

# The effect of the NSW custodial Violent Offender Treatment Program (VOTP) on reoffending

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# Violent offending

- Imprisonment rates steadily rising over last 3 decades (currently around 13,000 inmates).
- Violence most serious charge for over half of all inmates.
- Around 1/3 will commit a new offence after being released and one in 10 return to custody for breaching parole (Ringland & Weatherburn 2014).
- Little evidence of offence specialisation amongst violent offenders (e.g. Piquero, Jennings & Barnes 2012) but specific subgroups at much greater risk.
- Renewed focus on identifying what works for persistent offenders.

## Background to VOTP

- A CSNSW residential prison program delivered by a multidisciplinary team within a modified therapeutic community setting.
- Program based at the Parklea Correctional Centre with 64 beds available at any given time.
- Eligibility criteria: Male inmates with a non-parole period of at least two years and a current violent offence or history of violence. Assessed Med-High/High risk.
- Program duration 9 - 12 months to complete.
- Each week during treatment phase participants attend 3 x 2hr CBT based group sessions.
- Upon completion participants can be referred to a 'VOTP Maintenance' program, which provides post-release support.

# What do we already know?

- 1 Evidence suggests CBT-based therapeutic programs work for general offending (e.g. Feucht & Holt, 2016).
- 2 Evidence specific to violent offenders is limited (Polaschek & Collie, 2004; Joliffe & Farrington, 2007)
  - *Resourcing further, well-designed evaluations should be a very high priority if criminal justice systems intend to continue to invest in programmes for serious offenders that maximise reductions in harm to the community.* - Joliffe and Farrington (2007)
- 3 Previous CSNSW research shows significant changes in cognitions, emotional regulation and empathy after participation in VOTP but no examination of reoffending.

# The current study

- ① Aim: To evaluate the causal impact of the VOTP program on re-offending and returning to custody.
- ② Considerations for analysis:
  - Voluntary participation.
  - Low volume of offenders.
  - Censoring and return to custody.
- ③ Implement IV methods and OLS methods to analyse free time re-offending and return to custody.

- 1 CSNSW's Offender Information Management System (OIMS).
  - Provides information regarding program referrals, attendance and completions.
- 2 BOCSAR's Reoffending Database (ROD).
  - Provides information on all court appearances finalised in NSW since 1994.
  - Supplemented with NSW Police and CSNSW custody data.

## Data II

Outcome variables:

- Re-offending with any offence.
- Re-offending with any offence or returning to custody.
- Re-offending with a violent offence.
- Re-offending with a violent offence or returning to custody.

Follow up: 24 months free time post-release

Control variables: Age, SEIFA quartile, ARIA, LSI-R, Aboriginality, whether released to parole & a rich suite of prior criminal history offending measures.

## Problem: Omitted Variable Bias (OVB)

- Omitted Variable Bias (OVB) may cause us to under or over estimate the true causal effect of the program.
- OVB stems from a variable that meets three conditions:
  - ① Influences re-offending behaviour.
  - ② Correlated with program participation.
  - ③ Not observable in the data.
- The fact that participation in VOTP is voluntary creates an OVB problem for us.

## OVB Example 1: Upward bias

- Suppose VOTP participants are more motivated to change than non-participants.
- We cannot observe (and thus control) for intrinsic motivation.
- So comparing these two groups may cause us to *overestimate* the effect of VOTP as these offenders are less likely to re-offend, irrespective of VOTP.

