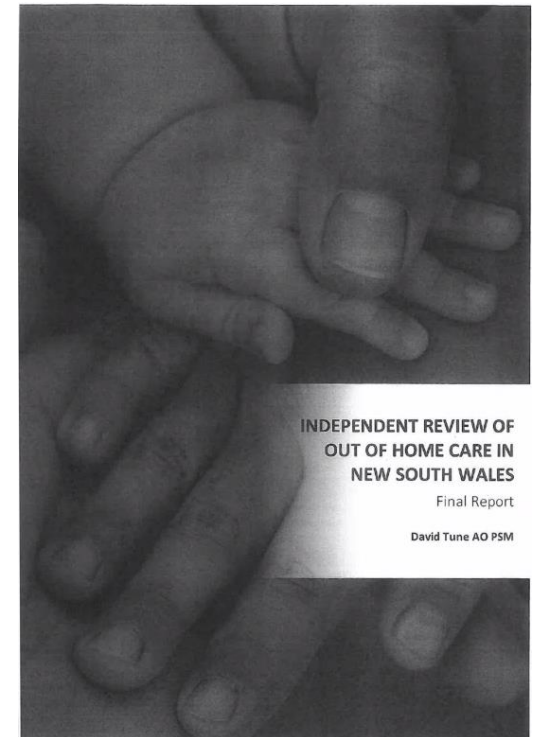# Contents

A brief history
of the
NSW Investment Approach
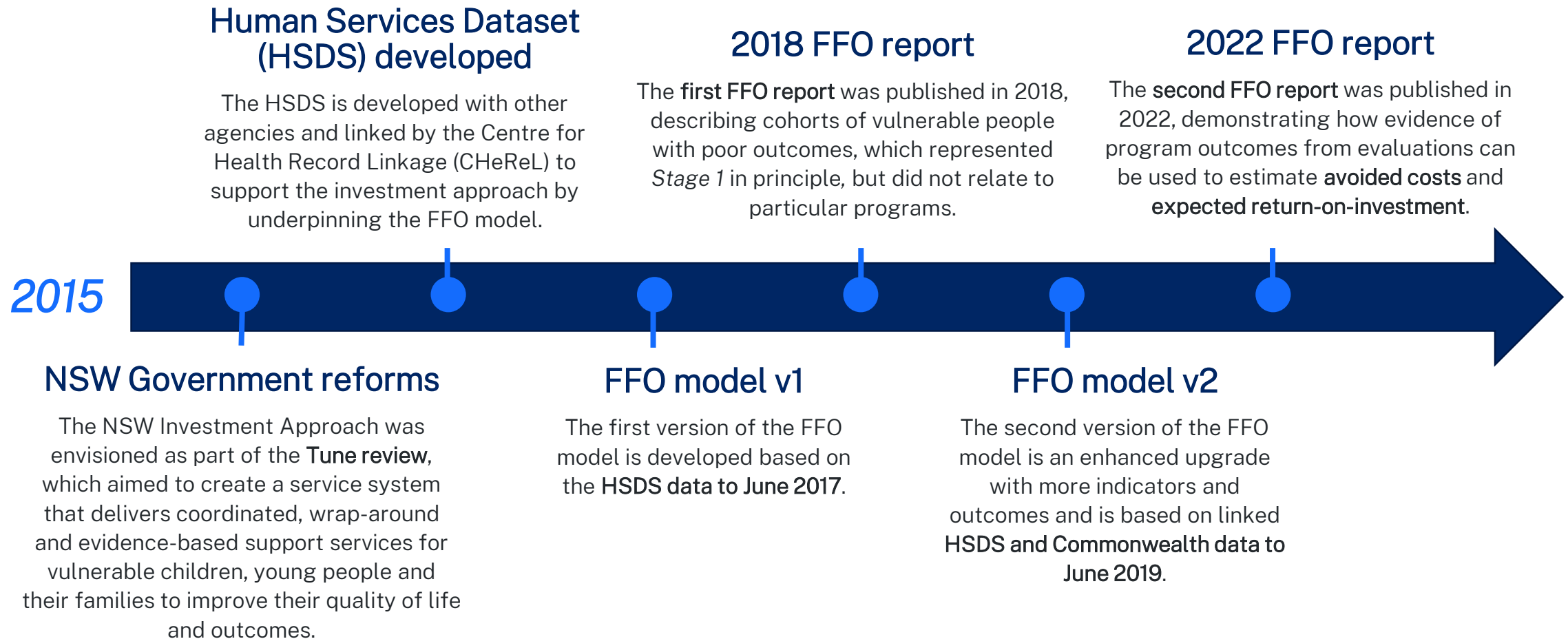
2015 - Tune Review into the OOHC system in NSW

Recommendations:

- An **outcomes-focused** approach
- **Evidence-based** strategies
- Enhanced **collaboration** between agencies
- Utilise **data** to inform decision making
- Aimed at greater **efficiency, accountability** and **improved outcomes** for the community.

The NSW Government responded by implementing a number of reforms, including the NSW Investment Approach

INDEPENDENT REVIEW OF
OUT OF HOME CARE IN
NEW SOUTH WALES
Final Report

David Tune AO PSM

Data and modelling assets have been in development since 2015

NSW
GOVERNMENT

Human Services Dataset (HSDS) developed

The HSDS is developed with other agencies and linked by the Centre for Health Record Linkage (CHeReL) to support the investment approach by underpinning the FFO model.

2018 FFO report

The **first FFO report** was published in 2018, describing cohorts of vulnerable people with poor outcomes, which represented *Stage 1* in principle, but did not relate to particular programs.

2022 FFO report

The **second FFO report** was published in 2022, demonstrating how evidence of program outcomes from evaluations can be used to estimate **avoided costs** and **expected return-on-investment**.

2015

NSW Government reforms

The NSW Investment Approach was envisioned as part of the **Tune review**, which aimed to create a service system that delivers coordinated, wrap-around and evidence-based support services for vulnerable children, young people and their families to improve their quality of life and outcomes.

FFO model v1

The first version of the FFO model is developed based on the **HSDS data to June 2017**.

FFO model v2

The second version of the FFO model is an enhanced upgrade with more indicators and outcomes and is based on linked **HSDS and Commonwealth data to June 2019**.

Two reports released in 2022-23 mark a significant milestone

- The ***Forecasting Future Outcomes Stronger Communities Actuary Insights Report 2022***. It was released by the NSW Government to demonstrate how the Forecasting Future Outcomes model is used to support the investment approach.

- The ***Investment Plan for Human Services in NSW*** outlines more broadly how the investment approach can be applied by government to direct investment in the most effective and efficient way.

The NSW Investment Approach
- an overview -

The NSW Investment Approach aligns program effectiveness with financial benefits

Effective Programs

- Improve people's lives
- Reduce need for future services
- Generate return on investment that saves government money

The NSW Investment Approach helps the wellbeing of children and families in NSW by

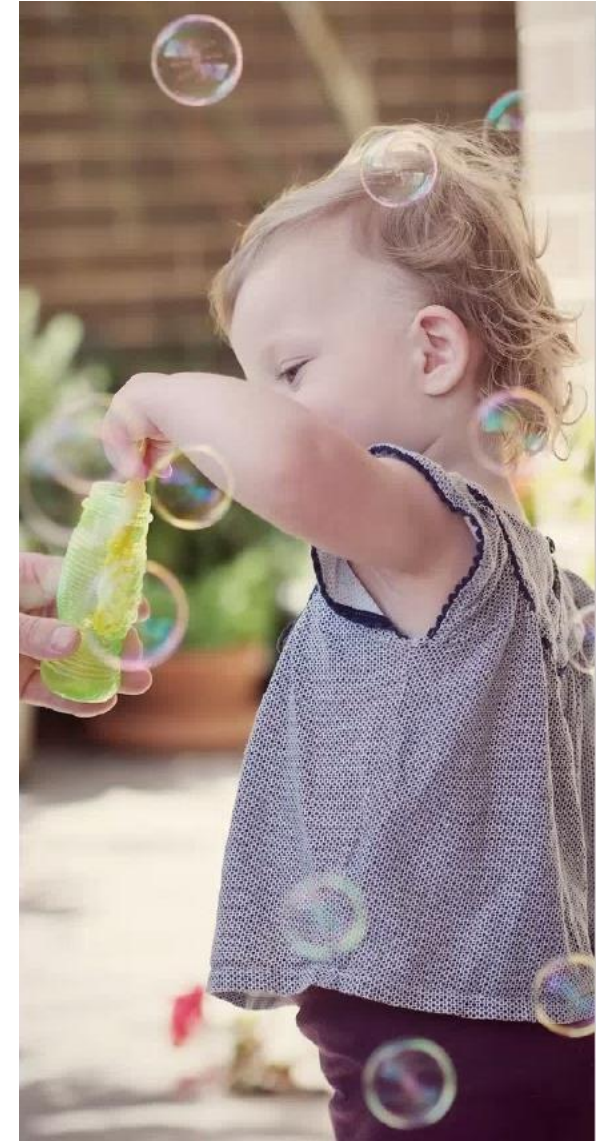- projecting their future service use and costs to government
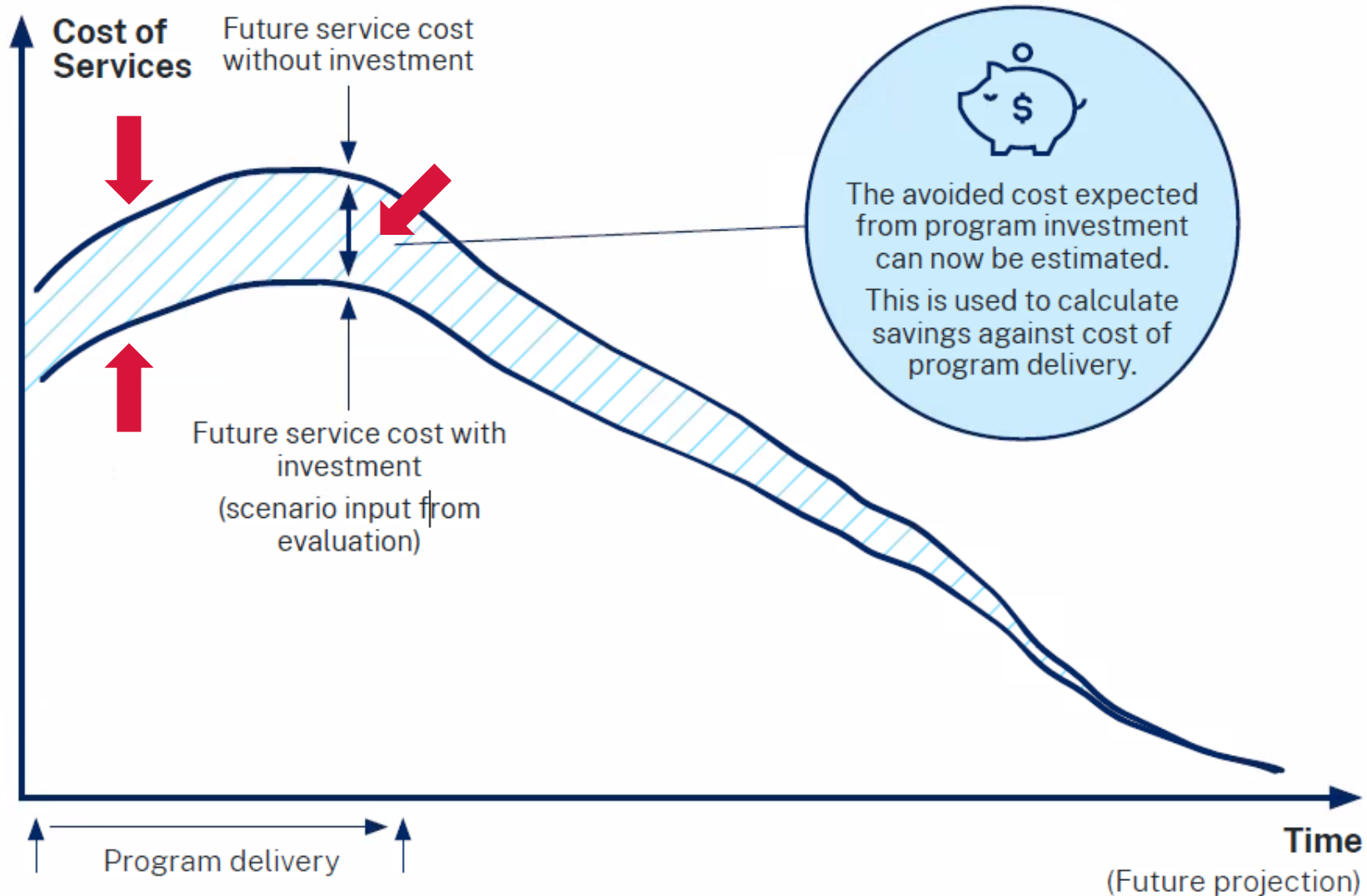- assessing which programs are most effective
- putting resources where the greatest improvement to people's lives will be

- **Outcomes** focused
  - Effective programs improve people's lives

- **Evidence-based**
  - Measures program performance

- Uses **data**
  - Analysis and modelling

- Is **efficient** and cost-effective
  - Saves taxpayer dollars
  - Generating a return-on investment
  - Reduce future service use

- A way of being **accountable.**

Communities and Justice

A diagram to show how we calculate avoided costs

Cost of Services

Future service cost without investment

The avoided cost expected from program investment can now be estimated.

This is used to calculate savings against cost of program delivery.

Future service cost with investment
(scenario input from evaluation)

Program delivery

Time
(Future projection)

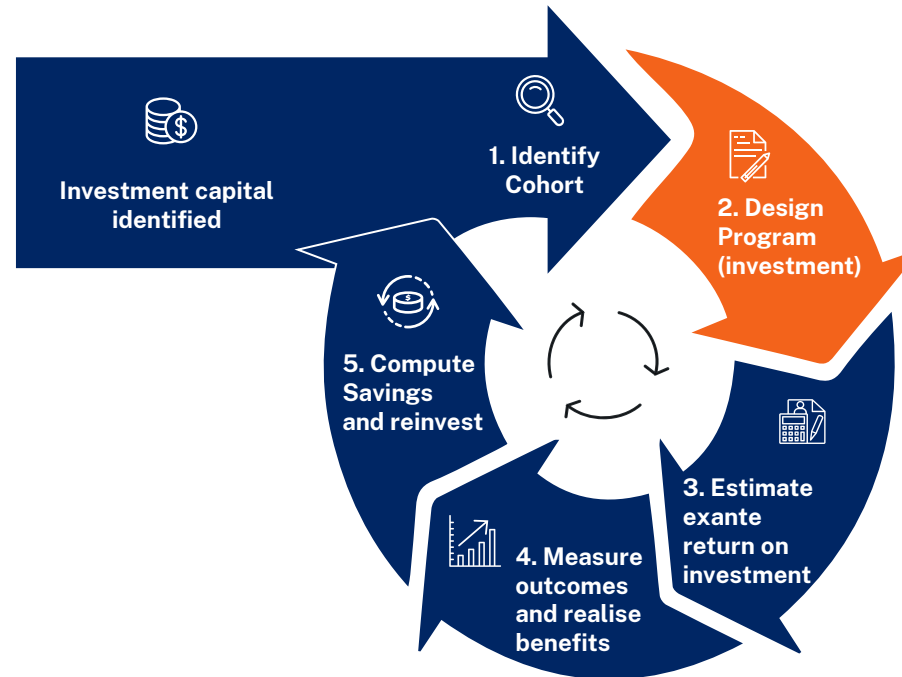# The investment approach implementation (5 stages of analysis)

