

Queensland, Australia

# Griffith Criminology Institute



# Evaluation of Home Detention in South Australia: Final Report

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## Contents

Glos	ssary	.7	
Exe	cutive Summary	.8	
	<ul><li>1.1 Introduction</li><li>1.2 Outcomes analysis</li><li>1.3 Economic evaluation</li></ul>	.8 .8 .9	
2	Introduction1	12	
	<ul><li>2.1 Project background: the first evaluation</li></ul>	12 13	
3	Evaluation methodology1	15	
	3.1 Aims of the evaluation13.2 Evaluation data sources13.3 Evaluation methods1	5  5  5	
3.3.1 3.3.2 3.3.3 3.3.4 3.3.5 3.3.6	Quantitative analysis of DCS data       1         Measures20       2         Analytic strategy       2         Economic evaluation       2         Program funding and cost data       2         Cost effectiveness modelling       2	15 21 22 24 26	
	3.4 Methodological limitations    2      3.5 Evaluation ethics    2	28 29	
4	Outcomes evaluation	30	
	4.1 Release Ordered Home Detention	30	
4.1.1 4.1.2 4.1.3	Sample characteristics	30 ost-ROHD 37	32
	4.2 Court Ordered Home Detention	10	
4.2.1 4.2.2 4.2.3	Sample characteristics: Court Ordered Home Detention	40 ost-COHD 45	41
	<ul><li>4.3 Does HD reduce the likelihood of returning to custody compared to sentence?</li></ul>	a prison 17 custody	51
5	Economic evaluation	55	
	5.1 Introduction55.2 Program growth55.3 Program cost55.4 Program outcomes and benefits65.5 Program cost effectiveness6	55 57 58 65 66	
6	Conclusion	76	

	79
Model accuracy tests ROHD	81
Model accuracy tests COHD	82
PSM balance and fit: ROHD and PD	83
PSM balance and fit: COHD and PD	84
Bivariate analysis COVID-19/ROHD	85
Bivariate analysis COVID-19/COHD	86
Supplementary economic modelling	87
	Model accuracy tests ROHD Model accuracy tests COHD PSM balance and fit: ROHD and PD PSM balance and fit: COHD and PD Bivariate analysis COVID-19/ROHD Bivariate analysis COVID-19/COHD Supplementary economic modelling

## Tables

Table 1: State-wide home detention program cost calculation method	.25
Table 2: Model parameters used in economic modelling	.27
Table 3: Demographic, criminal justice and sentence characteristics of prisoners	
sentenced to ROHD between 1 <sup>st</sup> July 2016 and 1 <sup>st</sup> July 2022 by gender (n=1260)	.30
Table 4: Demographic, criminal justice, and sentence characteristics of prisoners	
sentenced to ROHD from 1 <sup>st</sup> July 2016 to 1 <sup>st</sup> July 2022, and ending before 22 <sup>nd</sup> August	
2022, by breach status (n=1260)	.33
Table 5: Demographic, criminal justice, and sentence characteristics of prisoners	
sentenced to ROHD from 1 <sup>st</sup> July 2016 to 1 <sup>st</sup> July 2022, and ending before 22 August	
2022, by return to custody status (n=434)	.35
Table 6: Adjusted Cox regression models predicting breaches/RTC among prisoners	
sentenced to ROHD between 1 July 2016 and 1 July 2022, ending by 22 August 2022	.36
Table 7: Unstandardized beta and relative points for predictors of ROHD breach	.38
Table 8: Demographic, criminal justice, and sentence characteristics of people sentence	d
to COHD between 1 July 2016 and 1 July 2022 by gender (n=1074)	.40
Table 9: Demographic, criminal justice, and sentence characteristics of people sentence	d
to COHD from 1 July 2016 to 1 July 2022, and ending before 22 August 2022, by breach	۱
status (n=1074)	.42
Table 10: Demographic, criminal justice, and sentence characteristics of people sentence	ed
to COHD from 1 July 2016 to 1 July 2022, and ending before 22 August 2022, by return	to
custody status (n=1074)	43
Table 11: Demographic, criminal justice, and sentence characteristics of people sentenc	ed
to HD or prison between 1 July 2016 and 1 July 2022, and ending before 22 August 2022	2
by ROHD status (n=2596)	.47
Table 12: Demographic, criminal justice, and sentence characteristics of people sentence	ed
to HD between 1 July 2016 and 1 July 2022, and ending before 22 August 2022 by COH	ID
status (n=2665)	.50
Table 13: Adjusted Cox regression models predicting breaches/RTC among prisoners	
sentenced to ROHD between 1 July 2016 and 1 July 2022, ending by 22 August 2022	52
Table 14: Home detention budget allocation 2016/17 to 2021/22 (\$million)	.59
Table 15: DCS State-wide home detention program costs 2016-17 to 2021-22	.60
Table 16: Average HD cost based on months in program 2016-17 to 2021-22	61
Table 17: HD Program cost effectiveness results 2016-17 to 2021-22	.72
Table 18. Sensitivity and 1-specificity for risk score deciles from prediction model	.81
Table 19 Sensitivity and 1-specificity for risk score deciles from prediction model	.82
Table 20 Balance and fit descriptive statistics	.83
Table 21: Balance and fit descriptive statistics	.84
Table 22: ROHD breaches by COVID status	.85
Table 23: ROHD RTC by COVID status	.85
Table 24: COHD breaches by COVID status	.86
Table 25: COHD RTC by COVID status	.86
Table 26: HD Program cost effectiveness – extended scenario	.87

## Figures

Figure 1: Sample and cohort description, ROHD	16
Figure 2: Sample and cohort description, COHD	17
Figure 3: Sample descriptions, prison discharged and matched ROHD	18
Figure 4: Sample descriptions, prison discharged and matched COHD	19
Figure 5: Economic evaluation program cost data components 2016-17 to 2021-22	23
Figure 6: HD Markov model pathways and comparison	26
Figure 7: Nomogram of predicted risk of ROHD breach	38
Figure 8: Nomogram of predicted risk of COHD breach	46
Figure 9: Days to return to custody by matched prisoner discharge and ROHD group	49
Figure 10: Days to return to custody by matched prisoner discharge and COHD group .	51
Figure 11: HD program development by order type 2016-17 to 2021-22	57
Figure 12: Home detention cost and custodial cost offsets	63
Figure 13: Estimated cost effectiveness per HD detainee - base case	67
Figure 14: Incremental cost effectiveness per HD detainee – base case	68
Figure 15: Estimated cost effectiveness per HD detainee – including RTC	70
Figure 16: Incremental cost effectiveness per HD detainee – including RTC	71
Figure 17. Area under the ROC curve for model predicting risk of ROHD breach	81
Figure 18. Area under the ROC curve for model predicting risk of ROHD breach	82

## Glossary

ABS	Australian Bureau of Statistics
AHCSA	Aboriginal Health Council of South Australia
AHREC	Aboriginal Health Research and Evaluation Committee
AIC	Akaike Information Criterion
CBC	Community Based Corrections
CEA	Cost effectiveness analysis
COHD	Court Ordered Home Detention
DCS	Department for Correctional Services
EM	Electronic Monitoring
HD	Home Detention
HISSP	Home Detention Integrated Support Services Program
ICU	Intensive Compliance Unit
ORNI-R	Offender Risk Needs Inventory - Revised
PD	Discharged from Prison
PSM	Propensity Score Matching
PSA	Probabilistic Sensitivity Analysis
РҮА	Prison Years Avoided
ROHD	Release Ordered Home Detention
RoGS	Report on Government Services
ROC	Receiver Operating Characteristics
ROR	Risk of re-offending
RTC	Return to custody
SA	South Australia
SAPOL	South Australia Police
SPRC	Social Policy Research Centre

## **Executive Summary**

#### 1.1 Introduction

In May 2020, the South Australian Department for Correctional Services (DCS) commissioned a team of researchers from the Social Policy Research Centre, UNSW Sydney (University of New South Wales); Griffith Criminology Institute, Griffith University; and Époque Consulting to conduct an independent evaluation of Home Detention (HD) in South Australia (SA). This follows on from an initial evaluation (2016-2018) and provides a longitudinal assessment of the impact of legislative and program changes to HD in SA since 2016. Findings are presented related to the profile and outcomes of two distinct group of prisoners subject to HD: those on court-ordered HD (COHD) and those on release-ordered HD (ROHD) spanning from 2016 - 2022. The report also presents findings from the economic evaluation of home detention in South Australia.

## 1.2 Outcomes analysis

Key findings from the analysis are summarised below:

- The majority of individuals serving HD orders were males (approximately 80%) with an average age in the late 30s, and less than one in ten were Aboriginal.
- The most common index offences for individuals serving ROHD were drug related (34.0%), compared to COHD where they were overwhelmingly administrative/driving related offences (79.9%). In terms of ROHD, in the approximately six-year follow-up period characterising the current data, 13.9% of prisoners breached the conditions of ROHD compared to 14.0% of individuals serving COHD who breached the conditions of an order.
- In terms of returns to corrective services post completion of HD orders (up to 22 August 2022) 21.0% of those serving ROHD returned to custody within the approximately six-year follow-up period, and 24.4% of those serving COHD returned in the same time frame.
- In the current analysis, the key variables associated with whether a prisoner would breach conditions of ROHD were a higher risk assessment score (i.e. Risk of Reoffending score), having multiple prior sentences, and a fraud index offence associated with their ROHD sentence. The key variables associated with returns to custody post ROHD were younger age at release, a higher number of prior sentences and previously recorded breaches of ROHD. A higher risk assessment score at the time of ROHD was marginally associated with returns to custody following ROHD.
- The key variables associated with whether a prisoner would breach conditions of COHD were having a public order/property offence as an index offence associated with their COHD sentence, a higher risk assessment score, and shorter sentenced days to COHD.
- The key variables associated with returning to custody following the completion of COHD were an index offence of theft, a higher risk assessment score, and shorter number of actual days served on COHD.
- A higher number of days of HISSP support was associated with a lower rate of ROHD and COHD breaches among those who received high needs support packages.
- Propensity score matched proportions of prisoners released to ROHD with those released directly from prison show that the likelihood of returning to custody following ROHD is far

lower than compared to being released directly from prison (i.e., 23% versus 40%) at 730 days post discharge. The analyses indicated that the rate of return to custody was 1.85 times lower for those sentenced to ROHD compared to matched counterparts who received a prison sentence over the entire observation period. These results provide some evidence to suggest that all else being equal, if a prisoner is released to ROHD they will be less likely to return to custody than if they remain in prison for the duration of their sentence.

- Similarly, propensity score matched proportions of prisoners serving COHD with those released directly from prison show that the likelihood of returning to custody following COHD is far lower than compared to being released directly from prison (i.e., 33% versus 45%) at 730 days post discharge. The analyses indicated that the rate of return to custody was 1.53 times lower for those sentenced to COHD compared to matched counterparts who received a prison sentence over the entire observation period. Again, this provides some evidence to suggest that all else being equal, if a prisoner serves COHD rather than a prison sentence, they will be less likely to return to custody following the completion of their sentence.
- Several different measures were used to assess the potential impact of the COVID-19 pandemic on the outcomes measured in the current analysis. In short, those who were admitted to and left ROHD prior to the COVID-19 pandemic were slightly more likely to have breached ROHD compared to those admitted prior to the COVID-19 pandemic and released during the pandemic. Timing of admission to ROHD (i.e., pre-post COVID-19) was not associated with returns to custody net of other factors measured.
- The impact of the COVID-19 pandemic as measured in the current analyses was not associated with breaches of COHD or returns to custody post COHD net of other factors measured.

## **1.3 Economic evaluation**

The final phase 2 evaluation report now includes 6 years of offender and financial data for 2,694 HD orders from 2016-17 to 2021-22, 1,441 ROHD and 1,253 COHD. Since 2016, costs of incarceration have continued to grow at over 5 per cent per annum emphasising the value of diversionary programs such as SA HD. Key findings of the economic evaluation include:

- HD program utilisation (concurrent detainees per month) has been sustained consistently during the 6-year study period with around 126 for ROHD and around 117 for COHD indicating established high demand for the HD programs.
  - The number of detainees increased slightly during the most recent phase 2 study period to around 134 ROHD and 126 COHD, following the initial program development phase.
  - There were 145 detainees (5.8%) placed on repeat HD orders, most (135) for a second sentence and a small number (10) for a third return HD order.
- The HD program budget allocation was \$7.9 million at the start of the phase 2 study period in 2018-19 increasing to \$8.3 million in 2021-22 In line with annual indexation, a total of \$42.8 million over the complete 6-year study period.
- The estimated total HD program cost increased during the initial development phase to \$4.8 million in 2018/19, the highest level during the 6-year study period.

- From 2019-20 program cost declined for the remaining 3 years to \$4.3 million in 2019-20 and \$3.2 million in 2021-22, partially due to COVID-19 restrictions which reduced in scope HD populations and related cost allocations.
- The total cost of HD support services provided through HISSP were \$1.3 million in 2018/19 and increased to \$1.9 million in 2021-22.
  - The increased HISSP support service costs have partly offset program cost declines, although total program cost per year has declined since 2018-19.
  - Total HD program cost including HISSP was \$6.1 million in 2018/19, \$5.5 million in 2019/20 and \$5.1 million in 2020-21 and 2021-22, a total of \$31.3 million over the 6 financial years.
- The program supported a total of 2,482 HD detainees during the study period (1,352 ROHD and 1,197 COHD) providing an estimated average cost per detainee of \$11,612 across average HD sentences of 6.3 months.
  - Based on the total number of 17,121 HD months during the study period from 2016-17 to 2021-22 this represents an average HD cost of \$1,827 per month.
  - On average ROHD orders were 6.2 months with an estimated average cost per detainee of \$11,337.
  - Detainees serving COHD orders spent their full sentence in HD with a slightly higher average 6.4 months and an estimated average cost of \$11,678.
- The total program cost of \$31.1 million is substantially below the total budget of \$42.8 million for the 6-year study period 2016-17 to 2021-22.
- Although HD sentences are generally around six months this annualises to \$21,925 in the case of a full year in HD, which represents around 21% of the annual cost of prison in South Australia.

Home detention custodial cost offsets

- Based on prior custodial sentences over several years before their HD order the study group served total prison time estimated at \$187.6 million.
- The program generated substantial custodial cost offsets during the 6-year study period of \$148.7 million (ROHD \$78.4 million and COHD \$70.3 million). This provides a base case on directly measurable costs and prison days avoided during the study period.
- In addition to the base case for prison time avoided within the study period the program is also generating further cost offsets following completion of HD orders through reduced returns to custody estimated at \$51.5 million based on reduced recidivism rates compared to a matched prison discharge group.
- Combined, the program cost of \$31.3 million is generating \$148.7 million of direct prison offsets with high confidence, plus a further estimated future offset beyond the study timeframe of \$51.5 million, a total estimated cost offset of \$200.3 million.
- The cost effectiveness modelling indicates that the average HD cost per order of \$11,668 is resulting in cost savings of \$43,603 per detainee through direct HD prison time avoided and \$54,887 when including subsequent reduced returns to custody.

#### Program outcomes and benefits

• Consistent with the phase 1 evaluation custodial cost offsets as outlined above represent a subset of quantifiable outcomes for HD detainees but the program is also potentially

producing a range of implicit positive outcomes that are difficult to measure, particularly in monetary terms. These benefits may include increased ability to obtain and sustain appropriate housing and reduced risk of homelessness, management of drug and alcohol abuse, improved community and workforce participation, improved education and job skill training, improved and sustained physical and mental health, as well as improved outcomes for families, partners and children of offenders.

Program cost effectiveness

- This longitudinal 6 year follow up evaluation confirms initial positive outcomes for HD detainees and develops enhanced modelling of the substantial cost offsets reported in the phase 1 study period.
- It is exceptional that government programs deliver this level of cost effectiveness where the total program cost is generating multiples in offsets of around 4.8 times within the study timeframe and nearly 6.4 times if future reductions in returns to custody are considered.
- HD is potentially supporting additional benefits such as increased participation in education and employment and other measures of quality of life for offenders, their families, partners and children. There are also potential further indirect prison cost offsets including lost productivity across paid and unpaid work, workplace disruption and replacement and injury through prison assaults.
- This final report of the complete 6-year economic evaluation confirms that even under conservative assumptions, the South Australian HD program is resulting in significant positive benefits and system cost offsets. These benefits can extend well beyond the HD episode, potentially offsetting the cost of HD investment many times over.

## **2** Introduction

In February 2017, the South Australian Department for Correctional Services (DCS) commissioned a team of researchers from the Social Policy Research Centre, UNSW Sydney, Griffith University, and Epoque Consulting to conduct an independent evaluation of Home Detention (HD) in South Australia. The first mixed method evaluation project included analysis of DCS data and gualitative interviews with program stakeholders and prisoners subject to HD. The findings showed that the HD reforms (expanded use of ROHD, introduction of COHD, and implementation of the HD support program HISSP) had a demonstrable positive impact across multiple domains. The return to custody rate, for example, was found to be significantly lower for prisoners who completed their sentence on ROHD than a matched group of prisoners who served their sentence in prison. Further, the economic analysis indicated that the changes to HD provided substantial quantifiable cost offsets for the findings accessible via DCS government. The project are the website (see https://www.corrections.sa.gov.au/about/our-research/hd-research-evaluation).

The two-year time period of the first evaluation project was appropriate for assessment of program effectiveness however an examination of post HD outcomes is enhanced by a longer analysis period. This is because there can be a lengthy time between prison or HD release and reoffending. The current evaluation builds on findings from the first evaluation and includes analyses of outcomes for those on HD over an approximately six-year period from July 2016 (when the first evaluation project began) to July 2022. This final evaluation report presents findings related to the outcomes of two distinct groups of offenders subject to HD: those on court-ordered HD (COHD) and those on release-ordered HD (ROHD). The report also presents findings for the economic evaluation that examines the cost effectiveness of the program for the government. The report concludes with an overview of the key findings over this six-year time frame.

#### 2.1 **Project background: the first evaluation**

The initial evaluation findings presented a picture of positive impact. The qualitative data indicated that the HISSP program could be enhanced to better meet the needs of prisoners on HD and that some prisoners had unrealistic expectations about daily life on HD. The quantitative data analysis showed positive prisoner outcomes including significantly lower return to custody rates for prisoners who completed their ROHD or COHD sentences compared to a matched control group who served their sentence in prison.

The first HD evaluation also presented economic cost effectiveness analysis reporting significant program cost offsets for the South Australian Department of Corrective Services. Due to the direct offset of high-cost prison time for substantially lower cost home detention the total program cost was estimated to be generating multiples in custodial offsets of over four-fold within the study timeframe and almost seven-fold if the future reductions in recidivism are considered. The economic evaluation added to the quantitative and qualitative components of the first HD research project illustrating that even under conservative assumptions HD detainees were likely to benefit from improved life trajectories potentially reflected in significant positive benefits and system cost offsets.

The first HD evaluation project included the option for longitudinal follow up to validate preliminary phase 1 findings and extend the analysis across the quantitative and economic components. The

extended 4 year phase 2 study period has now been completed and results for the combined 6 year evaluation timeframe are presented in this final evaluation report.

## 2.2 Policy and program context

HD is a criminal justice sanction that allows offenders to live in the community in an approved residence and comply with imposed conditions. These orders are not available for the most serious/violent offences such as homicide, sexual, or terrorist offences, nor is HD a sentencing option for individuals convicted of minor offences and considered to be 'low-risk'. Typical conditions for HD include: suitability of residence; regular contact and compliance with parole officers and movement restriction conditions of HD orders. Additional conditions can also be imposed such as drug testing and certain program attendance on a case-by-case basis. In addition, prisoners approved for HD are often subject to Electronic Monitoring (EM) and strict supervision by corrective services officers. In 2015 and 2016, the SA government introduced a number of legislative and program changes that aimed to expand the use and effectiveness of HD throughout the state. The Statutes Amendment (Home Detention) Bill 2015 expanded the use of Release-Ordered HD (ROHD) used for a person already serving a sentence in prison, and established Court-Ordered HD (COHD) as a new sentencing option where a person is sentenced to a term of imprisonment by way of home detention. In addition, the government funded the development and implementation of the Home Detention Integrated Support Services Program (HISSP) to support offenders to successfully complete their sentence and reintegrate into the community. These changes to HD were part of a larger reform strategy to reduce reoffending by 10% by 2020 (Government of South Australia, 2016).

This policy and program context has been impacted by the COVID-19 pandemic. Much of the emerging literature on the criminal justice system's response to the pandemic has focused on actions within prisons and gaols (see for example Madhumita, 2021; Novisky et al, 2020), however, the impact on HD should also be considered. Research from the US indicates that many states responded to the high risk and rate of transmission within prisons by reducing arrests, suspending court appearances, transferring low risk and vulnerable offenders from prison to HD, and employing remote and virtual supervision strategies, including for those on HD (see for example Schwalbe & Koetzle, 2021). Similarly, corrective services across Australia have implemented a number of changes to their HD programs. Changes to programs have included using remote supervision of offenders where possible, and offering support and rehabilitation programs via digital technologies, rather than through face-to-face contact (Payne & Hanley, 2020).

Prior to the global pandemic, Australia had seen a sustained trend of upward growth in imprisonment rates (Payne & Hanley, 2020). This pattern is evident in the South Australian prisoner population averages that show an increase every year from 2009/10 to 2017/18, with a small decrease in the average number of prisoners in the 2018/19 financial year (Productivity Commission, 2020). However, the available data indicates that since the onset of the pandemic in Australia, the number of persons in custody as well as those serving community-based corrections such as HD have decreased. The Australian Bureau of Statistics, Corrective Services data shows that the average daily prisoner number was 42,633 in the March 2021 quarter, in comparison to an average of 43,069 prisoners in the December 2019 quarter. Further, an average of 77,527 people were serving community-based corrections (CBC) orders in the March 2021 quarter – a significant decrease to the 83,648 people subject to CBC orders in the December 2019 quarter (ABS, 2021; 2020).

Further longitudinal analysis on the reductions of people in custody and those serving community orders is required, however, crime statistics also show a reduction in most crime categories during the pandemic period. Indeed, rolling crime statistics from the South Australian Police show that between May 2021 and May 2020 there was a reduction in all offences against property including criminal trespass (-27%) property damage (-9%); and theft (-25%) (SAPOL, 2021). The trend is mixed in relation to offences against people with a reduction in homicides (-15%), robbery (-22%) and threatening behaviour (-13%); however, there was an increase in sexual assault and related offences (+11%) and assaults (+8%) (SAPOL, 2021).

This context of ongoing policy reform and COVID-19 (COVID) is the background to the evaluation of HD in SA. The analysis presented in this report considers the effect that COVID has had on HD outcomes. There is currently minimal literature on the impact of COVID on correctional practices and outcomes, however there is some research that has been published on its impact on offending in the community. In the current analysis, it was possible to model potential impacts of the COVID on breaches of ROHD/COHD, as well as returns to custody.

## **3 Evaluation methodology**

The evaluation methodology is detailed in the Evaluation Plan (Cale, Zmudzki & Hilferty, 2020) with key details described below.

