Australian Government

Department of Social Services

Priority Investment Approach
## Actuarial Model and Data, and the Try Test and Learn Fund

September 2017

Content

- Brief overview of policy context and current status

- Priority Investment Approach – underpinning data and actuarial model

- Using the model to help evaluate current programs and initiatives
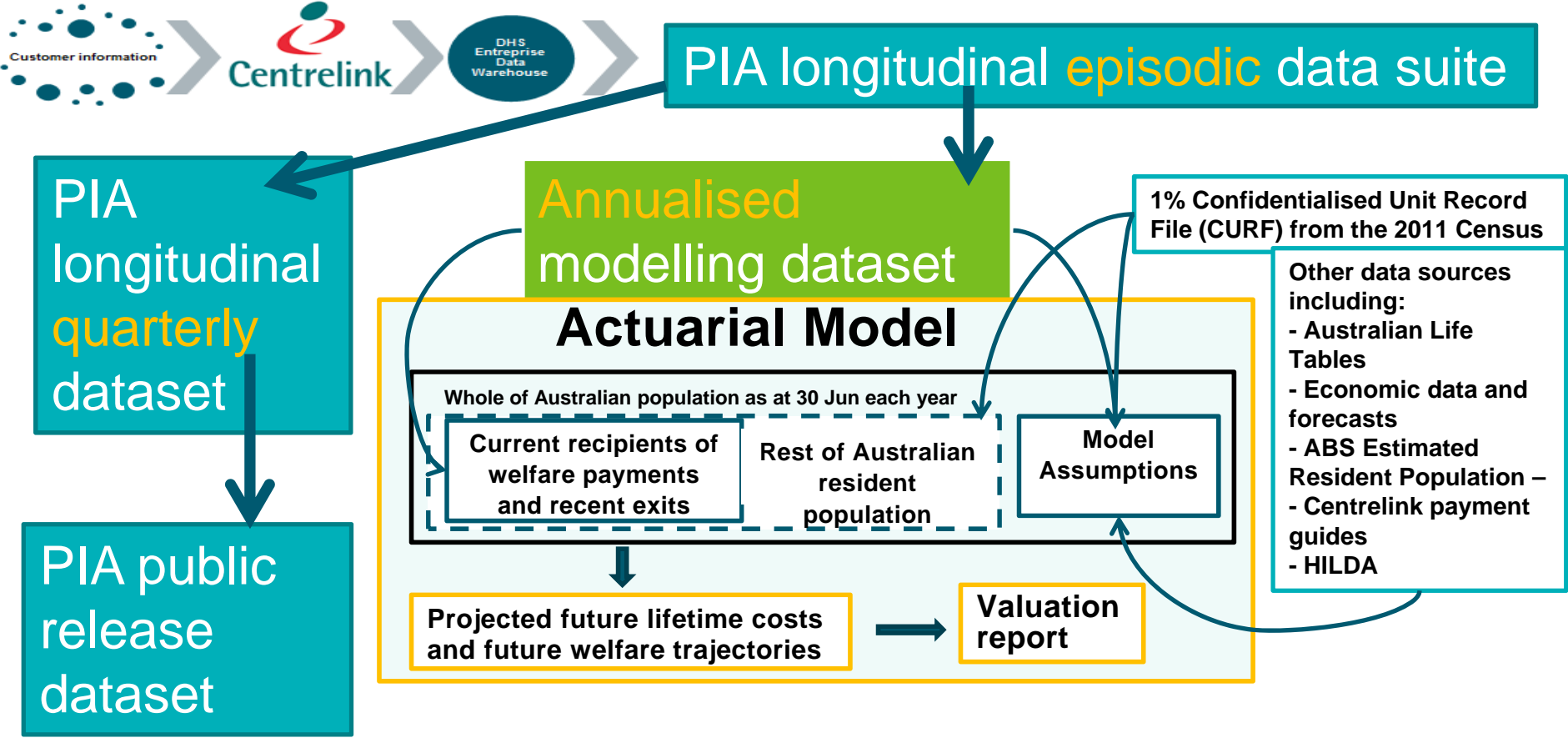
- Try, Test and Learn Fund