The investment approach analysis cycle is made up of five sequential stages that occur once program funding (investment capital) is identified for a program (investment):
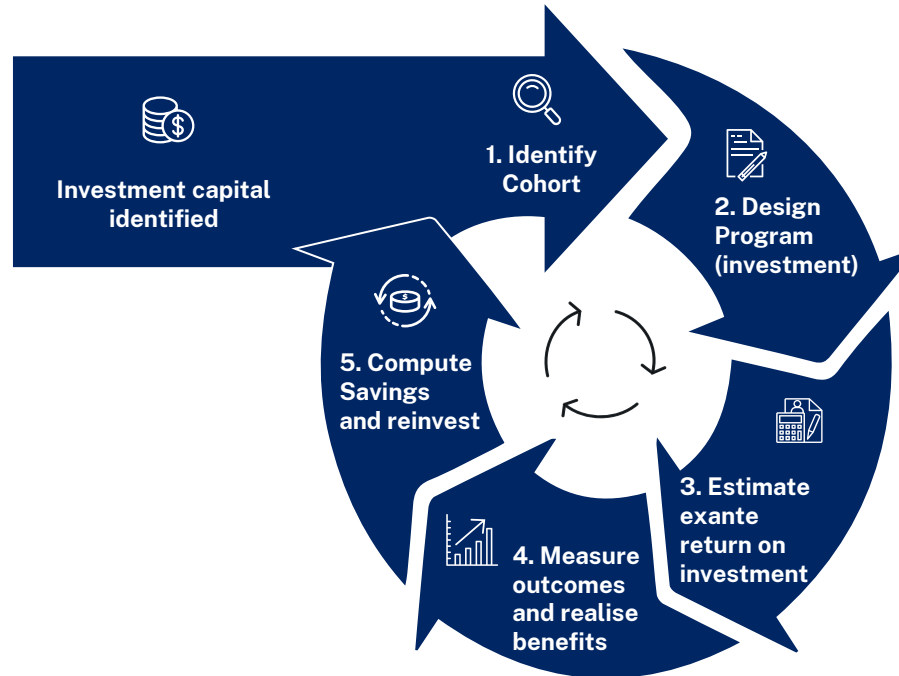
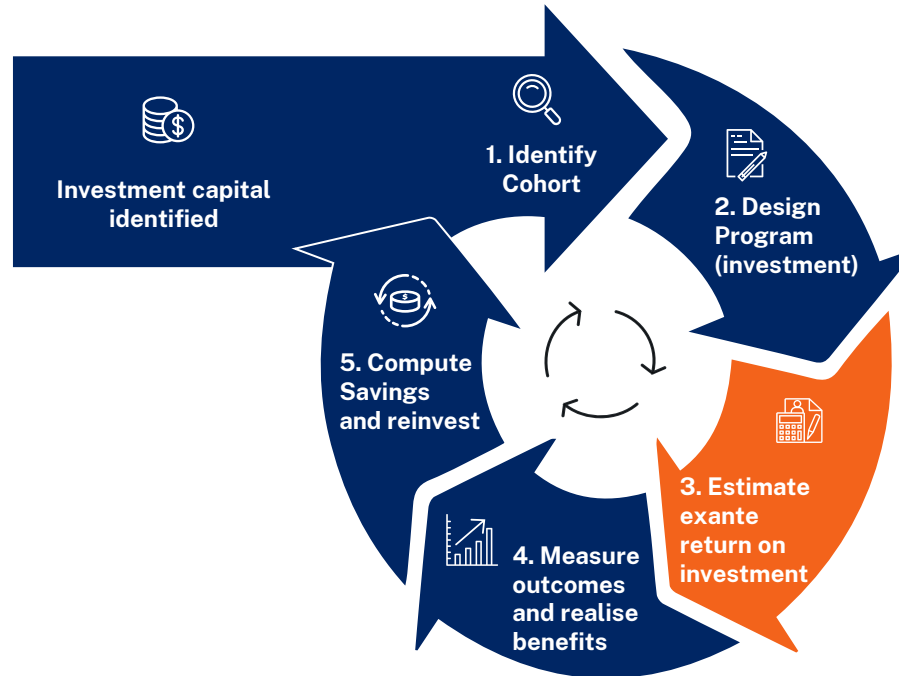# The investment approach implementation (5 stages of analysis)

The investment approach analysis cycle is made up of five sequential stages that occur once program funding (investment capital) is identified for a program (investment):
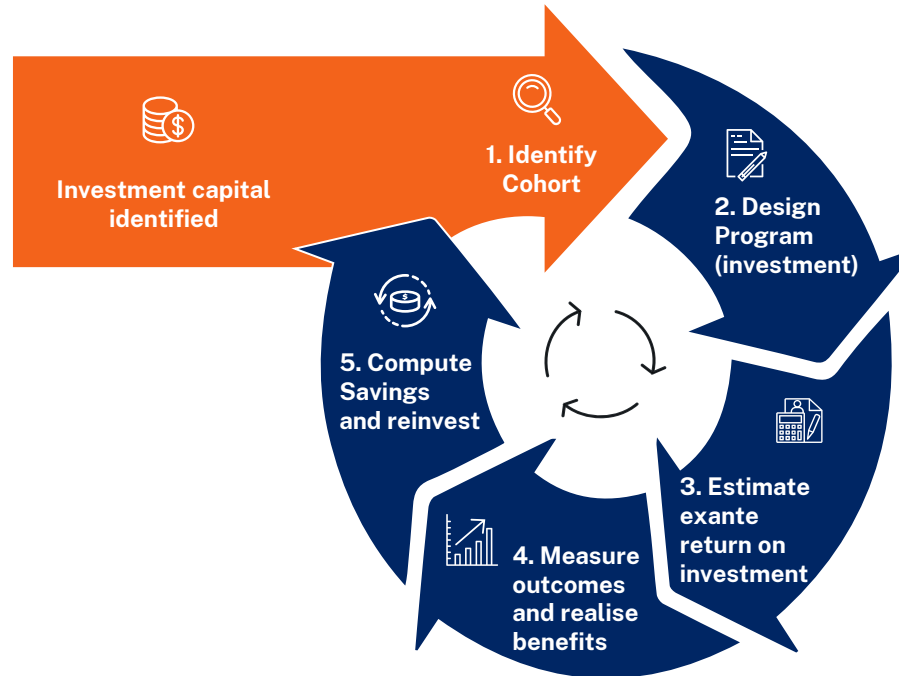
- Stage 1. Identify cohort

The investment approach implementation (5 stages of analysis)

The investment approach analysis cycle is made up of five sequential stages that occur once program funding (investment capital) is identified for a program (investment):

- Stage 1. Identify cohort
- Stage 2. Design program

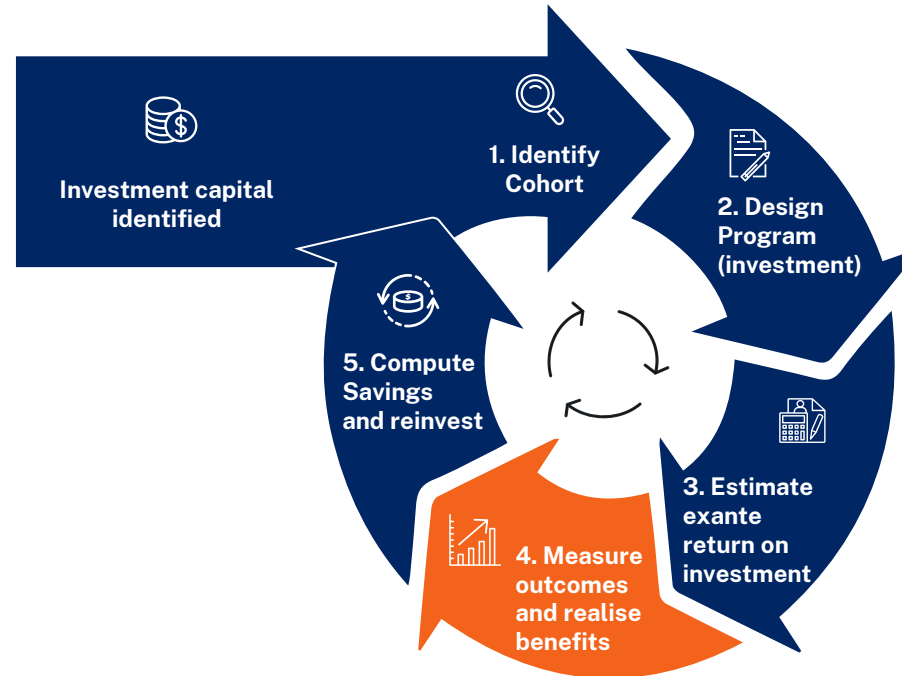# The investment approach implementation (5 stages of analysis)

The investment approach analysis cycle is made up of five sequential stages that occur once program funding (investment capital) is identified for a program (investment):

Investment capital identified

1. Identify Cohort

2. Design Program (investment)

3. Estimate exante return on investment

4. Measure outcomes and realise benefits

5. Compute Savings and reinvest

- Stage 1. Identify cohort
- Stage 2. Design program
- Stage 3. Estimate ex-ante return-on-investment

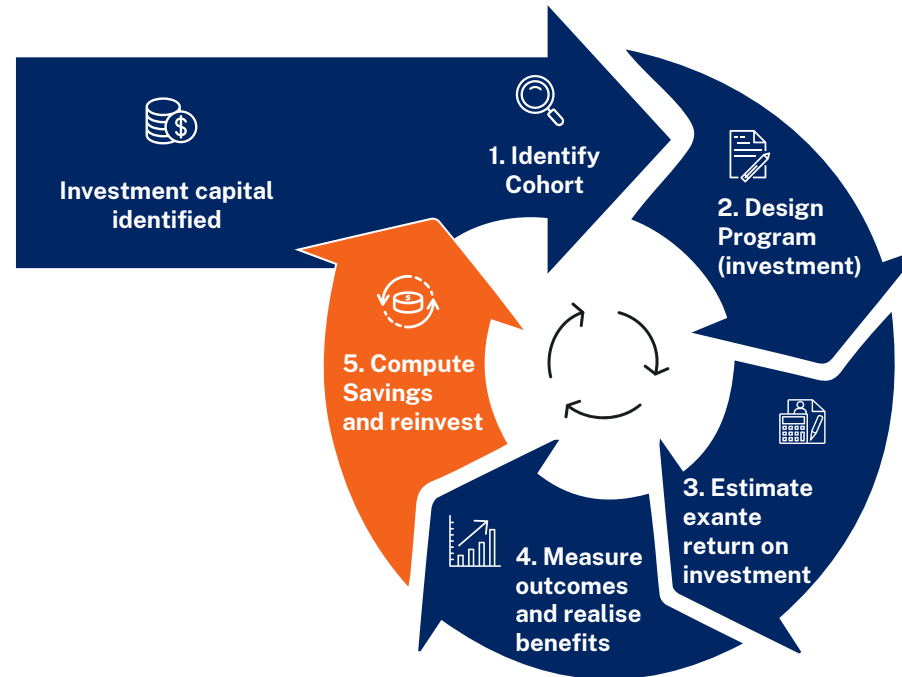# The investment approach implementation (5 stages of analysis)

The investment approach analysis cycle is made up of five sequential stages that occur once program funding (investment capital) is identified for a program (investment):

- Stage 1. Identify cohort
- Stage 2. Design program
- Stage 3. Estimate ex-ante return-on-investment
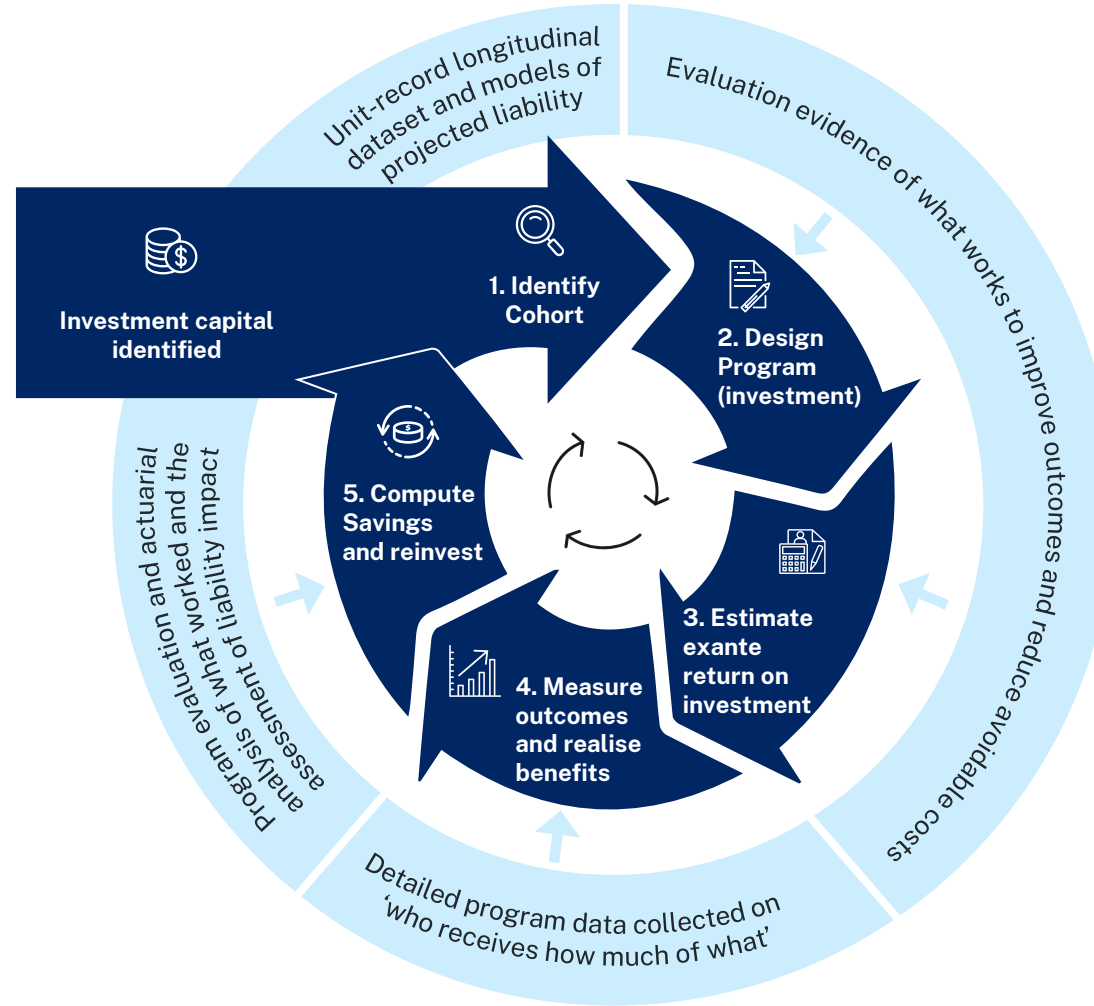- Stage 4. Measure realised outcomes attributable to programs

The investment approach implementation (5 stages of analysis)