### 3.1 Aims of the evaluation

As specified in the Evaluation Plan, the project aims to conduct a longitudinal assessment of the impact that legislative and operational changes to HD have had on client outcomes and costs to government. To facilitate longitudinal analysis our assessment will focus on three key domains over the period from approximately July 2016 to July 2022 including: re-offending rates, forecast prisoner growth, and HD program expenditure and cost effectiveness.

#### 3.2 Evaluation data sources

This phase 2 evaluation draws upon and extends two data sources:

- DCS administrative data from July 2016 to August 2022. DCS data was provided for three distinct cohorts: those on ROHD; those on COHD; and a comparative group of prisoners who were released from prison during the specified time period. Data items contained in the dataset include: demographic information; prior offending history; information about index sentencing; offending related program undertaken; information about index community order; return to corrective services information (e.g. return to prison and/or breach details). Data on the HD Integrated Support Services Program (HISSP) was not made available for this report.
- DCS financial data for the period 1 July 2016 to 1 July 2022. The data items contained in the dataset include HD program operating expenditure, electronic monitoring costs, intensive compliance unit cost allocations, and HISSP cost data based on monthly payments to service providers.

The phase 1 evaluation included qualitative data as previously reported (Cale et al., 2018).

## 3.3 Evaluation methods

The research team employed a mixed-method approach for the evaluation. Each method is described separately below.

#### 3.3.1 Quantitative analysis of DCS data

The outcomes evaluation is based upon analysis of administrative data obtained from DCS. The dataset was de-identified by DCS and included: demographic characteristics of prisoners, historical and current offence information, risk assessment information, information about involvement in different programs while in custody, sentence details, and information about breaches of HD orders and returns to custody. The data in the current outcomes evaluation covered HD orders from 1 July 2016 to 1 July 2022, and HD order breaches and returns to custody up until 22 August 2022.

To investigate which key demographic, sentencing and correctional history characteristics were associated with positive outcomes on HD, four separate sets of analyses were conducted based on samples derived from administrative correctional data provided by DCS SA of prisoners released to HD since July 2016. Descriptions of each sample are provided below and as shown, they correspond to different forms of HD and different follow-up times.

The first sample involved all prisoners who received ROHD between 1 July 2016 to 1 July 2022 who either completed or breached their ROHD order by 22 August 2022 (the end of the observational period at the time of receipt of the data). The original data set contained 1531 observations corresponding to 1353 unique individuals. Sixty-five individuals had two or more admissions to HD during the observation period. For these outcomes analyses, we limited our observations to the most recent HD admission; data on prior instances of HD were removed. Prisoners in the dataset who were still serving ROHD sentences at the time the data were requested from DCS were excluded from the analyses (n = 93). The final sample includes 1260 prisoners released to ROHD between 1 July 2016 to 1 July 2022 (see figure 1).



#### Figure 1: Sample and cohort description, ROHD

The second series of analyses investigated a subgroup of prisoners sentenced to COHD from 1 July 2016 to 1 July 2022 and were discharged and/or breached their order up to 22 August 2022. The data set contained 3312 observations corresponding to 1198 unique individuals. Of the 1198 prisoners who received COHD in SA during this period, 124 were still in COHD by the end of the observation period. These cases were removed from the data, resulting in a final COHD sample of n = 1074 (see Figure 2).

Figure 2: Sample and cohort description, COHD



The third and fourth series of analyses involved all prisoners in SA who were sentenced and released from custody between 1 July 2016 and 1 July 2022. Prisoners who completed ROHD in the same period were matched to prisoners discharged from custody (Prisoner discharged; PD) who were not sentenced to ROHD (Figure 3). Note that those in the PD group were removed if: a) they were not eligible for a home detention order based on the data available (e.g., on remand or convicted of homicide or sexual assault); (b) were sentenced and/or released outside of the six-year observation period; or (c) had ever received a home detention order. For these analyses, individual cases from both groups were also removed if they did not have risk assessment score on record. The groups were matched on key demographic and sentence characteristics and then compared in terms of the proportions of prisoners who returned to custody by 22 August 2022. The same matching procedures were replicated for prisoners who completed COHD in the same period (Figure 4).

Figure 3: Sample descriptions, prison discharged and matched ROHD





Figure 4: Sample descriptions, prison discharged and matched COHD

The statistical analysis focused on the key measures described below.

#### 3.3.2 Measures

Covariates. In the current study, demographic covariates included: (1) age; (2) sex (0=female, 1=male); (3) Aboriginal (0=no, 1=yes); (4) level of education (0=less than high school, 1=high school or greater); and (5) employment status prior to incarceration (0=unemployed, 1=employed). The offence history variables included the type of index offence for which they were serving the current sentence and were coded as a: violent (0=no, 1=ves); theft (0=no, 1=ves); drug related (0=no, 1=yes); administrative/driving (0=no, 1=yes); public order/property (0=no, 1=yes); or fraud (0=no, 1=yes). The number of prior sentences was also included as well as the number of non-parole period days that were part of the initial sentence (i.e., ROHD), and the number of days sentenced to HD orders (i.e., ROHD/COHD). Risk assessment information (Risk of Reoffending (ROR) and Prisoner Risk Needs Inventory-Revised ('ORNI-R') scores were also included. Participation in programs in custody was coded as whether the individual had ever participated in a: prison employment program (0=no, 1=yes); prison education program (0=no, 1=yes); behavioural change program (0=no, 1=yes); literacy and numeracy program (0=no, 1=yes); and/or, domestic violence program (0=no, 1=yes). Finally, engagement in HD Integrated Support Service programs (HISSP) was examined in relation to breaches of HD conditions only and was coded as: received support (0=no, 1=yes), total days of support received, received high needs support (0=no, 1=yes), total days of high needs support received, and total days of non-high needs support received. Note that square root transformations were used to normalise non-normally distributed continuous covariates.

*Recidivism & Follow-up periods.* Two different outcome variables were measured across all the analyses. The first was whether prisoners' records indicated they had breached their HD conditions (0=discharged from HD, 1=breached HD)<sup>1</sup>. The respective follow-up period was computed by determining the number of days from release to HD and breach of HD or discharge from an HD order, whichever came first. Note that an offence committed during HD would have been associated with a breach of HD conditions, however it was not possible to determine the specific reason/basis for the breach of HD orders in the data. The second outcome variable was whether prisoners returned to custody for a new offence (i.e., returned to prison for a new sentence) at some point following the completion of their sentence that included an HD order (0=did not return to custody, 1=returned o custody). Similarly, the follow-up period here was determined by computing the number of days between the end of an individual's last completed sentence (including parole period) that included an HD order and their return to custody or the 22<sup>nd</sup> of August 2022, whichever came first. It was not within the scope of the current analysis to report on whether new offences were the same category as prior offences for which individuals received and HD order.

<sup>&</sup>lt;sup>1</sup> This outcome variable refers to any recorded breach of HD conditions. It does not refer to the outcome of the breach of conditions, such as being returned to custody, or cases where breaches occur but do not result in HD being revoked. The discharged category refers to those individuals who were discharged from HD without any recorded breaches.

#### 3.3.3 Analytic strategy

Cox Regression. First, bivariate analyses were used to provide a description of the different samples according to demographic characteristics, covariates and outcome variables. All of these analyses were conducted comparing males and females, breach status (i.e., breached an HD order vs. did not breach an HD order), and return to custody (i.e., returned to custody following an HD order vs. did not return to custody following an HD order). Next, Cox regression models were estimated for the ROHD sample, the first predicting breaches of ROHD, the second predicting returns to custody following ROHD. Cox regression (or Cox proportional hazards) is a time-to-event analysis that determines the average probability of an event occurring at any given point during the observation period. The analysis produces a Hazard Ratio (HR), which can be interpreted as the probability that one group would experience the event sooner (or later) than the other group. Cox regression does not require equal follow up times. However, it assumes that the difference in hazards (i.e. probability of the outcome event) between groups remain proportional across time. This assumption was assessed and verified by assessing the presence of time-dependent covariates. Cox regression also assumes that a linear relationship exists between the log hazards and each covariate; this was confirmed by visual inspection of residual plots. This analysis was employed to determine the relative association between covariates that were associated with survival time (i.e.. breaching/reoffending). Prisoners were followed from the start of their ROHD sentence to the time of their breach or successful completion of the sentence. Prisoners were also followed from the end of ROHD to the time they returned to custody (RTC) or the end of the follow-up period (22<sup>nd</sup> August 2022), whichever came first. Prisoners who did not breach ROHD conditions or did not return to custody were right censored and comprised the comparison group for the respective analyses. Multivariate Cox Proportional Hazards regression analyses were conducted to test the relationship between prisoners' rates of breaches/RTC, and demographic, criminal justice, and sentence related characteristics. Hazard Ratios (HR) and the respective 95% Confidence Intervals (95% CI) were computed as measures of effect size and precision of any association between covariates, HD breaches, and RTC. HRs greater than 1 indicate a higher probability of the outcome (i.e., breach or RTC) at any point during the observation period, whereas HRs lower than 1 signify a lower probability of the outcome.

*Risk prediction modelling.* Backwards stepwise logistic regression analyses were conducted to identify the optimal predictors for inclusion in a model predicting the risk of HD breach<sup>2</sup>. Model selection was determined using the Akaike Information Criterion (AIC), which balances model fit and complexity, with lower AIC scores corresponding to a better model. Receiver Operating Characteristics (ROC) curves were then calculated to test model accuracy. The area under the ROC curve is plotted against model sensitivity (true positive rate) and 1- specificity (false positive rate) and represents the probability that the model correctly discriminates between a positive case and a negative case. Finally, nomograms were created to illustrate the multivariate probability of HD breach derived from the risk prediction model.

<sup>&</sup>lt;sup>2</sup> Risk prediction modelling was only conducted for breaches of ROHD/COHD. Risk prediction modelling was not conducted for returns to custody following orders. The rationale behind this is that those individuals who breached an HD order were under supervision at the time compared to those who returned to custody.

*Propensity score matching.* Propensity Score Matching (PSM) matches participants from different groups based on theoretically and empirically relevant covariates (Lane, To, Shelley, & Henson, 2012), and was used to create matched experimental (1. ROHD and 2. COHD; Home detention) and control (PD; Prison discharges) groups to determine the effect of ROHD and COHD on returns to custody by 22 August 2022. Only prisoners with a completed sentence (including parole period) prior to the end of the observation period were eligible for matching. The observation period spanned from the end date of the last completed sentence to the date of first return to custody or 22 August 2022, whichever came first. The sample derivation process is presented above in figures 3 and 4. Next, Kaplan-Meier survival curves were calculated to compare the average time to return to custody between the matched experimental and control groups. The survival time was the number of days from the end of ROHD/COHD to return to custody or the end of the follow-up period (22<sup>nd</sup> August 2022), whichever came first. Cox regression analysis was also conducted to calculate if being sentenced to ROHD/COHD was associated with a lower rate of return to custody, relative those in the PD group who had comparable baseline characteristics. These analyses were repeated with the pre-matched sample to determine if the results were an artefact of the data matching process.

#### 3.3.4 Economic evaluation

This second phase of the economic evaluation has built on the first project (2016-2018) to validate and extend the costs and benefits of home detention to the South Australian justice system. The methodology developed during the completed first evaluation (phase 1) established the economic framework across cost components and program outcomes. The initial project developed costing calculation methods and cross validated DCS operating unit costs with published Report on Government Services (RoGS) expenditure across the ROHD and COHD offender populations (Cale, Zmudzki et al. 2018).

This document presents the final report for the combined phase 1 and phase 2 evaluation projects. Further details of economic data sources and program costs are provided in the phase 2 Evaluation Framework including Home Detention Integrated Support Services Program (HISSP) costs and program related custodial cost offsets (Cale, Zmudzki et al. 2020). The phase 1 evaluation established economic modelling methods to extend and validate preliminary study period outcomes when the phase 2 longitudinal follow up data were available.

The current phase 2 evaluation uses the same sources of program funding and cost data and the same methodology for the extended longitudinal study period now including 6 complete financial years from 2016-17 to 2021-22, Figure 5. In line with completed phase 1 and phase 2 reports, the economic evaluation is integrated and aligned with the quantitative analysis of the custodial HD dataset (Cale, Zmudzki et al. 2018, Cale, Zmudzki et al. 2021).





Notes: ROGS = Report on Government Services, HISSP = Home Detention Integrated Support Services Program, EM = Electronic Monitoring, ICU = Intensive Compliance Unit, FTE = Full time equivalent.

This document provides the final report for the complete 6-year study period including the final phase 2 extension for 2021-22, indicated by unshaded segment. The quantitative analyses however, as described in the previous section, take a slightly different perspective. Detainees still serving ROHD and COHD sentences at the end of the study period are excluded from the quantitative analysis to establish a clear endpoint based on completed HD orders. Additionally, the outcomes analysis focuses on the most recent indexed HD admission with prior repeat HD orders for an individual excluded.

The economic evaluation perspective combines the quantitative outcomes but also assesses all days served in HD to align with program cost data and support calculation of average cost per day and per detainee. For this reason, the economic analysis presented in this final report includes HD days served under repeat ROHD and COHD orders, as well as calculated HD days served at the end of the study period as of 30 June 2022. The average ROHD and COHD sentence durations are separately based on completed orders, including repeat offenders, to exclude partial HD sentences from average order calculations. For total HD months the figures present all served months including calculated months of orders still being served, to provide a complete basis to calculate average HD cost per month.

The data analysis and pre-processing for the economic content was undertaken in Microsoft Excel, Microsoft 365 for business and STATA V16.1. (StataCorp LP, College Station, Texas, USA).

#### 3.3.5 Program funding and cost data

The economic component data sources incorporate annual HD budget allocations aligned with Statewide program costs calculated from RoGS operating expenditure, HISSP program support service costs as well as estimated program related custodial cost offsets. Home detention program costs are calculated from RoGS operating expenditures, and DCS Finance Directorate cost allocations of electronic monitoring (EM) and Intensive Compliance Unit (ICU) based on the number of offender days, Table 1. This cost calculation was separately cross validated during phase 1 with a comprehensive bottom-up program cost base using HD related operating units across community corrections based on HD staffing and FTE positions. This combined approach ensured consistency and comparability with published RoGS custodial cost data as well as validation of cost allocation calculations.

All program costs have been reviewed and updated for current procurement and contracting including electronic monitoring services. The final phase 2 data include service provider payments for HISSP integrated support services reported through DCS Finance systems. The cost of HISSP has been examined to confirm support services provided for HD detainees as HISSP services are also now available for offenders on other (non-HD) orders.

The final cost component relates to HD program cost offsets based on custodial data as described in the quantitative methods above. The phase 2 economic analysis extends previous preliminary work to examine longitudinal follow up of detainee returns to custody (RTC). Custodial days avoided because of COHD as well as through ROHD early release are developed into the economic evaluation modelling. All sources of cost data have been developed into a time series framework to establish before and after HD entry points as the basis of average costs per detainee. These sources of program cost have been incorporated into the Cost Effectiveness Analysis (CEA) modelling, described further below.

Cost item		Source / calculation		
Net total operatin	ng expenditure (a)	ROGS		
EM costs* (b)		Finance		
ICU costs (c )		Finance		
Net operating exp	penditure less EM and ICU (d)	a-(b+c)		
Number of offend	ler days (e )	ROGS		
Cost per day exclu	uding EM and ICU (f)	(d divided by e)		
Avg daily CC popu	lation with EM and ICI Linnut (g)	ROGS		
Annualised cost o	f FM** (b)	Finance		
Annualised cost o	f ICII (i)	h+c		
Total Annualised	cost of EM & ICU (j)			
Daily cost of EM a	nd ICU (k)	(j / 365.25)/g		
Cost of supervisio	n, EM and ICU (I)	(f+k)		
Number of offend	der davs	(g x 365.25)		
Proportion of pop	vulation in-cope (ROHD and COHD)	Data run by GES		
Number of offend	der days for in-scope population	,		
Annualised cost o	f ROHD and COHD			
HISSP service prov	vider costs	Finance		
Total for period of	f study			
Source:	Phase	1	Eval	

Table 1: State-wide home detention program cost calculation method

Source: Phase 1 Evaluation Report Notes: \* Includes the portion of the EM contract and lost and damaged goods which was allocated to the Community Corrections population in the ROGS calculation, \*\* Includes the full annual cost of the EM contract and lost and damaged goods, EM = Electronic Monitoring, ICU = Intensive Compliance Unit, CC = Community Corrections, HISSP = Home Detention Integrated Support Services Program.

#### Program costs and benefits

Program costs for the complete 6 financial years have been integrated with offender data analyses and developed into the economic modelling through HD detainee outcomes. Custodial days avoided through COHD as well as ROHD early release provide core cost offsets for the economic evaluation. This final report also extends preliminary work to examine longitudinal follow up of detainee returns to custody compared with the non-HD matched control group.

As referred to in the first evaluation report additional potential cost offsets may result from HD program support in a broader whole of government or societal perspective. These include a range of potential outcomes including physical and mental health, drug and alcohol dependency, community reengagement, employment, accommodation stability, court and policing or through reduced victim costs. Although these aspects are not an explicit component of the cost effectiveness modelling, a supplementary scenario has been developed based on published research to assess potential extended HD program cost effectiveness for potential indirect costs.

The costing components re-examine and incorporate scenarios in context of DCS's strategic policy through the '10by20' initiative (Government of SA, 2016), which established a target of reducing SA re-offending 10% by 2020. The HD program economic evaluation has been developed from the perspective of SADCS as the program funding agency.

#### 3.3.6 Cost effectiveness modelling

The economic component of the evaluation developed a Markov model framework to assess corrective services use, program costs and outcomes and to estimate cost effectiveness, Figure 6. The model defines transition probabilities of being placed on COHD or ROHD orders, successful completion of HD as well as cases of reoffending and return to custody. The structure uses corresponding pathways to define comparative events and incremental costs and outcomes between the matched evaluation control group. The Markov model provides the framework to undertake a Cost Effectiveness Analysis (CEA) of HD compared to time in prison.



#### Figure 6: HD Markov model pathways and comparison

Source: Phase 2 Evaluation Framework (Cale, Zmudzki et al. 2020)

Results are estimated as cost per prison year avoided due to the alternative sentencing option of home detention. The economic modelling approach applies methods commonly used in program evaluation in healthcare settings. Health economic modelling of cost effectiveness often reflects high levels of uncertainty in outcomes related to risk of illness relapse and readmissions to hospital. The variation in these ongoing outcomes has natural implications for estimated program cost effectiveness similar to the uncertainty in custodial outcomes with rates of returns to community corrections or prison.

The Markov modelling framework provides rigorous methods to evaluate this uncertainty in estimated model parameters through sensitivity analyses and bootstrapping resampling techniques

including probabilistic sensitivity analysis (PSA). This provides the basis to integrate the extended RTC outcomes as a supplementary component of calculated incremental cost effectiveness ratio(s) with associated 95 percent confidence intervals. This supports inclusion of extended phase 2 RTC endpoints while sustaining the direct HD custodial cost offsets which underpin core program cost effectiveness. The phase 2 economic Markov modelling has been undertaken using TreeAge Pro version 2022 R2.1.

The program costs and outcomes are based on evaluation of financial and offender data and published program valuation sources, Table 2. The modelling parameters include estimated outcome distributions and variation to establish the framework for assessing joint model uncertainty in all parameters. All cost figures are reported in 2021-22 Australian dollars indexed at 1.5 percent per annum in line with SADCS guidance.

Parameter	Unit	Value	Distribution	Range	Source
Costs					
ROHD cost including EM and ICU	Per detainee	\$11,337	Gamma	± \$12,317	1: SADCS
COHD cost including EM and ICU	Per detainee	\$11,678	Gamma	± \$12,967	1: SADCS
Prison	Per year	\$105,277	n/a	n/a	2: RoGS
HD orders					
ROHD	Months	6.2	Gamma	± 6.7	3: SADCS
COHD	Months	6.4	Gamma	± 7.1	3: SADCS

#### Table 2: Model parameters used in economic modelling

Notes: ROHD = release-ordered HD, COHD= court-ordered HD, EM = Electronic Monitoring, ICU = Intensive Compliance Unit, ± = standard deviation

Sources:

1. South Australian Department of Corrective Services, Finance Directorate.

 Australian Government, Productivity Commission, Report on Government Services (RoGS) 2019-20. Table 8A.19 Recurrent expenditure per prisoner and per offender per day. Net operating expenditure. Annualised total figure for South Australia including operating expenditure and capital costs.

3. South Australian Department of Corrective Services, offender data.

The economic modelling develops a base case establishing direct prison years avoided offsets for the study group across ROHD and COHD orders. The base case is then extended to incorporate returns to custody for the HD study group compared to the propensity score matched control group. A further scenario examines estimated indirect costs of imprisonment and the related implications for HD cost effectiveness.

Program costs are combined with ROHD and COHD days to estimate average cost per order type based on average days detainees spend on each order. The variation in cost of each order type is similarly estimated from standard deviation or the number of days on each order type.

The phase 2 economic evaluation incorporated methodological enhancements that extended the analysis and robustness of results. This includes the extended complete 6-year phase 1 and phase 2 longitudinal follow up data providing validation of initial findings through increased study and control

group sample sizes. The final phase 2 study group for the economic evaluation was 2,482 detainees compared to 1,025 in the preliminary phase 2 report 1 and 882 in the previous 2018 evaluation.<sup>3</sup> The economic analysis includes calculated HD days for 217 detainees who were still serving their sentences at the end of the study period.<sup>4</sup> The final economic analysis also includes repeat HD orders for individuals providing a total sample for program cost analysis of 2,694 HD orders.<sup>5</sup>

The final 6-year program cost data include custodial activity during the COVID 19 pandemic restrictions and lockdowns. Source data from the latest available 2022 Productivity Commission RoGS report note the impact of COVID 19 on corrective services data including actual service delivery during 2020 and 2021 and the related ability of data providers to collect and process results (Productivity Commission 2022).<sup>6</sup>

## 3.4 Methodological limitations

The methodology outlined is best practice in evaluation of HD programs and was also designed to make best use of existing datasets. The researchers are confident that the design and findings presented in this report are robust, however there are some limitations associated with the design and it is important that these be considered when interpreting results. Importantly, in order to examine any changes between prisoners receiving different forms of HD and those on other forms of sanctions, our analysis included comparison groups. A quasi-experimental design was applied in the current analyses because it was not possible to randomly assign those who received HD orders/sentences and those who did not. Therefore, propensity score matching was utilised to match prisoners who completed HD orders/sentences between July 2016 and August 2022, with prisoners released from custody over the same time. Given that these data come from two distinct sources, the number of variables available for matching was limited to those available in each source, and only certain proportions of individuals serving HD orders were successfully matched. Key demographic and sentence characteristics and risk assessment information were available to conduct the matching.

The economic modelling is integrated with and shares the limitations associated with quantitative analyses of the offender data. This may have minor implications for outcomes such as reoffending rates during the COVID 19 pandemic. These aspects are not considered to have material implications for the estimated program cost effectiveness.

<sup>&</sup>lt;sup>3</sup> Minor differences result from quantitative sample sizes due to exclusion of incomplete HD sentences and repeat ROHD and COHD orders.

