

How the Actuarial Profession is helping New Zealand's most Vulnerable People

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NZ Society of Actuaries

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Disclaimers & Acknowledgements

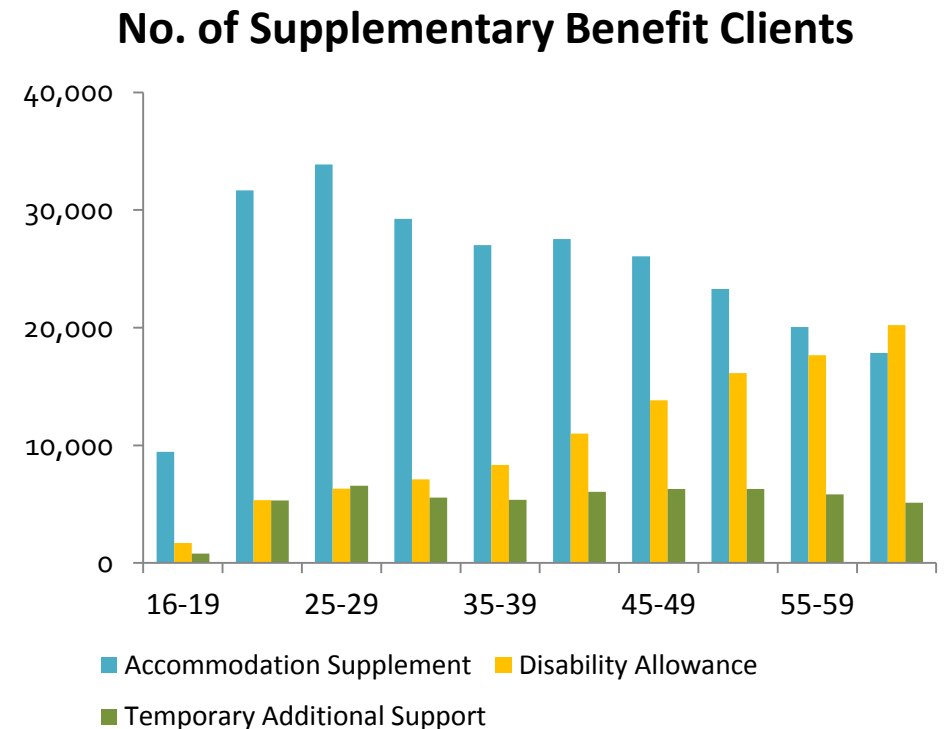
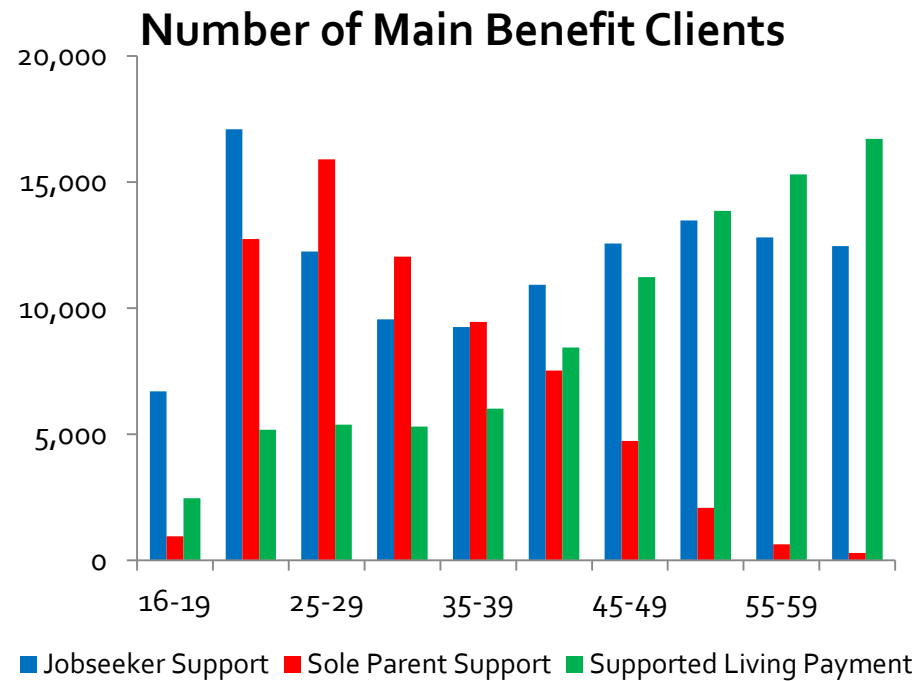
With regards to the presentation pack and verbal presentation thereof:

1. The programmes described are work in progress and so the information should not be regarded as final.
2. A number of organisations are involved in the work including non-government organisations. In particular:
 - a. Benefit system and social housing valuations – Taylor Fry
 - b. Justice valuation – PwC
 - c. Vulnerable children feasibility assessment – Ernst & Young
3. Any opinions represented in this presentation pack or expressed verbally during the presentation are those of the authors alone.

