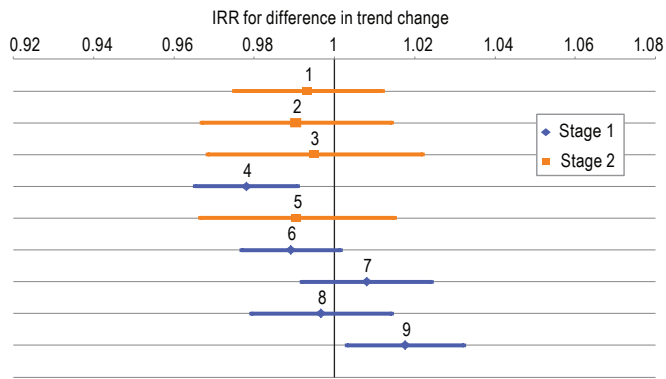


Figure A1. b) Incidents of DV assault offences

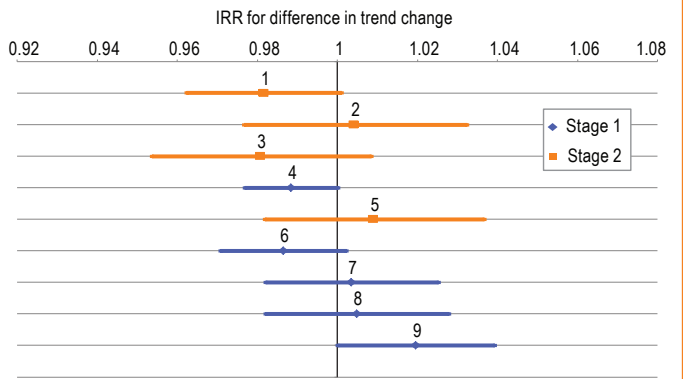


Figure A1. c) POIs charged with DV offences

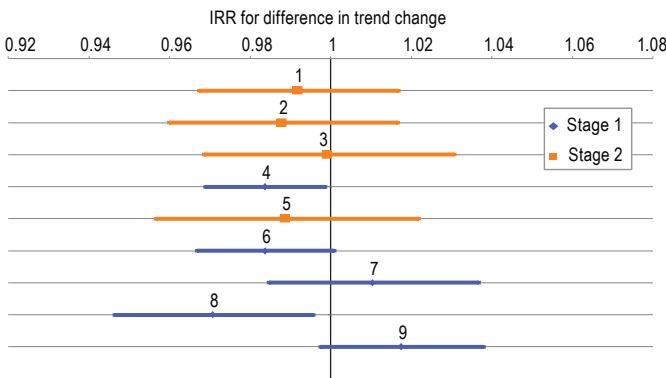


Figure A1. d) POIs charged with DV assault offences

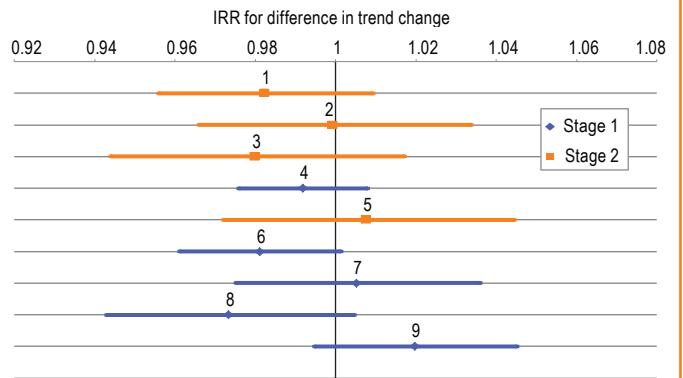


Figure A1. e) Victims of DV offences

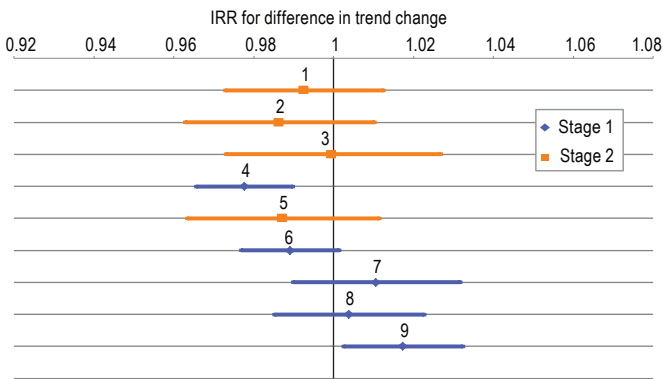


Figure A1. f) Victims of DV assault offences

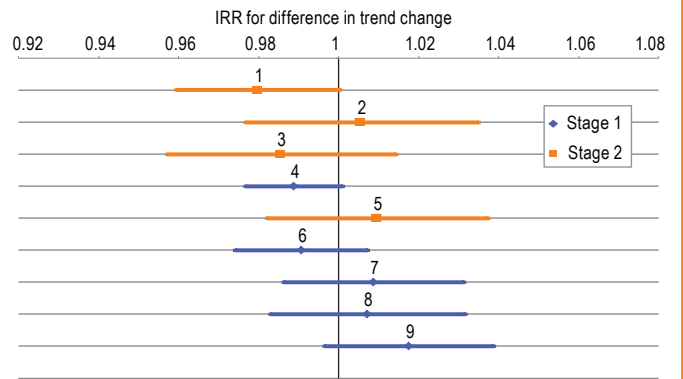


Figure A1. g) Police call-outs for DV related incidents