Brief overview of policy context and current status

- Review of Australia's Welfare System
  - A New System for Better Employment and Social Outcomes (McClure Report)

- Completed 2015 baseline valuation

- Completed 2016 valuation
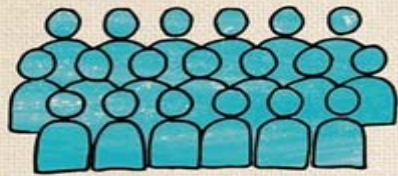
- Work has commenced on the 2017 valuation
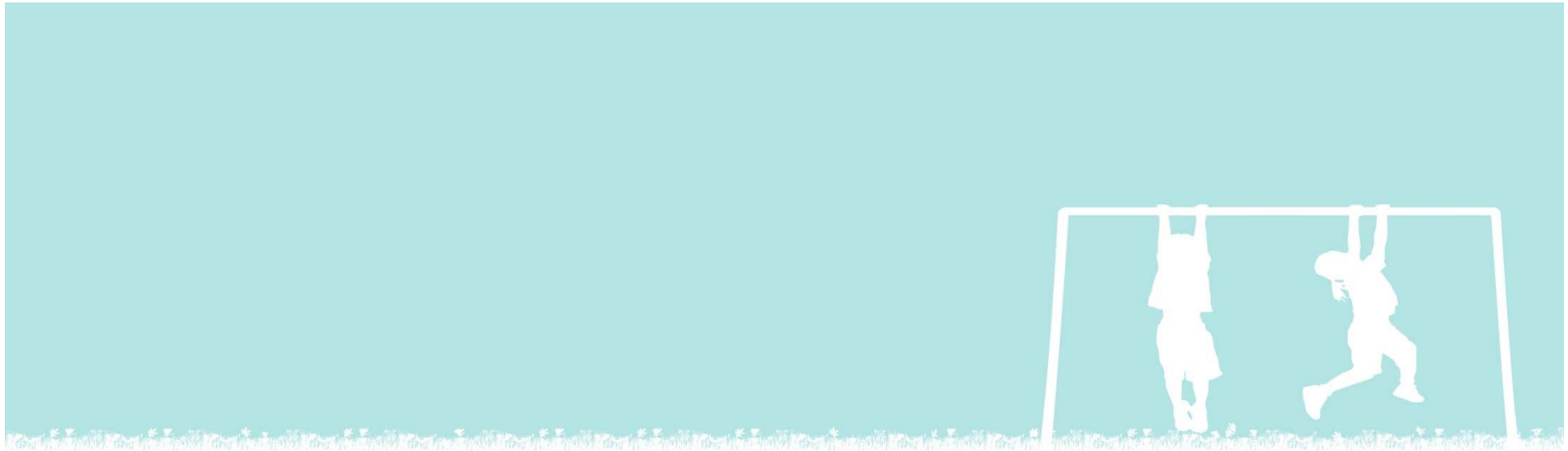
The Priority Investment Approach Underpinning Data & Actuarial Model

Overview of the PIA – How the data and model fits together

PIA longitudinal episodic data suite

PIA longitudinal quarterly dataset

PIA public release dataset

Annualised modelling dataset

1% Confidentialised Unit Record File (CURF) from the 2011 Census

Other data sources including:
- Australian Life Tables
- Economic data and forecasts
- ABS Estimated Resident Population –
- Centrelink payment guides
- HILDA

Actuarial Model

Whole of Australian population as at 30 Jun each year

Current recipients of welfare payments and recent exits

Rest of Australian resident population

Model Assumptions

Projected future lifetime costs and future welfare trajectories → Valuation report

THE ACTUARIAL MODEL

THE ELIGIBLE AUSTRALIAN POPULATION HAS ACCESS TO SOCIAL SECURITY

a. People who *currently use* social security and are in the system

Characteristics
GENDER
AGE
PARTNERING
FAMILY CIRCUMSTANCES
DISABILITY
EDUCATION

b. People who have never been in the system but *have potential* to be in the system

