

## Predicting Youth Justice supervision among young people placed in out-of-home care before age 10.

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### Objectives

To investigate how well we can predict which young people will be under Youth Justice (YJ) supervision by age 18, among children placed in out-of-home care (OOHC) before age 10.

### Approach

Data were drawn from the Better Evidence Better Outcomes Linked Data (BEBOLD) platform, which includes whole-of-population linked administrative data on 500,000 children in South Australia born 1991 onwards. In this study, children born 1991-1998 were followed from birth to age 18. Logistic regression models were used to predict the probability of a child placed in OOHC before age 10 transitioning into YJ by age 18. YJ contact was defined as at least one community- or custodial-based supervision order. Child and maternal sociodemographic and perinatal characteristics at birth, as well as maltreatment and placement characteristics were included as predictors.

### Results

A total of 2,832 children experienced OOHC before age 10. Of these 13.5% (n=381) experienced contact with YJ by age 18. Model discrimination (AUROC) was 0.8. Using the top 30% of the predicted probabilities as the 'high' risk threshold: 523 children were classified as 'high' risk; sensitivity was 69.8%; specificity was 76.5%, and the positive predictive value was 32.3%. The prediction model improved classification of those children who go on to experience YJ supervision from 13.5% of all of the 2,832 eligible children, to 32.3% of those in the highest 30% of risk.

### Conclusions

This analysis suggests there is potential to identify children in OOHC who are at higher risk of transitioning into YJ, and to provide these children with early supports that may prevent these transitions. However, there are ethical and practical considerations to using prediction models in this population, including the types of support programs employed and potential social and financial costs of inevitable false positive and negative predictions.