## OVB Example 2: Downward bias

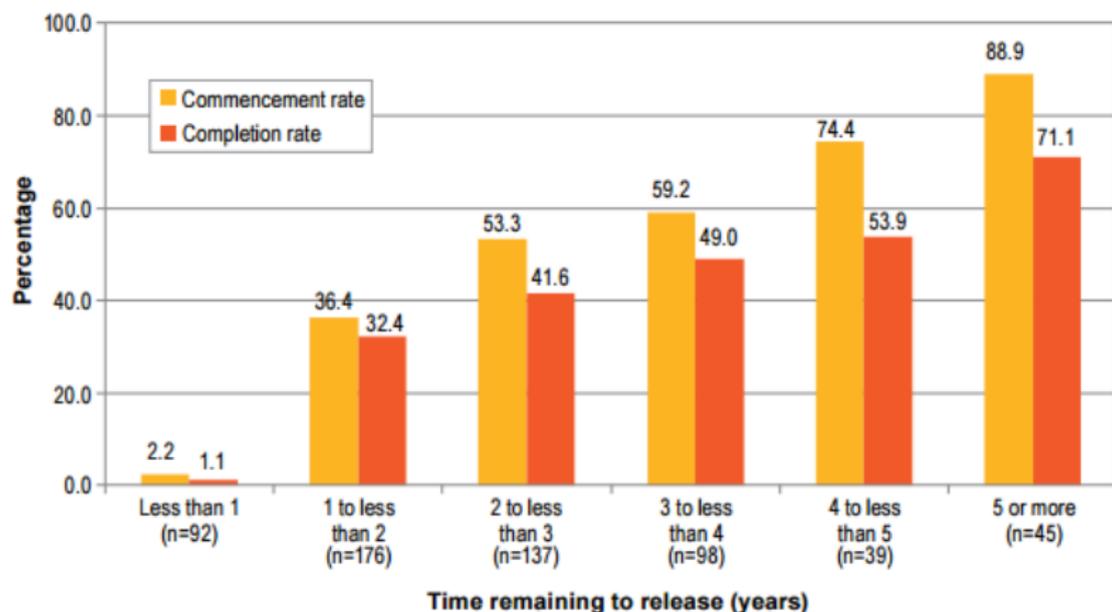
- Higher risk inmates have a stronger incentive to volunteer so that they can be considered for parole.
- Higher risk inmates are more likely to be prioritised.
- Since they are also more more likely to re-offend, irrespective of VOTP, we may *underestimate* the true causal effect of treatment.

## Solution: Instrumental Variables (IV)

- A technique called Instrumental Variables (IV) provides a solution.
- Find a third variable, called an 'instrument', that is correlated with program participation but not re-offending.
- Allows us to isolate variation in program participation that is unrelated to other unobserved factors.
- We can then exploit this 'random' variation to estimate the causal effect of VOTP on re-offending.
- The instrument we use here is the date of VOTP referral.

# Date of referral as an instrument

**Figure 1. Commencement and completion rate of VOTP, by time remaining to release**



# Implementation of IV

We conduct our IV analysis in three steps:

- 1 Use date of referral to predict participation in VOTP (net of controls).
- 2 Use this prediction to isolate for variation in VOTP participation that is unrelated to other unobserved factors.
- 3 Use this independent variation to estimate the causal effect of VOTP on re-offending.

Using this method we conduct two comparisons:

- Inmates who *started* VOTP vs. inmates who did not start.
- Inmates who *completed* VOTP vs. inmates who did not start *and/or* did not complete.

## Observed characteristics of sample

A total of 587 offenders were referred to VOTP between 2007-2014:

- 266 started (45% of those referred).
- 216 completed (37% of those referred; 81% of those who started).
- About half were Aboriginal & over 3/4 aged less than 40 yrs.
- 70% were medium or higher on LSI-R.
- 60% were from two lowest SEIFA quartiles.
- 70% had their first contact under the age of 20.
- Around half had 7+ prior court appearances & 40% had 4+ prior prison episodes.

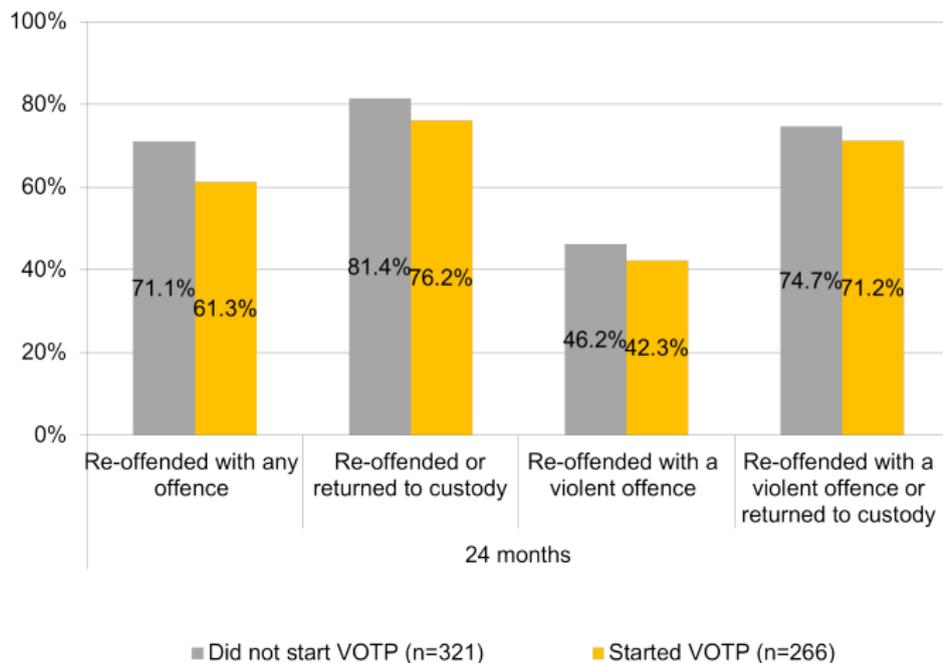
## Observed characteristics of sample (cont.)

