

# **Youth Justice Conferences and Indigenous Over-representation: Micro Simulation Case Study**

Anna Stewart

## Aim of presentation

- provide an example of the use of simulation modelling for examining a policy initiative
  - Describe the policy initiative
  - Describe simulation modelling
  - Compare two policy scenarios
  - Discuss the implications

## Policy Initiative

- 2001 Queensland Aboriginal and Torres Strait Islander Justice Agreement
  - reduce the rate of Indigenous people coming into contact with the CJS
  - by the year 2011 there will be a 50% reduction in the rate of Indigenous incarceration
- Need to reduce the number of Indigenous young people in the Juvenile Justice System

# 2001 - Juvenile Justice System

- over representation in the juvenile justice system of indigenous children
  - 4.4% of the 10-17 year old population Indigenous
  - 35% of court appearances
  - 57% of young people in detention
- proportion of young people with a finalised juvenile court appearance in the population
  - 39% of Indigenous males
  - 7% of non-Indigenous males
  - 13% of Indigenous females
  - 2% of non-Indigenous females

# Youth Justice Conferencing

- diversionary program to address offending behaviour
  - introduced in Queensland 1997
  - 2001 in pilot mode
  - available state wide in 2004
- was identified in the 2003 Justice Negotiation Group Progress Report as a process to reduce over representation
- Will YJC reduce over-representation by Indigenous children in the juvenile justice system by 2011?

# Simulation Modelling

- Provides a tool for examining policy impact out over time
  - short term and long term impact
  - ‘what if’ questions
- Allows experimentation with the system out over time
- Build a computer model of the system
  - develop scenarios
  - run different scenarios out over time
    - multiple times to reduce variation
  - compare the relative impact
- Standard tool in weather forecasting, economics, engineering

# Juvenile Justice Simulation Model

- funded by an 2001-2003 Australian Research Council Linkage grant
- Aim: to develop a computer model which can be used to test the relative effect of alternative policies and program interventions

The model is NOT:

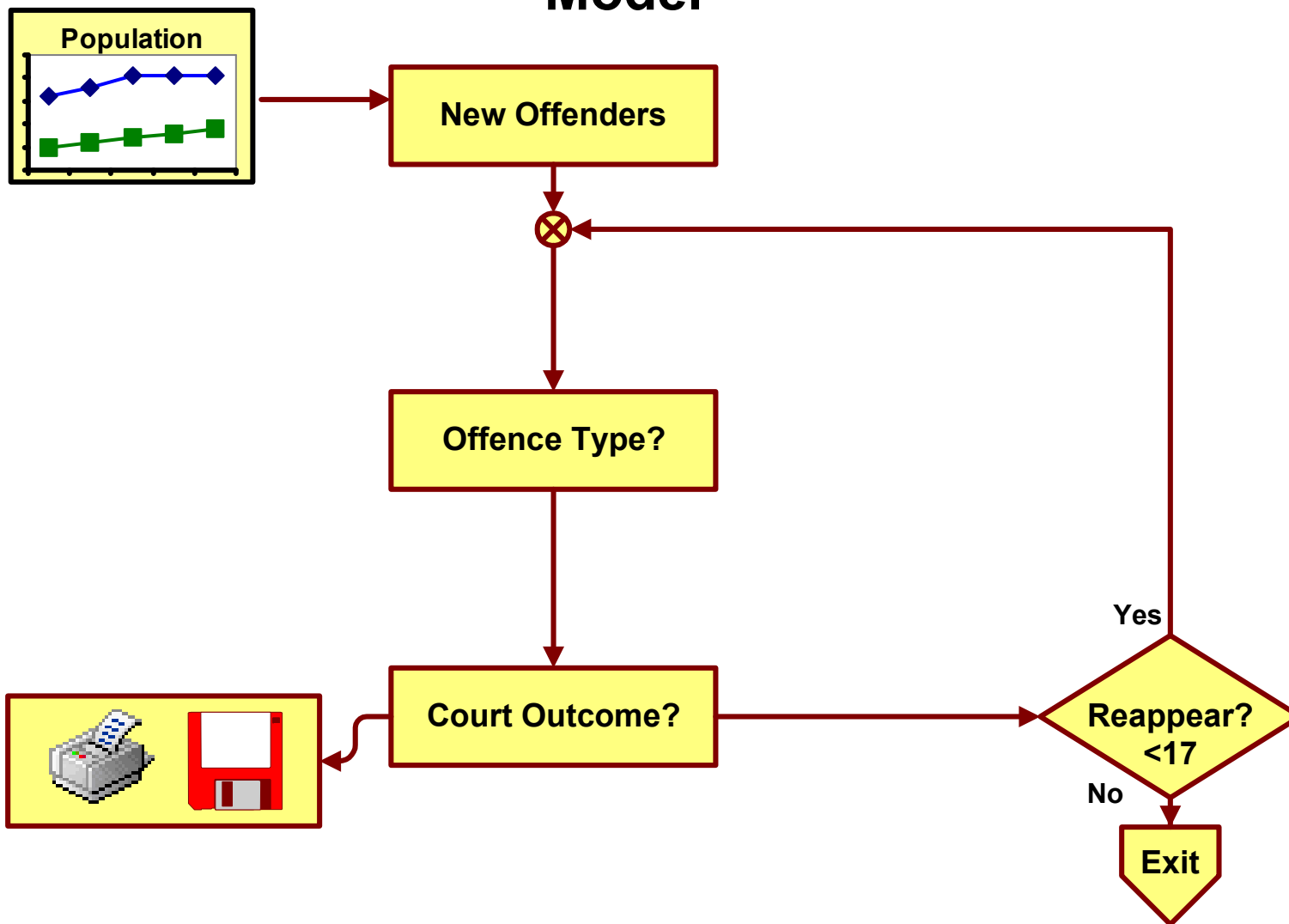
- A tool for projecting custody numbers
- A tool for providing absolute projections of justice system costs or numbers
- A crystal ball (which sees into the future)