<sup>&</sup>lt;sup>4</sup> Excluded from the quantitative analysis, 93 ROHD + 124 COHD = 217.

<sup>&</sup>lt;sup>5</sup> Total HD orders including repeat sentences and those still serving at the end of the study period: 1,441 ROHD + 1,253 COHD = 2,694.

<sup>&</sup>lt;sup>6</sup> The RoGS corrective services report emphasises the impact Government implemented lockdowns had in some jurisdictions on the number of people being received into and discharged from prison. These impacts are noted to potentially flow through to indicators on prison utilisation and costs per prisoner/offender per day to various extents in jurisdictions depending on the length and scale of lockdowns including within prison facilities and community corrections.

## 3.5 Evaluation ethics

The researchers sought and received approval to conduct evaluation activities from UNSW's Human Research Ethics Committee (HC 200634).

## **4** Outcomes evaluation

This section presents the analysis and findings of the DCS administrative data.

#### 4.1 Release Ordered Home Detention

#### 4.1.1 Sample characteristics

Table 3 below provides a bivariate description of all prisoners who received ROHD between 1 July 2016 and 1 July 2022 stratified by gender. Most of the sample were male (82.1% male, 17.9% female). The average age of the sample at the time they were released to HD was 39.2 (sd=10.5) years, and there were no differences in age between males and females. Approximately nine per cent of the sample was Aboriginal, with significantly more females (13.9%) than males (8.2%) identifying as Aboriginal. Around one-quarter of the sample (27.7%) had a high school education or above, with the proportion significantly greater for females (32.7%) than males (26.4%). One-third of the sample were employed prior to ROHD (35.6%), with a significantly greater proportion of those employed being male (41.1% vs. 14.5%).

	Total sample (n=1260) n (%) / x̄(sd)	Males (n=1034) n (%) / x̄(sd)	Females (n=226) n (%) / x̄(sd)	x²(df), φ / t(df), Cohen's d
Demographics				
Age at release to ROHD	39.24 (10.48)	39.25 (10.63)	39.22 (9.78)	n.s
Aboriginala	104 (9.2%)	75 (8.2%)	29 (13.9%)	<i>x</i> <sup>2</sup> (1)=6.59 <sup>*</sup> , .08
Completed high school <sup>b</sup>	258 (27.7%)	194 (26.4%)	64 (32.7%)	<i>x</i> <sup>2</sup> (1)=3.06 <sup>+</sup> .06
Employed <sup>c</sup>	331 (35.6%)	303 (41.1%)	28 (14.5%)	<i>x</i> <sup>2</sup> (1)=47.06 <sup>***</sup> , .23
Offence history				
Has multiple sentences	440 (34.9%)	376 (36.4%)	64 (28.3%)	<i>x</i> <sup>2</sup> (1)=5.28 <sup>*</sup> , .07
Avg. # of prior sentence	1.82 (1.63)	1.88 (1.72)	1.52 (1.10)	<i>t</i> (497.04)=3.94 <sup>***</sup> , .22
Index offence (ROHD sentence)				
Drug	429 (34.0%)	366 (35.4%)	63 (27.9%)	<i>x</i> <sup>2</sup> (1)=4.67 <sup>*</sup> , .06
Administrative/driving	277 (22.0%)	223 (21.6%)	54 (23.9%)	n.s
Public order/property	227 (18.0%)	199 (19.2%)	28 (12.4%)	<i>x</i> <sup>2</sup> (1)=5.90 <sup>*</sup> , .07
Violent	141 (11.2%)	120 (11.6%)	21 (9.3%)	n.s
Fraud	116 (9.2%)	74 (7.2%)	42 (18.6%)	<i>x</i> <sup>2</sup> (1)=28.97 <sup>***</sup> , .15
Theft	65 (5.2%)	47 (4.5%)	18 (8.0%)	<i>x</i> <sup>2</sup> (1)=4.43 <sup>*</sup> , .06
Risk ratings				
Risk of Reoffending (ROR) <sup>d</sup>	10.95 (5.39)	10.95 (5.45)	10.95 (5.10)	n.s
Offender Risk Needs Inventory (ORNI-R)e	25.60 (4.75)	25.30 (4.86)	27.15 (3.82)	<i>t</i> (208)=2.10 <sup>*</sup> , .39

Table 3: Demographic, criminal justice and sentence characteristics of prisoners sentenced to ROHD between 1<sup>st</sup> July 2016 and 1<sup>st</sup> July 2022 by gender (n=1260)

	Total sample (n=1260) n (%) / x̄(sd)	Males (n=1034) n (%) / x̄(sd)	Females (n=226) n (%) / x̄(sd)	x²(df), φ / t(df), Cohen's d
Prison programs				
Employment	1143 (90.7%)	937 (90.6%)	206 (91.2%)	n.s
Education	318 (25.2%)	213 (20.6%)	105 (46.5%)	<i>x</i> <sup>2</sup> (1)=65.74 <sup>***</sup> , .23
Domestic violence	89 (7.1%)	89 (8.6%)	0	<i>x</i> <sup>2</sup> (1)=20.93 <sup>***</sup> , .13
Literacy and numeracy	247 (19.6%)	184 (17.8%)	63 (27.9%)	<i>x</i> <sup>2</sup> (1)=11.96 <sup>***</sup> , .10
Making changes	192 (15.2%)	140 (13.5%)	52 (23.0%)	<i>x</i> <sup>2</sup> (1)=12.88 <sup>***</sup> , .10
Sentence characteristics				
Non-parole period (days) <sup>sqrt</sup>	573.12 (574.32)	596.06 (593.06)	468.13 (466.25)	<i>t</i> (1258)=2.62 <sup>**</sup> , .19
Length of ROHD (sentenced	191.87	194.93	177.86	n.s
Length of ROHD (actual days) <sup>sqrt</sup>	(198.43) 193.67 (209.64)	(201.25) 198.23 (212.85)	(184.74) 172.79 (193.36)	<i>t</i> (1258)=1.65 <sup>*</sup> , .12
ROHD breaches				
Breached ROHD conditions	175 (13.9%)	137 (13.2%)	38 (16.8%)	n.s
Days to breach	103.71 (116.4)	113.45 (123.01)	68.63 (80.50)	<i>t</i> (173)=2.43 <sup>**</sup> , .45
Return to custody (RTC) post-	ROHD			
RTC by 22 <sup>nd</sup> August 2022	265 (21.0%)	222 (21.5%)	43 (19.0%)	n.s
Days RTC	531.77 (395.48)	528.87 (394.28)	546.72 (405.99)	n.s

*p*<.10<sup>+</sup>, *p*<.05<sup>\*</sup>, *p*<.01<sup>\*\*</sup>, *p*<.001<sup>\*\*\*</sup>

Note: Percentages exclude missing cases

a. n=1126

b. n=923

c. n=931 d. n=916

e. n=210

e. n=210

Regarding offence histories, just over one-third (34.9%) of the sample had more than one prior sentence, and the average number of prior sentences was 1.8 (sd=1.6). Males were significantly more likely than females to have more than one prior sentence (36.4% vs. 28.3%), and a greater number of prior sentences (1.88 vs. 1.52). In terms of the index offence for which individuals received ROHD, around one-third (34.0%) were for drug offences, nearly one-quarter (22.0%) for administrative/driving offences, almost one-in-five (18.0%) for public order/property offences, one-in-ten (11.2%) for a violent offence, 9.2% for fraud, and 5.2% for a theft related offence. A significantly greater proportion of males than females had an index offence for drugs (35.4% vs. 27.9%) and public order/property offences (19.2% vs. 12.4%), whereas significantly more females than males were involved in fraud (7.2% vs. 18.6) and theft (4.5% vs. 8.0%). There were no significant gender differences for violent or administrative/driving offences.

Table 3 above also displays risk assessment information and involvement in prison programs while serving time in custody prior to release to ROHD. The average risk assessment score (based on the Risk of Re-offending screening assessment) for those with available data (n=916) was 10.95

(sd=5.4)<sup>7</sup>. For those assessed with the ORNI-R<sup>8</sup> (n=210), the average score was 25.6 (sd=4.8). Although there were no significant gender differences in ROR score, females did have significantly higher ORNI-R scores than males (25.30 vs. 27.15). Most of the sample (90.7%) were involved in employment programs in their custodial histories, with no difference between the genders regarding the proportion who participated in employment programs while in custody. Far fewer prisoners had prior involvement in education programs (25.2%), literacy and numeracy programs (19.6%), behavioural change programs (15.2%), and domestic violence programs (7.1%) while in custody. With the exception of participation in domestic violence and employment programs, a significantly greater proportion of females compared to males participated in all of the remaining program types while in custody.

In terms of sentence characteristics, the average non-parole period was 573.1 (sd=574.32) days, with males (596.1 days) having significantly longer non-parole periods than females (468.1 days). On average, prisoners spent 193.7 days (sd=209.6) in ROHD, with males (198.2 days) in ROHD significantly longer than females (172.8). Around one-in-eight (13.9%) prisoners breached their HD order and there were no significant differences in the proportion of males or females who breached ROHD. Among those who breached their HD order, the average time to breach was 103.7 days (sd=116.4), with the time to breach significantly longer for males (113.5 days) than females (68.6 days). One-in-five (21.0%) prisoners returned to custody by 22<sup>nd</sup> August 2022, with no significant difference between males and females regarding the proportion or average days to return to custody post-ROHD.

## 4.1.2 Variables associated with breaches of ROHD and returns to custody post-ROHD

Table 4 below shows bivariate comparisons of demographic, criminal justice and sentence characteristics of prisoners serving ROHD across those who breached conditions and those who did not. Around one-in-eight (13.9%) prisoners breached conditions of ROHD. Prisoners who did not breach their ROHD order were significantly more likely to have been employed at the time of their sentence (37.0% vs. 27.7%), be currently sentenced for an administrative or driving offence (23.0% vs. 15.4%) or a violent offence (11.8% vs. 7.4%) and had a longer non-parole period (582.6 days vs. 514.3 days). By contrast, those who breached their ROHD order were significantly more likely to have had multiple prior sentences (42.3% vs. 33.7%) and had a higher number of prior sentences (2.31 vs. 1.73), be currently sentenced for fraud (14.3% vs. 8.4%), have a higher ROR score (12.49 vs. 10.69), have a longer ROHD sentence (201.4 days vs. 190.3 days), and were more likely to return to custody (32.6% vs. 19.2%).

In terms of HISSP involvement, more days of support among those having received high needs support packages was associated with a lower likelihood of breaching ROHD (110.59 days vs. 84.98 days). These findings suggest that, at least in terms of breaching HD orders, the impact of HISSP

<sup>&</sup>lt;sup>7</sup> RoR risk categories = 0 - 11 (low), 12-15 (medium), 16-22 (high).

<sup>&</sup>lt;sup>8</sup> The ORNI-R instrument is utilised for prisoners who meet a specific threshold based on assessment with the RoR instrument. For these reasons, RoR score was used to measure risk level in all of the multivariate analyses. ORNI-R risk categories = 0-12 (low), 13-28 (medium), 29-39 (high), 40-41 (extreme).

duration was conditional (i.e., interacts with) on receiving a high needs support package. It is important to interpret this finding in context given that the purpose of HISSP is not primarily to reduce breaches of orders, but rather provide support for those on HD orders who need it the most. These findings suggest that one additional positive outcome for the highest needs prisoners released to ROHD is that these support services also assist them in complying with their HD orders.

	Total sample (n=1260)	No Breach (n=1085)	Breach (n=175)	x²(df), ф/
	n (%) / x̄(sd)	n (%) / x̄(sd)	n (%) / x̄(sd)	t(df), Cohen's d
Demographics				
Age at release to ROHD	39.24 (10.48)	39.31 (10.71)	38.85 (8.95)	n.s
Male	1034 (82.1%)	897 (82.7%)	137 (78.3%)	n.s
Aboriginal <sup>a</sup>	104 (9.2%)	86 (9.0%)	18 (10.6%)	n.s
Completed high school <sup>b</sup>	258 (27.7%)	224 (28.5%)	34 (23.1%)	n.s
Employed	331 (35.6%)	290 (37.0%)	41 (27.7%)	<i>x</i> <sup>2</sup> (1)=4.73 <sup>*</sup> , .07
Offence history				
Has multiple sentences	440 (34.9%)	366 (33.7%)	74 (42.3%)	<i>x</i> <sup>2</sup> (1)=4.85 <sup>*</sup> , .06
Avg. # of prior sentence	1.82 (1.63)	1.73 (1.50)	2.31 (2.23)	<i>t</i> (200.1)=3.33 <sup>***</sup> , .36
Index offence (ROHD sentence)				
Drug	429 (34.0%)	367 (33.8%)	62 (35.4%)	n.s
Administrative/driving	277 (22.0%)	250 (23.0%)	27 (15.4%)	<i>x</i> <sup>2</sup> (1)=5.09 <sup>*</sup> , .06
Public order/property	227 (18.0%)	190 (17.5%)	37 (21.1%)	n.s
Violent	141 (11.2%)	128 (11.8%)	13 (7.4%)	x <sup>2</sup> (1)=2.89 <sup>+</sup> , .05
Fraud	116 (9.2%)	91 (8.4%)	25 (14.3%)	<i>x</i> <sup>2</sup> (1)=6.27 <sup>*</sup> , .07
Theft	65 (5.2%)	54 (5.0%)	11 (6.3%)	n.s
Risk ratings				
Risk of Reoffending (ROR) <sup>d</sup>	10.95 (5.39)	10.69 (5.52)	12.49 (4.27)	<i>t</i> (221.7)=4.32 <sup>***</sup> , .34
Offender Risk Needs Inventory (ORNI-R) <sup>e</sup>	25.60 (4.75)	25.58 (4.88)	25.67 (4.05)	n.s
Prison programs				
Employment	1143 (90.7%)	989 (91.2%)	154 (88.0%)	n.s
Education	318 (25.2%)	272 (25.1%)	46 (26.3%)	n.s
Domestic violence	89 (7.1%)	73 (6.7%)	16 (9.1%)	n.s
Literacy and numeracy	247 (19.6%)	212 (19.5%)	35 (20.0%)	n.s
Making changes	192 (15.2%)	159 (14.7%)	33 (18.9%)	n.s
Sentence characteristics				
Non-parole period (days)sqrt	573.12 (574.32)	582.60 (587.69)	514.30 (480.54)	<i>t</i> (265.6)=1.69 <sup>*</sup> , .12

## Table 4: Demographic, criminal justice, and sentence characteristics of prisoners sentenced to ROHD from 1<sup>st</sup> July 2016 to 1<sup>st</sup> July 2022, and ending before 22<sup>nd</sup> August 2022, by breach status (n=1260)

	Total			
	sample	No Breach	Breach	
	(n=1260)	(n=1085)	(n=175)	<i>х²(df</i> ), ф /
	n (%) / x̄(sd)	n (%) / x̄(sd)	n (%) / x̄(sd)	<i>t</i> ( <i>df</i> ), Cohen's <i>d</i>
Length of ROHD (sentenced	191.87	190.33	201.40	#267 3)-2 01* 16
days) <sup>sqrt</sup>	(198.43)	(203.69)	(162.23)	(207.3) = 2.01, .10
Longth of POHD (actual days) surt	193.67	208.17	103.71	<i>t</i> (305.2)=8.41 <sup>***</sup> ,
Length of ROHD (actual days)	(209.64)	(217.61)	(116.40)	.53
HD Integrated Support Services	Program			
Received support	1133 (89.9%)	978 (90.1%)	155 (88.6%)	n.s
	105.69	104.77	111.54	
Days of support	(76.22)	(72.47)	(96.85)	n.s
Received high needs support	262 (23.1%)	218 (22.3%)	44 (28.4%)	n.s
Dave of high poods supports art	106.27	110.59	84.98	#E1 04)-2 20*** 60
Days of high needs support	(54.11)	(52.03)	(59.54)	l(51.94)=5.50, .09
Dave of no high poods supports art	79.97	79.05	85.78	<b>n</b> 0
Days of no high needs support	(81.97)	(78.54)	(101.09)	11.8
Return to custody (RTC) post-ROHD				
RTC by 22 <sup>nd</sup> August 2022	265 (21.0%)	208 (19.2%)	57 (32.6%)	<i>x</i> <sup>2</sup> (1)=16.29 <sup>***</sup> , .11
Days RTC	531.77	504.08	632.82	<i>t</i> (263)=2.19 <sup>*</sup> , .33
· · · · · · · · · · · · · · · · · · ·	(390.40)	(00.180)	(313.49)	-

*p*<.10<sup>+</sup>, *p*<.05<sup>\*</sup>, *p*<.01<sup>\*\*</sup>, *p*<.001<sup>\*\*</sup>

Note: Percentages exclude missing cases

a. n=1126

b. n=923

c. n=931

d. n=916

e. n=210

Table 5 below shows the bivariate comparisons of demographic, criminal justice and sentence characteristics of prisoners serving ROHD across those who returned to custody at some point in the follow-up period and those who did not. Approximately one-in-five (21.0%) prisoners who were sentenced to ROHD returned to custody by the 22<sup>nd</sup> of August 2022. Those who did not return to custody were significantly more likely to be older at release to ROHD (40.1 years vs. 36.0 years), employed at the time of their sentence (37.3% vs. 28.7%), be currently sentenced for a drug offence (37.0% vs. 23.0%), and have a longer non-parole period (612.7 days vs. 424.6 days), longer ROHD sentence (215.4 days vs. 103.7 days), and longer actual time spent in ROHD (219.2 days vs. 98.0 days). By contrast, those who returned to custody were significantly more likely to have had multiple prior sentences (50.2% vs. 30.9%) and a higher number of prior sentences (2.17 vs. 1.72), have been sentenced to ROHD for an administrative or driving offence (29.4% vs. 20.0%), have a higher ROR (13.7 vs. 10.4) or ORNI-R score (26.3 vs. 25.3), and were more likely to have participated in the making changes program (20.8% vs. 13.8%), although the effect size for this relationship was small. Those who eventually returned to custody were also significantly more likely to have breached their previous ROHD order (21.5% vs. 11.9%), and significantly faster (78.1 days vs. 116.1 days).

Table 5: Demographic, criminal justice, and sentence characteristics of prisoners sentenced to ROHD from 1<sup>st</sup> July 2016 to 1<sup>st</sup> July 2022, and ending before 22 August 2022, by return to custody status (n=434)

			_	
	Total	No return to	Return to	
	sample	Custody	Custody	
	(n=1260)	(n=995)	(N=265)	X²(01), φ / #(dt) Cohon's d
Demographics	II ( 76) 7 X(SU)	II (76) 7 X(SU)	II (76) 7 X(SU)	i(u), conens u
Demographics	20.24	40.10		#502 67)-6 44***
Age at release to ROHD	(10.48)	(10.75)	36.03 (8.65)	(503.07)=0.44 , 39
	1034	(10.70)		.00
Male	(82.1%)	812 (81.6%)	222 (83.8%)	n.s
Aboriginal <sup>a</sup>	104 (9.2%)	74 (8.5%)	30 (11.6%)	n.s
Completed high school <sup>b</sup>	258 (27.7%)	212 (28.5%)	46 (24.5%)	n.s
Employed <sup>c</sup>	331 (35.6%)	277 (37.3%)	54 (28.7%)	<i>x</i> <sup>2</sup> (1)=4.80 <sup>*</sup> , .07
Offence history				
Has multiple sentences	440 (34.9%)	307 (30.9%)	133 (50.2%)	<i>x</i> <sup>2</sup> (1)=34.42 <sup>***</sup> , .17
Avg. # of prior contonco	1 92 (1 62)	1 72 (1 59)	2 17 (1 76)	<i>t</i> (385.0)=3.78 <sup>***</sup> ,
Avg. # of prior sentence	1.62 (1.03)	1.72 (1.56)	2.17 (1.70)	.28
Index offence (ROHD				
sentence)	400 (04 00()		04 (00 00()	2(4) 40 40*** 40
Drug	429 (34.0%)	368 (37.0%)	61 (23.0%)	$X^{2}(1) = 18.18$ , .12
Administrative/driving	277 (22.0%)	199 (20.0%)	78 (29.4%)	<i>x</i> <sup>2</sup> (1)=10.86 <sup>m</sup> , .09
Public order/property	227 (18.0%)	173 (17.4%)	54 (20.4%)	n.s
Violent	141 (11.2%)	116 (11.7%)	25 (9.4%)	n.s
Fraud	116 (9.2%)	88 (8.8%)	28 (10.6%)	n.s
Theft	65 (5.2%)	48 (4.8%)	17 (6.4%)	n.s
Risk ratings				
Risk of Reoffending (ROR) <sup>d</sup>	10 95 (5 39)	10 36 (5 51)	13 66 (3 74)	<i>t</i> (337.9)=9.30 <sup>***</sup> ,
	10.00 (0.00)	10.00 (0.01)	10.00 (0.74)	.63
Offender Risk Needs Inventory	25.60 (4.75)	25.31 (4.93)	26.30 (4.23)	<i>t</i> (208)=1.36 <sup>+</sup> , .21
Prison programs				
i neen programe	1143			
Employment	(90.7%)	902 (90.7%)	241 (90.9%)	n.s
Education	318 (25.2%)	250 (25.1%)	68 (25.7%)	n.s
Domestic violence	89 (7.1%)	69 (6.9%)	20 (7.5%)	n.s
Literacy and numeracy	247 (19.6%)	203 (20.4%)	44 (16.6%)	n.s
Making changes	192 (15.2%)	137 (13.8%)	55 (20.8%)	<i>x</i> <sup>2</sup> (1)=7.91 <sup>**</sup> , .08
Sentence characteristics			, , , , , , , , , , , , , , , , , , ,	
the perception of the second	573.12	612.67	424.59	#40F0\ 4 C0*** 00
Non-parole period (days)	(574.32)	(600.74)	(431.48)	<i>t</i> (1258)=4.68 , .32
Length of ROHD (sentenced	191.87	215.35	103.69	<i>t</i> (621.5)=10.63 <sup>***</sup> ,
days) <sup>sqrt</sup>	(198.43)	(210.27)	(106.85)	.58 #665 A)- 11 24***
Length of ROHD (actual days)sqrt	(209.64)	∠19.15 (223.30)	97.90 (101.04)	(003.4) = 11.34, .60
ROHD breaches	()	(0.00)		
	175			2/4) 40 00***
Breached ROHD conditions	(13.9%)	118 (11.9%)	57 (21.5%)	<i>x</i> <sup>2</sup> (1)=16.29 <sup>***</sup> , .11
Days to breach	103.71	116.10	78 07 (84 99)	<i>t</i> (136 8)=2 21* 33
	(116.40)	(127.35)	. 5.57 (04.00)	(100.0 <i>j</i> = <i>L</i> . <i>L</i> 1 , .00

*p*<.10<sup>+</sup>, *p*<.05<sup>\*</sup>, *p*<.01<sup>\*\*</sup>, *p*<.001<sup>\*\*\*</sup>

Note: Percentages exclude missing cases

	Total sample (n=1260) n (%) / x̄(sd)	No return to custody (n=995) n (%) / x̄(sd)	Return to custody (n=265) n (%) / x̄(sd)	x²( <i>df</i> ), φ / <i>t</i> ( <i>df</i> ), Cohen's <i>d</i>
a. n=1126				

b. n=923

c. n=931

d. n=916

e. n=210

Table 6 below presents the adjusted cox regression models predicting ROHD breaches (Model 1) and returns to custody (Model 2). For the model examining breaches, the variables included in the models are based on those that had statistically significant bivariate associations with the respective outcomes. This includes an examination of the interaction effect between days of HISSP support and receiving a high needs support package. Model 1 indicates that net of other factors considered in the model, conviction for fraud (HR=2.20 [95% CI = 1.29-3.75]), a greater number of prior sentences (HR=1.59 [95% CI = 1.11-2.27]), and higher ROR score (HR=1.55 [95% CI = 1.20-2.01]) were associated with higher rate of ROHD breach, while a conviction for a violent offence (HR=0.46 [95% CI = 0.22 - 0.96]), a longer non-parole period (HR=0.95 [95% CI = 0.93 - 0.98]), and longer ROHD sentence (HR=0.93 [95% CI = 0.89 - 0.98]) were associated with lower rates of ROHD breach. An examination of interaction effects indicates that more days of HISSP support among those who received a high needs support package was associated with a lower rate of ROHD breach (HR=0.74 [95% CI = 0.63 - 0.86]).