Offenders starting/completing VOTP very similar to those who were referred but did not start.

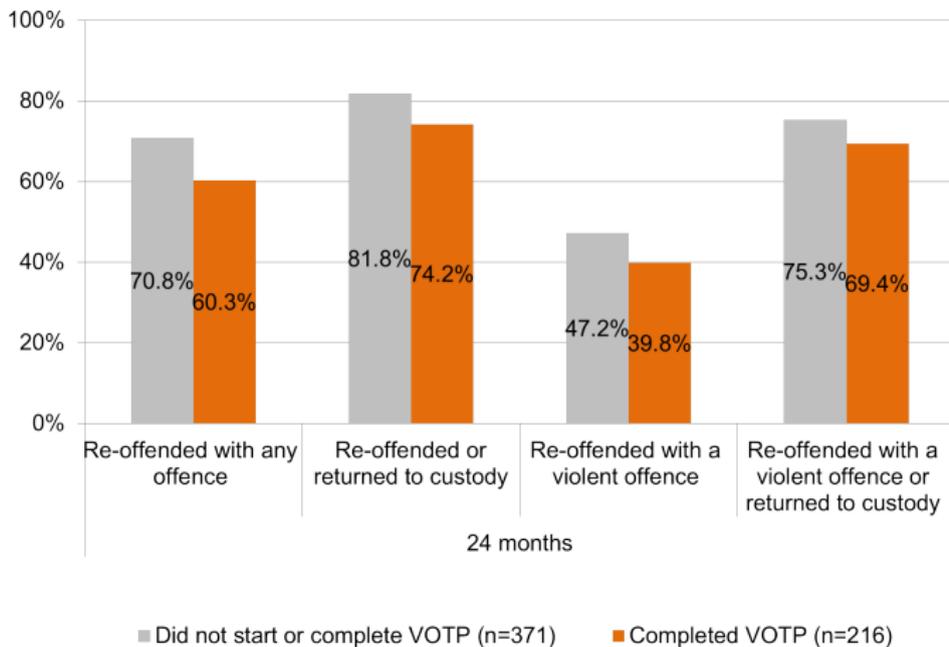
Significant differences:

- Aged 30 and above: 65.8% (starters) vs. 54.2% (non-starters); 67.6% (completers) vs. 54.7% (non-starters/non-completers).
- ATSI status: 42.6% (completers) vs. 50.9% (non-starters/non-completers).
- 5+ prior proven violent offences: 39.8% (starters) vs. 26.8% (non-starters).

## Observed reoffending - VOTP starters



# Observed reoffending - VOTP completers



## OLS results - VOTP starters

- OLS estimates indicate that *starting* VOTP is correlated with a 6 to 9 percentage point average reduction in risk across the four outcomes.

**Table 1. OLS Estimation of the effect of starting VOTP**

| <b>Outcome</b>                               | <b>Coeff</b> | <b>p-val</b> | <b>Std.<br/>error</b> | <b>N</b> |
|--|--------------|--------------|-----------------------|----------|
| General re-offending                         | -0.09        | .039         | 0.04                  | 452      |
| General re-offending or returning to custody | -0.07        | .047         | 0.03                  | 533      |
| Violent re-offending                         | -0.07        | .176         | 0.05                  | 400      |
| Violent re-offending or returning to custody | -0.06        | .106         | 0.04                  | 528      |

## 2SLS results - VOTP starters

- While 2SLS estimates consistently negative, the standard errors are too large for any of these to be statistically significant.
- Endogeneity test not significant.