# Juvenile Justice Simulation Model

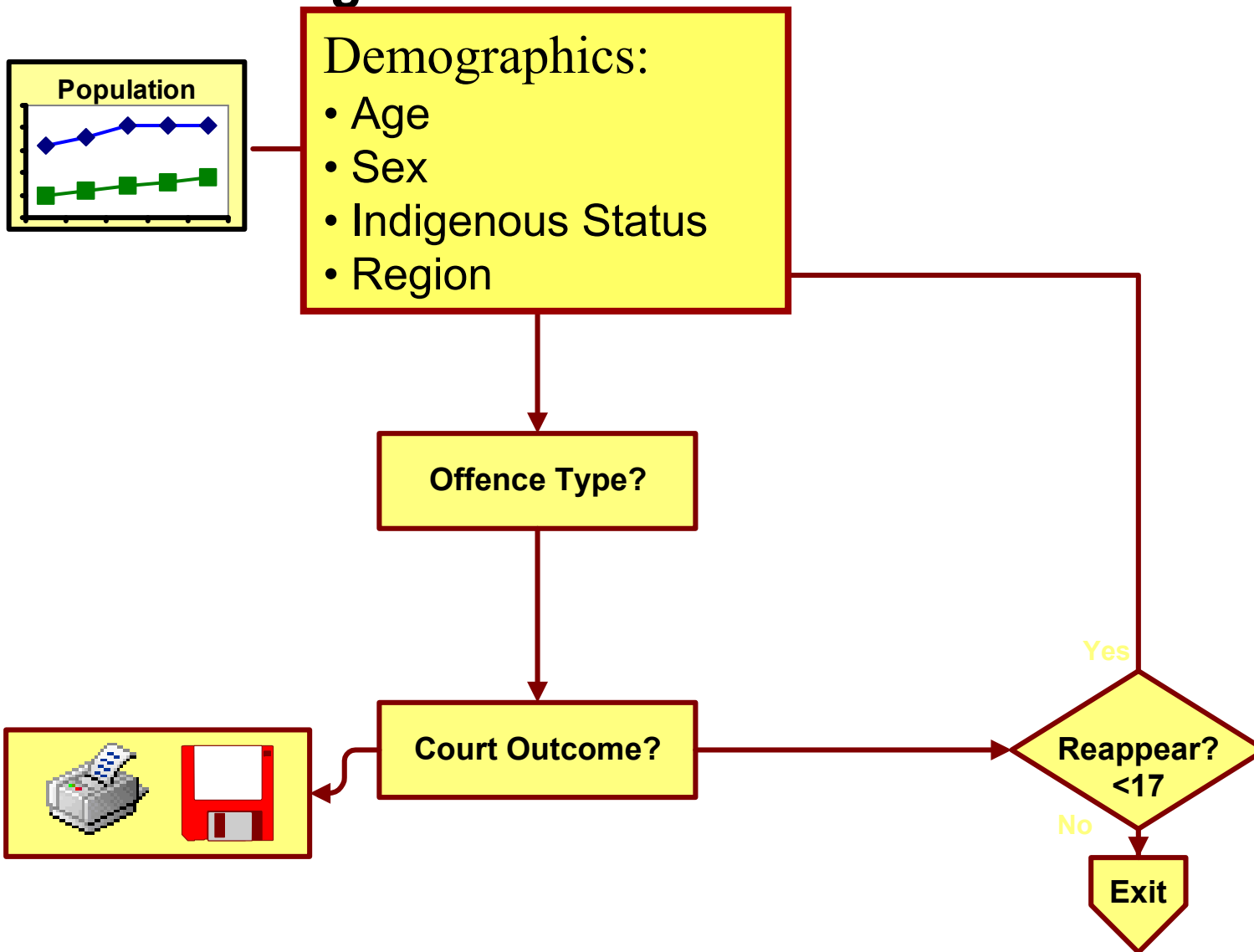
- Computer model of the juvenile justice system
- Using Extend micro-simulation package
  - Model the behaviour of individual entities flowing through the YJ system.
  - Aggregate behaviour of individuals to determine overall system behaviour
  - Use rates and probabilities determined from operational data to develop model parameters
    - 1983 and 1984 Birth cohort & 1999/00, 2000/01, 2001/02 and 2002/03 snapshots
    - longitudinal and cross sectional analysis
    - Finalised appearances of young people in court