The investment approach analysis cycle is made up of five sequential stages that occur once program funding (investment capital) is identified for a program (investment):
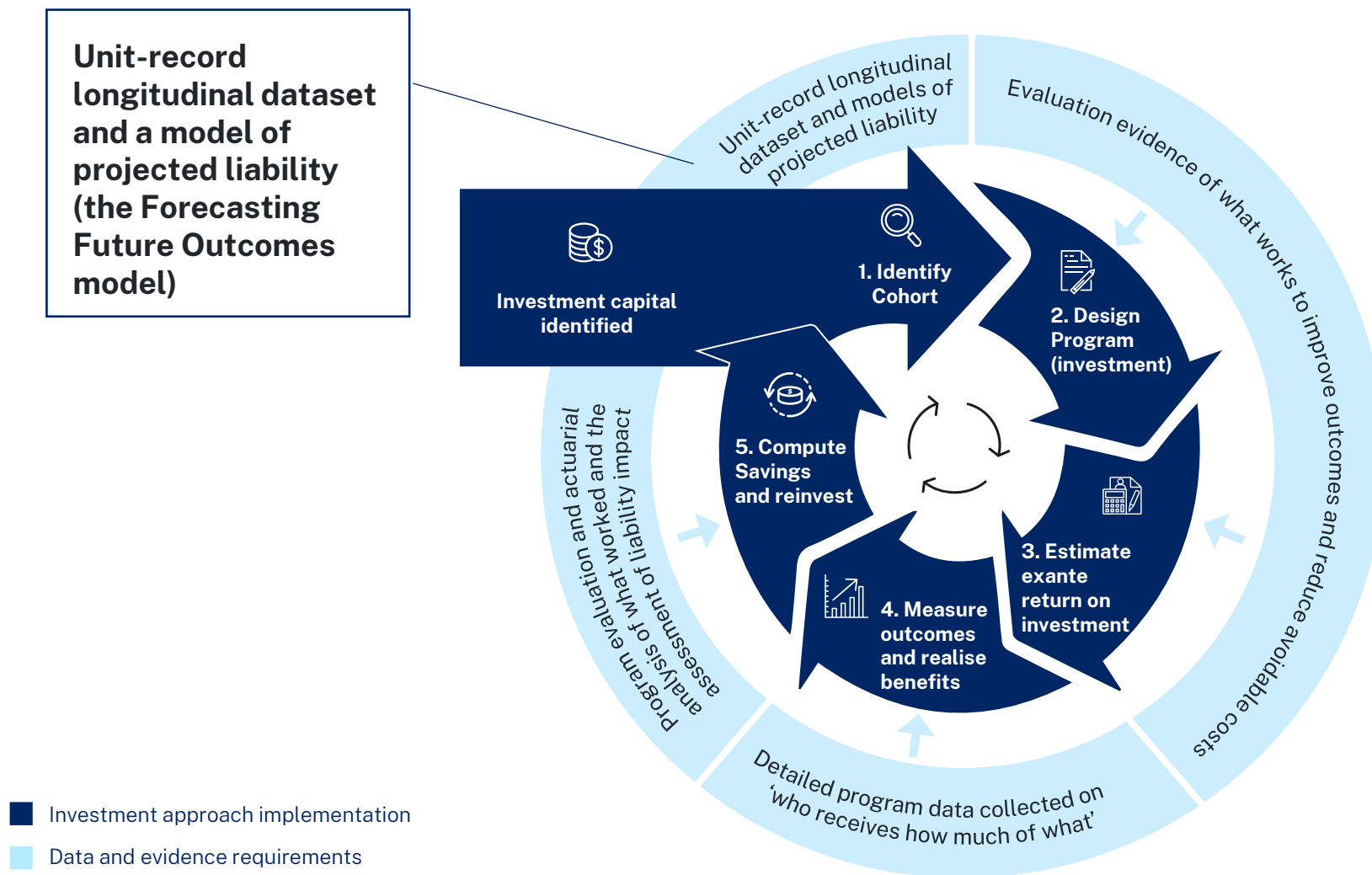

- Stage 1. Identify cohort
- Stage 2. Design program
- Stage 3. Estimate ex-ante return-on-investment
- Stage 4. Measure realised outcomes attributable to programs
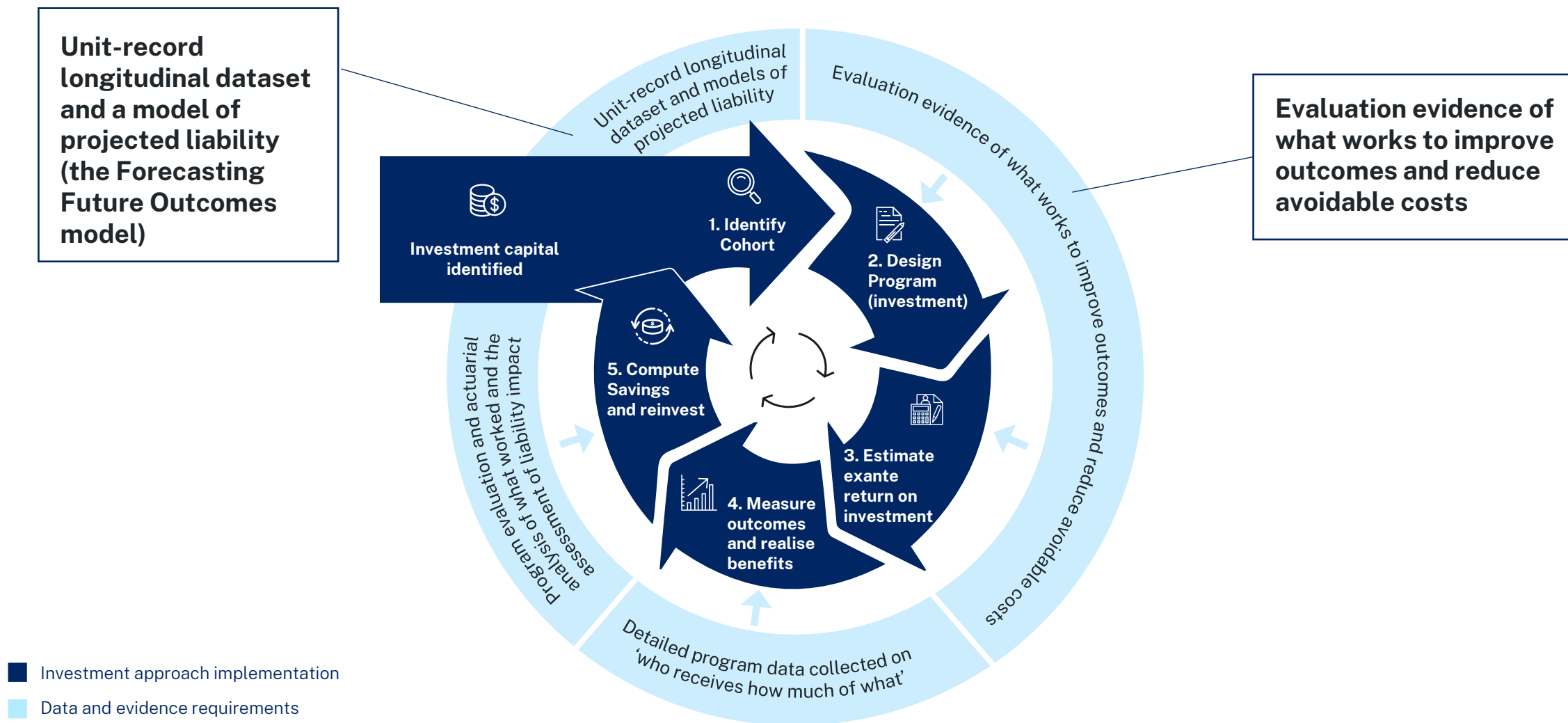- Stage 5. Compute savings to liability and reinvest

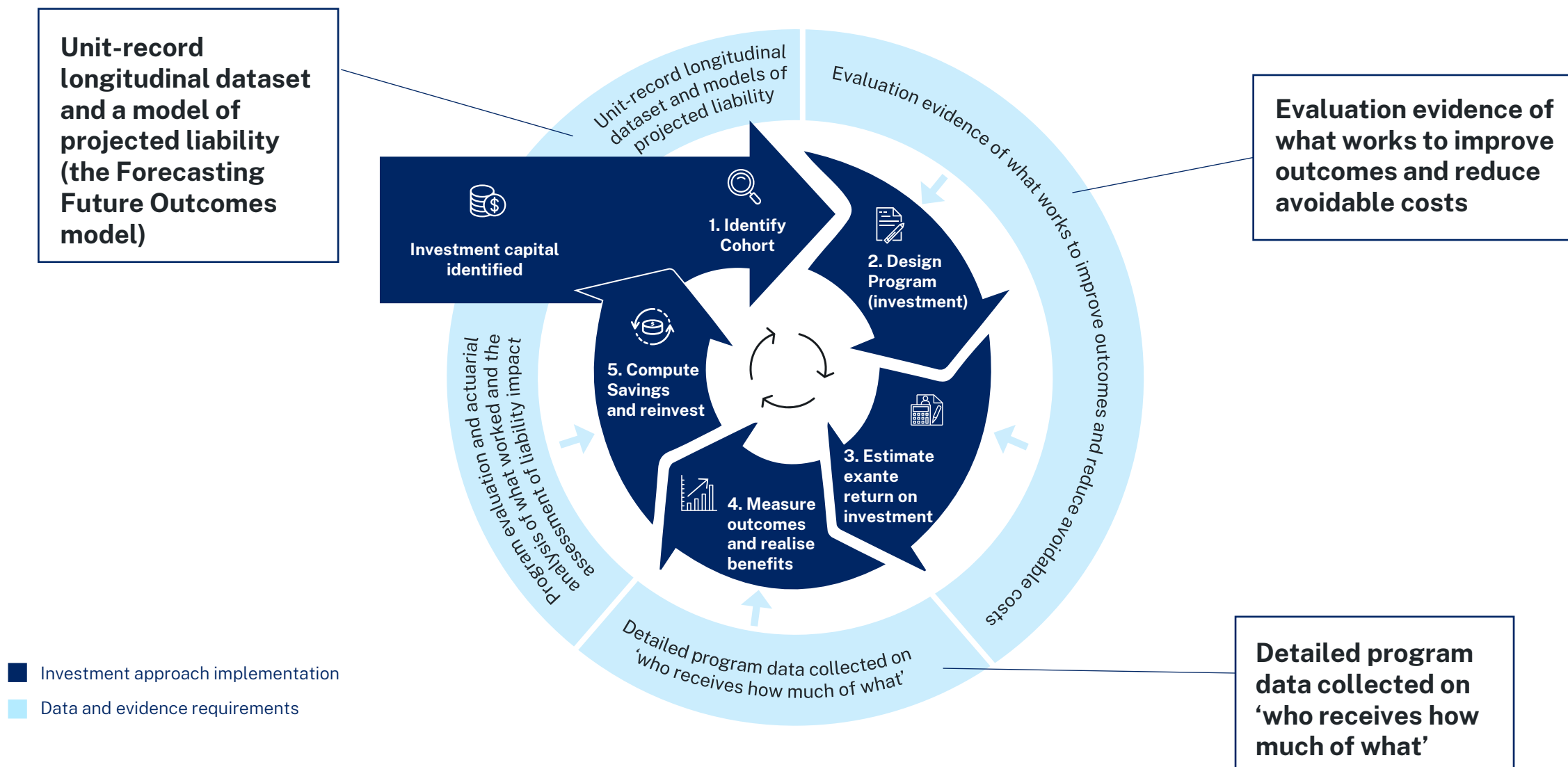# The investment approach analysis cycle is supported by data and evidence
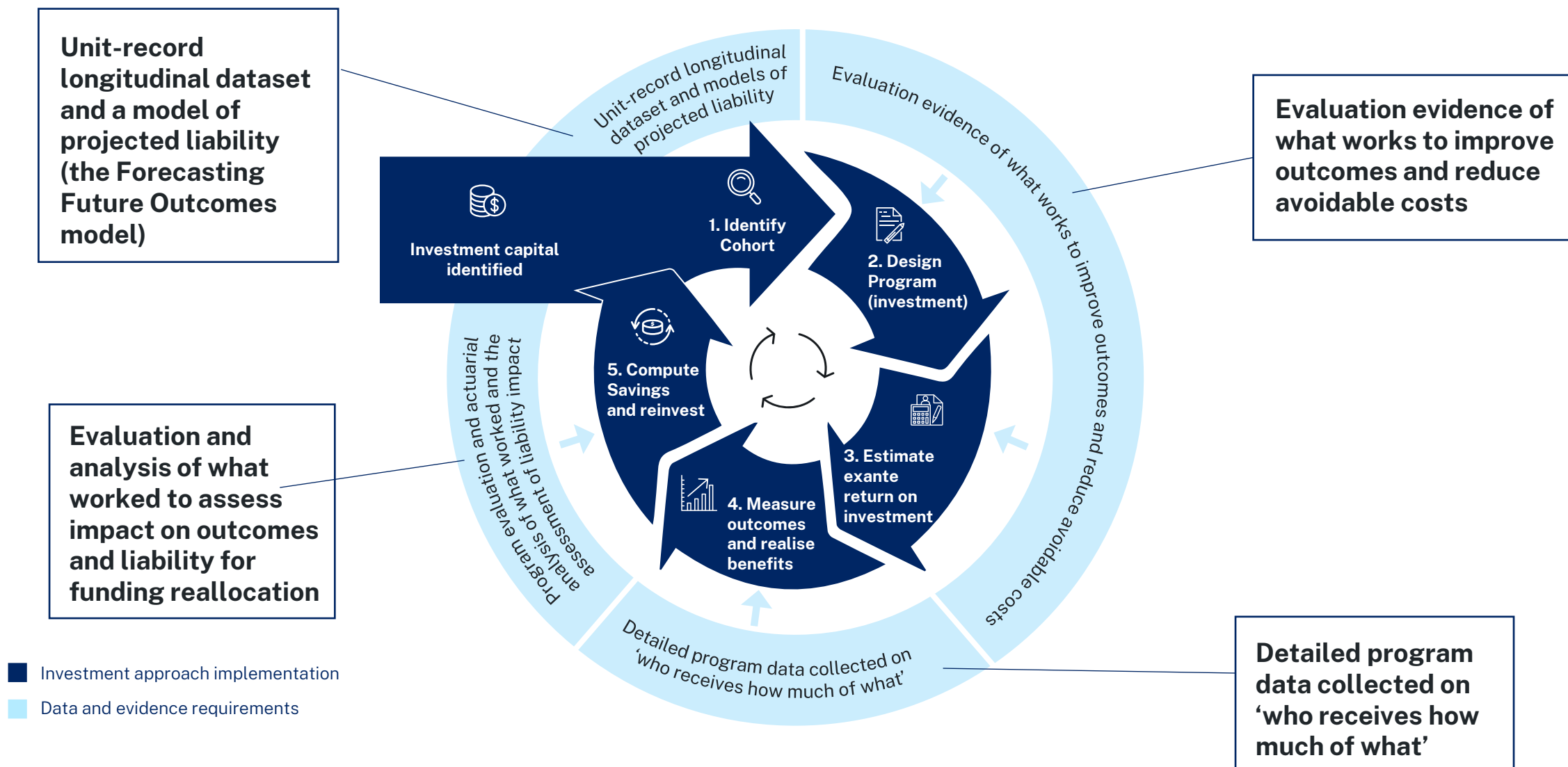
Data and evidence requirements

Unit-record longitudinal dataset and a model of projected liability (the Forecasting Future Outcomes model)

Unit-record longitudinal dataset and models of projected liability

Evaluation evidence of what works to improve outcomes and reduce avoidable costs

Detailed program data collected on 'who receives how much of what'

Program evaluation and actuarial analysis of what worked and the assessment of liability impact

Investment capital identified

1. Identify Cohort

2. Design Program (investment)

3. Estimate exante return on investment

4. Measure outcomes and realise benefits

5. Compute Savings and reinvest

■ Investment approach implementation

■ Data and evidence requirements

Data and evidence requirements

Unit-record longitudinal dataset and a model of projected liability (the Forecasting Future Outcomes model)

Evaluation evidence of what works to improve outcomes and reduce avoidable costs

Unit-record longitudinal dataset and models of projected liability

Evaluation evidence of what works to improve outcomes and reduce avoidable costs

Investment capital identified

1. Identify Cohort

2. Design Program (investment)

3. Estimate exante return on investment

4. Measure outcomes and realise benefits

5. Compute Savings and reinvest

Program evaluation and actuarial analysis of what worked and the assessment of liability impact

Detailed program data collected on 'who receives how much of what'

■ Investment approach implementation

■ Data and evidence requirements

Data and evidence requirements

Unit-record longitudinal dataset and a model of projected liability (the Forecasting Future Outcomes model)

Evaluation evidence of what works to improve outcomes and reduce avoidable costs

Detailed program data collected on 'who receives how much of what'

Unit-record longitudinal dataset and models of projected liability

Evaluation evidence of what works to improve outcomes and reduce avoidable costs

Detailed program data collected on 'who receives how much of what'

Program evaluation and actuarial analysis of what worked and the assessment of liability impact

Investment capital identified

1. Identify Cohort

2. Design Program (investment)

3. Estimate exante return on investment

4. Measure outcomes and realise benefits

5. Compute Savings and reinvest

■ Investment approach implementation
■ Data and evidence requirements

Data and evidence requirements

Unit-record longitudinal dataset and a model of projected liability (the Forecasting Future Outcomes model)

Evaluation evidence of what works to improve outcomes and reduce avoidable costs

Evaluation and analysis of what worked to assess impact on outcomes and liability for funding reallocation

Detailed program data collected on 'who receives how much of what'

Unit-record longitudinal dataset and models of projected liability

Evaluation evidence of what works to improve outcomes and reduce avoidable costs

Program evaluation and actuarial analysis of what worked and the assessment of liability impact

Detailed program data collected on 'who receives how much of what'

Investment capital identified

1. Identify Cohort

2. Design Program (investment)

3. Estimate exante return on investment

4. Measure outcomes and realise benefits

5. Compute Savings and reinvest

■ Investment approach implementation
■ Data and evidence requirements

The Forecasting Future Outcomes model
(FFO model)

What are the components of data, modelling and evidence that form the Forecasting Future Outcomes model ?