Model 2 examines the rate of returns to custody and includes covariates that had statistically significant bivariate associations with this specific outcome. The results indicate that a higher number of prior sentences (HR=2.21 [95% CI = 1.52-3.21]), breaching an HD order (HR=1.80 [95% CI=1.21-2.69]), and a higher ROR score (HR=1.32 [95% CI = 0.97-1.80]) were associated with higher rates of returns to custody, whereas older age at sentence (HR=0.61 [95% CI = 0.47-0.80]), employment prior to sentence (HR=0.63 [95% CI = 0.41-0.95]), and longer ROHD sentence (HR=0.92 [95% CI = 0.89-0.96]) were associated with a lower rate of return to custody.

	MODEL 1	MODEL 2		
VARIABLES	ROHD BREACH	ROHD RTC		
	HR (95% CI)	HR (95% CI)		
Demographics				
Age at release to ROHD		0.61 (0.47 - 0.80)***		
Employed	0.99 (0.65 – 1.51)	$0.63~(0.41-0.95)^{*}$		
Offence history				
# of prior sentences	1.59 (1.11 – 2.27) <sup>*</sup>	2.21 (1.52 – 3.21)***		
Index offence (ROHD sentence)				
Drug		0.89 (0.58 – 1.36)		
Administrative/driving	0.77 (0.43 – 1.36)	1.31 (0.79 – 2.18)		
Fraud	2.20 (1.29 – 3.75)**			
Violent	$0.46~(0.22-0.96)^{*}$			

Table 6: Adjusted Cox reg	ression models predicting	g breaches/RTC among pri	soners sentenced to
ROHD between 1 July 201	6 and 1 July 2022, ending	by 22 August 2022	

**Risk ratings**
VARIABIES	MODEL 1	MODEL 2 ROHD RTC
VARIADEES	HR (95% CI)	HR (95% CI)
Risk of Reoffending (ROR) <sup>sqrt</sup>	1.55 (1.20 – 2.01)***	1.32 (0.97 – 1.80)+
Prison programs		
Making changes		0.75 (0.49 – 1.16)
Sentence characteristics		
Non-parole period (days)	0.95 (0.93 – 0.98)***	1.02 (0.99 – 1.04)
Length of ROHD (sentenced days)	0.93 (0.89 – 0.98)**	0.92 (0.89 - 0.96)***
HD Integrated Support Services Program		
Days of support * received high needs support	0.74 (0.63 – 0.86)***	
ROHD breaches		
Breached ROHD conditions		1.80 (1.21 – 2.69)**
<i>p</i> <.10 <sup>+</sup> , <i>p</i> <.05 <sup>*</sup> , <i>p</i> <.01 <sup>**</sup> , <i>p</i> <.001 <sup>***</sup>		

#### 4.1.3 Predicting those at risk of breaching ROHD

Backwards stepwise logistic regression analysis was conducted to identify the optimal predictors for inclusion in a model predicting the risk of ROHD breach. Variable entry and removal probability were set to 0.1. Of the 1260 individuals who completed their ROHD placement, by either discharge or breach by the end of the observation period, 697 had non-missing data for all variables and were retained for the risk prediction modelling. The original model (step 0) included the following variables: did not complete year 12; unemployed prior to sentence; did not participate in prison employment, education, domestic violence, literacy and numeracy, or making changes program; age at admission; Aboriginal identity; sex; multiple prior sentences; ROR score; non parole days; and offence type for current sentence. Model selection was determined using the Akaike Information Criterion (AIC), which balances model fit and complexity, with lower AIC scores corresponding to a better model.

Inclusion of all variables in the step 0 model resulted in an AIC score of 605.01. Sequential backwards removal of variables gradually improved model fit. The step 8 model had the lowest AIC score (592.30), and included did not participate in the prison employment program (OR = 3.34 [95% CI = 1.62 - 6.86]), unemployment prior to sentence (OR = 1.60 [95% CI = 1.01 - 2.56]), length of non-parole period (up to 1 year = 1.00 (reference); 1 to 2 years OR = 2.75 [95% CI = 1.25-6.04]; 2 to 3 years OR = 1.87 [95% CI = 0.90-3.87]; more than 3 years OR = 1.91 [95% CI = 0.90 - 4.05]), age at admission (50 years or older = 1.00 (reference); 40 to 49 years OR = 2.19 [95% CI = 0.50 - 2.62]; 30 to 39 years OR = 1.58 [95% CI = 0.78 - 3.20]; 18 to 29 years OR = 2.19 [95% CI = 1.18 - 4.06]), number of prior sentences (OR = 1.14 [95% CI = 0.90-4.05]), ROR score (OR = 1.07 [95% CI = 1.02 - 1.13]), and length of ROHD sentence (OR = 1.04 [95% CI = 1.00 - 1.08]). The model had acceptable fit ( $x^2(8) = 7.56$ , p=.48), and explained 11.1% of the variance.

Receiver Operating Characteristics (ROC) curves were calculated to test model accuracy (Appendix A). The area under the ROC curve is plotted against model sensitivity (true positive rate) and 1-specificity (false positive rate) and represents the probability that the model correctly discriminates between a positive case and a negative case. As depicted in Appendix A, the model had an area

under the ROC curve score of .694 (95% CI = .639 - .749). This means that there was on average a 69.4% probability that a randomly selected person who breaches ROHD will have a higher risk score than a randomly selected person who does not breach ROHD. For example, risk scores equal to or greater than 8% have a 92.2% probability of correctly identifying that a ROHD breach will occur (true positive), and a 67.2% probability of identifying a ROHD breach when none will occur (false positive). Likewise, risk scores greater than 20.0% have a 55.2% probability of being a true positive, and a 25.2% probability of being false negative. The sensitivity and 1-specificity values for risk score deciles are presented in Appendix A: Table 1.

Nomograms are prediction tools used to estimate the multivariate probability of an outcome derived from a risk prediction model. Nomograms are created by assigning points to each variable unit corresponding to its unstandardised beta. The unstandardised beta indicates how much each unit of the independent variable increases the odds of the outcome if all other variables are held constant. We created a nomogram estimating the risk of ROHD breach based on employment status prior to admission, participation in a prison employment program, ROR score, age at admission, and sentenced offence type. The nomogram below (Figure 7) is interpreted by first aligning the predictor category with the respective points value, summing those points, and then matching the total points with the risk of breach axis. For example, someone with a ROR score of 11 (33 points), HD sentence of 12 months (30 points), non-parole period of 1 to 2 years (44 points), 3 to 4 or more prior sentences (10 points), aged 18 to 29 years (0 points), was unemployed prior to admission (18 points), and did an employment training program in prison (0 points) has a 22% risk of breaching ROHD. According to the ROC above, a risk score of 22% or greater has a true positive rate of 47%, and a false positive rate of 16%. The points for each predictor, and the total points corresponding to the risk of ROHD breach, are also presented in table 7.



#### Figure 7: Nomogram of predicted risk of ROHD breach

#### Table 7: Unstandardized beta and relative points for predictors of ROHD breach.

PREDICTOR	beta	Points
Unemployed prior to admission	0.47	17.61
Did not engage in employment program	0.31	11.45

PREDICTOR		beta	Points
AGE			
	18 to 29 years	reference	0
50 years or older		0.18	6.68
40 to 49 years		0.53	19.55
30 to 39 years		0.62	23.14
NUMBER PRIOR SENTENCES			
1 to 2		reference	0
3 to 4		0.28	10.27
5 or more		0.92	34.32
NON-PAROLE PERIOD			
More than 3 years		reference	0
2 to 3 years		0.65	24.04
1 to 2 years		0.85	31.68
Less than 1 year		1.18	44.04
HD SENTENCE LENGTH (MONTHS)			
Less than 1 month		reference	0
6 months		0.42	15.43
12 months		0.83	30.65
18 months		1.25	46.06
24 months		1.66	61.47
30 months		2.07	76.88
36 months		2.49	92.29
39 months		2.70	100
ROR SCORE			
1		reference	0
2		0.09	3.24
3		0.18	6.62
4		0.27	10.08
5		0.36	13.23
6		0.45	16.62
/		0.54	20.08
8		0.63	23.31
9		0.72	26.62
10		0.81	29.93
11		0.90	33.23
12		0.99	36.54
13		1.07	39.85
14		1.16	43.16
15		1.25	46.54
17		1.04	43.00 50.46
17		1.40	00.10 EG EE
10		1.52	50.55 50.95
19 20		1.01	63.00
20		1.70	UJ.2J 66 12
∠ ı 22		1.13	00.42 60.79
		1.00	09.70

PREDICTOR		beta	Points
	Constant	-4.42	

## 4.2 Court Ordered Home Detention

### 4.2.1 Sample characteristics: Court Ordered Home Detention

Table 8 below provides bivariate descriptions of prisoners sentenced to COHD from 1 July 2016 to 1 July 2022 and ending before 22 August 2022 stratified by gender (n=1074). Most of the sample were male (80.4%). The average age of the entire sample at the time they were sentenced to COHD was 38.4 (sd=10.5) years, and there were no differences in age between males and females. Around one-in-ten prisoners in COHD were Aboriginal (9.9%), and significantly more females who received COHD were of Aboriginal background (16.0%) compared to males (8.8%) who received COHD. Information on level of education and employment prior to the most recent custody episode were not available for these analyses.

	Total sample (n=1074) n (%) / x̄(sd)	Males (n=864) n (%) / x̄(sd)	Females (n=210) n (%) / x̄(sd)	x²(df), φ / t(df), Cohen's d
Demographics				
Age at release to COHD <sup>a</sup>	38.43 (10.90)	38.51 (11.37)	38.12 (9.03)	n.s
Aboriginal <sup>b</sup>	106 (9.9%)	75 (8.8%)	31 (16.0%)	<i>x</i> <sup>2</sup> (1)=6.92 <sup>**</sup> , .08
Offence history				
Has multiple sentences	390 (36.3%)	313 (36.2%)	77 (36.7%)	n.s
Index offence (COHD sentence) <sup>c</sup>				
Administrative/driving	438 (79.9%)	364 (82.4%)	74 (69.8%)	<i>x</i> <sup>2</sup> (1)=8.38 <sup>**</sup> , .12
Theft	107 (19.5%)	73 (16.5%)	34 (32.1%)	<i>x</i> <sup>2</sup> (1)=13.17 <sup>***</sup> , .16
Public order/property	74 (13.5%)	64 (14.5%)	10 (9.4%)	n.s
Violent	55 (10.0%)	47 (10.6%)	8 (7.5%)	n.s
Fraud	33 (6.0%)	16 (3.6%)	17 (16.0%)	<i>x</i> <sup>2</sup> (1)=23.30 <sup>***</sup> , .21
Drug	31 (5.7%)	26 (5.9%)	5 (4.7%)	n.s
Risk ratings				
Risk of Reoffending (ROR) <sup>d</sup>	10.50 (4.43)	10.55 (4.48)	10.31 (4.24)	n.s
Offender Risk Needs Inventory (ORNI-R) <sup>e</sup>	25.19 (5.45)	25.19 (5.51)	25.22 (5.05)	n.s
Sentence characteristics				
COHD sentenced days sqrt	255.93 (321.99)	257.08 (320.28)	251.22 (329.68)	n.s

 Table 8: Demographic, criminal justice, and sentence characteristics of people sentenced to COHD

 between 1 July 2016 and 1 July 2022 by gender (n=1074)

Days in COHD sqrt	198.60 (219.06)	202.28 (222.45)	183.44 (204.32)	n.s	
COHD breaches					
Breached COHD conditions	150 (14.0%)	116 (13.4%)	34 (16.2%)	n.s	
Days to breach	164.75 (171.28)	171.42 (182.36)	141.97 (125.97)	n.s	
Return to custody (RTC) post-0	COHD	· · ·	· · ·		
RTC by 22 <sup>nd</sup> August 2022	262 (24.4%)	222 (25.7%)	40 (19.0%)	<i>x</i> <sup>2</sup> (1)=4.05 <sup>*</sup> , .06	
Days RTC <sup>sqrt</sup> 410.16 406.53 430.35 <i>n.s</i> (386.60) (375.16) (449.64) <i>n.s</i>					
<i>p</i> <.10 <sup>+</sup> , <i>p</i> <.05 <sup>*</sup> , <i>p</i> <.01 <sup>**</sup> , <i>p</i> <.001 <sup>***</sup>	<i>p</i> <.10 <sup>+</sup> , <i>p</i> <.05 <sup>*</sup> , <i>p</i> <.01 <sup>**</sup> , <i>p</i> <.001 <sup>***</sup>				
Note: Percentages exclude missi	ng cases				
a. n=827					
b. n=1055					
c. n=526					

d. n=998

e. n=202

Around one-third (36.3%) of those in COHD had multiple prior sentences, with no significant differences evident between the proportion of males and females. In terms of the index offences for which individuals received COHD, most were involved in an administrative/driving offence (79.9%), one-in five were involved in a theft offence (19.5%), 13.5% were involved in a public order or property offence, 10.0% for a violent offence, 6.0% for a fraud offence, and 5.7% for a drug offence. Males were significantly more likely than females to have a current COHD sentence for an administrative or driving offence (82.4% vs. 69.8%), whereas females were more likely to have a current COHD sentence for a theft (32.1% vs. 16.5%) or fraud offence (16.0% vs. 3.6%). Furthermore, a greater proportion of males returned to custody by the end of the observation period (25.7% vs. 19.0%). No other gender differences were evident.

## 4.2.2 Variables associated with breaches of COHD and returns to custody post-COHD

Table 9 shows bivariate comparisons of demographic, criminal justice and sentence characteristics of prisoners serving COHD across those who breached conditions and those who did not. In total, 150 (14.0%) individuals breached conditions of COHD. A significantly greater proportion of those who breached COHD were Aboriginal (14.1% vs. 9.4%), were currently sentenced for theft (37.7% vs. 16.9%), fraud (11.6% vs. 5.2%), or a public order or property offence (33.3% vs. 10.6%), had a significantly higher ROR score (13.5 vs. 10.0), a longer COHD sentence (364.3 days vs. 238.4 days), and spent fewer actual days in COHD (164.8 days vs. 204.1 days). They were also more likely to return to custody (46.0% vs. 20.9%) and took fewer days to do so (365.1 days vs. 426.3 days).

In terms of HISSP involvement, more days of support among those having received high needs support packages was associated with a lower likelihood of breaching COHD (117.15 days vs. 88.05 days). Similar to the pattern observed for the ROHD cohort, this suggests that in terms of breaching COHD, the impact of HISSP duration was conditional (i.e., interacts with) on receiving a high needs support package. Again, the same caveat applies to these findings given that that the purpose of HISSP is not primarily to reduce breaches of orders, but rather provide support for those on HD orders who need it the most. Therefore, similar to the impact of HISSP on breaches of ROHD, these

findings suggest that one additional positive outcome for the highest needs prisoners sentenced to COHD is that these support services also assist them in complying with their HD orders.

•		U		· · · ·
	Total sample (n=1074) n (%) / x̄(sd)	No breach (n=924) n (%) / x̄(sd)	Breach (n=150) n (%) / x̄(sd)	x²( <i>df</i> ), φ / <i>t</i> ( <i>df</i> ), Cohen's <i>d</i>
Demographics				
Age at release to COHD <sup>a</sup>	38.43 (10.90)	38.57 (11.07)	37.57 (9.89)	n.s
Male	864 (80.4%)	748 (81.0%)	116 (77.3%)	n.s
Aboriginal <sup>b</sup>	106 (9.9%)	85 (9.4%)	21 (14.1%)	$x^{2}(1)=3.14^{+}, .06$
Offence history				
Has multiple sentences	390 (36.3%)	333 (36.0%)	57 (38.0%)	n.s
Index offence (COHD sentence) <sup>c</sup>				
Administrative/driving	438 (79.9%)	382 (79.7%)	56 (82.1%)	n.s
Theft	107 (19.5%)	81 (16.9%)	26 (37.7%)	<i>x</i> <sup>2</sup> (1)=16.56 <sup>***</sup> , .17
Public order/property	74 (13.5%)	51 (10.6%)	23 (33.3%)	<i>x</i> <sup>2</sup> (1)=26.58 <sup>***</sup> , .22
Violent	55 (10.0%)	46 (9.6%)	9 (13.0%)	n.s
Fraud	33 (6.0%)	25 (5.2%)	8 (11.6%)	<i>x</i> <sup>2</sup> (1)=4.33 <sup>*</sup> , .09
Drug	31 (5.7%)	27 (5.6%)	4 (5.8%)	n.s
Risk ratings				
Risk of Reoffending (ROR) <sup>d</sup>	10.50 (4.43)	10.01 (4.32)	13.49 (3.91)	<i>t</i> (198.4)=9.62 <sup>***</sup> , .82
Offender Risk Needs Inventory (ORNI-R) <sup>e</sup>	25.19 (5.45)	24.95 (5.58)	25.94 (4.99)	n.s
HD Integrated Support Service	s Program			
Received support	732 (68.2%)	625 (67.6%)	107 (71.3%)	n.s
Average total days of support <sup>sqrt</sup>	90.74 (73.48)	90.54 (74.55)	91.86 (67.24)	n.s
Received high needs support	119 (16.3%)	99 (15.8%)	20 (18.7%)	n.s
Days of high needs support <sup>sqrt</sup>	112.26 (51.06)	117.15 (49.76)	88.05 (51.78)	<i>t</i> (117)=2.68 <sup>**</sup> , .66
Days of no high needs support <sup>sqrt</sup>	73.01 (69.36)	72.60 (69.51)	75.40 (68.79)	n.s
Sentence characteristics				
COHD sentenced days sqrt	255.93 (321.99)	238.35 (293.74)	364.25 (445.45)	<i>t</i> (180.4)=3.67 <sup>***</sup> , .38
Days in COHD sqrt	198.60 (219.06)	204.10 (164.75)	164.75 (171.28)	<i>t</i> (224.2)=2.19 <sup>*</sup> , .17
Return to custody (RTC) post-	COHD	( /	(	
RTC by 22 August 2022	262 (24.4%)	193 (20.9%)	69 (46.0%)	<i>x</i> <sup>2</sup> (1)=44.13 <sup>***</sup> , .20
Days to RTC sqrt	410.16 (386.60)	426.27 (370.93)	365.12 (427.07)	<i>t</i> (99.7)=2.31 <sup>*</sup> , .37
<i>p</i> <.10 <sup>+</sup> , <i>p</i> <.05 <sup>*</sup> , <i>p</i> <.01 <sup>**</sup> , <i>p</i> <.001 <sup>***</sup>				

Table 9: Demographic, criminal justice, and sentence characteristics of people sentenced to COHD from 1 July 2016 to 1 July 2022, and ending before 22 August 2022, by breach status (n=1074)

Note: Percentages exclude missing cases

a. n=827

b. n=1055

c. n=526

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d. n=998 e. n=202

e. n=202

Table 10 shows bivariate comparisons of demographic, criminal justice and sentence characteristics of prisoners serving COHD across those who returned to custody at some point in the follow-up period and those who did not. Around one-quarter (24.4%) of those who received COHD returned to custody at some point during the follow-up period. Those who returned to custody were significantly more likely to be younger (36.6 years vs. 39.0 years), male (84.7% vs. 79.1%), have multiple prior sentences (44.3% vs. 33.7%), currently sentenced for a theft offence (28.0% vs. 16.5%), have a higher ROR (12.5 vs. 9.8) and ORNI-R score (26.1 vs. 24.5), spend fewer actual days in COHD (169.8 days vs. 207.9 days), breach their COHD order (26.3% vs. 10.0%), and take fewer days to breach their COHD order (151.3 days vs. 176.2 days).

Table 10: Demograp	ohic, criminal justice,	and sentence charac	teristics of people se	entenced to	COHD
from 1 July 2016 to 1	July 2022, and endin	g before 22 August 20	22, by return to custo	ody status (n=	=1074)

	Total sample	No return to custody	Return to custody	
	(n=1074) n (%) / x̄(sd)	(n=812) n (%) / x̄(sd)	(n=262) n (%) / x̄(sd)	x²(df), φ / t(df) Cohen's d
Demographics				
Age at release to COHD <sup>a</sup>	38.43 (10.90)	38.98 (11.19)	36.64 (9.76)	<i>t</i> (825)=2.64 <sup>**</sup> , .22
Male	864 (80.4%)	642 (79.1%)	222 (84.7%)	<i>x</i> <sup>2</sup> (1)=4.05 <sup>*</sup> , .06
Aboriginal <sup>b</sup>	106 (9.9%)	74 (9.3%)	32 (12.3%)	n.s
Offence history				
Has multiple sentences	390 (36.3%)	274 (33.7%)	116 (44.3%)	<i>x</i> <sup>2</sup> (1)=9.50 <sup>**</sup> , .09
Index offence (COHD sentence) <sup>c</sup>				
Administrative/driving	438 (79.9%)	320 (79.0%)	118 (82.5%)	n.s
Theft	107 (19.5%)	67 (16.5%)	40 (28.0%)	<i>x</i> <sup>2</sup> (1)=8.79 <sup>**</sup> , .13
Public order/property	74 (13.5%)	50 (12.3%)	24 (16.8%)	n.s
Violent	55 (10.0%)	41 (10.1%)	14 (9.8%)	n.s
Fraud	33 (6.0%)	23 (5.7%)	10 (7.0%)	n.s
Drug	31 (5.7%)	25 (6.2%)	6 (4.2%)	n.s
Risk ratings				
Risk of Reoffending (ROR) <sup>d</sup>	10.50 (4.43)	9.82 (4.23)	12.52 (4.39)	<i>t</i> (996)=8.69 <sup>***</sup> , .63
Offender Risk Needs Inventory (ORNI-R) <sup>e</sup>	25.19 (5.45)	24.53 (5.72)	26.13 (4.92)	<i>t</i> (200)=2.08 <sup>*</sup> , .30
Sentence characteristics				
COHD sentenced days sqrt	255.93 (321.99)	255.14 (317.44)	258.40 (336.34)	n.s
Days in COHD sqrt	198.60 (219.06)	207.91 (232.23)	169.76 (169.09)	<i>t</i> (517.6)=2.47 <sup>**</sup> , .16
COHD breaches				
Breached COHD conditions	150 (14.0%)	81 (10.0%)	69 (26.3%)	<i>x</i> <sup>2</sup> (1)=44.13 <sup>***</sup> , .20

	Total sample	No return to custody	Return to custody	
	(n=1074)	(n=812)	(n=262)	x²(df), φ /
	n (%) / x̄(sd)	n (%) / x̄(sd)	n (%) / x̄(sd)	<i>t</i> ( <i>df</i> ), Cohen's <i>d</i>
Dave to breach	164.75	176.22	151.28	ns
	(171.28)	(195.72)	(137.38)	11.5

*p*<.10<sup>+</sup>, *p*<.05<sup>\*</sup>, *p*<.01<sup>\*\*</sup>, *p*<.001<sup>\*\*\*</sup>

Note: Percentages exclude missing cases

a. n=827

b. n=1055

c. n=526 d. n=998

J. 11=990

e. n=202

Table 12 displays the adjusted Cox Regression models of the variables associated with breaches of COHD and returns to custody post COHD at the bivariate level. The results of model 1 show that net of other factors, conviction of a public order or property offence (HR=2.28 [95% CI = 1.10 - 4.72]), having a higher ROR score (HR=1.80 [95% CI = 1.04-3.14]), and having a shorter COHD sentence (HR=0.57 [95% CI = 0.46-0.70]) were significantly associated with a higher probability of breaching COHD sooner. Interaction effects indicate that more days of HISSP support was associated with a lower rate of breach among those who received a high needs support package (HR=0.69 [95% CI = 0.50 - 0.96]). Model 2 indicates that the likelihood of returning to custody sooner was significantly greater for those with a higher ROR score (HR=2.09 [95% CI = 1.48-2.94]), currently sentenced for a theft offence (HR=1.68 [95% CI = 1.06-2.64]), are male (HR=1.65 [95% CI=0.99-2.75]; statistically marginal association), and spent fewer actual days on COHD (HR=0.92 [95% CI=0.87-0.97]).