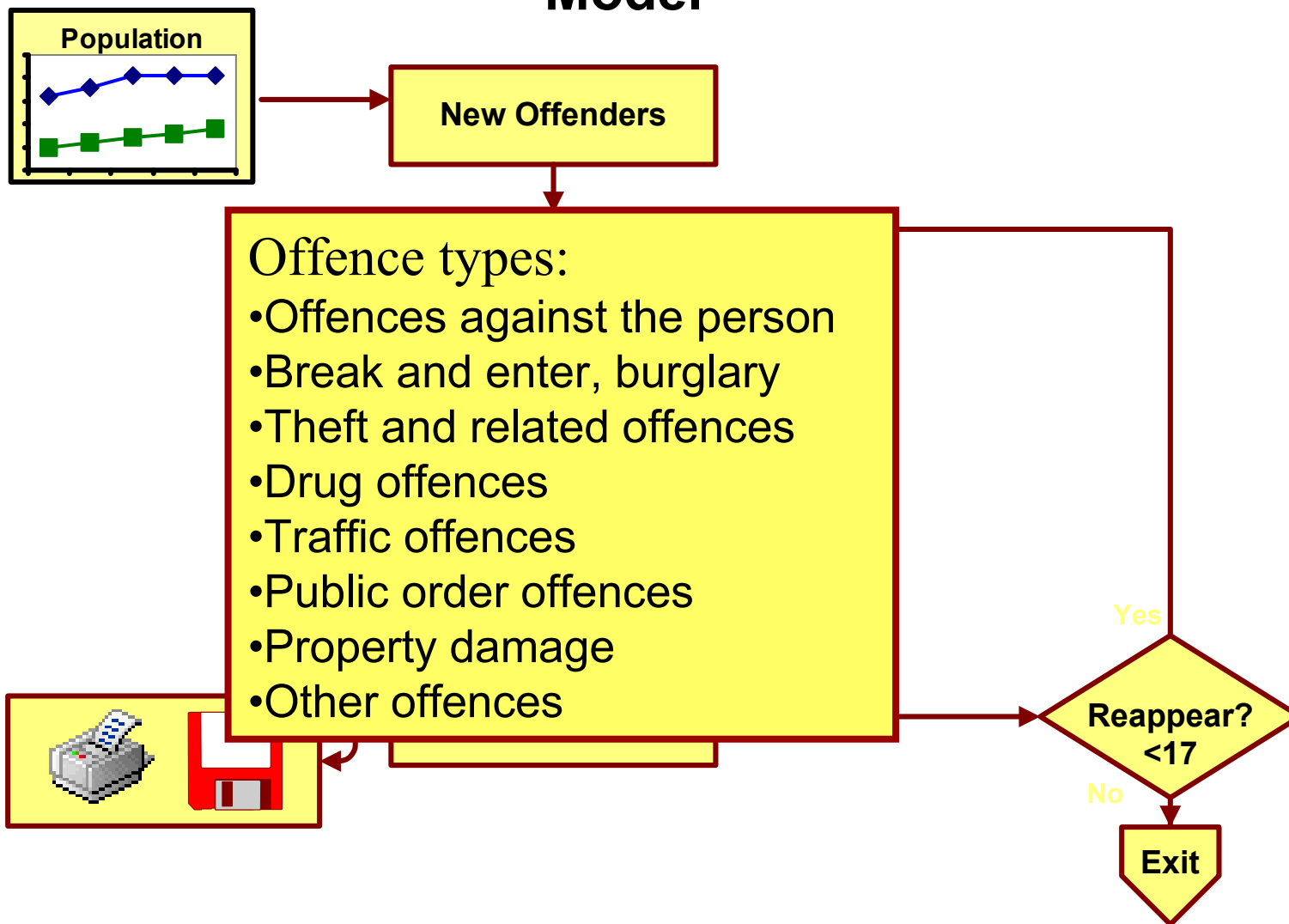
# Schematic Diagram of Juvenile Justice Simulation Model



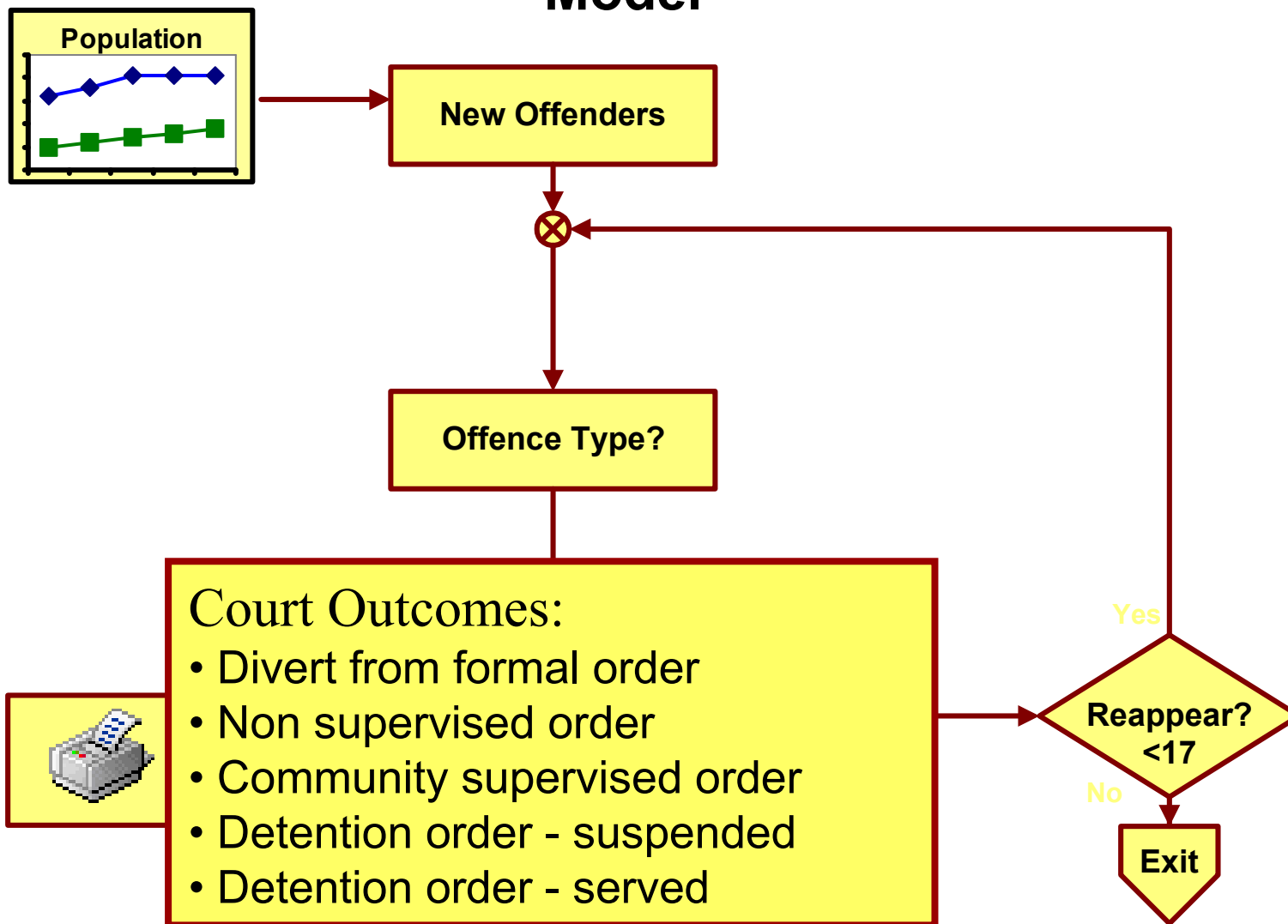
# Schematic Diagram of Juvenile Justice Simulation