The Human Services Dataset (HSDS)

+ Commonwealth data

- Multi-agency longitudinal linked data asset
- Children under age 25 and their families
- Demographics
- Service use history

(forms the basis of the population spine)

Outcome sub-models

- Calibrated using demographic and service use history
- Used to project future service use

Projection model

- Monte-Carlo simulation approach

Unit costs

- Costing manual

Evaluation results (scenario inputs)

- Outcome measures from evaluations
- Methods to collate and utilise them in scenarios

Analysis tools and templates

- Australian Bureau of Statistics (ABS) Datalab
- Model output
- Template and other spreadsheets

What is included in the NSW Human Services Dataset?

The HSDS includes all individuals born on or after 1 January 1990 who have received a service from at least one of the NSW services included in the HSDS, as well as their parents, other family members, guardians or carers. Data available is up to **30 June 2021**, and provides comprehensive coverage of service streams, outcomes and life events including:

Child protection
- Concern reports
- Risk of Significant Harm (ROSH) reports
- Safety Assessment, Risk Assessment and Risk Reassessment (SARA)
- Out of Home Care placements and type
- Restoration

Parental risk indicators
- Parent in custody
- Parent interaction with justice
- Proven alcohol and other drugs related offence or hospital admission
- Proven domestic violence related offence or victim of domestic violence
- Treatment for mental health in NSW hospital or ambulatory services

Justice
- Custody
- Community supervision
- Court finalisations
- Cautions
- Youth conferences
- Legal Aid

Police
- Victims
- Persons of interest
- AOD related events
- Domestic violence safety assessment

Customer service and Revenue
- Births, deaths & marriages
- Penalty/fines notices
- Enforcement of fines
- Work Development Orders

Housing
- Social housing tenancies and waitlist
- Private rental assistance
- Homelessness services

Education
- National Assessment Program — Literacy and Numeracy (NAPLAN) year 3 and year 7 results
- Attendance, enrolment and suspension
- HSC completion
- Unexpected government school moves
- Smart, Skilled & Hired program
- Enrolment in funded training
- Resource Allocation Model equity loadings

Health
- Public hospital admissions
- Private hospital admissions
- Emergency department presentations
- Ambulance patient contact events
- Childbirth
- Opiate treatment program

Mental health
- Hospital admission for mental health
- NSW Ambulatory mental health

Alcohol and other drugs (AOD)
- Hospital admission for alcohol and other drugs
- Proven alcohol and other drug offences

Commonwealth services*
- Welfare payments
- Medical Benefits Scheme
- Pharmaceutical Benefits Scheme
- Income and taxation
- Census data

*The HSDS is currently in the process of being linked to Commonwealth MADIP data (including: Census, Taxation, Medicare & Pharmaceutical, Education and Welfare datasets) for Investment Modelling work.

Communities and Justice

A flow chart of data & modelling for the Investment Approach using the Forecasting Future Outcomes model

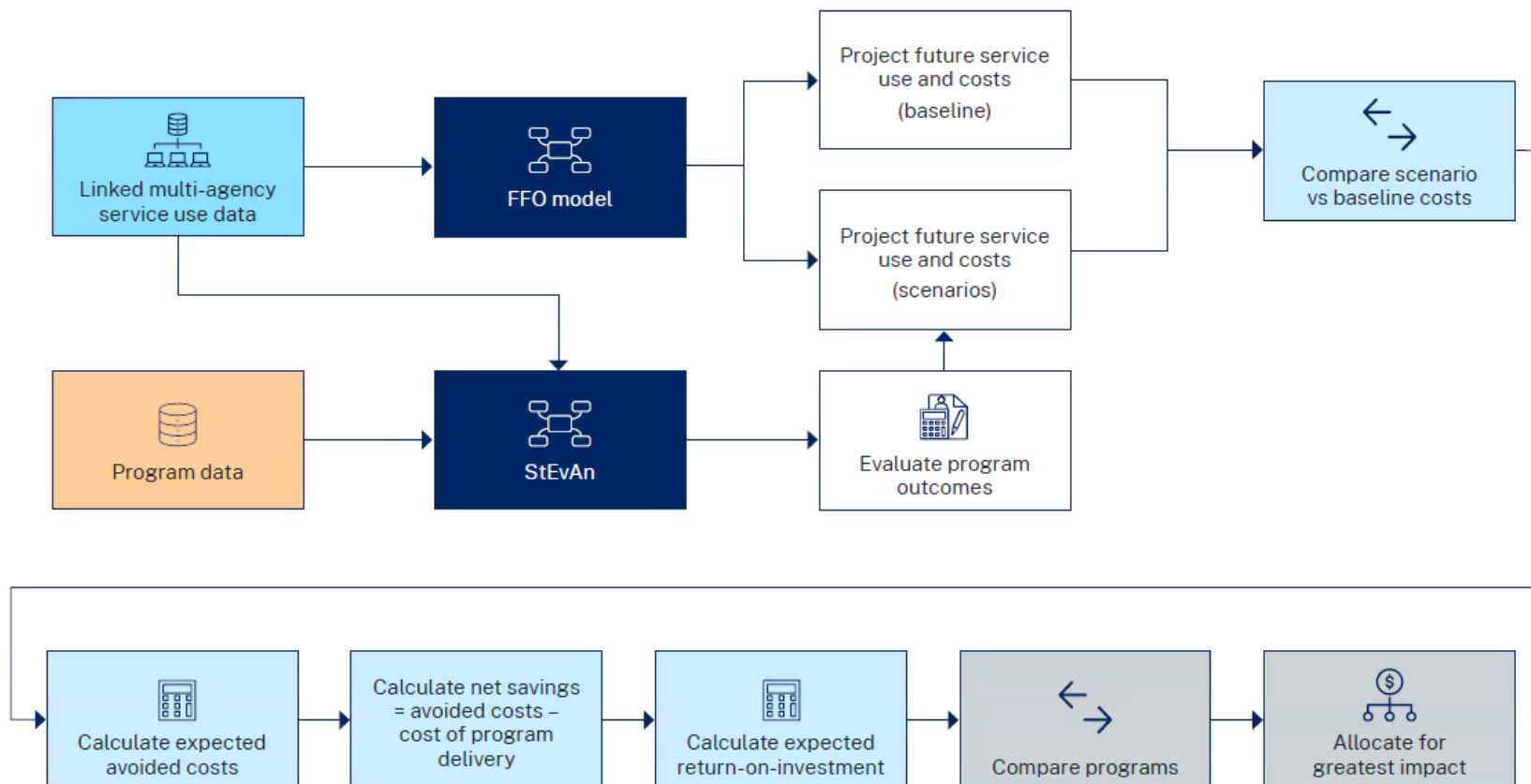**The NSW Investment Approach is driven by data**

NSW government services and programs:

- who receives which program or service?
- when do they receive it?

Models provide powerful knowledge and insights

- **The Forecasting Future Outcomes (FFO) model** - projects future service use and cost under various scenarios
- **The Standard Evaluation Analysis (StEvAn)** - to evaluate program outcomes for input into the FFO model scenarios

Linked multi-agency service use data → FFO model → Project future service use and costs (baseline) / Project future service use and costs (scenarios) → Compare scenario vs baseline costs

Program data → StEvAn → Evaluate program outcomes

Calculate expected avoided costs → Calculate net savings = avoided costs – cost of program delivery → Calculate expected return-on-investment → Compare programs → Allocate for greatest impact

We use:

- service data from multiple government agencies to model and project future service use (FFO model)
- cost data to estimate the cost of those future services
- program and service data to measure outcomes (StEvAn)
- the FFO model - to calculate reduced future service use and financial benefit to the community
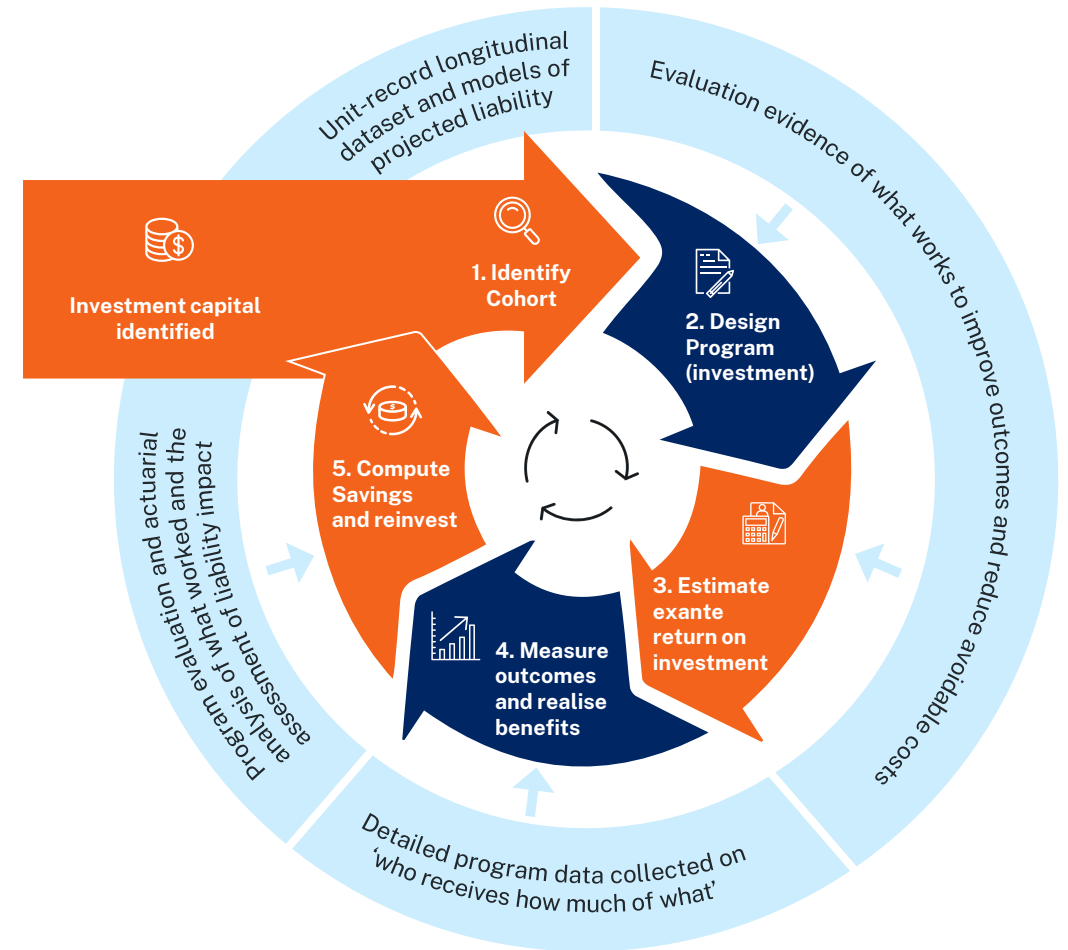
Communities and Justice

The Forecasting Future Outcomes model provides insights for Stages 1, 3 and 5

The investment approach analysis cycle is made up of five sequential stages that occur once program funding (investment capital) is identified for a program (investment):

- Stage 1. Identify cohort

- Stage 2. Design program (investment)

- Stage 3. Estimate ex-ante return-on-investment

- Stage 4. Measure outcomes

- Stage 5. Compute savings and reinvest

The analysis for the Forecasting Future Outcomes – Stronger Communities Investment Unit 2018 Insights Report, focused on Stage 1 – Identify Cohort, which involved describing cohorts of vulnerable people in NSW.

The Forecasting Future Outcomes model provides insights for Stages 1, 3 and 5

The investment approach analysis cycle is made up of five sequential stages that occur once program funding (investment capital) is identified for a program (investment):

- Stage 1. Identify cohort

- Stage 2. Design program (investment)

- Stage 3. Estimate ex-ante return-on-investment

- Stage 4. Measure outcomes

- Stage 5. Compute savings and reinvest

The analysis for the Forecasting Future Outcomes – Stronger Communities Investment Unit 2018 Insights Report, focused on Stage 1 – Identify Cohort, which involved describing cohorts of vulnerable people in NSW.

However, the Forecasting Future Outcomes Stronger Communities Actuary Insights Report 2022 demonstrates Stage 3 - Estimate ex-ante return-on-investment.

The Forecasting Future Outcomes model provides insights for Stages 1, 3 and 5

The investment approach analysis cycle is made up of five sequential stages that occur once program funding (investment capital) is identified for a program (investment):

- Stage 1. Identify cohort

- Stage 2. Design program (investment)

- Stage 3. Estimate ex-ante return-on-investment

- Stage 4. Measure outcomes

- Stage 5. Compute savings and reinvest

The analysis for the Forecasting Future Outcomes – Stronger Communities Investment Unit **2018** Insights Report, focused on **Stage 1 – Identify Cohort**, which involved describing cohorts of vulnerable people in NSW.

However, the Forecasting Future Outcomes Stronger Communities Actuary Insights Report **2022** demonstrates **Stage 3 - Estimate ex-ante return-on-investment**.

Communities and Justice

Stage 4 (measuring outcomes) is not the focus of this presentation

Stage 4 is implemented using the Standardised Evaluation Analysis (*StEvAn*) - the systematic and comparative evaluation of programs, or by relying on bespoke evaluations from the academic literature.

- The investment approach implementation requires outcomes to be measured (program evaluation).

- The StEvAn is a standardised method for evaluating outcomes has been developed, which will be the subject of a future presentation.

- It is an approach that can achieve scale through:

  - bulk data processing

  - a common 'build once and use many times' bank of outcome indicators applicable to multiple programs

  - innovative approaches to assigning counterfactual individuals.