	MODEL 1	MODEL 2
VARIABLES	COHD BREACH	COHD RTC
	HR (95% CI)	HR (95% CI)
Demographics		
Age at release to COHD		0.99 (0.97-1.01)
Male		1.65 (0.99-2.75)+
Aboriginal	0.62 (0.18 – 2.17)	
Offence history		
Has multiple sentences		1.31 (0.81-2.12)
Index offence (COHD sentence)		
Theft	1.36 (0.68 – 2.75)	1.68 (1.06-2.64)*
Fraud	1.86 (0.57 – 6.12)	
Public order/property	2.28 (1.10 – 4.72) <sup>*</sup>	
Risk ratings		
Risk of Reoffending (ROR) <sup>sqrt</sup>	1.80 (1.04 – 3.14)*	2.09 (1.48-2.94)***
Sentence characteristics		
Length of COHD (sentenced days) <sup>sqrt</sup>	0.57 (0.46 - 0.70)***	
Days in COHD sqrt		0.92 (0.87-0.97)**
HD Integrated Support Services Program		

 Table 11: Adjusted Cox regression models predicting breaches/RTC among prisoners sentenced to

 COHD between 1 July 2016 and 1 July 2022, ending by 22nd August 2022

Days of support \* received high needs support

 $0.69 (0.50 - 0.96)^{*}$ 

#### COHD breaches

Breached COHD conditions

*p*<.10<sup>+</sup>, *p*<.05<sup>\*</sup>, *p*<.01<sup>\*\*</sup>, *p*<.001<sup>\*\*\*</sup>

#### 4.2.3 Predicting those at risk of breaching COHD

Backwards stepwise logistic regression analysis was conducted to identify the optimal predictors for inclusion in a model predicting the risk of COHD breach. Variable entry and removal probability were set to 0.1. Of the 1074 individuals who completed their COHD placement, by either discharge or breach by the end of the observation period, 505 had non-missing data for all variables and were retained for the risk prediction modelling. The original model (step 0) included the following variables: sex, age at COHD admission, Aboriginal identity, prior sentence, ROR score, days sentenced to COHD, and offence type for current sentence. Note, that unlike ROHD, the COHD cohort could have more than one offence type associated with their sentence. Model selection was determined using the Akaike Information Criterion (AIC), which balances model fit and complexity, with lower AIC scores corresponding to a better model.

Inclusion of all variables in the step 0 model resulted in an AIC score of 277.37. Sequential backwards removal of variables gradually improved model fit. The step 8 model had the lowest AIC score (267.38) and included ROR score (OR=1.15 [95% CI= 1.07-1.24]), sentenced for a theft related offence (OR=1.78 [95% CI=0.94-3.38]), fraud related offence (OR=2.46 [95% CI = 0.94-6.42]), and a public order or property related offence (OR=2.65 [95% CI = 1.36-5.16]). The model had acceptable fit ( $x^2(8) = 6.34$ , p=.61), and explained 16.3% of the variance. As presented in Appendix B, the model had an area under the Receiver Operating Characteristics (ROC) of .730 (95% CI = .663 - .798), meaning the model has a 73.0% average probability of correctly discriminating between someone who does and does not breach COHD (see appendix B: Figure 1). The sensitivity and 1-specificity values for risk score deciles are presented in Appendix B: Table 1.

A nomogram was created estimating the risk of COHD breach based on ROR score, sentenced for a theft related offence, fraud related offence, and public order or property offence (see Figure 8). The nomogram is interpreted by first aligning the predictor category with the respective points value, summing those points, and then matching the total points with the risk of breach axis. For example, someone with an ROR score of 10 (43 points) who was sentenced for a fraud related offence (20 points) has a 17% risk of breaching COHD. The area under the ROC curve indicates that a risk score of 17% or greater has a true positive rate of 47% and a false positive rate of 16%. The points for each predictor, and the total points corresponding to the risk of ROHD breach, are also presented in Table 12

#### Figure 8: Nomogram of predicted risk of COHD breach



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PREDICTOR	beta	Points
Public order or property offence	0.81	20.43
Fraud related offence	0.78	19.79
Theft related offence	0.33	8.48
ROR SCORE		
1	Reference	0
2	0.2	4.61
3	0.38	9.29
4	0.56	14.33
5	0.75	18.96
6	0.94	23.8
7	1.12	28.63
8	1.31	33.26
9	1.50	37.9
10	1.70	42.83
11	1.88	47.66
12	2.07	52.5
13	2.26	57.03
14	2.45	61.86
15	2.63	66.7
16	2.82	71.53
17	3.01	75.95
18	3.20	81.1
19	3.39	85.52
20	3.57	90.56
21	3.76	95.4
22	3.95	100
Cor	nstant -4.07	

# 4.3 Does HD reduce the likelihood of returning to custody compared to a prison sentence?

**ROHD**. Data was available for 1353 individuals released to ROHD and 15,943 individuals discharged from prison (PD). Cases from the prisoner discharge data were removed if they were not eligible for home detention (e.g., on remand, sentenced for a sex offence or homicide, etc.) or had ever been sentenced to home detention. Data from both groups were removed if ROHD or PD admissions occurred before 1<sup>st</sup> July 2016, discharges after 1<sup>st</sup> July 2022, and if ROR scores were missing. Exclusion of ineligible cases from both groups resulted in a sample size of 929 for ROHD and 1667 for PD (see Figure 3 in the methodology section).

Cross tabulations presented in Table 11 below indicate that those on ROHD were significantly more likely to be older, completed high school, employed at the time of their sentence, be currently sentenced for a drug offence, administrative or driving offence, or fraud, participate in the literacy and numeracy program, and have a longer non-parole period. By contrast, the PD group were significantly more likely to be male, Aboriginal, have a prior sentence, be currently sentenced for fraud, violence, or a public order/property related offence, have a higher ROR score, participate in a domestic violence and violence prevention program, and return to custody.

Prison programs				
Risk ratings Risk of Reoffending (ROR)	13.42 (5.42)	14.76 (4.95)	11.02 (5.40)	<i>t</i> (1783.20)=17.42 <sup>***</sup> , 0.73
Public order/property	829 (31.9%)	664 (39.8%)	165 (17.8%)	<i>x</i> <sup>2</sup> (1)=133.69 <sup>***</sup> , .23
Violent	336 (12.9%)	238 (14.3%)	98 (10.5%)	<i>x</i> <sup>2</sup> (1)=7.36 <sup>**</sup> , .05
Fraud	169 (6.5%)	94 (5.6%)	75 (8.1%)	<i>x</i> <sup>2</sup> (1)=5.81 <sup>***</sup> , .05
Theft	459 (17.7%)	411 (24.7%)	48 (5.2%)	<i>x</i> <sup>2</sup> (1)=155.66 <sup>***</sup> , .25
Administrative/driving	188 (7.2%)	73 (4.4%)	115 (12.4%)	<i>x</i> <sup>2</sup> (1)=56.83 <sup>***</sup> , .15
Drug	610 (23.5%)	187 (11.2%)	423 (45.5%)	<i>x</i> <sup>2</sup> (1)=390.77 <sup>***</sup> , .39
Index offence (ROHD sentence) <sup>d</sup>		. /		
Has prior sentence	1321 (50.9%)	1039 (62.3%)	282 (30.4%)	<i>x</i> <sup>2</sup> (1)=244.00 <sup>***</sup> , .31
Employed <sup>c</sup>	474 (18.3%)	218 (19.7%)	256 (36.1%)	<i>x</i> <sup>2</sup> (1)=59.85 <sup>***</sup> , .18
Completed high school <sup>b</sup>	446 (17.2%)	230 (21.2%)	216 (30.5%)	<i>x</i> <sup>2</sup> (1)=19.81 <sup>***</sup> , .11
Aboriginal <sup>a</sup>	468 (18.0%)	407 (25.0%)	61 (7.3%)	<i>x</i> <sup>2</sup> (1)=111.44 <sup>***</sup> , .21
Male	2318 (89.3%)	1544 (92.6%)	774 (83.3%)	<i>x</i> <sup>2</sup> (1)=54.03 <sup>***</sup> , .14
Demographics Age at sentence	36.86 (10.47)	35.15 (9.91)	39.91 (10.70)	<i>t</i> (1803.07)=11.15 <sup>***</sup> , .47
	(n=2596) n (%) / x̄(sd)	(n=1667) n (%) / x̄(sd)	(n=929) n (%) / x̄(sd)	x²(df), φ / t(df), Cohen's d
	Total sample	Prison Discharge	ROHD	

Table 11: Demographic, criminal justice, and sentence characteristics of people sentenced to HD or prison between 1 July 2016 and 1 July 2022, and ending before 22 August 2022 by ROHD status (n=2596)

		Prison		
	Total sample	Discharge	ROHD	
	(n=2596)	(n=1667)	(n=929)	х²(df), ф /
	n (%) / x̄(sd)	n (%) / x̄(sd)	n (%) / x̄(sd)	<i>t</i> ( <i>df</i> ), Cohen's <i>d</i>
Domestic violence	479 (18.5%)	397 (23.8%)	82 (8.8%)	<i>x</i> <sup>2</sup> (1)=89.07 <sup>***</sup> , .19
Literacy and numeracy	539 (20.8%)	297 (17.8%)	242 (26.0%)	<i>x</i> <sup>2</sup> (1)=24.58 <sup>***</sup> , .10
Making changes	493 (19.0%)	302 (18.1%)	191 (20.6%)	n.s
Violence prevention	249 (9.6%)	206 (12.4%)	43 (4.6%)	<i>x</i> <sup>2</sup> (1)=41.09 <sup>***</sup> , .13
Sentence characteristics				
Non-parole period (days) <sup>sqrt</sup>	518.48	386.85	754.67	<i>t</i> (1694.1)=19.93 <sup>***</sup> ,
	(451.51)	(303.68)	(563.51)	0.85
Return to custody				
Return to custody	1053 (40.6%)	879 (52.7%)	174 (18.7%)	<i>x</i> <sup>2</sup> (1)=286.03 <sup>***</sup> , .33

*p*<.10<sup>+</sup>, *p*<.05<sup>\*</sup>, *p*<.01<sup>\*\*</sup>, *p*<.001<sup>\*\*\*</sup>

Note: Percentages exclude missing cases

a. n=2461

b. n=1795

c. n=1813

d. n=2591

Propensity score matching (PSM) is a technique that matches participants from different groups based on theoretically and empirically relevant covariates (Lane et al., 2012)<sup>9</sup>, and was used to create a matched ROHD and PD group to determine the effect of ROHD on returns to custody up to 22 August 2022. Groups were matched on variables available in both data sets that were associated with significant group differences (see Table 13). To reduce variance and maximise statistical power, we dichotomised age (18 to 29 years vs. 30 years or older), non-parole period (up to 2 years vs. more than 2 years), program participation (participated in any prison program vs. did not participate in any prison program), and minor offence type (i.e., administrative/driving, theft, fraud, and order/property offence). Variable matching aims to reduce the likelihood that the factors influencing group membership do not bias the association between sentence type and returns to custody.

One-to-one matching without replacement and a match tolerance of .001 was used to match those in ROHD (n=929) or PD (n=1667). This resulted in 308 pairs (n=616). The even distribution of variables between the ROHD and prisoner discharge group, referred to as balance, was determined by calculating the standardised bias and standardised mean difference. A standardised mean difference score of less than .20 suggests balance is achieved. Covariates with a standardised bias score greater than .10 should be included in regression models to remove residual confounding (Nguyen et al., 2017)<sup>10</sup>. Appendix C: Table 1 presents the balance and fit descriptive statistics and indicates that there are no significant differences between the PD and ROHD group in the post-

<sup>&</sup>lt;sup>9</sup> Lane, F. C., To, Y. M., Shelley, K., & Henson, R. K. (2012). An Illustrative Example of Propensity Score Matching with Education Research. *Career and Technical Education Research*, 37(3), 187-212. <u>https://doi.org/10.5328/cter37.3.187</u> <sup>10</sup> Nguyen, T.L., Collins, G.S., Spence, J., Daurès, J.P., Devereaux, P.J., Landais, P., & Le Manach, Y., 2017. Doubleadjustment in propensity score matching analysis: choosing a threshold for considering residual imbalance. BMC Med Res Methodol. 17(1), 1-8.

matched sample. Standardised bias scores were >.10 for all variables, indicating very little risk of potential bias.

In the post-matched sample, the average days to return to custody was significantly greater for the ROHD group (1634.52 days) than the PD group (1227.40 days) (*log rank x*<sup>2</sup>(1) = 17.70, *p*<.001); that is, on average the PD group returned to custody 407 days sooner than the ROHD group. This is demonstrated in the cumulative survival curves below (figure 9), which indicate, for example, that by 730 days post discharge, around 40% of the PD group, and 23% of the ROHD group, had returned to custody. Cox regression analyses indicate that the rate of return to custody was 1.85 times lower for the ROHD than PD group (HR = 0.54 [95% CI = 0.40 - 0.72]). Reanalysis of the pre-matched sample revealed a similar result, albeit with greater effect sizes, indicating that the findings are not a product of the matching process. Specifically, the mean days to return to custody was significantly greater for the PD (998.5 days) than the ROHD (1750.21 days) group (*log rank x*<sup>2</sup>(1) = 270.19, *p*<.001). Likewise, the rate of return to custody was 3.6 times lower for the ROHD than the PD group (HR = 0.24 - 0.33]).



Figure 9: Days to return to custody by matched prisoner discharge and ROHD group.

**COHD**. Data was available for 1198 people sentenced to COHD and 15 943 Prisoners Discharged (PD). Cases from the prisoner discharge data were removed if they were not eligible for home detention (e.g., on remand, sentenced for a sex offence or homicide, etc.) or had ever been sentenced to home detention. Data from both groups were removed if COHD or PD admissions occurred before 1 July 2016, discharges after 1 July 2022, and ROR scores were missing. Exclusion of ineligible cases from both groups resulted in a sample size of 998 for COHD and 1667 for PD (see Figure 4 in the methodology section).

Cross tabulations presented in Table 12 indicate that those in COHD were significantly more likely to be older and currently sentenced for an administrative or driving offence. By contrast, the PD

group were significantly more likely to be male, Aboriginal, currently sentenced for a drug, theft, violent, or public order/property related offence, have a higher ROR score, and return to custody.

		Dricon		
	Total sample (n=2665) n (%) / x̄(sd)	Discharge (n=1667) n (%) / x̄(sd)	COHD (n=998) n (%) / x̄(sd)	x²( <i>df</i> ), ∳ / t( <i>df</i> ), Cohen's <i>d</i>
Demographics				
Age at sentence	36.17 (10.32)	35.15 (9.94)	38.39 (10.79)	<i>t</i> (2427)=7.25 <sup>***</sup> , .32
Male	2348 (88.1%)	1544 (92.6%)	804 (80.6%)	<i>x</i> <sup>2</sup> (1)=86.64 <sup>***</sup> , .18
Aboriginal <sup>a</sup>	502 (18.8%)	407 (25.0%)	95 (9.7%)	<i>x</i> <sup>2</sup> (1)=92.68 <sup>***</sup> , .19
Offence history				
Has prior sentence	1396 (52.4%)	1039 (62.3%)	357 (35.8%)	<i>x</i> <sup>2</sup> (1)=176.50 <sup>***</sup> , .26
Index offence (ROHD senten	ce) <sup>b</sup>			
Drug	217 (10.0%)	187 (11.2%)	30 (5.9%)	<i>x</i> <sup>2</sup> (1)=12.01 <sup>***</sup> , .07
Administrative/driving	471 (21.7%)	73 (4.4%)	398 (78.8%)	<i>x</i> <sup>2</sup> (1)=1264.42 <sup>***</sup> , .76
Theft	514 (23.7%)	411 (24.7%)	103 (20.4%)	<i>x</i> <sup>2</sup> (1)=3.89 <sup>*</sup> , .04
Fraud	126 (5.8%)	94 (5.6%)	32 (6.3%)	n.s
Violent	292 (13.4%)	238 (14.3%)	54 (10.7%)	<i>x</i> <sup>2</sup> (1)=4.28 <sup>*</sup> , .04
Public order/property	735 (27.6%)	664 (39.8%)	71 (14.1%)	<i>x</i> <sup>2</sup> (1)=114.99 <sup>***</sup> , .23
Risk ratings				
Risk of Reoffending (ROR)	13.16 (5.18)	14.76 (4.95)	10.49 (4.39)	<i>t</i> (2663)=22.48 <sup>***</sup> , .90
Return to custody				
Return to custody	1132 (42.5%)	879 (52.7%)	253 (25.4%)	<i>x</i> <sup>2</sup> (1)=191.52 <sup>***</sup> , .27

Table 12: Demographic,	criminal justice,	and sentence	characteristics o	f people senter	nced to HD
between 1 July 2016 and	1 July 2022, and (	ending before 2	2 August 2022 by	COHD status (I	n=2665)

*p*<.10<sup>+</sup>, *p*<.05<sup>\*</sup>, *p*<.01<sup>\*\*</sup>, *p*<.001<sup>\*\*\*</sup>

Note: Percentages exclude missing cases

a. n=2612

b. n=2172

Propensity score matching (PSM) matches participants from different groups based on theoretically and empirically relevant covariates (Lane et al., 2012), and was used to create a matched COHD and PD group to determine the effect of COHD on returns to custody up to 22 August 2022. Groups were matched on variables available in both data sets that were associated with significant group differences and returns to custody. Specifically, these variables were age, sex, Aboriginal status, prior sentences, sentenced offence type, and ROR score. Note that to preserve statistical power, sentenced offence types were recoded into violent and non-violent offences (i.e., drug, administrative/driving, theft, fraud, and order/property offence), and age was dichotomised (18 to 29 years vs. 30 years or older). Variable matching aims to reduce the likelihood that the factors influencing group membership do not bias the association between sentence type and returns to custody.

One-to-one matching without replacement and a match tolerance of .001 was used to match those in COHD (n=998) or PD (n=1667). This resulted in 352 pairs (n=704). The even distribution of

variables between the COHD and prisoner discharge group, referred to as balance, was determined by calculating the standardised bias and standardised mean difference. A standardised mean difference score of less than .20 suggests balance is achieved. Covariates with a standardised bias score greater than .10 should be included in regression models to remove residual confounding (Nguyen et al., 2017). Appendix D: Table 1 presents the balance and fit descriptive statistics and indicates that there are no significant differences between the PD and COHD group in the postmatched sample. Standardised bias scores were >.10 for all variables, indicating very little risk of potential bias.

In the post-matched sample, the average days to return to custody was significantly greater for the COHD group (1379.93 days) than the PD group (1184.22 days) (*log rank x*<sup>2</sup>(1) = 11.58, *p*<.001); that is, on average the PD group returned to custody 196 days sooner than the COHD group. This is demonstrated in the cumulative survival curves below (figure 8), which indicate, for example, that by 730 days post discharge, around 45% of the PD group, and 33% of the COHD group, had returned to custody. Cox regression analyses indicate that the rate of return to custody was 1.53 times lower for the COHD than PD group (HR = 0.65 [95% CI = 0.51 - 0.84]). Reanalysis of the pre-matched sample revealed a similar result, albeit with greater effect sizes, indicating that the findings are not a product of the matching process. Specifically, the mean days to return to custody was significantly greater for the PD (998.5 days) than the COHD (1559.1 days) group (*log rank x*<sup>2</sup>(1) = 205.75, *p*<.001). Likewise, the rate of return to custody was 2.68 times lower for the COHD than the PD group (HR = 0.37 [95% CI = 0.32 - 0.43]).





# 4.4 Potential impact of COVID-19 on breaches of orders and returns to custody

Given the COVID-19 pandemic, we examined whether and to what extent this potentially had an impact on the outcome variables under examination in the current evaluation including breaches of HD orders and returns to custody following HD orders. Initially, we used several different measures

for estimating the potential impact of COVID-19 on prisoner breaches. These included whether prisoners were: (1) released to ROHD / sentenced to COHD and left before the COVID-19 pandemic (15 March 2020); (2) admitted to ROHD / sentenced to COHD during the COVID-19 pandemic; (3) admitted to ROHD / sentenced to COHD prior to COVID-19 and left during the pandemic; (4) admitted to ROHD / sentenced to COHD during COVID-19 lockdown (15 March – 30 June 2020); (5) Left ROHD / COHD during COVID-19 lockdown.

In terms of breaches, bivariate analyses suggested there was a positive association between being admitted to and leaving ROHD before COVID-19 and breaching conditions, and a negative association between being admitted to ROHD prior to COVID-19 and being released during the pandemic (Appendix E: Table 1). In short, those who were admitted to and left ROHD before COVID-19 were slightly more likely to have breached the conditions of their order, while those admitted prior to the pandemic and released during it were less likely to breach their ROHD order. These results are likely explained in part simply by the amount of time that characterised the observation period prior to and during the pandemic, but nonetheless it was important to determine if they had an impact on the likelihood of breaching conditions relative to the other variables that were analysed. Therefore, Table 15 displays the adjusted cox regression models predicting breaches of ROHD including the two variables discussed above. The results of model 1 show that being admitted to and leaving ROHD prior to the pandemic was associated with a higher rate of ROHD breaches (HR=1.47 [95% CI = 0.93-2.31]). However, admission to ROHD during COVID was not independently associated with ROHD breaches.