# Schematic Diagram of Juvenile Justice Simulation Model



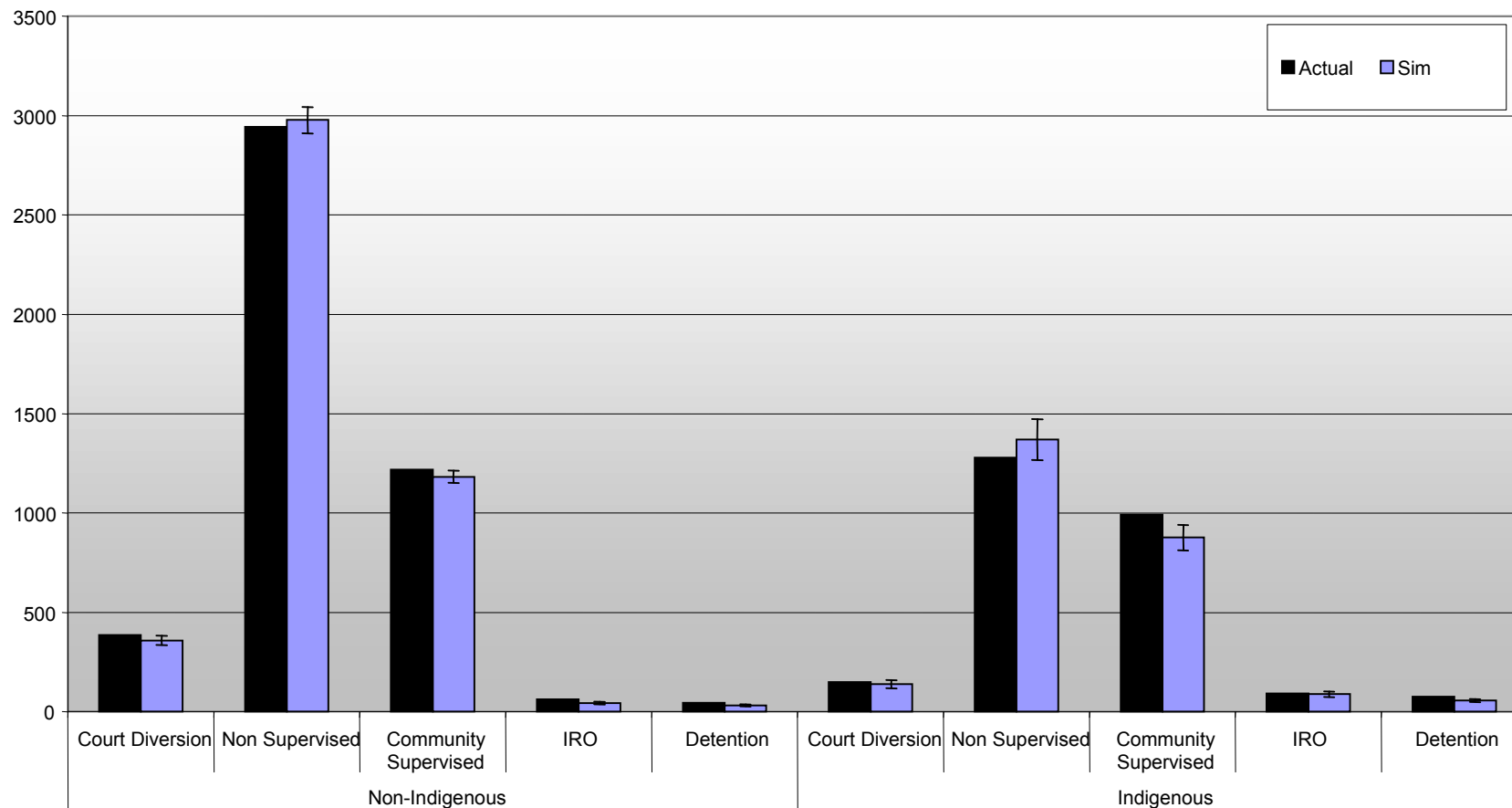
# Schematic Diagram of Juvenile Justice Simulation Model