Communities and Justice
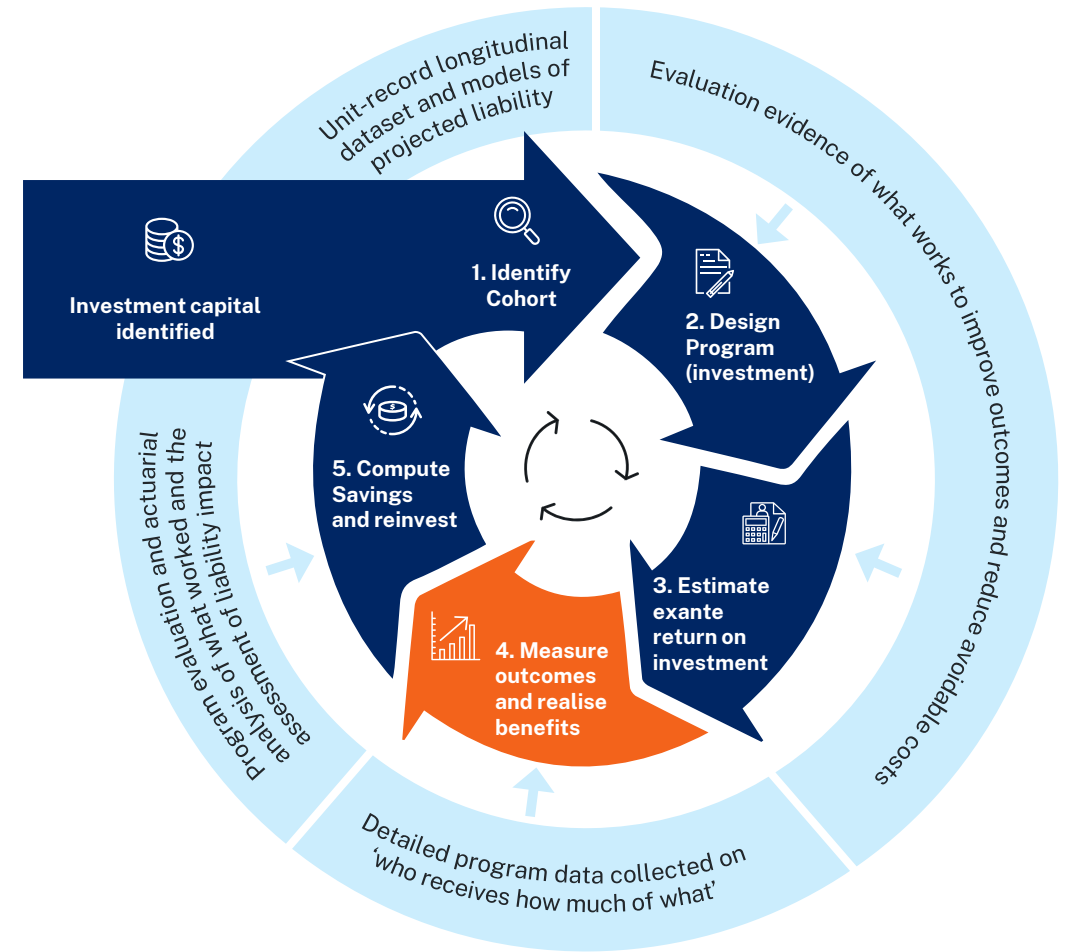
Understanding vulnerable people and families in the NSW population

Stage 1

The Forecasting Future Outcomes model at a glance

The Forecasting Future Outcomes model looks at service data on all NSW residents under 25 years of age at 30 June 2019 and projects their future costs to government from now up until the age of 40 years.

Study population
(25 years of age at 30/06/2019)

$191 billion

Total estimated future cost to NSW and Commonwealth Governments in providing services to this population to the age of 40 years

3,118,472

$61,000

on average **per person**

% total costs
($191 billion)

38%
NSW Government funded services cost including:
- 15% (28 billion) for Healthcare costs
- 10% (20 billion) for Justice costs (courts and corrections)

62%
Commonwealth Governments cost including:
- 48% ($92 billion) income support Centrelink
- 10% Medicare
- 3% PBS

Estimated future cost by service domain

- Income support costs (Centrelink) are estimated to cost $92 billion for the study population over the projection period, making up 48% of all future costs to government reflecting both the high cost and broad reach of income support in NSW.

- In total, Commonwealth Government costs comprising Income support (Centrelink), the Medicare Benefits Schedule, Medicare and Pharmaceutical Benefits Scheme (PBS) make up 62% of projected costs.
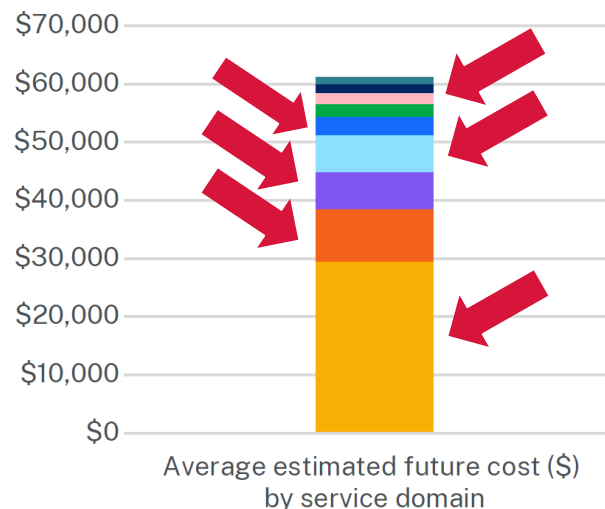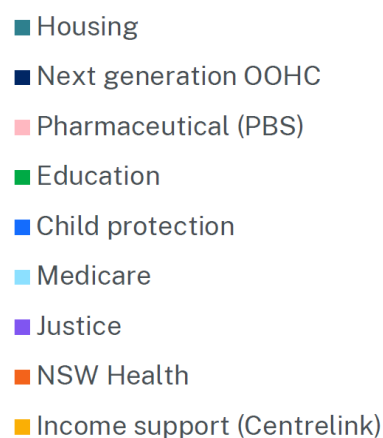
- The remaining 38% of costs relate to NSW Government funded services. Healthcare (NSW Health) accounts for 15% of total projected costs and Justice (courts and corrections), 10% of total costs.

- Child protection costs make up 5% of total projected cost or $10 billion.

Average estimated future cost ($)
by service domain

Service Domain	Average estimated future cost ($) by service domain	Total estimated future cost ($ billion) by service domain	Proportion (%)
Income support (Centrelink)	$29,516	$92b	48%
NSW Health	$9,036	$28b	15%
Justice	$6,406	$20b	10%
Medicare	$6,257	$20b	10%
Child protection	$3,206	$10b	5%
Education	$2,186	$7b	4%
Pharmaceutical (PBS)	$1,965	$6b	3%
Next generation OOHC	$1,508	$5b	2%
Housing	$1,041	$3b	2%
Total	**$61,121**	**$191b**	**100%**

Estimated future cost varies across the population

- The average estimated future cost for all people included in the study population is $61,000. However, this varies significantly by cohort within the study population. For example, males have an average projected cost of $48,000, while for females the average projected cost is $75,000.

- Females tend to have higher income support costs ($25,000 higher), NSW Health ($2,000 higher) and Medicare costs ($3,000 higher), all likely associated with pregnancy, childbirth and child-rearing.

- The cost of next generation out-of-home care is also attributed to mothers, which further explains the difference in average cost.

- While males have a smaller overall average cost than females, males have a significantly higher justice cost ($8,000 higher).
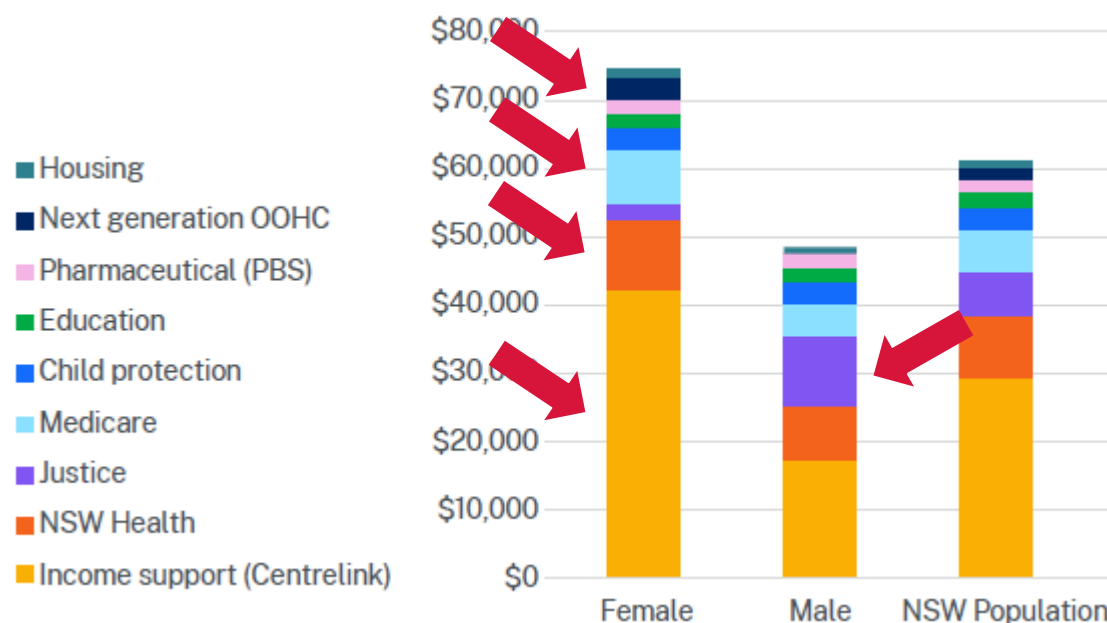
Service Domain	Average estimated future cost ($)		Total estimated future cost ($ billion)		Proportion (%)	
	Female	Male	Female	Male	Female	Male
Income support (Centrelink)	$42,454	$17,330	$64b	$28b	57%	36%
NSW Health	$10,093	$8,040	$15b	$13b	14%	17%
Justice	$2,332	$10,244	$4b	$16b	3%	21%
Medicare	$7,967	$4,647	$12b	$7b	11%	10%
Child protection	$3,211	$3,201	$5b	$5b	4%	7%
Education	$2,176	$2,196	$3b	$4b	3%	5%
Pharmaceutical (PBS)	$2,009	$1,923	$3b	$3b	3%	4%
Next generation OOHC[10]	$3,109	$1	$5b	$0b	4%	0%
Housing	$1,186	$903	$2b	$1b	2%	2%
Total	$74,537	$48,486	$113b	$78b	100%	100%

Estimated future cost is highly concentrated

Top 5%
of people by lifetime cost account for
25%
of the total estimated future cost

Top 19%
of people by lifetime cost account for
50%
of the total estimated future cost

Top 48%
of people by lifetime cost account for
75%
of the total estimated future cost

Individuals with highest service cost

Individuals with lowest service cost
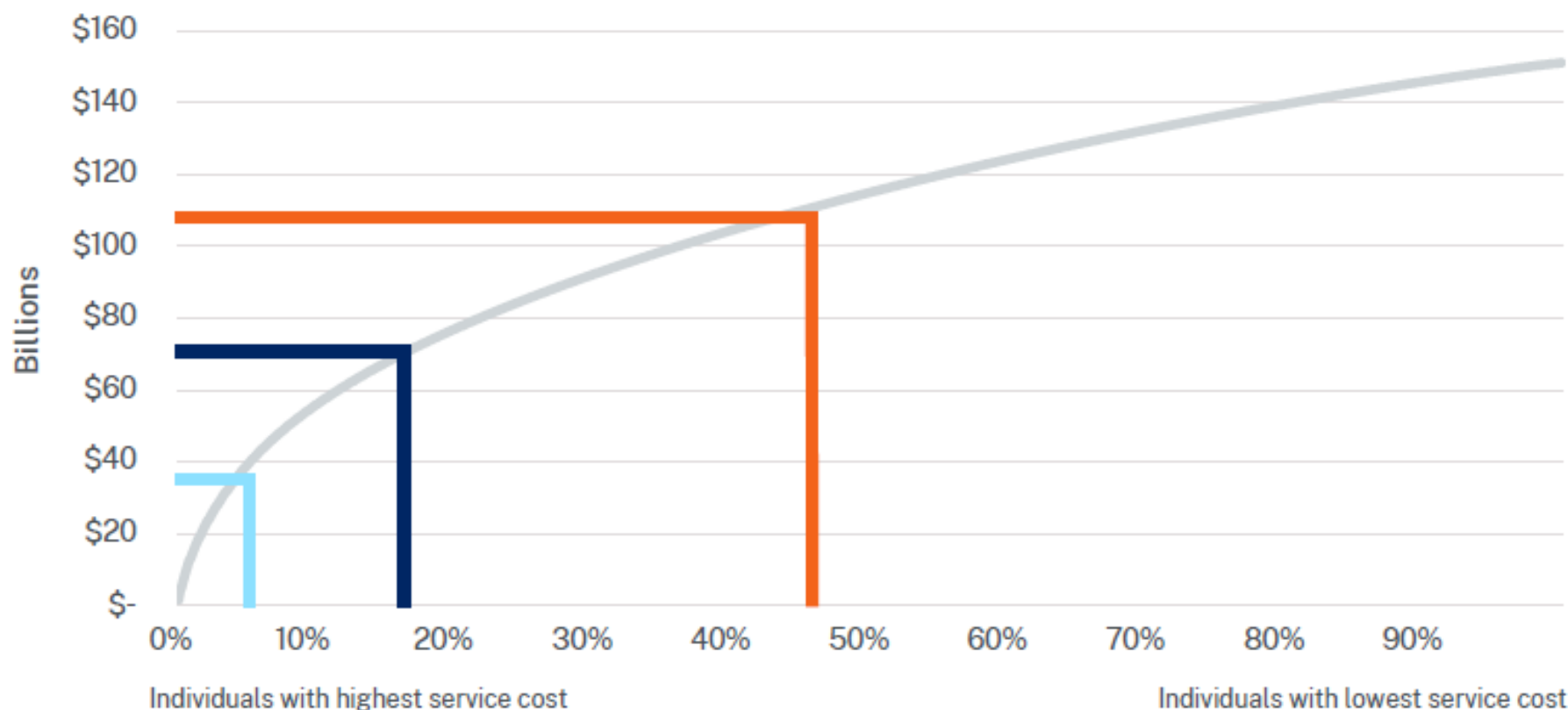
NSW born population only.

Cost is particularly concentrated in some service domains

Spread of estimated future cost by selected service domains (NSW population)

1% of people accounts for **28%** of estimated future costs for justice services

1% of people accounts for **48%** of estimated future costs for child protection services for children aged under five

5% of females are expected to have children accounting for **80%** of the next generation out-of-home care costs
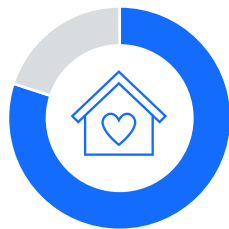
Service usage and costs are not evenly distributed across the NSW population

Top 1% of people by lifetime cost accounts for **9.6%** of the total estimated future cost
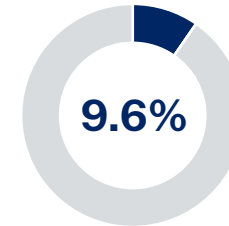
$18.4 billion

child protection and justice costs of this cohort account for 63% of their projected costs
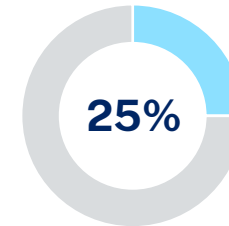
Top 5% of people by lifetime cost accounts for **25%** of the total estimated future cost

$38 billion
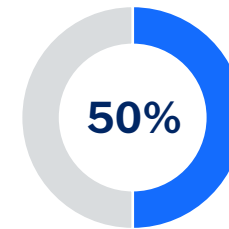
19% of people by lifetime cost accounts for **50%** of the total estimated future cost

$76 billion

Smart investments put resources where the greatest impact is

A small portion of the NSW population uses the majority of services in certain domains, but services in other domains are used more universally and consistently by the broader NSW population. This means that:

☑ Programs can be designed in a targeted way to the people who use those services

☑ Successful programs not only improve people's lives, but can also deliver financial benefits to the government and community
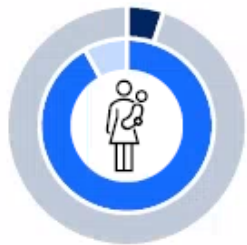
5% of the population is expected to use **92%** of **child protection** services

5% of the population is expected to use **86%** of **next generation OOHC** services

5% of the population is expected to use **65%** of **housing** services

Proportion (%) of NSW population by proportion (%) of future service cost and by service cost domain