In terms of returns to custody, bivariate analyses revealed that the impact of COVID-19 was negatively associated with returns to custody; those who returned to custody were more likely to have been admitted and left ROHD prior to COVID, and were less likely to have been admitted or released during COVID (Appendix E: Table 2). The results of model 2 show that admission to ROHD prior to or during COVID was not associated with the rate of return to custody, independent of other predictors.

	MODEL 1	MODEL 2
VARIABLES	ROHD BREACH	ROHD RTC
	HR (95% CI)	HR (95% CI)
Demographics		
Age at release to ROHD		0.96 (0.94 - 0.98)***
Employed	0.69 (0.46 - 1.04)+	$0.61  (0.40 - 0.94)^{*}$
Offence history		
# of prior sentences	1.18 (1.07 – 1.30)***	1.24 (1.12 – 1.37)***
Index offence (COHD sentence)		
Drug		0.90 (0.59 – 1.38)
Administrative/driving	0.69 (0.38 – 1.25)	1.34 (0.80 – 2.23)
Fraud	2.46 (1.41 – 4.29)**	
Violent	$0.45~(0.20-0.99)^{*}$	
Risk ratings		
Risk of Reoffending (ROR)	1.09 (1.05 – 1.14)***	1.04 (0.99 – 1.09)

Table 13: Adjusted Cox regression models predicting breaches/RTC among prisoners sentenced to	D
ROHD between 1 July 2016 and 1 July 2022, ending by 22 August 2022	

Prison programs		
Making changes		0.74 (0.46 – 1.16)
Sentence characteristics		
Non-parole period (days)	0.96 (0.93 - 0.98)***	1.01 (0.99 – 1.04)
Length of ROHD (sentenced days)	0.94 (0.90 - 0.99)*	0.92 (0.89 – 0.96)***
COVID		
Admitted and left ROHD prior to COVID	1.47 (0.93 – 2.31)+	1.84 (0.66 – 5.14)
Admitted to ROHD during COVID	0.51 (0.22 – 1.18)	1.61 (0.52 – 5.00)
ROHD breaches		
Breached ROHD conditions		1.82 (1.21 – 2.71)**

*p*<.10<sup>+</sup>, *p*<.05<sup>\*</sup>, *p*<.01<sup>\*\*</sup>, *p*<.001<sup>\*\*</sup>

We re-ran these same analyses for those prisoners sentenced to COHD in the current study and a slightly different pattern emerged. Namely, being sentenced to COHD prior to COVID but leaving COHD during COVID was associated with a lower likelihood of breach, whereas being sentenced to COHD during the COVID lockdown period was associated with a greater likelihood of breach (Appendix F: Table 1). By contrast, prisoners serving COHD were more likely to return to custody if they were serving and left COHD prior to COVID-19, and were less likely to return to custody if they were serving COHD during COVID (Appendix F: Table 2).

Table 16 displays the adjusted cox regression models predicting breaches of COHD and returns to custody following COHD including the COVID-19 related variables discussed above. The results show that being admitted to COHD prior to the pandemic and completing COHD during the pandemic, or being admitted to COHD during COVID lockdown, was not significantly associated with rate of COHD breach, net of other predictors. For returns to custody following a COHD sentence, being sentenced to and leaving COHD prior to COVID, and being admitted to COHD during COVID, was not significantly associated with returns to custody, net of the other variables in the model.

	MODEL 1	MODEL 2
VARIABLES	COHD BREACH	COHD RTC
	HR (95% CI)	HR (95% CI)
Demographics		
Age at release to COHD		0.99 (0.97-1.01)
Male		1.73 (1.03-2.90)*
Aboriginal	0.88 (0.41-1.89)	
Offence history		
Has multiple sentences		1.28 (0.79-2.08)
Index offence (COHD sentence)		
Theft	1.41 (0.78-2.55)	1.76 (1.11-2.78)*
Fraud	1.82 (0.76-4.33)	
Public order/property	1.75 (0.94-3.23)+	
Risk ratings		

Table 16: Adjusted Cox regression models predicting breaches/RTC among prisoners sentenced toCOHD between 1 July 2016 and 1 July 2022, ending by 22 August 2022

Risk of Reoffending (ROR) <sup>sqrt</sup>	2.18 (1.39-3.41)**	2.09 (1.48-2.95)***
Sentence characteristics		
Length of COHD (sentenced days) <sup>sqrt</sup>	0.72 (0.64-0.82)***	
Days in COHD sqrt		0.92 (0.87-0.97)**
COVID		
Admitted and left COHD prior to COVID		1.79 (0.71-4.53)
Admitted to COHD during COVID		1.42 (0.85-2.38)
Admitted prior to, but left during, COVID	0.56 (0.17-1.84)	
Admitted to COHD during lockdown	1.84 (0.71-4.78)	
COHD breaches		
Breached COHD conditions		1.42 (0.85-2.38)
n = 10t n = 05 <sup>*</sup> n = 01 <sup>**</sup> n = 001 <sup>***</sup>		

*p*<.10<sup>+</sup>, *p*<.05<sup>\*</sup>, *p*<.01<sup>\*\*</sup>, *p*<.001<sup>\*\*</sup>

## **5 Economic evaluation**

This chapter presents results for the complete phase 1 and extended phase 2 HD economic evaluation comprising the 6-year study period from 2016-17 to 2021-22. As described in section 2 the economic component utilises the approach established in phase 1, (Cale, Zmudzki et al. 2020). Preliminary results for the phase 2 economic evaluation were reported in November 2021 (Cale, Zmudzki et al. 2021).

## 5.1 Introduction

Since the phase 1 HD evaluation (2016-2018), the substantial costs associated with incarceration have continued to increase with growth in prison populations. Nationally in 2018-19 the government expenditure for corrective services was almost \$4.77 billion when including depreciation, a real increase of 5.8 per cent from 2017-18 (Productivity Commission 2020). Corrective services expenditure continued to increase in 2019-20 to \$5.09 billion, a further real increase of 5.1 per cent from 2018-19 (Productivity Commission 2021). This trend continued during the study period in 2020-21 with expenditure further increasing to \$5.43 billion, a consistent further real increase of 5.1 per cent from 2019-20 (Productivity Commission 2022).

As presented in Evaluation Report 1, the cost and growth in corrective services at the start of the phase 1 project was particularly acute in SA which was experiencing one of the fastest growth rates in prisoner population in Australia, with an increase of 67% over the 12 years from 2004 to 2016 (Government of South Australia 2016). In response to this trend, the SA Government commenced a range of initiatives through the Department of Correctional Services Strategic Plan 2018 - 2022 with an emphasis on alternatives to custodial offender management, rehabilitation and a focus on outcomes (Government of South Australia 2018). As noted in the phase 1 report (Cale, Zmudzki et al. 2018), these initiatives were implicitly aimed to reduce pressure on the state's custodial facilities and potential need for further high-cost investment in expansion or development of new prisons and the associated ongoing recurrent maintenance and running costs of new facilities. At the end of the evaluation period in 2022 the SA Government published a new DCS Strategic Plan 2022 – 2026 reemphasising and extending priorities of reduced reoffending supported through innovative evidence-based policies and programs (Government of South Australia, 2022).

In this national context of increasing pressure on prison capacity, the South Australian 10by20 Strategy Progress Report indicated the South Australian strategy was helping restrain custodial sentences (Government of South Australia 2020). Home detention was noted to contribute to this progress as an alternative to prison, helping achieve the lowest rate of return to corrective services in Australia at 44.9%. The rate of reoffending in South Australia reflects ongoing increased investment in rehabilitation programs, strengthening alternatives to custody such as HD and building better prison services (South Australian Department of Correctional Services 2020). This longitudinal phase 2 project was established to validate results since the preliminary phase 1 evaluation and further examine the effectiveness and related cost effectiveness of the SADCS HD program.

At the time of preparing preliminary phase 2 evaluation results the Productivity Commission released a first research report into the criminal justice system emphasising the record number of people in Australian prisons (Productivity Commission 2021). The report provides perspective of the continuing long-term increase in the imprisonment rate since the 1980s, around the highest level in a century, while during the same period the Australian crime rate has been declining. Australian imprisonment rates are above Organisation for Economic Co-Operation and Development averages with the implication that further growth will continue to require large capital investment in further prison capacity in addition to the high daily cost within the available system. The Productivity Commission (2021a) suggests that as the rising imprisonment rate is not explained through the amount or types of crime, government policy is at least part of the cause.

In this context, the high cost of imprisonment is viewed in economic terms of the resulting justice system outcomes in the same way that increased spending in other sectors such as healthcare is evaluated in terms of health outcomes, and alternative interventions. As for healthcare policy, this provides insights into the complex trade-offs facing policy makers. The report notes the complexity in the reasons for increased prison rates including increased reporting of some crimes such as domestic violence, as well as changes in criminal justice policy which has made bail more difficult to access, with more offenders remanded in custody. The focus of the Productivity Commission report is to examine alternatives to prison, including home detention, and potential effectiveness and related cost effectiveness of each option.

The Productivity Commission report (2021a) applies an economic framework to the underlying objectives and trade-offs in the prison system and notes some of the evidence gaps for policy makers including the developing evidence of HD presented in this and previous evaluations of HD in South Australia. The Productivity Commission report notes case study examples of policies and programs that have demonstrated net benefits through keeping some low-risk offenders out of prison by diversion, home detention or early parole, with reference to the South Australian HD phase 1 evaluation for COHD and early release in the case of ROHD. The report notes the gap in longitudinal studies of pathways through the criminal justice system and how these affect outcomes for different cohorts. This final phase 2 evaluation report further contributes to the evidence base through extended longitudinal follow up of HD detainees.

The Productivity Commission report also emphasises the importance of integrated services (such as HISSP) to support effective treatment of underlying issues helping offenders to reintegrate, rehabilitate and avoid further offending. It is noted in the Productivity Commission report that integrated offender support programs including the Australian Capital Territory's Extended Throughcare model appear to be effective in reducing recidivism (Griffiths, Zmudzki et al. 2017). The report also underlines the value in pursing new initiatives and the need to measure and monitor outcomes and evaluate programs independently to drive continuous improvement, in line with this continuing evaluation of HD in South Australia.

Consistent with the Productivity Commission recommendations SADCS is proactively initiating further programs including the first NDIS pilot program in Australia aimed at identifying people in custody with a disability and coordinating with NDIS support teams to develop support plans in preparation for release to the community. The NDIS pilot is being independently evaluated at the time of this report.

## 5.2 Program growth

The first phase of the HD evaluation showed growth in SA HD programs since the introduction of ROHD in 2014 and the subsequent implementation of COHD in 2016. This final economic evaluation report includes the complete 6 years of HD data from July 2016 to June 2022, Figure 11. The current phase 2 evaluation has added data for detainees placed on HD orders during the 4 year extended study period from July 2018 to June 2022, unshaded section. This provides a combined total study group of 2,694 HD orders comprised of 1,441 ROHD and 1,253 COHD.



Figure 11: HD program development by order type 2016-17 to 2021-22

Source: SADCS offender data

Notes: Figures present total HD orders including repeat orders for detainees and orders still being served at the end of the study period in June 2022. Shaded section indicates completed phase 1 study period. COHD commenced in September 2016, ROHD commenced prior to the study period. ROHD n=1,352 individuals, 1,441 orders including repeat sentences. COHD n=1,197 individuals 1,253 orders including repeats.

The total number of HD orders reflect ongoing cycling through the program at different durations for new detainees and those completing their HD order. Figures presented in this final evaluation report include the complete 6-year study period, validating results from the previous interim evaluation reports. The average HD duration for the complete evaluation period 2016-17 to 2020-22 is around 6.3 months across both HD order types.<sup>11</sup>

To indicate the number of HD detainees in the program at any point, concurrent orders were derived as the number of total entries less the number of exits each month, (Figure 11 dotted lines per order type). This shows that the program utilisation (concurrent detainees per month) has been sustained consistently during the 6-year study period with around 126 for ROHD and around 117 for COHD. This sustained utilisation increased slightly during the most recent phase 2 study period to around

<sup>&</sup>lt;sup>11</sup> Average sentence by order type: ROHD = 6.2 months, COHD = 6.4 months.

134 ROHD and 126 COHD, following the initial program development phase. There were 145 detainees (5.8%) placed on repeat HD orders, most (135) for a second sentence and a small number (10) for a third return HD order.<sup>12</sup>

Growth in the HD programs has continued since the phase 1 evaluation covering 2016-17 and 2017-18. This timeframe overlapped with development in the HD programs, the implementation of the extended ROHD legislation and introduction of COHD in September 2016. ROHD has been provided in SA since 1993, before the phase 1 study period in 2016-17 and 2017-18. During the complete 6year evaluation timeframe the demand for ROHD orders remained consistently strong with 1,441 cumulative program entries as of June 2022 (Figure 11, blue solid line).<sup>13</sup> Over the same 6-year period the number of completed orders was similarly stable reflecting the throughput of typical HD sentences of several months (blue dashed line).

The COHD orders commenced in September 2016 and similarly showed sustained growth and program demand. As for ROHD, the COHD program development is shown as cumulative entries of 1,253 at the end of the evaluation period in June 2022 (Figure 11, solid red line). Both ROHD and COHD reflect consistent completed orders (dashed blue and red lines) and the net concurrent number of orders derived from entries per month less completions per month (blue and red dotted lines).

The HD program is not directly capped through capacity of staffing or equipment and the supply of monitoring devices could be further scaled up as needed. The current level of about 260 detainees at any point in time is a net balance and there are routinely multiple orders of variable duration continually cycling in and out within each year. The trend in concurrent levels of detainees demonstrates sustained high demand and utilisation for the HD program during the evaluation period. Reported performance of the target 85% successful completion of HD orders was achieved during the study period in 2019-20 (South Australian Department of Correctional Services 2020). Successful completion of HD orders remained high in the latest 2020-21 reporting at 77%, although the figures are likely to have been impacted by COVID-19 restrictions (South Australian Department of Correctional Services 2021).

## 5.3 Program cost

As presented in completed phase 1 and phase 2 evaluation reports, program budget funding was announced by the SA Government in 2016-17 and 2017-18 and allocated over forward years to 2021-22, Table 14. These combined budget allocations were established to implement supervision and management of offenders subject to the 2016 introduction of court-ordered home detention and continue to expand the use of the Department for Correctional Services' sentenced HD program.

<sup>&</sup>lt;sup>12</sup> Repeat HD orders by order type: ROHD = 89, COHD = 56.

<sup>&</sup>lt;sup>13</sup> Minor variation to figures reported in the quantitative sections of the report due to timeframe cut-off and the quantitative figures focusing on most recent indexed and completed orders.

2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	Total
2.041	4.402	4.512	4.625	4.694	4.764	25.038
0.618	3.280	3.351	3.425	3.497	3.550	17.721
2.659	7.682	7.863	8.050	8.191	8.314	42.759
	2016-17 2.041 0.618 2.659	2016-17         2017-18           2.041         4.402           0.618         3.280           2.659         7.682	2016-172017-182018-192.0414.4024.5120.6183.2803.3512.6597.6827.863	2016-17         2017-18         2018-19         2019-20           2.041         4.402         4.512         4.625           0.618         3.280         3.351         3.425           2.659         7.682         7.863         8.050	2016-17         2017-18         2018-19         2019-20         2020-21           2.041         4.402         4.512         4.625         4.694           0.618         3.280         3.351         3.425         3.497           2.659         7.682         7.863         8.050         8.191	2016-17         2017-18         2018-19         2019-20         2020-21         2021-22           2.041         4.402         4.512         4.625         4.694         4.764           0.618         3.280         3.351         3.425         3.497         3.550           2.659         7.682         7.863         8.050         8.191         8.314

#### Table 14: Home detention budget allocation 2016/17 to 2021/22 (\$million)

Source: SADCS Finance Directorate, SA Treasury Agency Statements

The HD program budget allocation was \$7.9 million at the start of the phase 2 study period in 2018-19, increasing to \$8.3 million in 2021-22 In line with annual indexation. HD funding is part of broader community-based supervision services including bail supervision, intensive bail supervision, parole and probation services, community services and the preparation of court reports (Government of South Australia 2021).

#### Program staffing and HD operational costs

In line with the methodological approach presented in chapter 2, the South Australian home detention program costs have been prepared based on the Report on Government Services (RoGS) operating figures combined with estimated Electronic Monitoring (EM) and related Intensive Compliance Unit (ICU) costs for the program population, Table 15**Error! Reference source not found.** The estimated total HD program cost increased during the initial development phase to \$4.8 million in 2018/19, the highest level during the 6-year study period. From 2019-20 program cost declined for the remaining 3 years to \$4.3 million in 2019-20 and \$3.2 million in 2021-22. The program cost decline has been impacted by COVID-19 restrictions in the final years of the study period which reduced the in-scope HD populations and related cost allocations.<sup>14</sup>

<sup>&</sup>lt;sup>14</sup> The operating expenditure figure for 2020-21 was presented as indicative in Report 1 as the RoGS based figures were not available. The estimate of \$52,384,412 was assumed as 2019-20 expenditure indexed at 1.5%. The actual RoGS figure subsequently published for 2020-21 was \$54,952,000 and has been updated in this final report.

	Source /							
Cost item	calculation	2016/17		2017/18	2018/19	2019/20	2020/21	2021/22
Net total operating expenditure (a)	ROGS	\$ 38,462,000	\$	45,665,000	\$ 53,893,000	\$ 51,610,258	\$ 54,952,000	\$ 55,071,825
EM and ICU costs* (b)	DCS Finance	\$ 8,519,612	\$	9,982,781	\$ 10,688,645	\$ 10,265,436	\$ 10,163,359	\$ 11,134,409
Net operating expenditure								
less EM and ICU (c)	a-b	\$ 29,942,388	\$	35,682,219	\$ 43,204,355	\$ 41,344,822	\$ 44,788,641	\$ 43,937,416
Number of offender days (d )	ROGS	2,328,104		2,192,961	2,187,848	2,221,085	2,076,804	2,412,355
Cost/day excl. EM and ICU (e)	(c / d)	\$ 12.86	\$	16.27	\$ 19.75	\$ 18.61	\$ 21.57	\$ 18.21
Average daily CC population								
with EM and ICU input (f)	ROGS	882		802	864	1,032	988	1,099
Annualised EM and ICU cost** (g)	DCS Finance	\$ 9,408,793	\$	10,994,265	\$ 11,653,396	\$ 11,050,885	\$ 11,232,613	\$ 12,187,797
Daily cost of EM and ICU (h)	(g/365.25)/f	\$ 29.21	\$	37.53	\$ 36.93	\$ 29.32	\$ 31.13	\$ 30.37
Cost of supervision, EM and ICU (i)	(e+h)	\$ 42.07	\$	53.80	\$ 56.67	\$ 47.93	\$ 52.69	\$ 48.59
Number of offender days (j)	(f x 365.25)	322,151	_	292,931	315,576	376,938	360,867	401,288
Proportion of population in-scope	Data run by							
(ROHD and COHD) (k)	GES	24%		28%	27%	24%	18%	17%
Number of offender days								
for in-scope population (I)	(j x k)	76,309		80,751	84,336	89,622	65,995	66,333
Annualised ROHD and COHD cost		\$ 3,210,129	\$	4,344,676	\$ 4,779,751	\$ 4,295,803	\$ 3,477,473	\$ 3,222,789
IHISSP/HISSP service provider costs			\$	780,667	\$ 1,320,610	\$ 1,201,181	\$ 1,693,725	\$ 1,869,784
Total program cost per year		\$ 3,210,129	\$	5,125,343	\$ 6,100,361	\$ 5,496,984	\$ 5,171,199	\$ 5,092,573

#### Table 15: DCS State-wide home detention program costs 2016-17 to 2021-22

Source: SADCS Finance Directorate

Notes: \* Includes the portion of the EM contract and lost and damaged goods which was allocated to the Community Corrections population in the ROGS calculation, \*\* Includes the full annual cost of the EM contract and lost and damaged goods, EM = Electronic Monitoring, ICU = Intensive Compliance Unit, CC = Community Corrections

Program staffing is a core cost component as HD detainees are case managed by a Community Corrections Officer and DCS is responsible for supervising offenders in the community. To cross validate program costs the initial phase of the economic analysis examined HD related units across community corrections based on HD staffing and FTE positions provided by DCS Finance Directorate. The HD proportions were applied to each unit budget variance report to derive the total cost of HD for the study period. This alternative costing approach produced figures consistent with the RoGs based method. The final HD program costs present the RoGS allocation approach to support consistency and comparability with published Corrective Services cost reporting.

The HISSP service provider agreement was reassessed and recontracted from November 2017 through OARS Community Transitions and continued throughout the phase 2 evaluation period. The total cost of HD support services provided through HISSP were \$1.3 million in 2018/19 and increased to \$1.9 million in 2021-22. The increased HISSP support service costs have partly offset program cost declines, although total program cost per year has declined since 2018-19. The total HD program cost including HISSP was \$6.1 million in 2018/19, \$5.5 million in 2019/20 and \$5.1 million in 2020-21 and 2021-22, a total of \$31.3 million over the 6 financial years.

#### Average cost per HD detainee

Average HD cost per detainee per month has been calculated across the complete 6-year study period based on total cost in 2021-22 dollars combined with total months of home detention for each order type. Cost data are aggregated across both ROHD and COHD order types with a total program cost for the 6 years of \$31.3 million, Table 16.<sup>15</sup> During the study period there were 1,441 ROHD and 1,253 COHD, a total of 2,694 orders.

The number of HD orders, detainees and HD months served have been calculated to include all HD services provided during the study period. For this reason, there are slight differences with figures in the quantitative analysis which focuses on the single most recent HD order per detainee and excludes incomplete orders still in progress at the end of the study period. The figures for the economic component of the evaluation have been undertaken to provide total HD activity aligned with program cost over the 6 financial years. The total orders include 145 repeat HD orders for 89 ROHD and 56 COHD detainees.

To align with the total number of HD months the figures include 217 detainees who were still serving their orders at the end of the study period. The number of months for each of these orders has been calculated based on order commencement date to the end of the study period on 30 June 2022. This calculation is an extension of the analysis for this final report to confirm total HD months provided during the 6 years. This has added 1,535 HD months across multiple years for those serving longer HD sentences.<sup>16</sup>

Consistent with the phase 1 economic evaluation the average cost figures are based on aggregate costs across both HD order types providing indicative figures which mask inherent variation in the type, duration, and support service mix of detainees. The average cost per detainee corresponds to an average HD sentence for ROHD of 6.2 months and 6.4 months for COHD. These average HD sentences are based on high variation right skewed durations with standard deviations for both order types higher than the average sentence.