IT PREDICTS THE LIFETIME COSTS FOR EACH COHORT

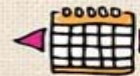IT IS A FOUNDATION FOR FUTURE VALUATIONS AND FOR POLICY DESIGN

The Baseline Valuation

IT WILL MAKE PROJECTIONS AS TO WHO WILL COME INTO THE SYSTEM, WHO WILL STAY AND WHO WILL LEAVE THE SYSTEM BASED ON EVIDENCE
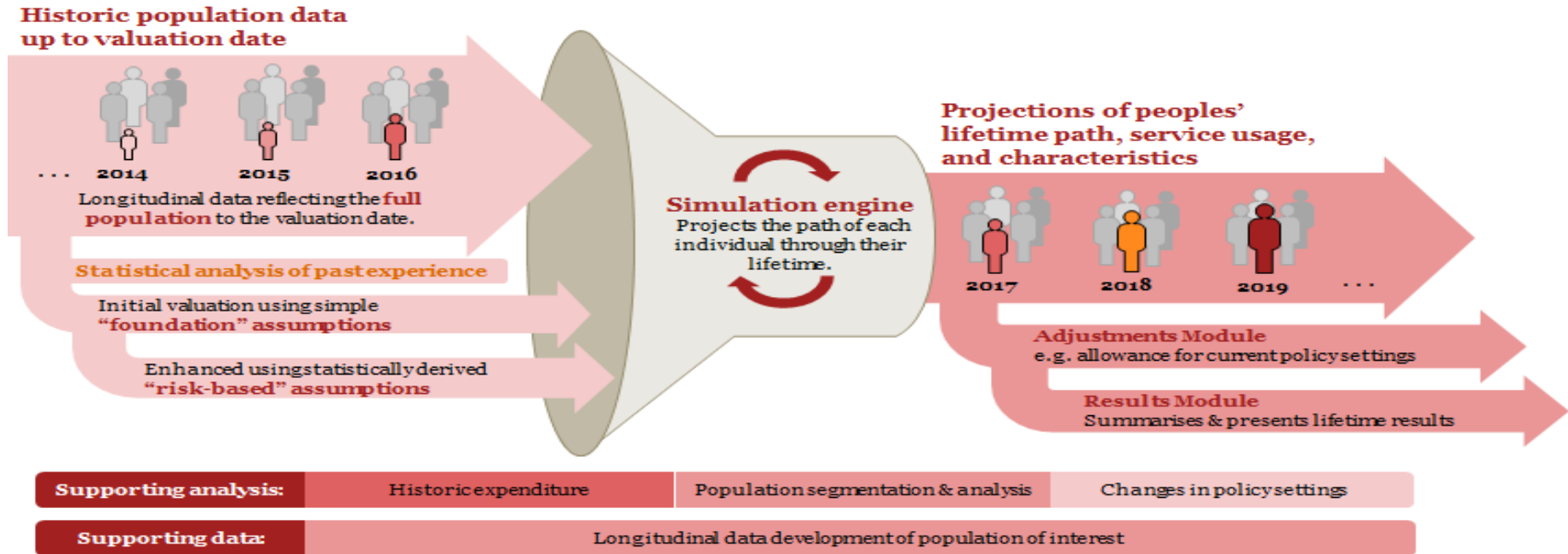
IT WILL MONITOR AND MEASURE THE IMPACT OF INTERVENTIONS
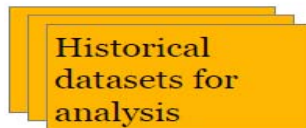
THE REVALUATION WILL
- EXAMINE THE EXPERIENCE OVER THE PAST YEAR
- IDENTIFY NEW PRIORITIES FOR THE NEXT YEAR

Projection model overview

Historic population data up to valuation date

... 2014   2015   2016

Longitudinal data reflecting the full population to the valuation date.

Statistical analysis of past experience

Initial valuation using simple "foundation" assumptions

Enhanced using statistically derived "risk-based" assumptions

Simulation engine
Projects the path of each individual through their lifetime.

Projections of peoples' lifetime path, service usage, and characteristics

2017   2018   2019   ...