Service cost domain legend:
- – – % of all costs
- —— % of Child protection costs
- —— % of Housing costs
- —— % of Justice cost
- —— % of NSW Health cost
- —— % of Education cost
- —— % of Welfare (Centrelink) cost
- —— % of Medicare (MBS) cost
- —— % of Pharmaceutical (PBS) cost
- —— % of Next gen OOHC cost
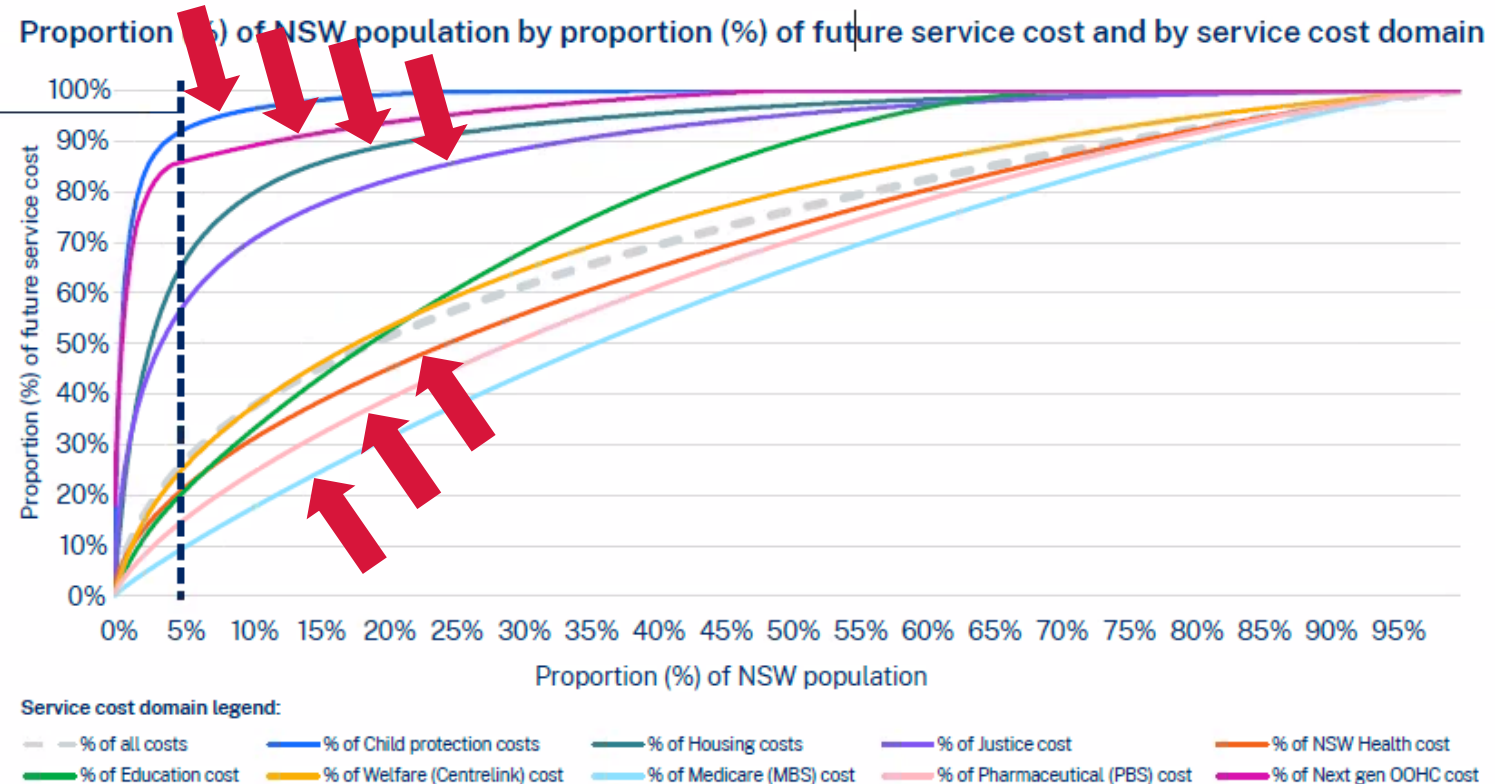
Costs are concentrated on relatively few people

- Costs vary across different strata within the NSW population. These results show how the distribution and nature of costs differ across service domains for different percentile bands.

- The highest percentile group tend to use services that the general population seldom use. This is the case for Justice, which has an average cost of $2,400 for the median group, but $133,100 for the highest cost percentile group.

- Similarly, the average child protection cost for the median group is $316, while for the highest percentile group it is $167,900. Next generation out-of-home care (OOHC) costs for the highest cost percentile is $64,400 but only $398 for the median group.

Legend:
- Housing
- Next generation OOHC
- Pharmaceutical (PBS)
- Education
- Child protection
- Medicare
- Justice
- NSW Health
- Income support (Centerlink)
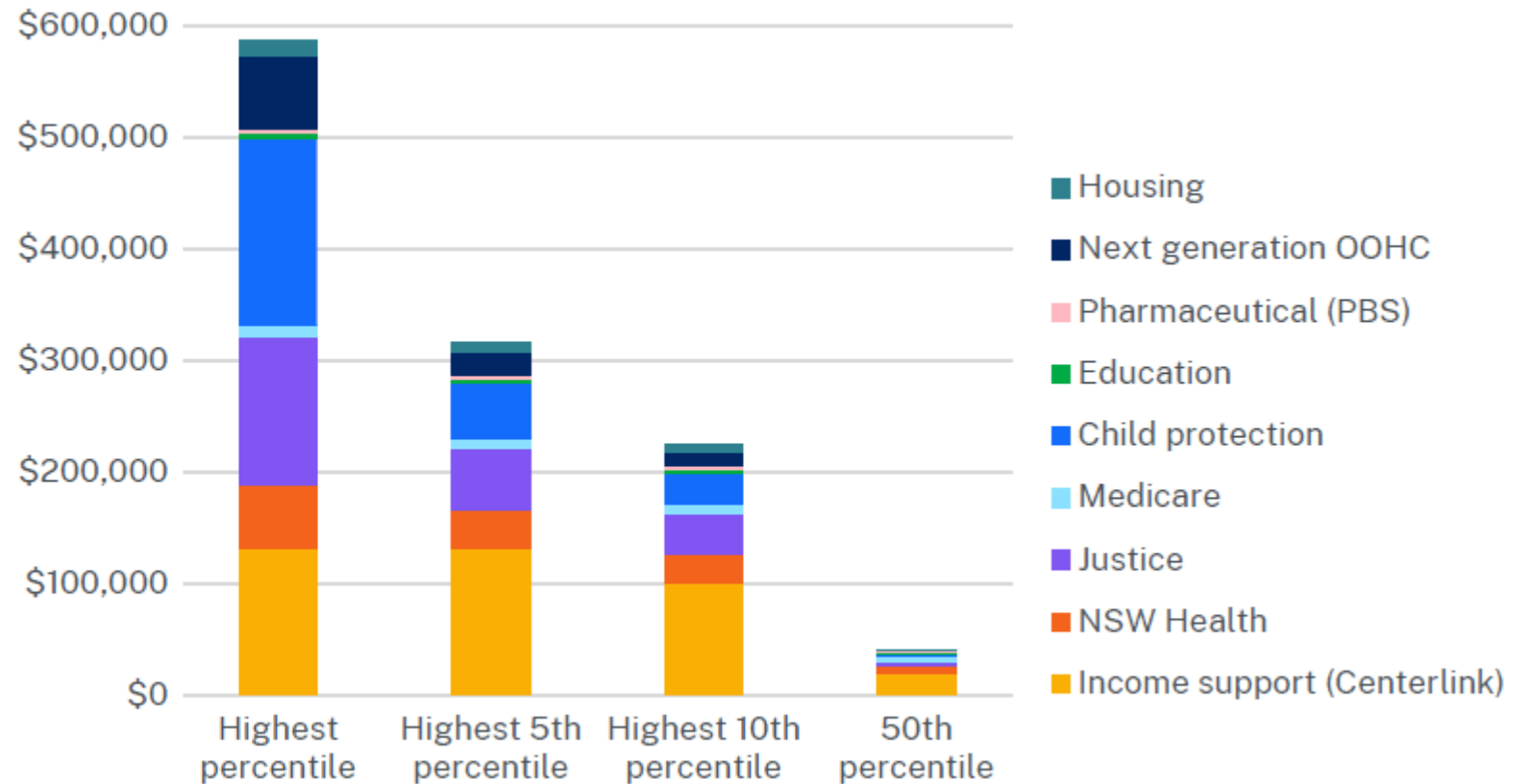
Vulnerable groups identified in FFO 2018 Insights Report

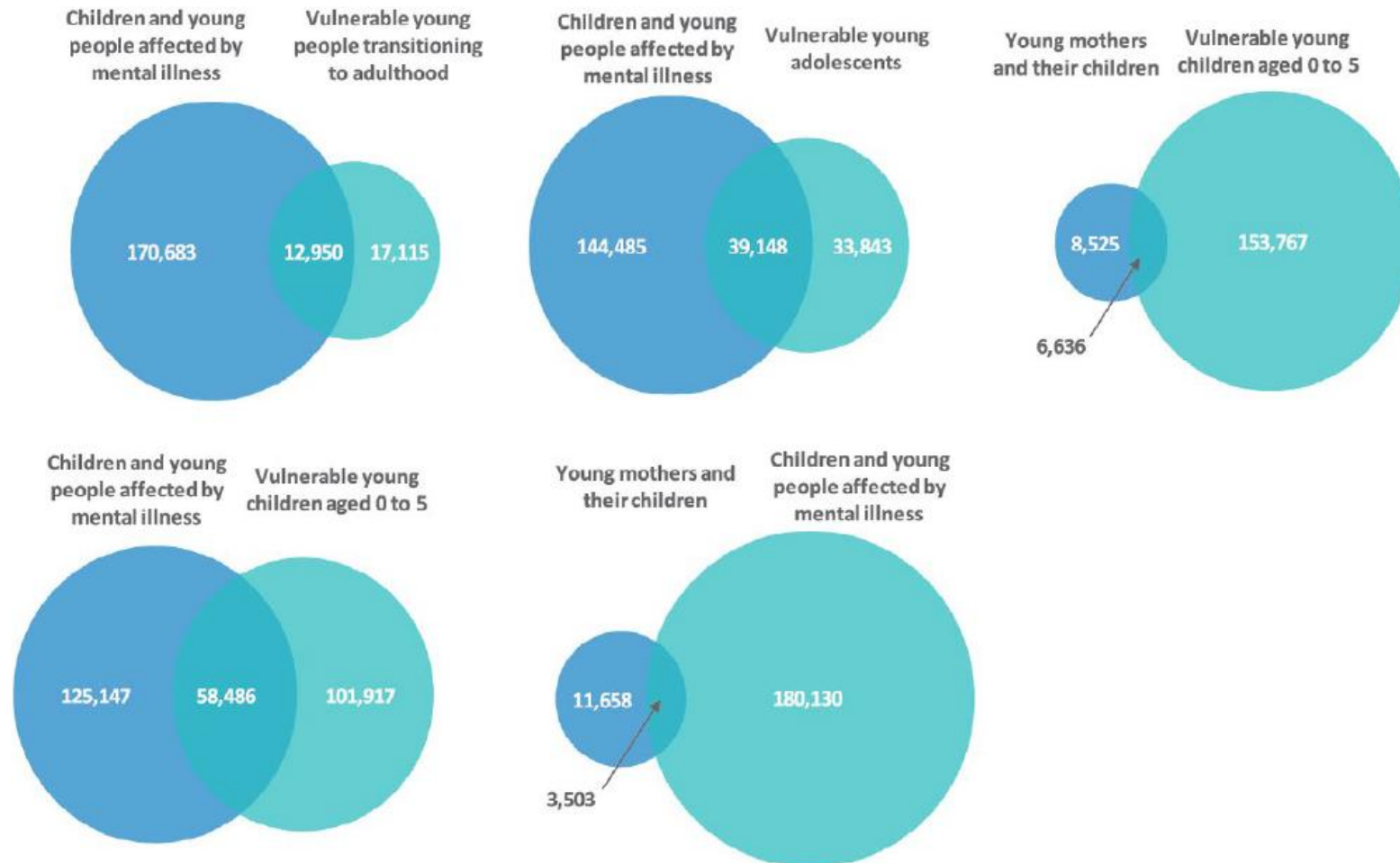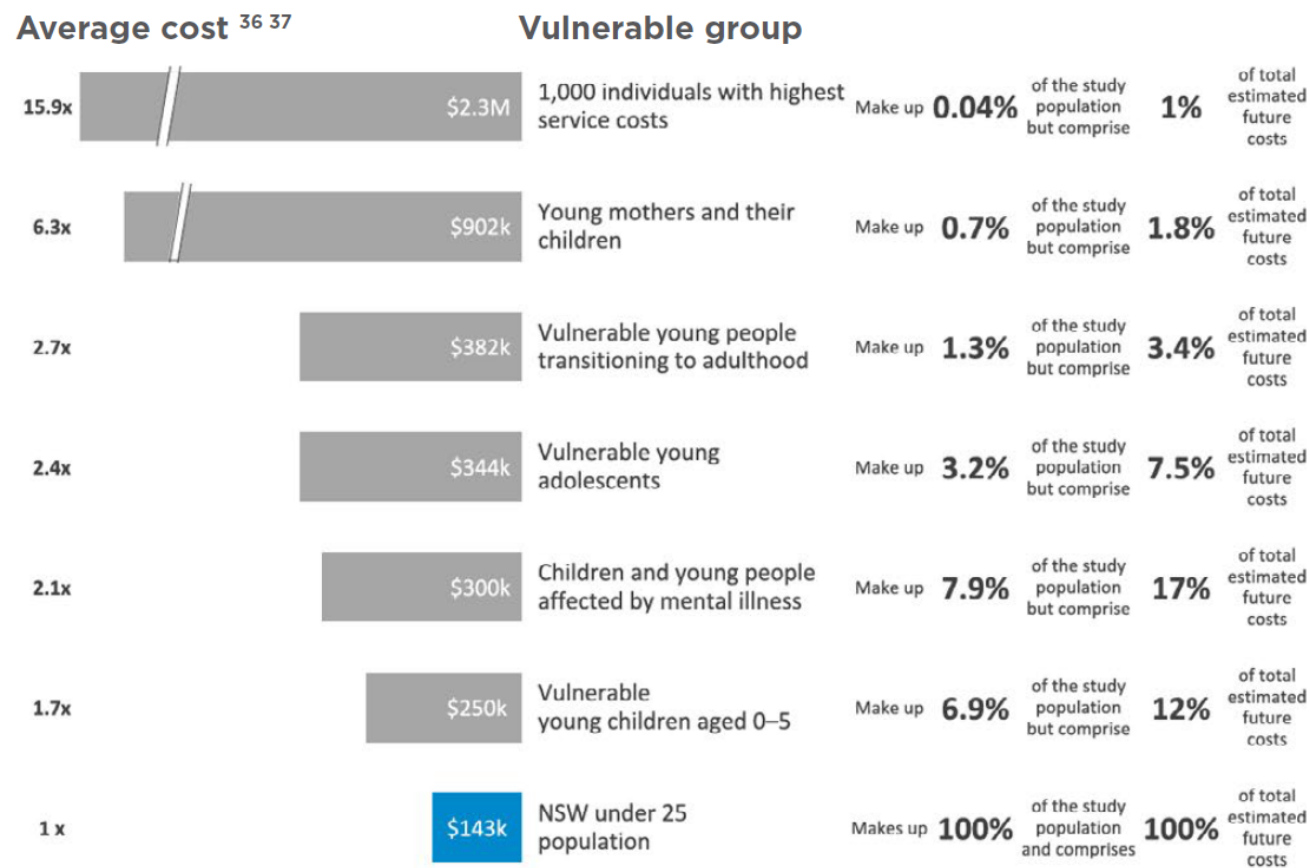|	
Vulnerable young children aged 0-5	Children born in NSW aged 5 or younger at 30 June 2017 with any of the following risk factors: • one or more parental risk factors [13] • two or more perinatal risk factors [14] • assessment at ROSH+
Vulnerable young adolescents	Anyone born in NSW who was aged between 10 and 14 at 30 June 2017 with any of the following risk factors in the five years prior: • one or more parental risk factors • interactions with the justice system[15] • assessment at ROSH+
Vulnerable young people transitioning to adulthood	Anyone born in NSW who was aged between 16 and 18 at 30 June 2017 with any of the following risk factors in the five years prior: • interactions with the justice system • assessment at ROSH+
Young mothers and their children	Females born in NSW aged 21 or younger at 30 June 2017 with at least one child, and their children
Children and young people affected by mental illness	Anyone born in NSW who was aged 18 or younger at 30 June 2017 with any of the following risk factors in the five years prior: • use of NSW mental health services (hospital or ambulatory) • parents use of NSW mental health services (hospital or ambulatory)
1,000 individuals with highest estimated service cost	The 1,000 individuals born in NSW with the highest estimated future cost