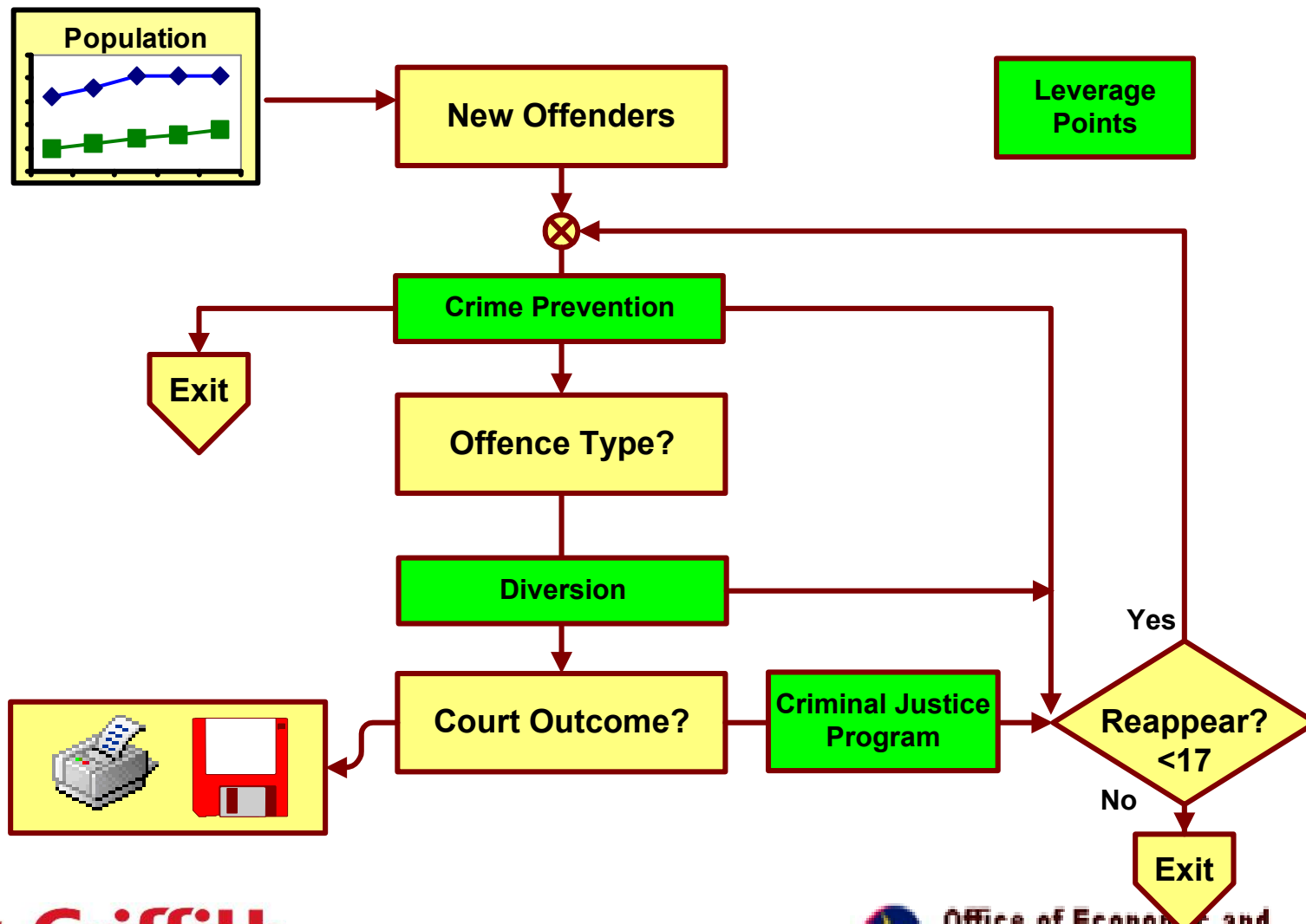
## Important model decision points

- Prediction of court outcomes
  - Decision tree analysis was undertaken, but results were inconclusive
  - Logistic regression used to determine significant predictive factors
- Reappearance
  - Desistance and time to reappearance
  - Survival analysis based on predictors found to be significant in Cox regression
  - Statistical distributions fitted to survival curves