Adjustments Module
e.g. allowance for current policy settings

Results Module
Summarises & presents lifetime results

Supporting analysis:	Historic expenditure	Population segmentation & analysis	Changes in policy settings

Supporting data:	Longitudinal data development of population of interest

The model process

1. Data

Historical datasets for analysis

2. Inputs

Model population

Assumption sets:
- Demographic
- Class
- Class characteristic variables
- Utilisation
- Size
- Policy adjustments
- Economic adjustments
- Mortality
- Indexation & discounting

3. Model

Population at year t

Simulate individual through year

Update population at year t+1

4. Outputs

Simulation output

Projection model – simulation engine

Starting population
For each person:
- What are their current demographic characteristics? (age, gender, indigenous status, etc.)
- What is their current and past interaction with the system? (age at entry to system, recent payments, etc.)

Starting population at valuation date (t)

Ageing

Mortality

Level of highest educational attainment

Simulate demographics and life circumstances

Children & partnering status

Update step
Update data items to reflect position at the end of the year (which then becomes the start of the next year)
E.g. update duration in system

Update population dataset to year t+1

Annual projection cycle

Simulate class or wellbeing

Class / wellbeing
Does the person's class or wellbeing/vulnerability change during the year?

Simulate payment or service $ amount

Simulate agency interactions (utilisation)

Agency interaction
How does person interact with the agency and which services do they utilise?

Service/payment category amounts
For each service or payment category the person utilises: What amount do they receive each year?

Forward looking adjustments ensure that the model reflects the current economic, legislative & political environment

Variables considered by the model (2016)

Modelling variables – 2016 Valuation

- Age

- Gender

- Welfare class

- Previous welfare class

- Partner status

- Number of dependent children

- Age of dependent children

- Highest level of education attained

- Duration in welfare class / welfare system

- Age entered welfare system (Age Pension only)

- Indigenous status

- Previous welfare utilisation

- Income Support payment type (Working Age, Studying and Parenting Classes)

medical condition categories

- Employment earnings indicator

- Place of birth

- Relationship of carer to care recipient (Carer Payment only)

- Number of care recipients (Carer Allowance only)

- Age of care recipients (Carer Payment only)
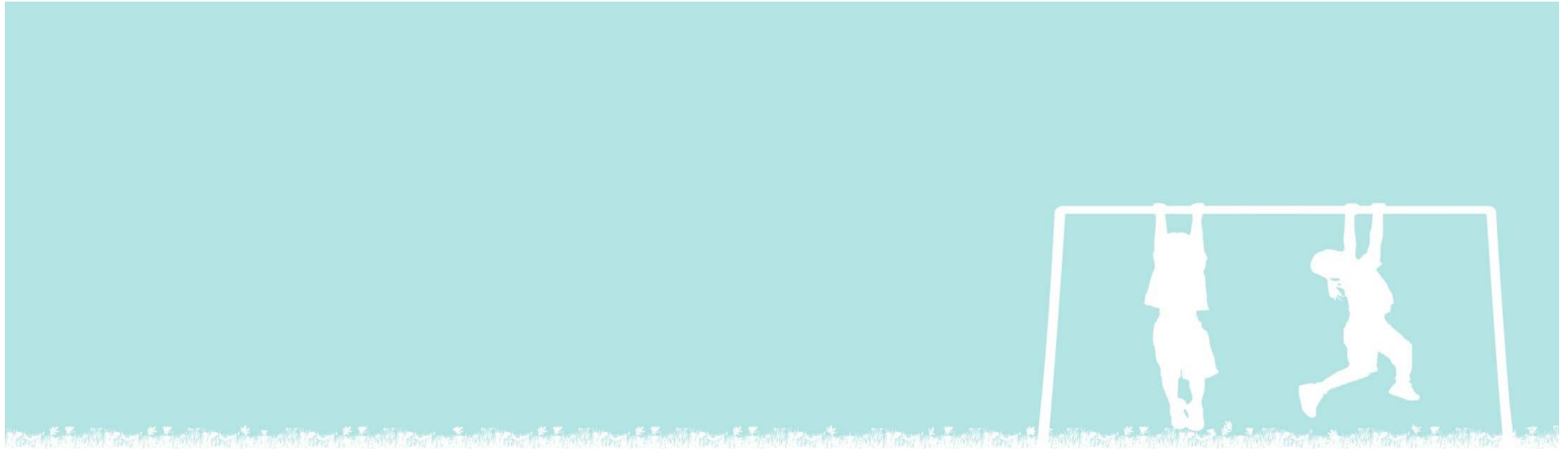
Using the model to help evaluate current programs and initiatives