Beyond cost, vulnerable groups experience poor life outcomes

WELLBEING DOMAIN	SOCIAL OUTCOME	VULNERABLE YOUNG CHILDREN AGED 0-5	VULNERABLE YOUNG ADOLESCENTS	VULNERABLE YOUNG PEOPLE TRANSITIONING TO ADULTHOOD	YOUNG MOTHERS AND THEIR CHILDREN[20]	CHILDREN AND YOUNG PEOPLE AFFECTED BY MENTAL ILLNESS	HIGHEST 1,000 COST INDIVIDUALS
SOCIAL & COMMUNITY	Proportion expected to have an OOHC placement	12x	>50x	>50x	N/A	5.8x	10x
	Proportion whose children expected to require OOHC	3.9x	5.4x	12x	15x	3.0x	25x
SAFETY	Proportion expected to enter custody	2.5x	3.8x	8.1x	4.0x	2.4x	5.9x
HOME	Proportion expected to use social housing as adults	2.5x	3.4x	3.6x	4.2x	2.2x	3.7x

Beyond cost, vulnerable groups experience poor life outcomes

WELLBEING DOMAIN	SOCIAL OUTCOME	VULNERABLE YOUNG CHILDREN AGED 0-5	VULNERABLE YOUNG ADOLESCENTS	VULNERABLE YOUNG PEOPLE TRANSITIONING TO ADULTHOOD	YOUNG MOTHERS AND THEIR CHILDREN[20]	CHILDREN AND YOUNG PEOPLE AFFECTED BY MENTAL ILLNESS	HIGHEST 1,000 COST INDIVIDUALS
EDUCATION & SKILLS	Proportion completed or expected to complete the HSC	0.8x	0.8x	0.6x	0.3x	0.8x	0.2x
HEALTH	Proportion expected to be admitted to hospital for Alcohol and other drugs (AOD)	1.7x	2.5x	4.3x	2.9x	1.9x	5.1x
ECONOMIC	Proportion expected to be supported by welfare	1.4x	1.8x	2.0x	1.4x	1.4x	1.3x

Overlaps across vulnerable groups

Estimated future cost of vulnerable groups

Average cost [36] [37]

Vulnerable group

15.9x	$2.3M	1,000 individuals with highest service costs	Make up	**0.04%**	of the study population but comprise	**1%**	of total estimated future costs
6.3x	$902k	Young mothers and their children	Make up	**0.7%**	of the study population but comprise	**1.8%**	of total estimated future costs
2.7x	$382k	Vulnerable young people transitioning to adulthood	Make up	**1.3%**	of the study population but comprise	**3.4%**	of total estimated future costs
2.4x	$344k	Vulnerable young adolescents	Make up	**3.2%**	of the study population but comprise	**7.5%**	of total estimated future costs
2.1x	$300k	Children and young people affected by mental illness	Make up	**7.9%**	of the study population but comprise	**17%**	of total estimated future costs
1.7x	$250k	Vulnerable young children aged 0–5	Make up	**6.9%**	of the study population but comprise	**12%**	of total estimated future costs
1x	$143k	NSW under 25 population	Makes up	**100%**	of the study population and comprises	**100%**	of total estimated future costs

Note: Dollar values are from the FFO 2018 Insights Report and are expressed in 2017$.

Intergenerational insights for vulnerable groups

Influence of parental risk factors

Time since at least one parent used AOD services
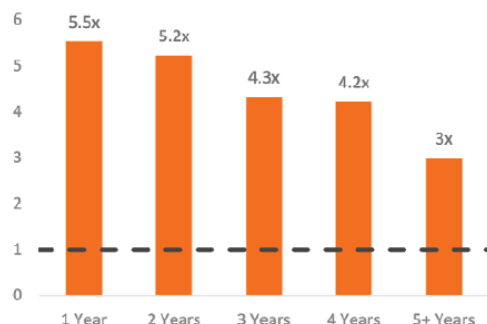
Time since at least one parent used mental health services
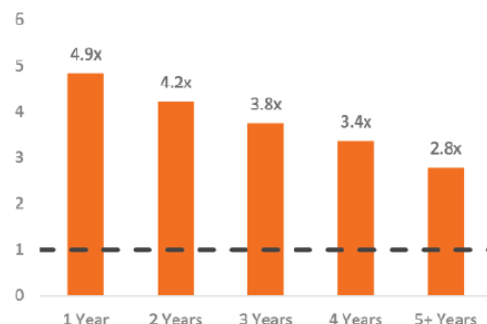
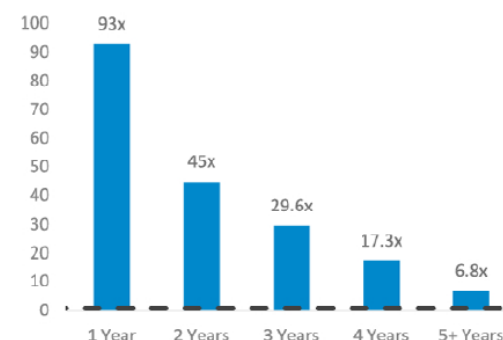Time since at least one parent interacted with the justice system
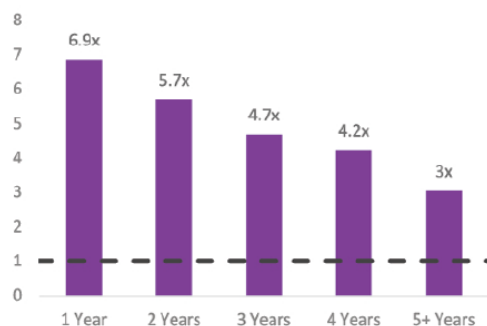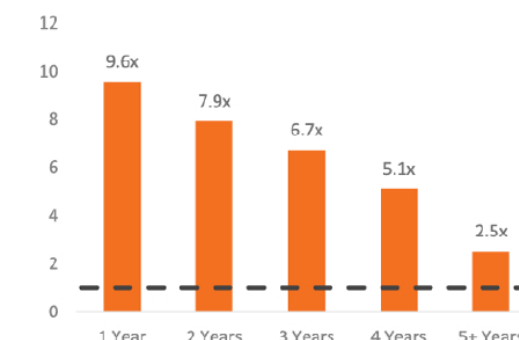
Age of their mother at birth (relative to age 30)
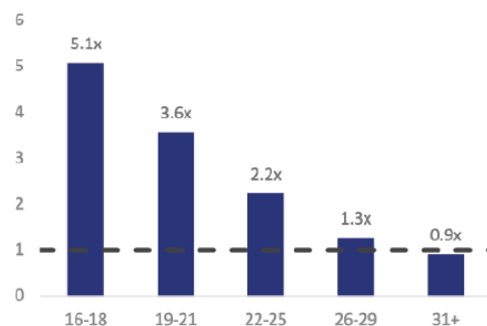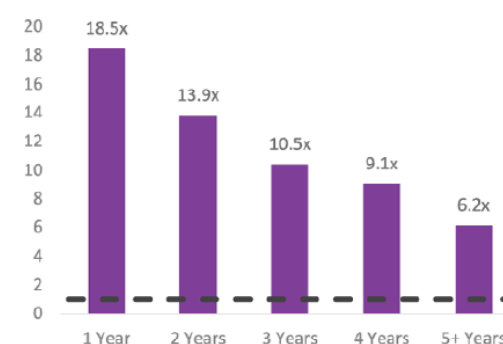
Intergenerational OOHC

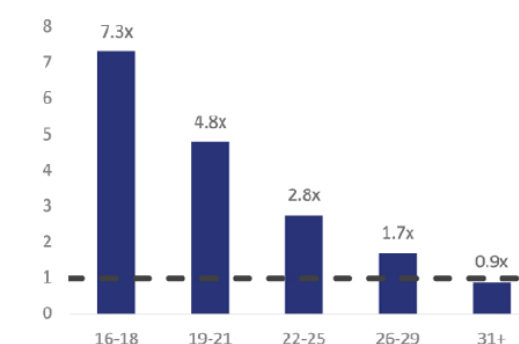Time since the mother last interacted with child protection services

Time since the mother last interacted with mental health services

Time since the mother last interacted with justice services

Age of the mother at birth (relative to age 30)

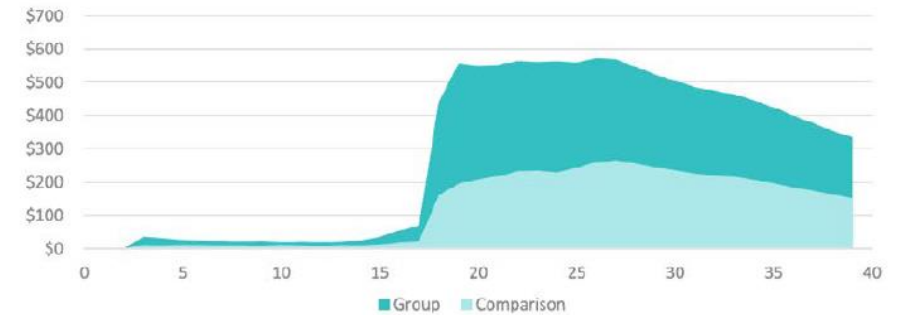# Example pathways – annual estimated future cost for a typical 2 year old
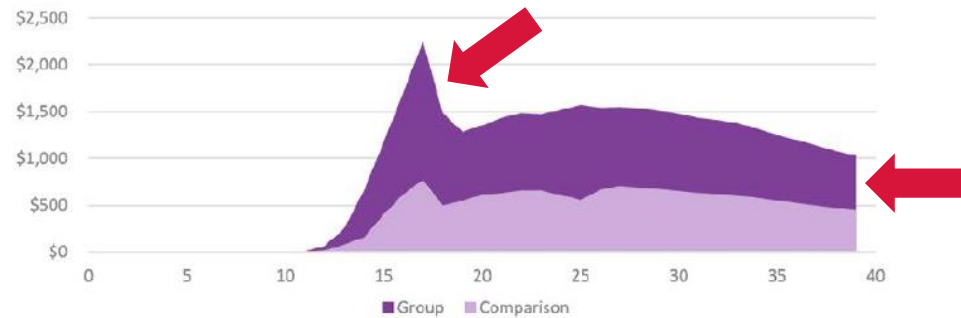
Note: Dollar values are from the FFO 2018 Insights Report and are expressed in 2017$.

Case Study Demonstration
(Stages 3 & 5)

Using the Forecasting Future Outcomes model for the Investment Approach Stages 3 and 5

Cohorts are defined using program eligibility criteria

Scenarios are defined using measure program outcomes

Baseline projection is run for each program

Scenarios are run and compared against baseline to calculate avoided costs

Communities and Justice

Introduction to
Functional Family Therapy–Child Welfare (FFT-CW)

- Functional Family Therapy – Child Welfare (FFT-CW) is targeted to families and involves a series of therapy sessions that allow all members of the family to participate.

- The program's main aim is to keep children and young people, aged 0-17 years, in their existing homes where possible, rather than placing children in out-of-home care.

- Provided over 3-6 months, FFT-CW consists of five modules: 1. Engagement, 2. Motivation, 3. Relational Assessment, 4. Behaviour Change and 5. Generalisation.

- The program focusses on providing support to children and young people and their families facing a variety of social issues including criminal/justice issues as well as child welfare issues.

- Although FFT is a family focused service, the main outcome of interest is a child protection indicator. The analysis therefore focusses on the outcomes of the child rather than the family.
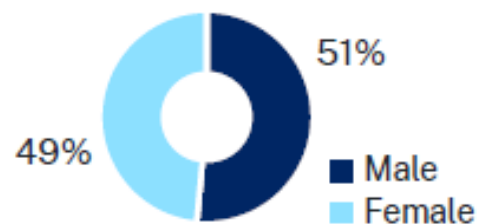
Creation of FFT-CW Target Group

Eligibility Criterion	Treatment applied in the Forecasting Future Outcomes model
1. Involvement with Child Protection and living at home	✔ Safety and Risk Assessment within last two quarters
2. Involvement with out-of-home care and about to be restored	✔ In out-of-home care in June 2019 but not in out-of-home care as at the end of the quarter
3. Involvement with pre-natal referrals to the program, unallocated warm referrals to the program or referrals to the program external to the NSW Department of Communities and Justice	✖
4. Family with caregivers who have cognitive delay	✖
5. Is not involved with a sexual abuse referral	✔
6. Is not involved with suicidal ideation	✖
7. Is not involved in Parental Responsibility to the Minister (PRM) referrals when they meet certain criteria	✖
8. Is not involved with other programs e.g. Brighter Futures, Youth Hope, IFP, IFBS, PRM when certain criteria is met	✖

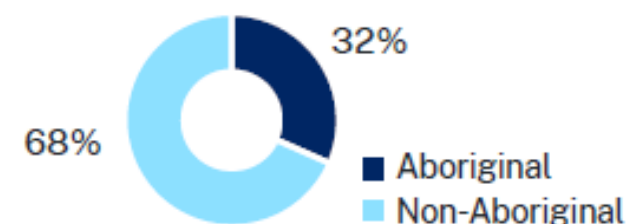# Demographics of the FFT-CW Target Group

Number in group
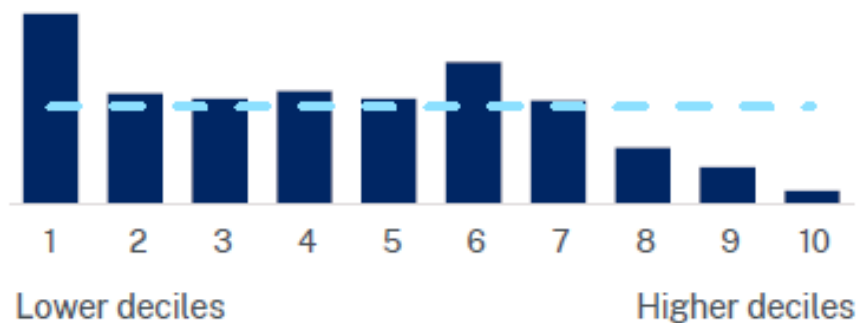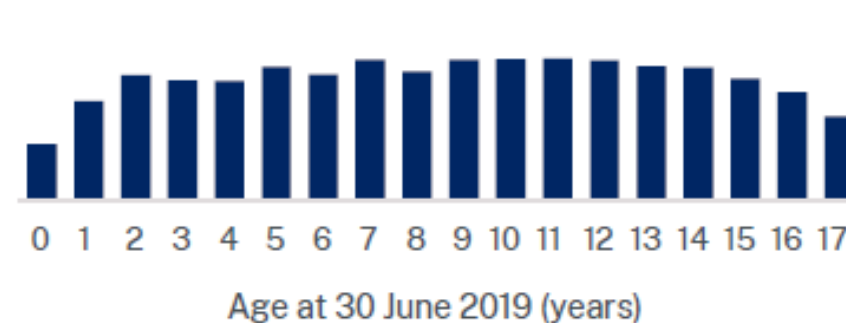
10,553
(0.45% of NSW born population)