# Baseline Results (for 2002/03)



# Schematic Diagram of Juvenile Justice Simulation Model



# System Experiments

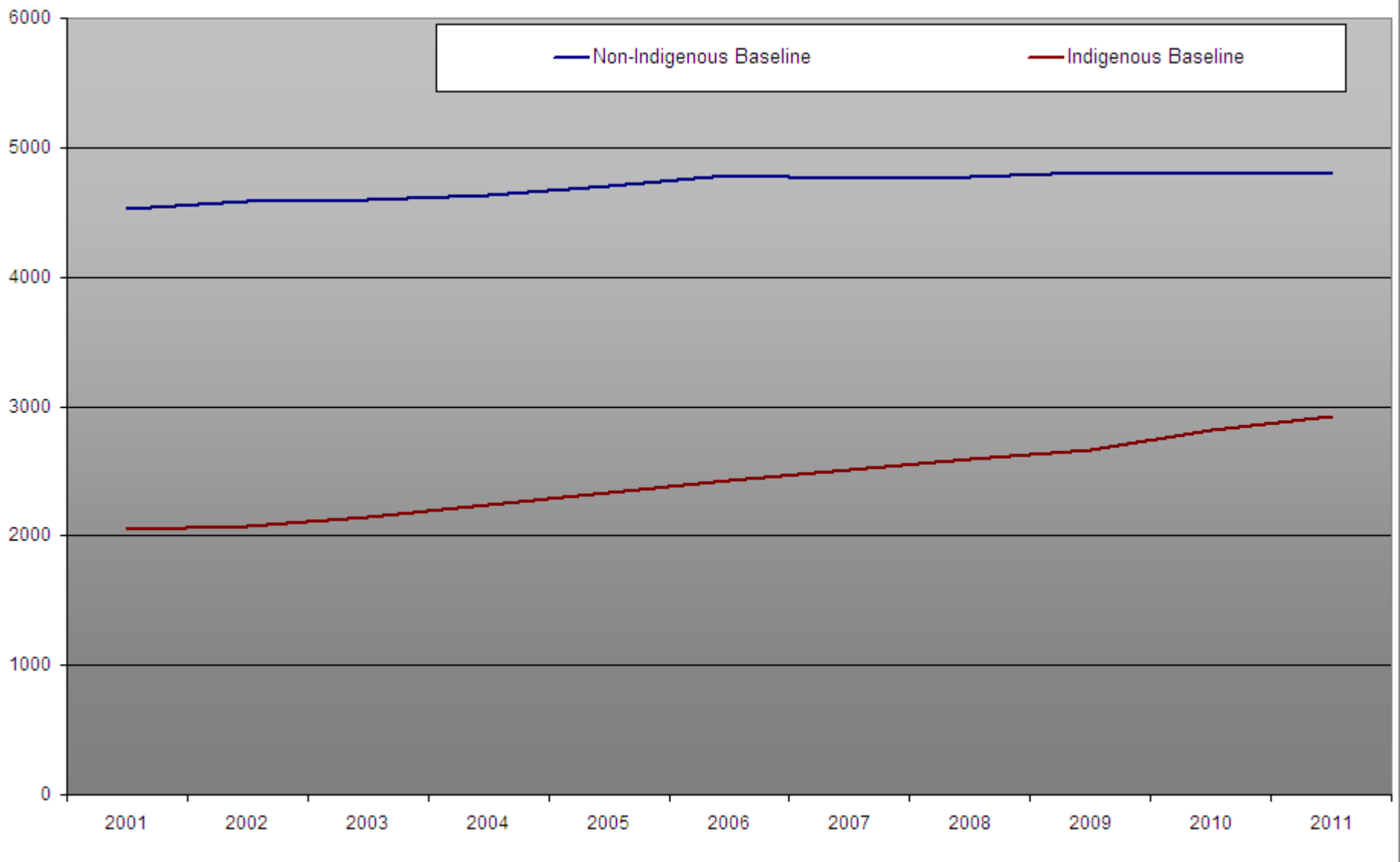
- Baseline Simulation
- Scenario 1: Introduce YJC state wide
- Scenario 2: Introduce YJC and target Indigenous young people
- What difference do these changes make to over representation by indigenous young people in 2011?



## Baseline

- Assumptions
  - Do nothing – no introduction of YJC
  - only change is demographic
- Outcome in 2011
  - increase in court appearances
    - 6% non-Indigenous children
    - 30% Indigenous children
- increase in population of 10 – 17 year old indigenous children (4.4% to 5.7%)
- proportion of Indigenous to non-Indigenous increases
- over representation stays the same

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# Scenario 1: Introduce YJC Queensland wide

- Assumptions
  - Referral rates
    - different for different offences
    - different for first, second, and third appearance
    - same for Indigenous and non-Indigenous young people
  - Efficacy rates
    - 15% reduction in reappearances
- Luke and Lind (2002) evaluation of NSW conferencing

Program Name: YJ Conferencing  
 Program Type: Police Diversion  
 Model Name: Queensland Juvenile Justice Model  
 User Name: mjilivi

[Program Details](#)
[Eligible: Age](#)
[Eligible: Gender](#)
[Eligible: Indig](#)
[Eligible: Region](#)
[Eligible: Offending Profile](#)
[Comment](#)

 Target specific offence types: 

Offence Type	Appearance Count			
	1	2	3	> 4
Person	10.0	2.0	1.0	0.0
B & E	28.0	10.0	3.0	0.0
Theft	28.0	10.0	3.0	0.0
Drug	15.0	8.0	2.0	0.0
Traffic	15.0	8.0	2.0	0.0
Good Order	15.0	8.0	2.0	0.0
Prop. Damage	15.0	8.0	2.0	0.0
Other	15.0	8.0	2.0	0.0