Evaluating programs and interventions

Step 1. Using historical admin data to define the population of interest

Step 2. Running the actuarial simulation model on the population of interest to produce average future lifetime cost (LTC) estimates and future welfare pathway predictions.

Step 3. Running the actuarial simulation model on an appropriate reference group to produce average future LTC estimates.
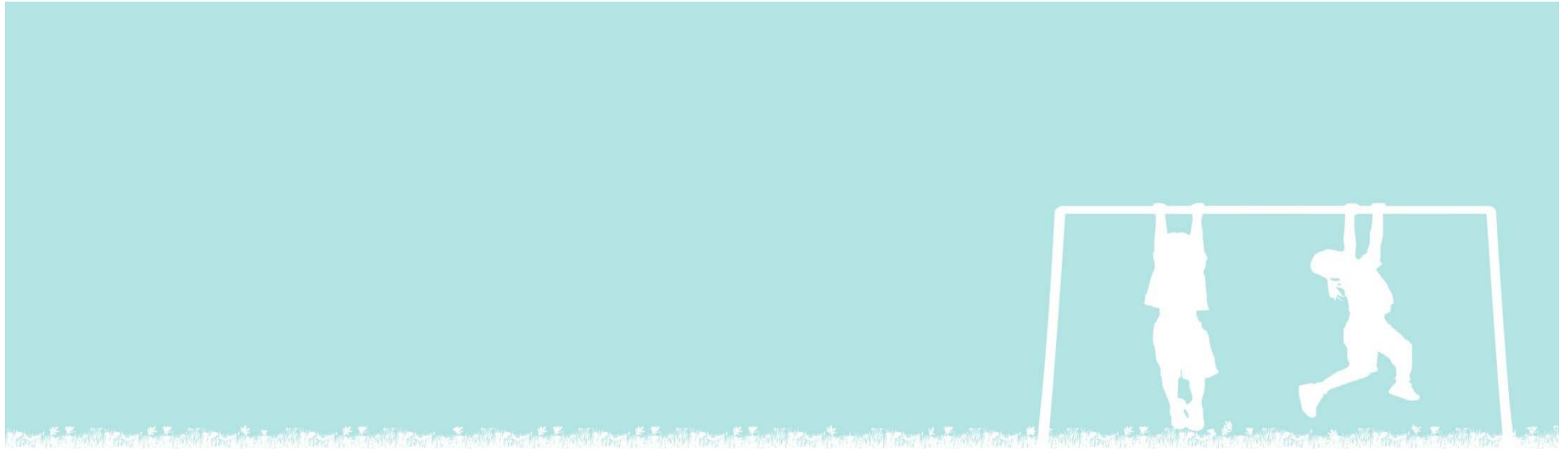
Evaluating programs and interventions: ParentsNext program

Cohort: 16,494 Parenting Payment recipients who commenced ParentsNext between April 2016 and June 2017