Sex

51% Male
49% Female

Aboriginal

32% Aboriginal
68% Non-Aboriginal

Distribution of socio-economic decile at birth

1 2 3 4 5 6 7 8 9 10
Lower deciles .... Higher deciles

Distribution of age at 30 June 2019

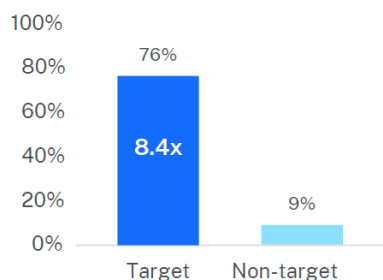0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
Age at 30 June 2019 (years)

Baseline expected future outcomes:
Functional Family Therapy–Child Welfare (FFT-CW)

CHILD PROTECTION
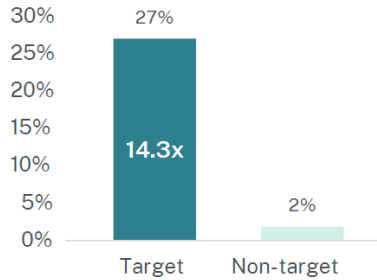Proportion expected to be reported at Risk of Significant Harm in future

Target: 76% (8.4x)
Non-target: 9%

CHILD PROTECTION
Proportion expected to have an out-of-home care placement in future

Target: 28% (194.3x)
Non-target: 0%
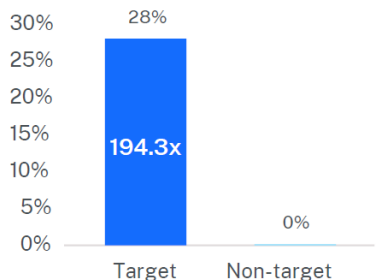
HOUSING
Proportion expected to use public housing as an adult

Target: 27% (14.3x)
Non-target: 2%

JUSTICE
Proportion expected to be in custody in future

Target: 21% (11.8x)
Non-target: 2%
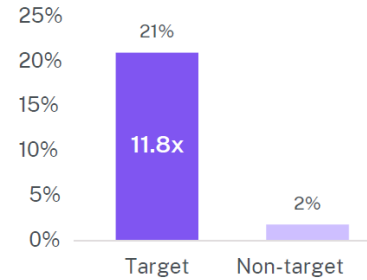
CHILD PROTECTION
Average expected years in out-of-home care

Target: 1.66 (270x)
Non-target: 0.01
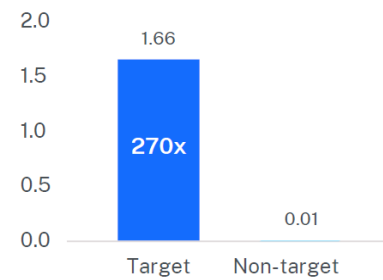
CHILD PROTECTION
Proportion of females whose children are expected to require out-of-home care

Target: 3.2% (36.9x)
Non-target: 0.1%
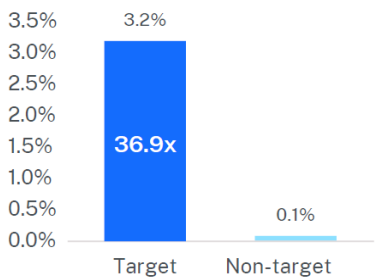
EDUCATION
Proportion expected to be suspended from school in future

Target: 48% (4.4x)
Non-target: 11%
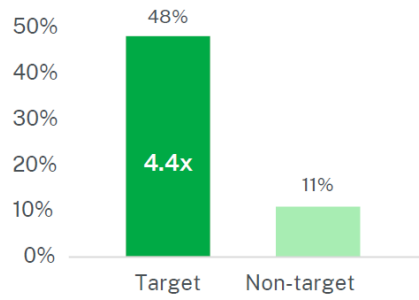
EDUCATION
Proportion expected to complete the HSC

Target: 32% (0.5x)
Non-target: 69%
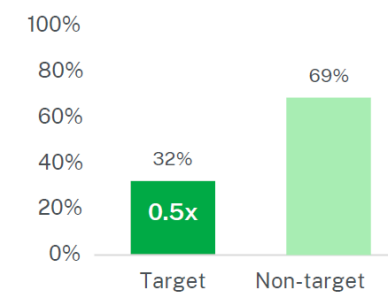
The target group is the cohort of people from the general population eligible for the program; the non-target group is the complement of the population highlighting the extent of disadvantage experienced by the target group. These are not treatment and counterfactual groups. Analysis of the target population enables us to better understand the profile and vulnerabilities of a cohort and the types of interventions that would best meet their needs.

Scenarios definitions for Functional Family Therapy–Child Welfare (FFT-CW)

Scenario 1 – an assumed 12.1% reduction in out-of-home care entries and 4.6% reduction in Risk of Significant Harm reports plus a 12.1% reduction (same as out-of-home care) in parental risk factors over 10 quarters.

- Based on 2020 NSW Evaluation by the UNSW affiliated National Drug and Alcohol Research Centre
- As a result of the short measurement period for the evaluation, we have extrapolated the effects of the program to a 10 quarter period
- FFT-CW program improves parenting and family dynamics. The scenario reduces Parental Risk Factors by the same magnitude as ROSH

Scenario 2 – Scenario 1 plus a 15% reduction in justice interactions over 10 quarters.

- 2007 evaluation report produced by the Justice Research Center in Florida USA, which reported reductions in recidivism rates amongst youths who participated in FFT
- This scenario allows us to explore potential impacts of FFT-CW that are not included in the evaluation

Estimated future cost by scenario and domain (FFT-CW)

The table provides the extract from the model outputs for the FFT-CW program. The Baseline (target group) outcomes and projected future cost (discounted at 7%) are compared with the estimated projections for the respective Scenarios based on the NSW evaluation evidence for FFT-CW. The difference is the projected liability reduction or saving attributable to the investment in the program.

Scenarios of average estimated future cost ($) by service domain

	Baseline	Scenario 1	Scenario 2	Difference (S1)	Difference (S2)	Relativity (S1)	Relativity (S2)
Income support (Centrelink)	$71,035	$70,806	$70,760	-$229	-$275	-0.3%	-0.4%
Child protection	$98,781	$85,390	$85,340	-$13,391	-$13,441	-13.6%	-13.6%
NSW Health	$28,696	$28,377	$28,222	-$319	-$475	-1.1%	-1.7%
Justice	$52,119	$51,585	$50,699	-$534	-$1,420	-1.0%	-2.7%
Medicare	$7,804	$7,778	$7,783	-$26	-$22	-0.3%	-0.3%
Education	$4,650	$4,650	$4,650	$0	$0	0.0%	0.0%
Pharmaceutical (PBS)	$3,314	$3,282	$3,279	-$33	-$35	-1.0%	-1.1%
Housing	$8,194	$8,176	$8,152	-$18	-$42	-0.2%	-0.5%
Next generation OOHC	$13,549	$13,879	$13,463	$330	-$86	2.4%	-0.6%
Total	**$288,143**	**$273,922**	**$272,346**	**-$14,220**	**-$15,796**	**-4.9%**	**-5.5%**

Expected return-on-investment by scenario (FFT-CW)

	Baseline	Scenario 1	Scenario 2
Projected average liability per person	$288,143	$273,922	$272,346
Attributable avoided costs		$14,220 (4.9%)	$15,796 (5.5%)
Investment per person		$8,500	$8,500
Projected net savings per person		$5,720	$7,296
Expected return-on-investment		1.67	1.85

- The estimated unit cost of delivering the FFT-CW program in NSW is $8,500 per participant or $17,000 per family. This is the investment that we compare to expected savings attributable to each participant in the program.

- Under Scenario 1, FFT leads to an expected liability reduction of $14,220 for every child in a family referred to the program. After deducting the cost of delivering FFT-CW of $8,500 per person, this results in a net saving of $5,720 or an expected return-on-investment of 1.67. This means that under Scenario 1, we would expect $1.67 in savings for every $1 invested in FFT-CW.

- Under Scenario 2 the projected net savings are greater at $7,296 per person or an expected return-on-investment of 1.85. When considering the NSW Government's investment in FFT as a whole of $17 million per annum, this is expected to lead to a liability reduction of between $28.4 million and $31.5 million.

- After deducting the cost of investment over two years FFT is expected to lead to a net saving of between $11 million and $15 million.

Expected return-on-investment by scenario (FFT-CW)

Case study	Investment per person	Lower range projected savings per person	Upper range projected savings per person	Lower expected ROI	Midpoint expected ROI	Upper expected ROI
FFT-CW	$8,500	$14,220	$15,796	1.67	1.76	1.85
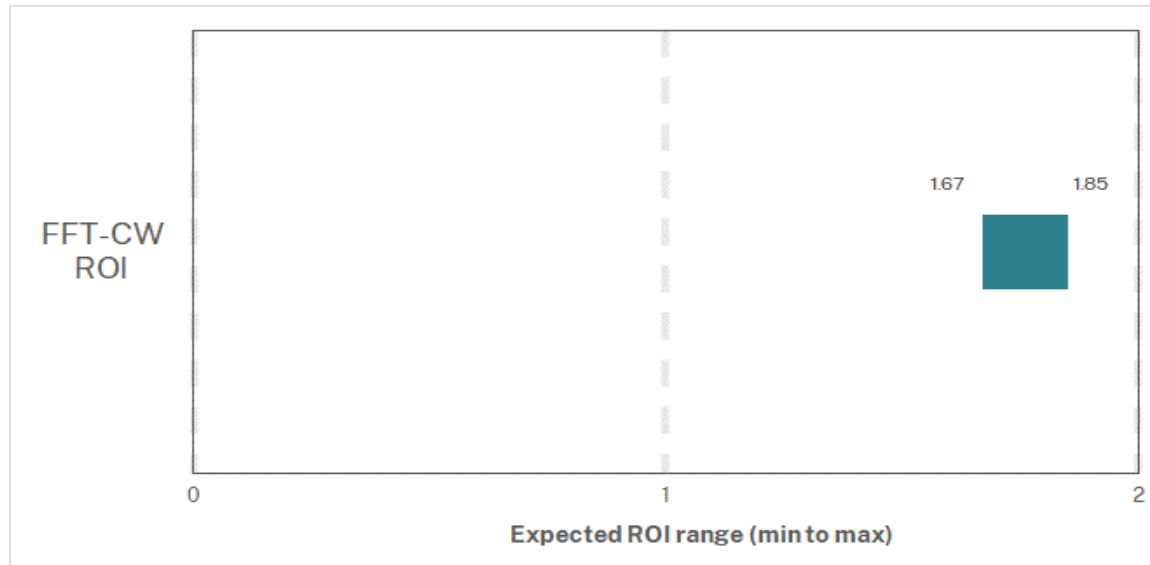
- The case studies highlight the differences in returns across programs. Using the mid-point expected return-on-investment, a $1 investment in FFT-CW should yield cost savings to government of $1.76.

- We estimate that the NSW Government's existing investment in FFT-CW over the next two years will not only cover its costs, but lead to net avoided costs of between $11 million and $15 million.

FFT-CW ROI

1.67   1.85

Expected ROI range (min to max)

Wrap Up

The NSW Investment Approach aligns effective programs with financial benefits

Effective Programs

- Improve people's lives
- Reduce need for future services
- Generate return on investment that saves government money

The NSW Investment Approach helps the wellbeing of children and families in NSW by

- projecting their future service use and costs to government
- assessing which programs are most effective
- putting resources where the greatest improvement to people's lives will be

NSW is now in a completely new place compared to before, because we can now quantify the performance of human services programs in terms of their impact on people's lives and on costs to government, which are generally aligned.

Questions ?

Next Steps

- Complete *Stage 5* for existing NSW Government programs (underway)

- Link the 2022 Human Services Dataset with the latest Commonwealth data (underway)

  - working alongside the Centre for Health Record Linkage and the Australian Bureau of Statistics

- Update the Forecasting Future Outcomes model with 2022 data:

  - the latest data will likely allow more outcome sub-models to be calibrated and used

- *Stage 4* evaluations using the Standardised Evaluation Analysis (StEvAn) (underway)

FFO Model Available Outcomes

FFO Model Number	Domain/Sector	Modelled Outcome
1	Child protection	Concern report
2	Child protection	Primary reported issue of a concern report
3	Child protection	ROSH report
4	Child protection	SARA/SAS2 investigation
5	Child protection	Primary assessed SARA/SAS2 issue
6	Child protection	In OOHC
7	Child protection	In oohc at the end of the quarter
8	Child protection	OOHC placement type at entry
9	Child protection	OOHC placement change
10	Child protection	OOHC placement type at end of quarter
11	Child protection	Times child changed OOHC placement
12	Child protection	Child of CYP in OOHC

FFO Model Available Outcomes

FFO Model Number	Domain/Sector	Modelled Outcome
13	Child protection	Days in OOHC
14	Child protection	Number of children of CYP in OOHC
15	Justice	Police caution
16	Justice	Youth conference
17	Justice	Finalised court appearance
18	Justice	Convicted for drug and alcohol offence
19	Justice	Enters custody in the quarter
20	Justice	In custody at the end of the quarter, given they just entered custody
21	Justice	In custody at the end of the quarter, given they were in custody at the end of the previous quarter
22	Justice	Community supervision
23	Justice	Legal aid services

FFO Model Available Outcomes

FFO Model Number	Domain/Sector	Modelled Outcome
24	Justice	Number of finalised court appearances
25	Justice	Number of police cautions
26	Justice	Number of youth conferences
27	Justice	Days in custody
28	Health	Ambulance patient contact
29	Health	Number of ambulance patient contacts
30	Health	Emergency department presentation
31	Health	Number of emergency department presentations
32	Health	Public hospital admission
33	Health	Private hospital admission
34	Health	Days in public hospital
35	Health	Days in private hospital

FFO Model Available Outcomes

FFO Model Number	Domain/Sector	Modelled Outcome
36	Health	Admission to hospital for drug and alcohol related event
37	Health	Admission to hospital for mental health related event
38	Health	Mental health ambulatory services
39	Health	Days receiving mental health ambulatory services
40	Health	Opioid Treatment Program
41	Health	Other drug and alcohol program
42	Health	Female gives birth
43	Health	Number of children given birth to
44	Housing	Homelessness services
45	Housing	Private rental assistance
46	Housing	In public housing, given they were not in public housing in the previous quarter (child model)

FFO Model Available Outcomes

FFO Model Number	Domain/Sector	Modelled Outcome
47	Housing	In public housing, given they were not in public housing in the previous quarter (adult model)
48	Housing	In public housing, given they were in public housing in the previous quarter (child model)
49	Housing	In public housing, given they were in public housing in the previous quarter (adult model)
50	Housing	Days in public housing
51	Education	Minimum NAPLAN Year 3 band
52	Education	Minimum NAPLAN Year 7 band
53	Education	NAPLAN Year 3 completion
54	Education	NAPLAN Year 7 completion
55	Education	HSC completion
56	Education	Unexpected government school move

FFO Model Available Outcomes

FFO Model Number	Domain/Sector	Modelled Outcome
57	Education	School suspension in the quarter
58	Education	Number of unexpected government school moves
59	Parental	At least one parent had proven AOD related offence or AOD hospital admission
60	Parental	At least one parent was treated for mental health in hospital or ambulatory services
61	Parental	At least one parent had a domestic violence related offence or was a victim of domestic violence
62	Parental	At least one parent interacted with justice sector
63	Parental	At least one parent in custody
64	Welfare	Cost of welfare in the year
65	Welfare	Receipt of parenting single payment in the year
66	MBS	Use of MBS in the year

FFO Model Available Outcomes

FFO Model Number	Domain/Sector	Modelled Outcome
67	MBS	Cost of MBS in the year conditional on some use
68	PBS	Cost of PBS in the year