Table 2. 2SLS Estimation of the effect of starting VOTP

| Outcome                                      | Coeff | p-val | Std. error | N   |
|--|-------|-------|------------|-----|
| General re-offending                         | -0.01 | .948  | 0.15       | 452 |
| General re-offending or returning to custody | -0.15 | .233  | 0.13       | 533 |
| Violent re-offending                         | -0.03 | .862  | 0.17       | 400 |
| Violent re-offending or returning to custody | -0.16 | .218  | 0.13       | 528 |

| Outcome                                      | Partial F | C-Stat | Endog-test |
|--|-----------|--------|------------|
| General re-offending                         | 30.89     | 0.29   | .588       |
| General re-offending or returning to custody | 34.64     | 0.46   | .495       |
| Violent re-offending                         | 26.21     | 0.05   | .829       |
| Violent re-offending or returning to custody | 35.33     | 0.68   | .411       |

## OLS results - VOTP completers

- OLS estimates indicate that *completing* VOTP is correlated with a 6 to 9 percentage point average reduction in risk across the four outcomes.

**Table 3. OLS Estimation of the effect of completing VOTP**

| <b>Outcome</b>                               | <b>Coeff</b> | <b>p-val</b> | <b>Std.<br/>error</b> | <b>N</b> |
|--|--------------|--------------|-----------------------|----------|
| General re-offending                         | -0.09        | .029         | 0.04                  | 452      |
| General re-offending or returning to custody | -0.07        | .050         | 0.04                  | 533      |
| Violent re-offending                         | -0.08        | .102         | 0.05                  | 400      |
| Violent re-offending or returning to custody | -0.04        | .258         | 0.04                  | 528      |

## 2SLS results - VOTP completers

- While 2SLS estimates consistently negative, standard errors are too large for any of these to be statistically significant.
- Endogeneity test not significant.

Table 4. 2SLS Estimation of the effect of completing VOTP

| Outcome                                      | Coeff | p-val | Std. error | N   |
|--|-------|-------|------------|-----|
| General re-offending                         | -0.01 | .948  | 0.19       | 452 |
| General re-offending or returning to custody | -0.19 | .235  | 0.16       | 533 |
| Violent re-offending                         | -0.04 | .862  | 0.22       | 400 |
| Violent re-offending or returning to custody | -0.20 | .223  | 0.17       | 528 |

| Outcome                                      | Partial F | C-Stat | Endog-test |
|--|-----------|--------|------------|
| General re-offending                         | 19.20     | 0.19   | .588       |
| General re-offending or returning to custody | 22.82     | 0.60   | .495       |
| Violent re-offending                         | 15.98     | 0.04   | .829       |
| Violent re-offending or returning to custody | 24.69     | 1.00   | .411       |

# Conclusions

- Results are promising, at least for general reoffending.
- Unable to rule out bias therefore cannot be certain that effects observed are causal.
- Replicating the study with an RCT would be ideal.
- Next best solution: conduct a longer follow-up study with larger sample.
- Need to isolate the effect of VOTP from the post-release maintenance program.

# Keen to read more?

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## The effect of the Violent Offender Treatment Program (VOTP) on offender outcomes

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*Aim:* To identify the impact of the Violent Offender Treatment Program (VOTP) on re-offending and return to custody outcomes at 24 months of free time post release.

*Method:* Data were obtained for all offenders referred to VOTP between 2007 and 2014 and released from prison, yielding a sample size of 587 referrals. Ordinary least squares and two-stage-least-squares (2SLS) linear probability models were used to estimate the differences between those who started the program and those who did not, on four outcome variables measured at 24 months free time post release: 1) re-offending with any offence; 2) re-offending with any offence or a return to custody; 3) re-offending with a violent offence; and 4) re-offending with a violent offence or a return to custody. Similar analyses were also undertaken comparing outcomes for offenders who completed VOTP with those who did not complete the program.

*Results:* Starting VOTP was associated with significantly lowered probability of general re-offending (by 9 percentage points), general re-offending or returning to custody (7 percentage points) at 24 months free time post release. Similar differences in the probability of general re-offending (9 percentage points) and general re-offending or returning to custody (7 percentage points) were found in relation to completing VOTP. We also find non-significant results for violent re-offending. The latter finding may be related to loss of statistical power due to sample attrition.

*Conclusion:* VOTP appears to be associated with lower rates of general re-offending and return to custody, however the estimates obtained are based on a simple regression approach and may not represent causal effects. Replication with more robust techniques and/or a larger sample size is recommended.

*Keywords:* violent offending, re-offending, instrumental variables, regression

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