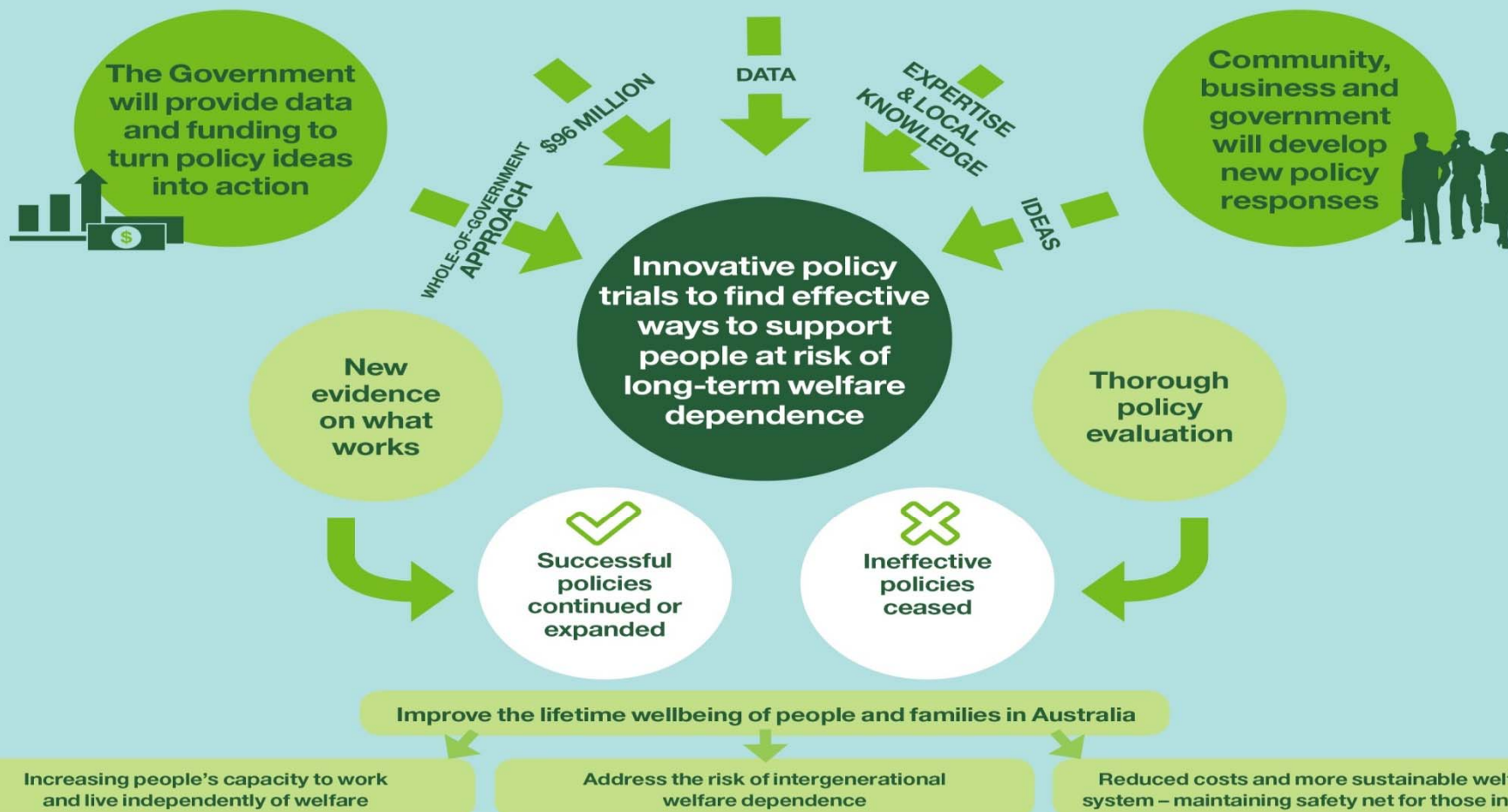**Average future lifetime costs: ParentsNext cohort vs. reference groups**
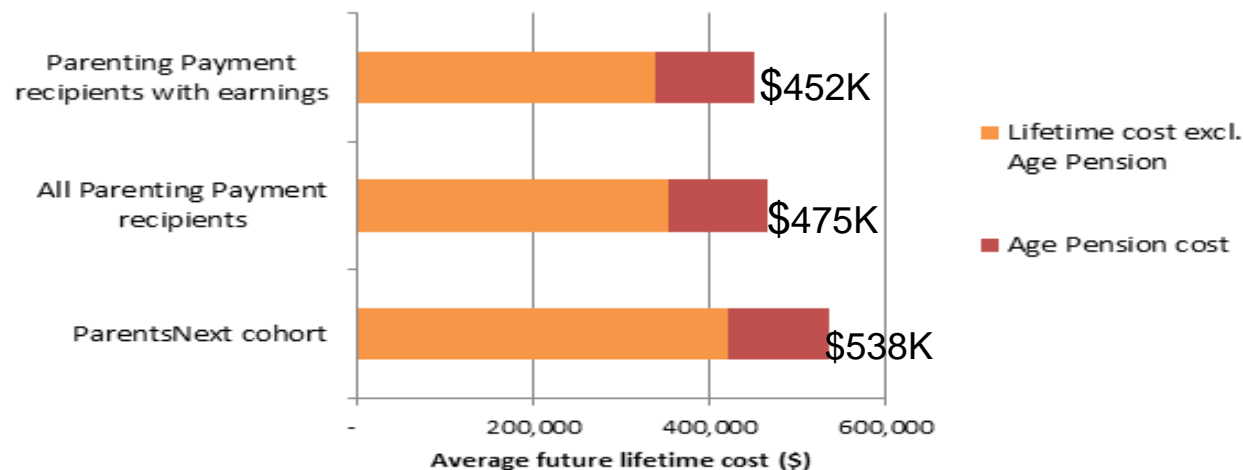
The higher lifetime costs of ParentsNext cohort suggests that they are more disadvantaged compared to the wider Parenting Payment recipients group.