HD	Study	Repeat	In HD at	Study		Average				Average cost
order	period	orders	study	period HD	% total	HD	SD HD	Total HD	Proportion of	based on HD
type	detainees	oracis	period end	orders	orders	months	months	months	total cost	months
ROHD	1,352	89	93	1,441	53.5%	6.2	6.7	9,035	\$ 16,507,588	\$ 11,337
COHD	1,197	56	124	1,253	46.5%	6.4	7.1	8,086	\$ 14,773,971	\$ 11,678
Total HD	2,482	145	217	2,694	100.0%			17,121	\$ 31,281,559	\$ 11,612

#### Table 16: Average HD cost based on months in program 2016-17 to 2021-22

Source: SADCS Finance Directorate, SADCS offender data, SD=standard deviation

<sup>&</sup>lt;sup>15</sup> Average program cost calculations adjusted to 2021-22 dollars at 1.5% per annum in line with SADCS guidance.

<sup>&</sup>lt;sup>16</sup> Total 217 detainees still serving HD orders at study end with average of 7.1 months on 30 June 2022.

Notes: Figures presented in 2021-22 dollars indexed at 1.5% per annum. Total study period detainees presented by order type; total detainees lower than sum of order types due to 67 individuals having repeat orders of both order types.

Based on the total 17,121 HD months during the 6-year study period from 2016-17 to 2021-22 this represents an average HD cost of \$1,827 per month.<sup>17</sup> On average ROHD orders were 6.2 months with estimated average cost per detainee of \$11,337.<sup>18</sup> Detainees serving COHD orders spent their full sentence in HD with a similar average 6.4 months and an estimated average cost of \$11,678.<sup>19</sup> This provides an indicative cost per HD order of \$11,612 across both order types.

Although HD sentences are generally around six months this annualises to \$21,925 in the case of a full year in HD, which represents around 21% of the annual cost of prison in South Australia at \$105,277 (Productivity Commission 2022).<sup>20</sup> The total program cost of \$31.1 million is substantially below the total budget for the 6-year study period of \$42.8 million over 2016-17 to 2021-22.

#### Custodial cost offsets from HD

The cost effectiveness analysis focused on a comparison of total program costs and HD activity during the 6-year study period, Figure 12, centre segment. For consistency with the phase 1 evaluation this figure provides overarching perspective of the scale and proportion of HD cost components, for context to the economic cost effectiveness modelling in following sections. In line with the phase 1 evaluation report the left segment (blue bar) is not shown as a directly comparative figure as it includes several years of prison sentences for some individuals in the HD study group. The figure is not presented as a direct comparison of custodial time avoided but indicates the scale of total cost of prison sentences for the study group prior to their ROHD order, \$187.6 million.<sup>21</sup> This provides high level perspective of the HD program cost of \$31.3 million over the 6-year study period (green bar). These two elements are shown as positive cost figures above the zero baseline.

 $<sup>^{17}</sup>$  \$31,281,559 total program cost / 17,121 HD months = \$1,827 per HD month.

<sup>&</sup>lt;sup>18</sup> Based on average monthly cost ROHD standard deviation of 6.7 months \* \$1,827 = \$12,317.

<sup>&</sup>lt;sup>19</sup> Based on average monthly cost COHD standard deviation of 7.1 months \* \$1,827 = \$12,967.

<sup>&</sup>lt;sup>20</sup> Productivity Commission, Report on Government Services, Corrective Services, part C Chapter 8, Table 8A.19. South Australian daily total net operating expenditure and capital costs of 288.43 \*365=\$105,277. Annual cost of HD = \$1,827/month \* 12 = \$21,925 / Annual prison cost of \$105,277 = 20.8%.

<sup>&</sup>lt;sup>21</sup> Based on prior prison sentences for the ROHD group at an average of 1.2 years (n=1,441), a total of 1,781.7 prison years at 2021-22 cost of prison 105,277 per annum = 187.6 million.



#### Figure 12: Home detention cost and custodial cost offsets

Source: SADCS offender data, DCS Finance Directorate

Notes: Offset for returns to custody presented as indicative based on conservative rates at year 2 in line with figures presented in section 3. Figures presented in 2021-22 dollars. Shaded segment indicates negative costs as offsets.

The comparative custodial cost offsets for the ROHD study group are based on commencement of a HD order during the study period, calculated from HD commencement and release dates. Days in HD directly reduce the number of days in prison, shown as negative costs below the zero baseline, Figure 12, shaded lower section. For the ROHD group this represents a cost offset of \$78.4 million over the 6 financial years.<sup>22</sup> This core element of custodial cost offset is directly measurable as sentenced prison time redirected to home detention and underpins the HD outcomes and program cost effectiveness. This is not typical of community-based offender support programs that generally require assessment through custodial baselines compared to follow up of returns to custody. Previous studies have shown that community-based support programs for released prisoners such as the Extended Throughcare program in the ACT reduce recidivism, but custodial offsets are based on prior history and reflect inherent uncertainty in potential future returns to custody and related severity and sentence of offences (Griffiths, Zmudzki et al. 2017).

<sup>&</sup>lt;sup>22</sup> Based on ROHD days within 6-year study period at an average of 6.2 months (n=1,441, SD=6.7 months, total of 745.1 years of custody avoided at an average cost of \$105,277 per annum = \$78.4 million.

Whereas ROHD results in reduced prison days due to early release, COHD represents a complete prison diversion with the full HD sentence an avoided custodial term. Similar calculations were made to derive the COHD custodial cost offset during the study period of \$70.3 million, Figure 12, centre segment red bar.<sup>23</sup> In line with the phase 1 evaluation this provides the core figures for estimated program cost effectiveness as all values are based directly on measurable costs and prison days avoided during the study period. Combined, the 6-year HD program cost of \$31.3 million is generating cost offsets through prison time avoided of \$148.7 million. This final evaluation report result provides a comparable summary to the phase 1 evaluation and validates the core HD cost offsets reported in the preliminary phase 2 report. Further extended phase 2 analysis is presented in the following sections.

#### Custodial cost offsets from reduced returns to custody

In addition to the core prison time avoided within the 6-year study period, the HD program is also generating further cost offsets following completion of orders through reduced returns to custody (RTC). As presented in the quantitative analysis, of the propensity score matched comparison group (section 3), only 23% of ROHD detainees returned to prison compared to 40% of the prison discharge group representing a reduced RTC rate of 17%. The COHD study group also returned to custody at a lower rate of 33% compared to the control group RTC rate of 45%, a reduced rate of 12%. These RTC rates provide an initial conservative estimate of cost offset as they are based on returns at year 2 following HD release. Further RTC details are developed in the economic modelling in follow sections.

The estimated RTC rates reflect characteristic uncertainty in future detainee pathways and are subject to variation in actual custodial returns and the related prison cost offsets. For this reason, the figures shown in Figure 12 (right hand segment) provide a conservative estimate of further offsets based on reduced RTC average sentences.<sup>24</sup> In line with the quantitative analyses, the ROHD returns are based on an average sentence (prison and ROHD component) of 1.6 years resulting in an estimated further cost offset of \$40.5 million.<sup>25</sup> The reduced COHD returns to custody provide a further cost offset of \$11.1 million. The smaller estimated COHD offset is due to COHD being HD only with no prison sentence and therefore a shorter average sentence of 0.7 years which is combined with a smaller RTC reduction of 12%.<sup>26</sup> Based on these estimates HD is generating a further \$51.5 million in cost offsets through reduced RTC episodes.

Examined together it is clear that the HD program cost of \$31.3 million is generating an estimated \$148.7 million of direct prison offsets with high confidence, plus a further estimated future offset beyond the study timeframe of \$51.5 million, with no additional correctional services cost. Although there is uncertainty around the additional RTC offset estimate this suggests a combined custodial cost offset in the order of \$200.3 million. It is exceptional that government programs deliver this level of cost effectiveness where the total program cost is generating multiples in offsets of around 4.8

months, a total of 667.4 years of custody avoided at an average cost of \$105,277 per annum = \$70.3 million. <sup>24</sup> Average prior sentence data has been used as RTC custodial data does not include details of each return sentence.

<sup>&</sup>lt;sup>23</sup> Based on COHD days within the 6-year study period at an average of 6.4 months (n=1,253, SD=7.1

<sup>&</sup>lt;sup>25</sup> Based on a 17.0% reduced probability of an average sentence of 1.6 years (n=1,441).

<sup>&</sup>lt;sup>26</sup> Based on a 12.0% reduced probability of an average sentence of 0.7 years (n=1,253).

times within the 6-year study timeframe and an estimated 6.4 times if the future reductions in RTC are considered. Further details of the base case and RTC components are presented in the following economic modelling sections.

### 5.4 **Program outcomes and benefits**

The economic evaluation takes the core perspective of DCS as the funding agency and examines outcomes and cost offsets to corrective services. This provides a focus for program cost effectiveness based on data sources available for the evaluation. As described in the phase 1 evaluation report (Cale et al, 2018), the HD program is supporting a wide range of positive outcomes for detainees with the overarching aims of improving community integration, social and health outcomes and reducing reoffending rates.

The HD Program benefits may extend into the medium and longer-term with interrelated positive outcomes such as increased ability to obtain and sustain appropriate housing and reduced risk of homelessness, management of drug and alcohol abuse, improved community and workforce participation, improved education and job skill training, improved and sustained physical and mental health, as well as improved outcomes for families and children of offenders. These extended outcomes are likely to be improved through the program HISSP support services provided during a home detention sentence. Although the evaluation does not include data for these wider outcomes, the quantitative analyses indicate the positive association between higher number of days of HISSP support and a lower rate of ROHD and COHD breaches among those who received a high needs support package.

There are also positive outcomes such as the relative contribution of using innovative technology such as electronic monitoring, the benefits that may result from tailored individualised case management and related potential turning points that may support improved lifetime pathway trajectories with life changing long term outcomes. Although HD detainees are lower risk offenders than those committing violent crimes, there are potential rehabilitation points for this group, particularly COHD who may be first time offenders and avoid being exposed to the prison environment. In this context, the economic evaluation presents a base case of the SA HD program effectiveness and related cost effectiveness, but research shows that there are further likely positive outcomes that, if study group data were available, would add further to the program cost effectiveness results.

Research indicates that increasing numbers of Australians with limited educational backgrounds, financial capacity, and employment opportunities, as well as mental and cognitive disabilities are imprisoned each year, and as a result of their incapacity to reintegrate with society successfully when released often return to prison reflecting inequity for socially disadvantaged persons (Baldry and Russell 2017, Russell and Baldry 2020). This research shows the associated high social costs of prison where those incarcerated are usually worse off when released with around a half being homeless and the rest being in unstable or unsuitable housing, and over 75 per cent being unemployed (Baldry et al., 2006). Imprisonment results in loss of housing and employment, often more indebtedness, and when compounded with underlying complex support needs results in continuing the imprisonment cycle.

The research into prisoner outcomes suggests that families of prisoners also often face related economic, social and emotional disadvantages with large numbers of children suffering from the imprisonment of a parent at some time in their childhood (Baldry & Russell, 2017; Russell & Baldry, 2020). Children of prisoners' experience loss of their mother or father and are often placed in out of home care or in the informal care of extended family. Further, children of prisoners typically experience disrupted schooling and greater poverty and are more open to abuse and the likelihood of themselves ending up in prison.<sup>27</sup>

In this context the assessment of HD program costs presented in the previous section show the upfront program establishment and ongoing costs but are compared only for a subgroup of program benefits that can be measured in monetary terms. Full program benefits are often diffused, difficult to quantify, and may result after substantial time lags beyond the study timeframe. Assessment of these types of benefits require data linkage over extended post-program periods with secondary data sources such as healthcare, community programs, accommodation and justice systems.

The HD program aims to develop more structured days for offenders so in cases of no employment, detainees are required to undertake education and rehabilitation programs or they may do community service. Separate benefits may stem from the complexities for women and men in HD in their daily activity including family responsibilities. And further indirect benefits may result from reduced pressure on prison overcrowding and helping facilitate sufficient space and suitable environments for undertaking rehabilitation programs.

Finally, the South Australian HD program as an alternative to prison supports community benefits through detainees serving their sentence in an appropriate supervised environment, with support, training and rehabilitation services while retaining connection to live within the community. The extent that HD is avoiding prison as well as reducing returns to custody will have ongoing benefits resulting from program investment in home detention order options.

## 5.5 **Program cost effectiveness**

The phase 1 evaluation report assessed program cost effectiveness in the context of the established growth trend in the South Australian prison population and the associated high cost of additional prison demand. The SADCS 10by20 initiative incorporated the potential impact of diversionary strategies including HD to support improved outcomes as well as relieve custodial demand pressure and avoid, or delay, the need for development of new infrastructure. The strategy underlined the key role that non-custodial interventions could play in alleviating prison capacity pressure through alternatives to custodial sentencing, diversionary options for first time offenders from entering the prison system and reducing recidivism through community-based programs to support rehabilitation (Cale, Zmudzki et al. 2018).

In this overarching context, this final report extends the evaluation study period for a complete 6 years to validate program cost offsets. The extended data confirm base case HD alternative sentence pathways as well as the impact of reduced recidivism by individuals placed on HD orders compared to those on custodial prison sentences. The economic Markov modelling firstly developed

<sup>&</sup>lt;sup>27</sup> Ibid.

a base case to assess the cost effectiveness of the direct cost offsets resulting from prison time avoided due to the alternative HD order. From the base case the model is then extended to incorporate reduced rates of returns to custody for those serving ROHD and COHD orders compared to the control group.

#### HD cost effectiveness base case

The predominant HD cost offsets are driven by the cost of prison avoided by being placed on a HD order, directly offsetting the high cost of imprisonment with the much lower cost of HD. The cost offsets for each HD order are known with certainty as the full duration of the ROHD or COHD is a direct alternative to being in prison. In this context, the base case model establishes a base line where the custodial alternative is the cost of prison for the equivalent HD sentence, Figure 13. The no HD control group is shown as the alternative cost of imprisonment of around \$55,000 for the average 6-month HD sentence.<sup>28</sup> This is the equivalent custodial cost for each detainee if they had remained in prison (indicated as red square). The no HD control group represent zero prison years avoided as they would have remained in custody if they had not been placed on the alternative HD order (therefore shown as zero prison years avoided on the horizontal axis).



Figure 13: Estimated cost effectiveness per HD detainee - base case

Source: SADCS offender data, DCS Finance Directorate

The HD study group reflects the cost of the HD program for the duration of each ROHD and COHD order.<sup>29</sup> The study group bootstrapping scatter plot (blue dots) represents the variation in HD duration with a mean of half a prison year avoided and an average HD program cost per detainee of \$11,668 (shown as dotted line intersection).<sup>30</sup> This represents the variation in HD sentences as prison years avoided on the horizontal axis (average 0.52 years – dotted line) and the net cost of the HD program

<sup>&</sup>lt;sup>28</sup> Average HD sentence 0.53 years \* \$105,277 (2021-22 annual cost of prison in South Australia) = \$55,270

<sup>&</sup>lt;sup>29</sup> ROHD mean 6.2 months (S.D. 6.7 months), COHD mean 6.4 months (S.D. 7.1 months).

<sup>&</sup>lt;sup>30</sup> Minor variation from raw figures presented in Table 10 reflecting variation in model parameters.

less the cost offset of avoiding prison. The model bootstrap distribution shows HD prison years saved as always positive, seeing as all HD results in avoided time in prison.

From the base case cost and outcome distributions in Figure 13, HD program cost effectiveness is estimated as the incremental cost of HD, compared to the incremental outcome of prison years avoided, Figure 14. The point estimates from model bootstrapping indicate a lower mean cost of \$43,603 for HD compared to the equivalent duration sentence in prison.<sup>31</sup> This lower cost is associated with the mean HD program effectiveness of 0.52 years (shown as dotted line intersection). This represents a highly cost-effective outcome as the program is delivering a positive outcome of prison years avoided as well as being lower cost. This type of economic modelling commonly compares positive costs for study and control groups with respective outcomes to calculate an incremental cost effective. This facilitates comparison to evaluate a program that may be, for example, twice the cost of a comparator, but is generating five times better outcomes, and therefore is more cost and better outcomes and is referred to as 'cost saving'. The 95% confidence interval for model variation in all parameters is shown as the green ellipse.



Figure 14: Incremental cost effectiveness per HD detainee – base case

The base case model findings based on the extended 6-year study period are consistent with and validate the phase 1 evaluation results (Cale et al, 2018). The outcome is not surprising given the diversion from high-cost prison custody to substantially lower cost monitoring and supervision in a home setting. Although there is variation in the cost offsets through the amount of prison time avoided for each HD order, the core base case component of the cost effectiveness modelling is directly driven by the number of HD orders and associated sentence durations. Therefore, the base case modelling results provide an exceptionally positive foundation to the HD program cost effectiveness with high confidence. This is not the case with changes in returns to custody following completion of HD given the uncertainty of actual returns to prison. For this reason, the RTC component has been

<sup>&</sup>lt;sup>31</sup> Mean HD cost \$11,668 compared to mean prison cost of \$55,270.

developed as a separate model extension to the base case to assess the further positive incremental outcomes and related variation.

Cost effectiveness including RTCs

The second component of cost offsets resulting from the HD program relates to reduced returns to custody (RTC) for those having completed a HD order compared to the no HD control group. Based on the quantitative analyses (section 3) the percentage of RTCs was 34.0% lower for ROHD and 27.4% lower for those subject to COHD compared to the control group.<sup>32</sup> The model integrates these rates of return in each HD order type to estimate the additional program cost effectiveness resulting from this further improved outcome beyond the HD order period.

Separate to the base case cost offsets the future RTC rates reflect inherent uncertainty which could result in a range of future actual cost offsets. The Markov model framework was extended to include the expected rates of return combined with the average sentence durations prior to HD and related variation. As presented in the quantitative analyses the offender data indicates returns to custody but does not include finalised sentence details. For this reason, the model assumes RTC is for the same average duration to previous prison sentences.

When the RTC model parameters are included the cost effectiveness per detainee extends the base case and introduces additional uncertainty into the estimated cost effectiveness, Figure 15. Where the base case scenario identified the control group as a single baseline point, the RTCs now reflect the calculated cost and total prison years avoided as a negative value (the estimated cost of the return to prison years), from the previous zero baseline.

 <sup>&</sup>lt;sup>32</sup> ROHD 18.7% RTCs compared to 52.7% control = 34.0%, ROHD annual exponential rate in model = 3.46
 %. Control group annual exponential rate = 11.74%. COHD 25.4% compared to 52.7% control group = 27.4%, COHD annual exponential rate in model = 4.76%. Propensity score matched analysis confirmed consistent results with complete pre-matched 6-year study period data as presented in section 3.



#### Figure 15: Estimated cost effectiveness per HD detainee – including RTC

The control group bootstrapped scatter plot reflects this variation above the \$55,270 cost of the average HD order duration and variation across RTC sentences (red point estimates). The average total cost when RCTs are included is \$117,324 made up of the base case \$55,270 plus an average \$62,054 for the estimated returned prison time.<sup>33</sup> The HD study group similarly now incorporate the cost of the HD program with reduced prison years avoided to reflect the addition of returns to custody. This shows that the study group has decreased mean prison years avoided from 0.52 to 0.02 in total, a decrease from base case of 0.48 years. In line with the higher proportion of RTCs in the control group the impact is comparatively higher with a decrease in prison years avoided for the HD study group of -0.60 (red dashed line intersection).

The combined contribution to HD program cost effectiveness is again presented as the incremental cost and prison years avoided, Figure 16. The model results show the estimated increased contribution to cost effectiveness per detainee resulting from relatively lower RTCs. The incremental cost (cost of HD program plus prison cost offsets) has increased by \$50,769 to \$62,437. Although the prison years avoided decreased for the HD study group when RTCs are included, as the control group prison years avoided decreased by more, the incremental effectiveness has increased by 0.08 years to 0.60 (dashed line intercept).

Source: SADCS offender data, DCS Finance Directorate Note: Based on 6 year model timeframe in line with study period RTC data.

<sup>&</sup>lt;sup>33</sup> Control group RTC = 52.7%. The control group RTC sentence assumes 1.13 years as average between ROHD 1.57 years and COHD 0.70 years. This equates to an average 0.60 years in returned prison time at an average cost of around \$62,000.



#### Figure 16: Incremental cost effectiveness per HD detainee – including RTC

Source: SADCS offender data, DCS Finance Directorate Notes: Based on 6 year model timeframe in line with study period RTC data. WTP = willingness to pay at annual cost of prison \$105,277. 95% confidence interval indicated by green ellipse.

The inclusion of estimated RTCs contributes to increased HD program cost effectiveness and the results remain exceptional as 'cost saving' including increased cost offsets as well as additional prison years avoided. In line with the high variation in return sentences the bootstrapped results reflect a substantial range around the mean cost effectiveness estimate, shown with joint 95% confidence across all model parameters as the green ellipse.

This helps better assess the contribution of the RTC component of the cost offsets showing that although there is substantial variation, the 95% confidence interval indicates significantly lower cost as well as increased prison years avoided for the HD study group.

It is conventional to report probabilistic sensitivity analysis (PSA) as cost effectiveness acceptability curves representing the probability of the program being cost effective at respective cost thresholds. In the case of the HD modelling the estimated probability of being cost effective is effectively 100% as the results are 'cost saving'. The red point estimate dots in Figure 16 above show incremental cost greater than zero, but these are also associated with positive effectiveness of prison years avoided (to the right of the zero vertical axis). The sloped dashed line indicates a cost effectiveness threshold of the average cost of a year in prison. This indicates estimated cost effectiveness outcomes that may be above zero but are still resulting in sufficient prison years avoided to offset the average cost of HD.

#### HD Cost effectiveness results

The economic model base case takes a conservative approach to establish the core scenario that is known with certainty. The base case derives immediate outcomes focusing on the average HD duration and the directly related prison time avoided through the community-based alternative, Table 17**Error! Reference source not found.** The cost effectiveness results present the estimated program cost and prison years avoided as shown in the bootstrap model distributions in the previous sections. The base case presents the average HD program cost of \$11,668 compared to the control

group cost of \$55,270 as the equivalent HD period had detainees remained in prison.<sup>34</sup> This provides an incremental higher cost of \$43,603 for the control group.

	Cost		Effec	ctiveness	
Model scenario	Total cost	Additional cost	PYAs	Additional PYAs	Cost per PYA
Base case – During study period					
HD Study group:	\$11,668		0.52		
Control group:					
Prisoners discharged	\$55,270	\$43,603	0.00	-0.52	Cost saving
Extended scenario including					
RTCs					
HD Study group:	\$62,437		0.02		
Control group:					
Prisoners discharged	\$117,324	\$54,887	-0.58	-0.60	Cost saving

#### Table 17: HD Program cost effectiveness results 2016-17 to 2021-22

Source: SADCS offender data, DCS Finance Directorate

Notes: Cost effectiveness is the estimated costs per Prison Year Avoided (PYA). Estimated over a 6-year timeframe following entry to the HD program. Costs indexed to 2021-22 dollars in line with SADCS guidance.