Program Name: YJ Conferencing

Program Type: Police Diversion

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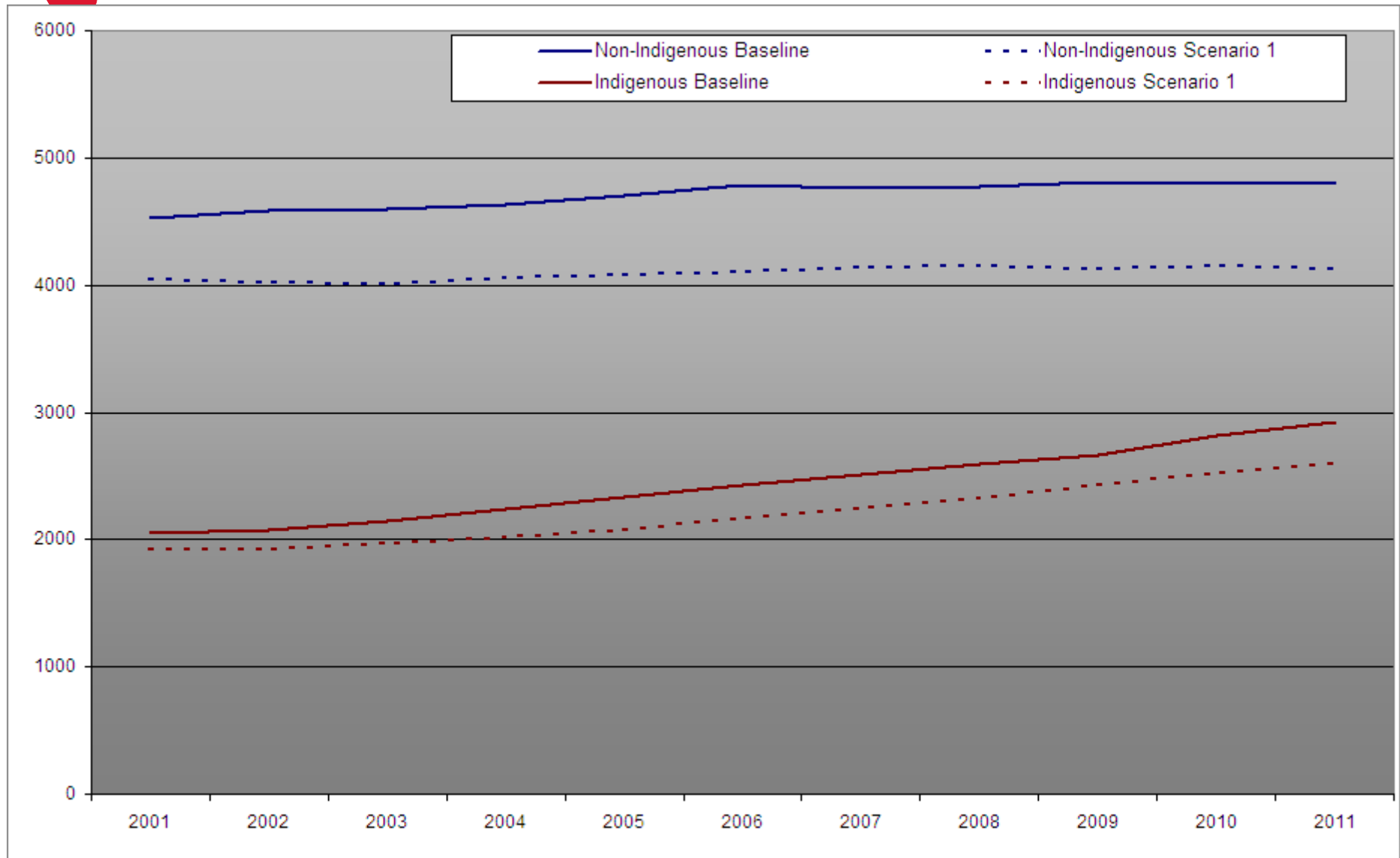



	Year	Percentage Coverage	Percentage Efficacy
Program Start	<input type="text" value="2001"/>	<input type="text" value="100"/> %	<input type="text" value="15"/> %
Program End	<input type="text" value="2011"/>	<input type="text" value="100"/> %	<input type="text" value="15"/> %

 Program Length (weeks) 

 Program Cost (\$ per unit intervention) 
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## Scenario 1: Outcome in 2011

- reduction in court appearances
  - due to diversionary nature of YJC
    - 5.6% Indigenous
    - 8.8% non-Indigenous
  - due to non-reappearance
    - 5.2% Indigenous
    - 5.6% non Indigenous
- total reduction
  - 11% Indigenous
  - 14% non-Indigenous
- 3% **increase** in over representation by Indigenous young people in court appearances

## Scenario 2: Target Indigenous children YJC

- Assumptions
  - 100% of Indigenous children conferenced at first offence
  - same efficacy – 15%
  - subsequent offences same rate as non-Indigenous children



Program Name: Indig Conf

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Program Type: Police Diversion

Model Name: Queensland Juvenile Justice Model

User Name: mjilivi

[Program Details](#)

[Eligible: Age](#)

[Eligible: Gender](#)

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[Eligible: Region](#)

[Eligible: Offending Profile](#)

[Comments](#)

Target specific offence types:

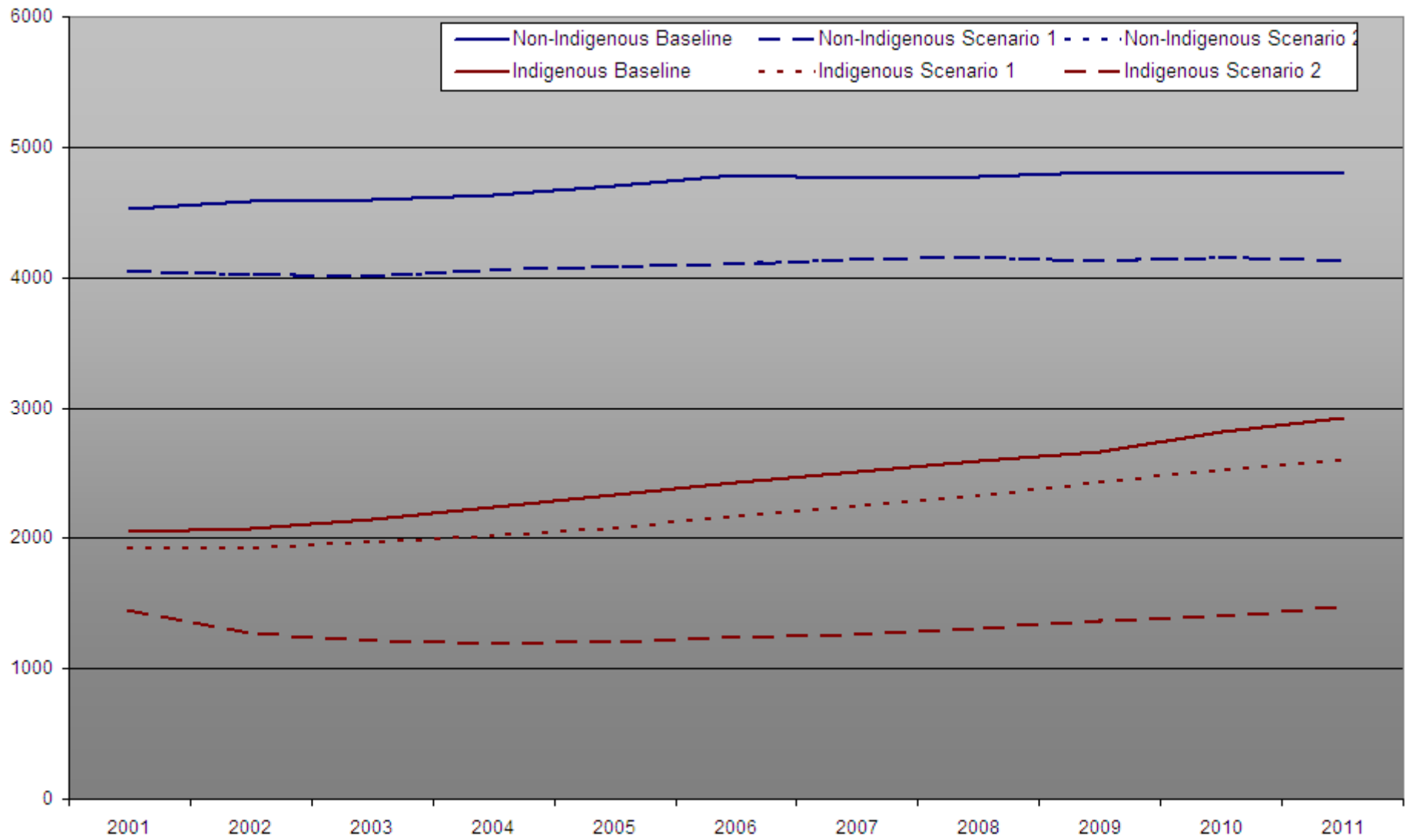
Offence Type	Appearance Count			
	1	2	3	> 4
Person	100.0	4.0	1.0	0.0
B & E	100.0	5.0	2.0	0.0
Theft	100.0	5.0	2.0	0.0
Drug	100.0	2.5	1.0	0.0
Traffic	100.0	2.5	1.0	0.0
Good Order	100.0	2.5	1.0	0.0
Prop. Damage	100.0	2.5	1.0	0.0
Other	100.0	2.5	1.0	0.0

Appearance history counted on:

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## Scenario 2: Outcome in 2011

- reduction in court appearances
  - due to diversionary nature of YJC
    - 27.2% Indigenous
    - 8.8% non-Indigenous
  - Reduction due to non-reappearance
    - 22.4% Indigenous
    - 5.6% non Indigenous
- total reduction in court appearances
  - 50% reduction in Indigenous appearances
  - 14% reduction in non Indigenous appearances
- 36% **decrease** in over representation in court appearances

## Implications for the Justice Agreement

- YJC could result in a reduction in over representation
  - only if seriously targeted at Indigenous young people
  - no guarantee the efficacy will remain the same
- need to try other interventions
- criminal justice system interventions are unlikely to make dramatic difference
  - need to target initiation of offending
  - early interventions
  - community based interventions

# Simulation modelling

- provides a tool for examining the relative impact of different interventions out over time
- provides an opportunity to experiment with different interventions to reach targets
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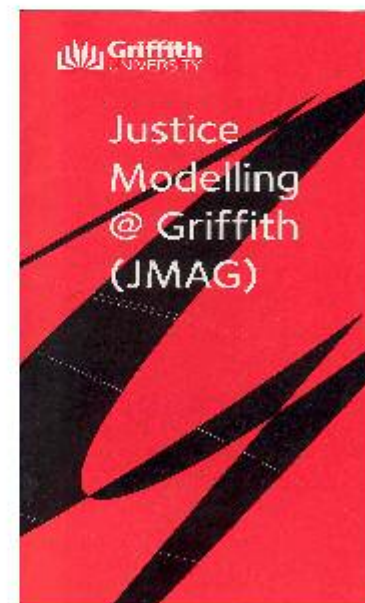
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Justice Modelling @ Griffith is an independent organisation established to facilitate evidence-based management within the justice system. Justice Modelling @ Griffith provides access to innovative research and analyses to assist organisational decision-making, development of exemplary practices and policy, and strategic organisational planning.

Our mission is to enhance the planning and decision making capabilities of the justice agencies

- By applying a broad range of modelling technologies to crime control and crime prevention issues
- By providing advanced research and analytical techniques to facilitate the interpretation of organisational information systems.





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Password:

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If you do not have a logon enter your details below and a password will be emailed to you.

Create your own username: \*  
First Name   
Last Name   
Organisation   
Email address \*

Mailing list  Leave selected if you wish JMAG to include you in their mailing list

Fields marked \* are required. Other fields are optional



## Questions?

- Policy implications
  - can the criminal justice system reduce over-representation?
- Simulation modelling
  - why is it that simulation modelling is so rarely used in the justice system?
  - how do we ensure we have the evaluations necessary to do simulation modelling?