Try, Test and Learn Fund

Try, Test and Learn Fund

The Government will provide data and funding to turn policy ideas into action

$96 MILLION

DATA

EXPERTISE & LOCAL KNOWLEDGE

WHOLE-OF-GOVERNMENT APPROACH

IDEAS

Community, business and government will develop new policy responses

Innovative policy trials to find effective ways to support people at risk of long-term welfare dependence

New evidence on what works

Thorough policy evaluation

Successful policies continued or expanded

Ineffective policies ceased

Improve the lifetime wellbeing of people and families in Australia

Increasing people's capacity to work and live independently of welfare

Address the risk of intergenerational welfare dependence

Reduced costs and more sustainable welfare system – maintaining safety net for those in need

Initial priority groups

Young parents: young people aged under 25 who started receiving Parenting Payment at age 18 or under and who are still receiving an income support payment.

Young carers: young people aged under 25 who are in receipt of Carer Payment or at immediate risk of going onto the payment.

Students at risk of unemployment: young people aged under 25 who have moved, or are at risk of moving, from study (post-secondary or tertiary and been in receipt or receiving a student payment) to an extended period on an unemployment payment.

How the Try, Test and Learn Fund works

The four key phases of a tranche of the Try, Test and Learn Fund

PHASE 1 — Ideas generation

PHASE 2 — Co-development

PHASE 3 — Funding

PHASE 4 — Delivery and Evaluation

Outcomes of Tranche 1 of the Try, Test and Learn Fund

- Nearly 400 ideas were submitted to Tranche 1 of the Fund from the community sector, business, academics and individuals.

- A shortlist of submitted ideas was co-developed into robust project proposals in a process facilitated by independent co-design experts and involving idea proponents and other relevant experts, with support from DSS.

- We anticipate funding approval soon for a number of Tranche 1 projects, with roll out expected from late 2017.

The importance of evaluation and co-design

- Interventions introduced using a 'try, test and learn' approach.

- Developing an evaluation/evidence framework is a key element of the co-design process with end users and other key stakeholders.

- The actuarial analysis will form an important component in determining the effectiveness of interventions and policy settings will be refined on the basis of robust and ongoing evaluation.

- Interventions are evaluated to determine "what works for whom" and adjusted, scaled or ceased accordingly.

- Interventions could be piloted and refined on a smaller-scale before being scaled to a larger or national level if they are proven effective.

Future tranches of the Try, Test and Learn Fund

- Work is underway to develop a framework for systematically identifying future groups of interest, utilising the Priority Investment Approach model and data.

- Groups of interest will be identified through statistical modelling, using the PIA data and actuarial model outputs.

- Qualitative policy considerations will be used to further refine deliberations on groups identified through this quantitative process.

- A key consideration in selecting groups will be the historical and projected future welfare dependency of individuals within each group, and the range of possible future welfare pathways.

- Targeted trials aimed at assisting members of the newly-identified groups will be developed through future tranches of the Fund.

Any Questions?

Thank you