Similarly, the effectiveness for the HD study group in prison years avoided (PYA) results directly from the average HD period of 0.52 years compared to the baseline control group with zero prison years avoided. It is conventional to present cost effectiveness results as incremental cost effectiveness ratios with an estimated probability of being cost effective based on model distributions and bootstrapping analysis. For the HD cost effectiveness base case, the results are exceptional as the HD study group is lower cost and produces an improved outcome in prison years avoided. For this reason, an incremental cost effectiveness ratio is not presented, and the result is shown as cost saving.<sup>35</sup>

The extended scenario results including the comparative lower rate of returns to custody in the HD study group is presented in the same format, Table 20. In this scenario the HD study group average cost increases to \$62,437 (the HD program cost plus the additional cost of study group returns to prison) and the prison years avoided decreases by the amount of the returns to custody (from 0.52 PYA to 0.02). The control group average cost increases by the additional return to prison duration and the PYA decrease by the comparatively higher RTC rate amount for the control group, from the zero-base case to -0.58 prison years avoided. This extends the estimated cost saving result of the HD study group to \$54,887 per detainee with an estimated comparative saving of 0.60 prison years avoided. The probabilistic sensitivity analysis in Figure 14 and Figure 16 show that although the

<sup>&</sup>lt;sup>34</sup> Average HD program cost for ROHD and COHD orders.

<sup>&</sup>lt;sup>35</sup> The occurrence of a lower cost and positive outcome is referred to a 'dominated' result. As this represents a negative incremental cost effectiveness ratio the result is 'cost saving' and is considered highly cost effective.
results reflect substantial variation (due to the characteristic distribution of individual sentences), the results are exceptionally positive as indicated by the 95% confidence intervals.

### Other potential HD benefits and cost offsets

In addition to the highly positive HD program cost effectiveness results for the base case and reduced returns to custody there are highly likely further benefits and related cost offsets. Although data for these additional outcomes are not available for the HD study group, previous research indicates that these dimensions are well established plausible components of HD program pathways (Baldry et al., 2012). These additional potential benefits are not explicitly incorporated in the economic modelling but plausibly provide further upside returns from the HD program investment. This emphasises the conservative approach taken and that the very positive results presented in the previous sections establish the core outcomes known with confidence and are likely to be associated with implicit further program effectiveness and related cost effectiveness.

For example, previous research has examined the lifetime pathway of prison populations with inherent complex needs that have been shown can manifest across interrelated sectors for homelessness, mental and physical health, disability, criminal justice, social benefits, education and employment (Baldry, Dowse et al. 2012). As noted in the phase 1 economic evaluation, this research compiled case studies of individuals that share similar complex needs, disadvantage, vulnerabilities and risk factors to the HD study group. The work estimated a range of institutional life-course costs associated with cycling in and out of criminal justice across age groups, with figures ranging from \$900,000 to \$4.5 million per individual. In this longer-term pathway cost perspective, the estimated cost per HD order of around \$11,600 is potentially marginal given the possibility of positively altering the lifetime pathway, at least for a proportion of HD participants. The research specifically positions the importance of key elements of the Program including establishing stable and secure housing and the value of associated wrap around support services such as HISSP.

The phase 1 economic evaluation also noted separate research examining the lifetime cost perspective of reducing recidivism, similarly in the context of vulnerable prison groups, including younger people and Aboriginal people (Office of the Inspector of Custodial Services 2014). This research based on Western Australian recidivism rates emphasises the high-cost implications of repeat offending in terms of imprisonment costs, as well as indirectly through related rates of increased crime, more victims and flow-on related costs to interrelated government agencies. This provides evidence of the multidimensional flow on benefits associated with reduced rates of recidivism. These are related benefits in context of the validated reduced returns to custody in the HD study group phase 2 longitudinal follow up and potentially facilitate ongoing pathway benefits contributing to cost offset benefits into the future.

From this direct cost perspective, there are then the range of potential government and social costs across healthcare, drug and alcohol support, homelessness, employment and other often immeasurable pathway implications. This longer-term perspective is particularly relevant for intervention programs such as HD as there is no substantial upfront investment to recover over time, and pathway stabilisation may continue to generate continuing positive outcomes without further program investment. Although HD detainees are assessed as lower risk there are no doubt frequent cases when avoiding prison and receiving support services in a safe and secure environment may make a profound difference. While the forward pathway and preliminary findings on reduced HD

recidivism reflect inherent uncertainty about future lifetime pathways, it is plausible that these lifetime perspectives are relevant in some cases.

These types of additional benefits could include increased participation in education and employment and other measures of quality of life for the Program participants, their families, partners and children. The forward scenarios illustrate that even under consistently conservative assumptions HD detainees in a proportion of cases may benefit from improved lifetime trajectories, which are potentially reflected in significant positive benefits and system cost offsets, extending well beyond the HD period and potentially offsetting the cost of HD investment many times over.

There are also indirect costs of imprisonment including lost employment, declining physical or mental health and family separation, likely to fall on prisoners' families and society more generally (Productivity Commission 2021). Although many of these costs are potentially significant, they are often difficult to measure, at least in monetary terms. The recent Productivity Commission work (2021a) notes that alternative punishments such as diversion from prison can significantly reduce these indirect costs.

It is clear that the cost of being in prison goes beyond the direct operating expenditure and capital costs with indirect costs of prison often including lost productivity for paid and unpaid work and workplace disruption while offenders are in prison (Morgan 2018). This research indicates these cost items are an average of \$30,138 per prisoner.<sup>36</sup> Other costs related to imprisonment have been estimated for items including lost productivity across paid and unpaid work, workplace disruption and replacement and injury through prison assaults. These costs have been estimated to add in the order of 20% to the direct sentence cost of prison alone. A supplementary economic modelling scenario indicates these indirect costs could add a further \$4,700 of cost offsets per detainee, results provided in Appendix G.<sup>37</sup>

Further costs relate to policing and court costs, and these would add further offsets to the HD cost effectiveness through reduced RTCs. This adds to the conservative approach taken for the evaluation and provides potentially further cost effectiveness upside. As many of the costs associated with crime relate to serious criminal and violent offences and home detention is targeted at low-risk offenders these indirect costs are likely to be lower in line with committed offences and risk profiles.

The costs of crime in Australia extend across interrelated sectors and many aspects for offenders, their families and the broader community. Previous research indicates these may include medical costs, lost output, and intangible costs, which set a monetary value on pain, suffering and lost quality of life (Mayhew, 2003). This research estimates costs across homicide, assault, sexual assault, robbery, burglary, theft of vehicles, theft from vehicles, shop theft, other theft, criminal damage or vandalism, arson, fraud, drug offences, overall crime costs as well as other costs such as criminal justice system costs, costs of victim assistance, security costs, household precaution costs, and insurance costs. These estimated crime costs in 2003 were \$19 billion, plus a further \$13 billion for

<sup>&</sup>lt;sup>36</sup> Estimated for average HD order of 6.3 months, base costs from 2014-15 indexed at 1.5% per annum to 2021-22.

<sup>&</sup>lt;sup>37</sup> Model scenario incremental costs of \$59,654 (Appendix G) compared to RTC scenario \$54,887 (table 22) = \$4,767.

additional costs such as policing, prisons and security, a total estimated cost of nearly \$32 billion per year.<sup>38</sup> Fraud was reported as the costliest crime, followed by violent crime (homicide, assault and sexual assault) and burglary.

There are also potential improved outcomes within the RTC cases, for example individuals who may have committed more serious crimes in the past or with a history in repeat offending may face RTC for a relatively minor technical breach or minor offence. The current outcome quantitative analysis data flag RTC but masks the potential fact that for individuals RTC may have resulted after a longer stable period out of custody than previously and for a significantly less serious offence, which in context represents an improved outcome.

<sup>&</sup>lt;sup>38</sup> Ibid.

# 6 Conclusion

This report presents the final findings for the second evaluation of HD in SA. Specifically, the report details findings of the outcomes analysis for prisoners on ROHD and COHD and the related economic evaluation for the period July 2016 to July 2022.

The quantitative analysis includes comprehensive bivariate descriptions of prisoners serving ROHD and COHD between July 2016 and July 2022. A comparison of both cohorts shows many similarities between the demographic and criminal history profiles of both groups including ages; the proportion of Aboriginal and Torres Strait Islander offenders sentenced to these programs; and the proportion of offenders with an offence history indicating multiple sentences. There are distinct differences in the index offence of those receiving ROHD and COHD with the highest proportion of those on ROHD sentenced for a drug offence and the highest proportion of those on COHD sentenced for an administrative or driving offence. These patterns are all consistent with the previous evaluation reports (Cale et al., 2021; Cale et al., 2018).

Gender differences were evident among the profiles of prisoners serving HD. In terms of ROHD, male prisoners were less likely than female prisoners to be Aboriginal, or have completed high school, but were more likely to have been employed prior to their sentence. Males were also more likely multiple prior sentences than females. In terms of offences associated with ROHD, males were more likely to have index offences associated with drug offences or public order/property offences, whereas females were more likely to have theft and fraud related offences compared to males. Generally, females were also more likely to have participated in prison programming prior to ROHD, had shorter non parole periods than males, and shorter number of days actually served on ROHD. No differences were evident between males and females in terms of whether they breached ROHD or returned to custody following ROHD.

In terms of COHD, males were less likely than female prisoners to be Aboriginal, and more likely to be serving COHD for administrative/driving offences. In contrast, females were more likely to be serving COHD for fraud and theft related offences compared to males, and were less likely than males to return to custody following COHD.

In contrast to the previous evaluations which showed higher rates of breaches among those on ROHD, findings from the current quantitative analysis showed similar rates of breaches associated with ROHD and COHD (13.9% and 14.0% respectively). One explanation for this may be the longer follow-up periods employed in the current study. However, the results also showed that days to breaches of orders were substantially higher among those serving COHD (average of 164.8 days compared to 103.7 days) suggesting that those serving COHD were compliant for longer periods of time; sentenced days were substantially longer for COHD orders compared to ROHD orders (average of 256 days compared to 191 days) and actual days served were virtually the same between the two cohorts (average of 194 days for ROHD and 199 days for COHD). The key factors associated with breaches of ROHD were a higher number of prior sentences, having an index fraud offence, and a higher risk assessment score. Having a violent index offence was associated with breaching COHD was having a public order/property related index offence and a higher risk assessment score.

Importantly, the provision of HISSP high needs support packages for longer durations of time were associated with a decreased likelihood of breaches of ROHD and COHD.

The rates of returns to custody following HD orders were also virtually the same between those on ROHD and COHD (21% and 24% respectively). However, individuals who did return to custody post COHD did so sooner than those who completed ROHD (average of 410 days compared to 532 days). The key factors associated with returns to custody following ROHD were a younger age at ROHD, a higher number of prior sentences, and having breached the prior ROHD order. In contrast, the key factors associated with returns to custody following COHD were having a theft related index offence for the COHD order, and a higher risk assessment score. All of these findings are largely in line with the factors associated with breaches of HD orders and returns to custody identified in the previous evaluations.

The current analysis that compared those on ROHD with those discharged from prison showed that those on ROHD were significantly more likely to be older, have completed high school and have been employed prior to their sentence than those released from prison. In contrast, those discharged from prison were more likely to be male and Aboriginal than those released to ROHD. Not surprisingly, the index offence profiles also differed; those released to ROHD were more likely to have index offences involving drug related offences, administrative/driving offences, and fraud offences. In contrast, those released from prison were more likely to have had theft, violent, or public order/property index offences, and those who served prison terms were more likely to have participated in violence prevention and domestic violence programs. Similarly discrepant prisoner profiles were evident for those who served COHD compared to those who served prison sentences<sup>39</sup>. For these reasons, propensity score matching was used to compare those on ROHD and COHD with matched groups of prisoners discharged from prison. In terms of ROHD, as an example, the analysis showed that those on ROHD were significantly less likely than a matched group to return to custody at 730 days post release (23% versus 40%). The odds of returning to custody was nearly two times (1.85) lower for those on ROHD over the course of the entire observation period. Propensity score matching was also used to compare those on COHD with a matched group of offenders discharged from prison. While this analysis also highlighted some differences between the samples, it also indicated that those on COHD were 1.53 times less likely to return to custody than those matched individuals who were discharged from prison.

Finally, considering the potential impact of the COVID-19 pandemic, the results showed that while there was some correlational evidence to suggest that the pandemic itself, lockdowns and/or other related factors were potentially associated with breaches of HD orders and returns to custody, as measured in the current study these did not impact outcomes over and above the other factors measured that were associated with these outcomes. In fact, there was a marginal association to suggest breaches of ROHD may have been slightly more likely prior to the COVID-19 pandemic, however these results should be interpreted cautiously.

<sup>&</sup>lt;sup>39</sup> Those who served COHD were significantly more likely than the prison discharged group to be older, non-Aboriginal, sentenced for an administrative/driving, and have a lower risk assessment score.

The economic analysis indicates that the South Australian HD program is highly cost-effective. Through prison time avoided over the 6-year study period the program cost of \$31.3 million is generating \$148.7 million of direct prison offsets with high confidence, plus a further estimated future offset beyond the study timeframe of \$51.5 million, a total estimated cost offset of \$200.3 million. Per HD detainee this equates to an average HD cost of \$11,668 resulting in cost savings of \$43,603 per detainee through direct HD prison time avoided and \$54,887 when including subsequent reduced returns to custody.

The HD program is also potentially producing a range of implicit positive outcomes that are difficult to measure, particularly in monetary terms. These benefits may include increased ability to obtain and sustain appropriate housing and reduced risk of homelessness, management of drug and alcohol abuse, improved community and workforce participation, improved education and job skill training, improved and sustained physical and mental health, as well as improved outcomes for families, partners and children of offenders.

The 6-year longitudinal follow up evaluation has confirmed initial positive outcomes for HD detainees and developed enhanced modelling of the substantial cost offsets reported in the phase 1 study period. The total HD program cost is generating multiples in offsets of around 4.8 times within the study timeframe and nearly 6.4 times if the future reductions in RTC are considered. This final report of the economic evaluation confirms that even under conservative assumptions, the South Australian HD program is resulting in significant positive benefits and system cost offsets. These benefits can extend well beyond the HD episode, potentially offsetting the cost of HD investment many times over.

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# Appendix A Model accuracy tests ROHD



### Figure 17. Area under the ROC curve for model predicting risk of ROHD breach

RISK SCORE DECILES	SENSITIVITY	1-SPECIFICITY
6.21%	.948	.890
8.05%	.922	.777
10.77%	.853	.672
12.55%	.793	.563
14.40%	.690	.461
16.65%	.621	.355
19.12%	.552	.252
23.23%	.431	.154
29.43%	.267	.065

Table 18. Sensitivity and 1-specificity for risk score deciles from prediction model.

### Appendix B Model accuracy tests COHD



Figure 18. Area under the ROC curve for model predicting risk of ROHD breach

RISK SCORE DECILES	SENSITIVITY	1-SPECIFICITY
3.34%	1.00	.882
5.00%	.905	.729
6.51%	.857	.615
7.42%	.810	.523
8.91%	.762	.466
10.87%	.683	.369
13.90%	.587	.271
17.51%	.460	.161
25.34%	.317	.068

Table 19 Sensitivity and 1-specificity for risk score deciles from prediction model.

# Appendix C PSM balance and fit: ROHD and PD

### Table 20 Balance and fit descriptive statistics

	PR	E-MATCH (I	n=2596)		PO	ST-MATCH	(N=616)	
	PD (n=1667)	ROHD (n=929)	t	d	PD (n=308)	ROHD (n=308)	t	d
Age	0.65	0.81	8.71	0.39	0.75	0.77	0.66	0.05
Male	0.93	0.83	6.74	0.36	0.85	0.86	0.23	0.02
Aboriginal	0.25	0.07	12.58	0.41	0.11	0.11	<0.01	<0.01
Completed high school	0.41	0.46	4.47	0.23	0.26	0.25	0.09	0.01
Employed	0.20	0.36	7.55	0.41	0.31	0.31	0.26	0.02
Prior sentence	0.62	0.30	16.65	0.66	0.42	0.46	1.14	0.09
Violent offence	0.14	0.11	2.72	0.11	0.12	0.12	<0.01	<0.01
Minor offence	0.75	0.43	15.99	0.71	0.67	0.63	0.93	0.08
Drug offence	0.11	0.46	18.98	1.09	0.21	0.25	1.05	0.09
ROR score	14.76	11.02	17.42	0.75	12.92	12.53	0.90	0.07
Program participation	0.52	0.48	2.37	0.10	0.48	0.49	0.24	0.02
Non-parole period	0.16	0.45	17.94	0.82	0.30	0.27	0.81	0.06
Predicted probability	0.26	0.58	27.42	1.56	0.42	0.42	<0.01	<0.01
Standardised mean difference (covariates only)				0.50				0.04

d = standardised bias

t = t statistic

# Appendix D PSM balance and fit: COHD and PD

	PRE-MATCH (n=787)			POST-MATCH (N=704)				
	PD (n=473)	COHD (n=314)	t	d	PD (n=352)	COHD (n=352)	t	d
Age	0.65	0.76	5.73	0.23	0.76	0.77	0.35	0.03
Male	0.93	0.81	8.57	0.46	0.87	0.87	0.11	0.01
Aboriginal	0.25	0.10	10.73	0.35	0.10	0.12	0.84	0.07
Prior sentence	0.62	0.36	13.78	0.54	0.49	0.49	0.08	0.01
Violent offence	0.86	0.48	20.74	1.07	0.26	0.26	<0.01	<0.01
ROR score	14.76	10.49	22.48	0.86	12.44	12.24	0.57	0.04
Predicted probability	0.20	0.56	32.91	1.85	0.38	0.38	<0.01	<0.01
Standardised mean difference (covariates only)				0.59				0.03

### Table 21: Balance and fit descriptive statistics

Note: \**p*<.05; \*\**p*<.01; \*\*\**p*<.001.

d = standardised bias

t = t statistic

# Appendix E Bivariate analysis COVID-19/ROHD

#### Total No breach Breach sample (n=175) $x^2(df), \phi /$ (n=1085) (n=1260) n (%) / n (%) / t(df), Cohen's d n (%) / x(sd) x(sd) x(sd) Admitted and left ROHD prior to 761 640 121 $x^{2}(1)=6.50^{*}, .07$ COVID (60.4%) (59.0%) (69.1%) 366 320 Admitted to ROHD during COVID 46 (26.3%) n.s (29.0%)(29.5%) Admitted prior to, but left during, 133 125 8 (4.6%) $x^{2}(1)=7.71^{**}, .08$ COVID (10.6%) (11.5%) Admitted to ROHD during lockdown 44 (4.1%) 50 (4.0%) 6 (3.4%) n.s Left ROHD during lockdown 53 (4.2%) 45 (4.1%) 8 (4.6%) n.s

### Table 22: ROHD breaches by COVID status

*p*<.10<sup>+</sup>, *p*<.05<sup>\*</sup>, *p*<.01<sup>\*\*</sup>, *p*<.001<sup>\*\*\*</sup>

COVID from 15<sup>th</sup> March 2020 to end of observation period.

Lockdown from 15<sup>th</sup> March 2020 to 30<sup>th</sup> June 2020

#### Table 23: ROHD RTC by COVID status

	Total sample (n=1260) n (%) / x̄(sd)	No RTC (n=1085) n (%) / x̄(sd)	RTC (n=175) n (%) / x̄(sd)	x²(df),
Admitted and left ROHD prior to COVID	761 (60.4%)	545 (54.8%)	216 (81.5%)	<i>x</i> <sup>2</sup> (1)=62.54 <sup>***</sup> , .23
Admitted to ROHD during COVID	366 (29.0%)	324 (32.6%)	42 (15.8%)	<i>x</i> <sup>2</sup> (1)=28.36 <sup>***</sup> , .15
Admitted prior to, but left during, COVID	133 (10.6%)	126 (12.7%)	7 (2.6%)	<i>x</i> <sup>2</sup> (1)=22.26 <sup>**</sup> , .13
Admitted to ROHD during lockdown	50 (4.0%)	39 (3.9%)	11 (4.2%)	n.s
Left ROHD during lockdown	53 (4.2%)	44 (4.4%)	9 (3.4%)	n.s

*p*<.10<sup>+</sup>, *p*<.05<sup>\*</sup>, *p*<.01<sup>\*\*</sup>, *p*<.001<sup>\*\*\*</sup>

COVID from 15th March 2020 to end of observation period.

Lockdown from 15<sup>th</sup> March 2020 to 30<sup>th</sup> June 2020

# Appendix F Bivariate analysis COVID-19/COHD

### Table 24: COHD breaches by COVID status

	Total sample (n=1074) n (%) / x̄(sd)	No breach (n=924) n (%) / x̄(sd)	Breach (n=150) n (%) / ⊼(sd)	x²(df), φ / t(df), Cohen's d
Admitted and left COHD prior to COVID	613 (57.1%)	521 (56.4%)	92 (61.3%)	n.s
Admitted to COHD during COVID	357 (33.2%)	306 (33.1%)	51 (34.0%)	n.s
Admitted prior to, but left during, COVID	104 (9.7%)	97 (10.5%)	7 (4.7%)	<i>x</i> <sup>2</sup> (1)=5.02 <sup>*</sup> , .07
Admitted to COHD during lockdown	42 (3.9%)	32 (3.5%)	10 (6.7%)	$x^{2}(1)=3.52^{+}, .06$
Left COHD during lockdown	44 (4.1%)	39 (4.2%)	5 (3.3%)	n.s

*p*<.10<sup>+</sup>, *p*<.05<sup>\*</sup>, *p*<.01<sup>\*\*</sup>, *p*<.001<sup>\*\*\*</sup>

COVID from 15<sup>th</sup> March 2020 to end of observation period.

Lockdown from 15<sup>th</sup> March 2020 to 30<sup>th</sup> June 2020

### Table 25: COHD RTC by COVID status

	Total sample (n=1074) n (%) / x̄(sd)	No RTC (n=812) n (%) / x̄(sd)	RTC (n=262) n (%) / x̄(sd)	x²(df), φ / t(df), Cohen's d
Admitted and left COHD prior to COVID	613 (57.1%)	420 (51.7%)	193 (73.7%)	<i>x</i> <sup>2</sup> (1)=38.92 <sup>***</sup> , .18
Admitted to COHD during COVID	357 (33.2%)	308 (37.9%)	49 (18.7%)	<i>x</i> <sup>2</sup> (1)=33.01 <sup>***</sup> , .18
Admitted prior to, but left during, COVID	104 (9.7%)	84 (10.3%)	20 (7.6%)	n.s
Admitted to COHD during lockdown	42 (3.9%)	30 (3.7%)	12 (4.6%)	n.s
Left COHD during lockdown	44 (4.1%)	30 (3.7%)	14 (5.3%)	n.s

*p*<.10<sup>+</sup>, *p*<.05<sup>\*</sup>, *p*<.01<sup>\*\*</sup>, *p*<.001<sup>\*\*\*</sup>

COVID from 15<sup>th</sup> March 2020 to end of observation period.

Lockdown from 15<sup>th</sup> March 2020 to 30<sup>th</sup> June 2020

## Appendix G Supplementary economic modelling

	Cost		Effective	eness	
Model scenario	Total	Additional cost	PYAs	Additional PYAs	Cost per PYA
Plus 20% indirect prison costs	031				
HD Study group:	\$68,236		0.02		
Control group: Prisoners discharged	\$127,890	\$59,654	-0.58	-0.60	Cost saving

Table 26: HD Program cost effectiveness – extended scenario

Source: SADCS offender data, DCS Finance Directorate