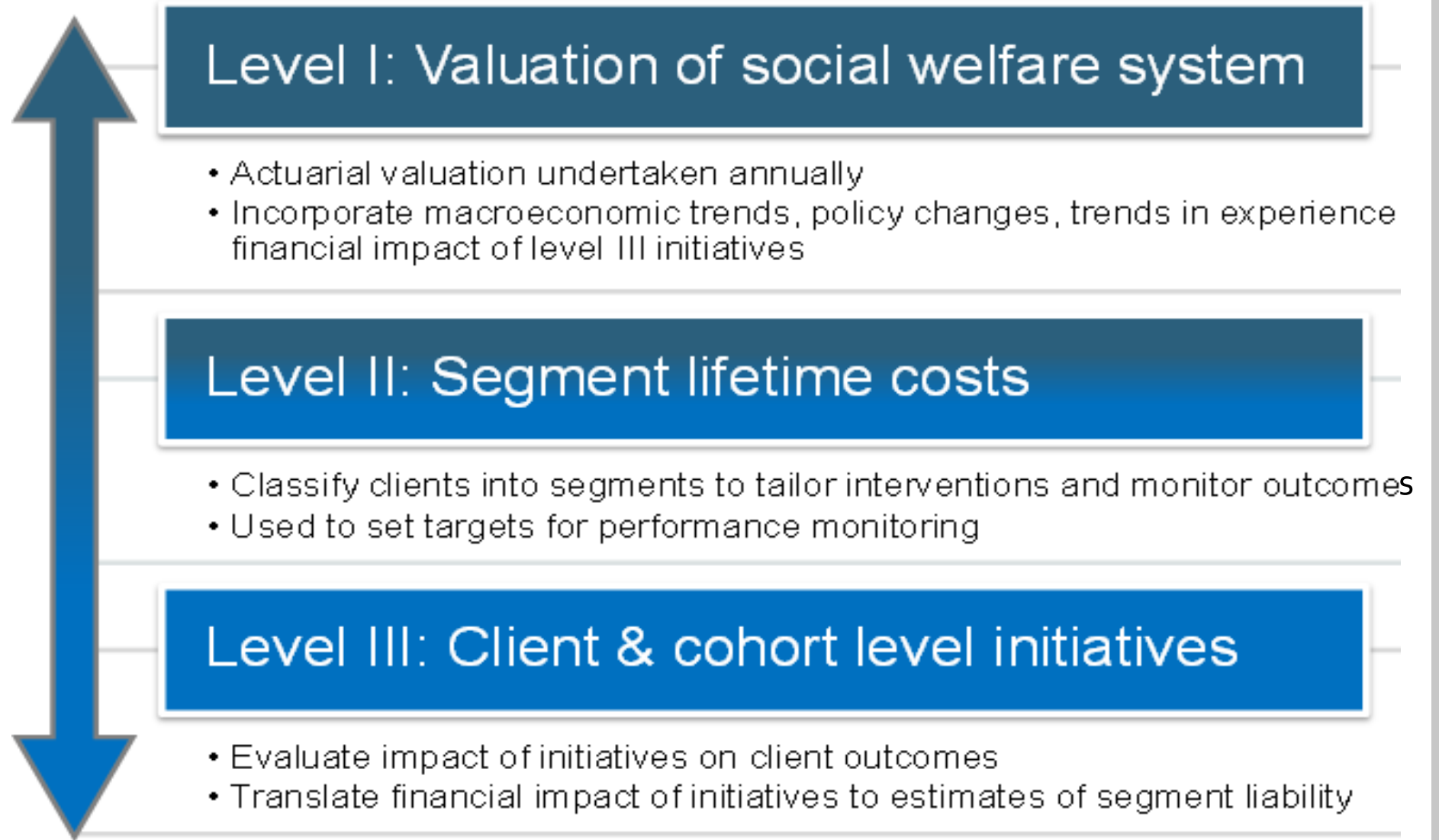
Recap on Benefit System Actuarial Work – Basics

The benefit system provides financial support in the form of:

- Main benefits to people who are unemployed or unable to work due to health conditions – Approx. 280,000 people
- Supplementary benefits to top-up income and help meet specific costs such as accommodation and childcare – Approx. 650,000 people (including over 65's)



Recap on Benefit System Actuarial Work – Investment Approach Framework



Source: Taylor Fry

Note: Current client liability definition relates to people who have received a benefit in the year to the valuation date

Benefit System Actuarial Work – Level I - Improved Understanding of Drivers of Liability

Child, Youth & Family (CYF) and Corrections data were used for the first time in 2015 to inform the benefit system valuation.



- CYF covers Care & Protection of children and Youth Justice
- Over a third of 16-25 year old benefit system clients have some form of CYF history
- Their average liability is over 40% higher than those without CYF history and collectively they represent 47% of the total 16-25 year old liability.
- About a quarter of the benefit system population have had a criminal conviction in the past.
- Clients with criminal convictions have a 40% higher average liability than those who don't.

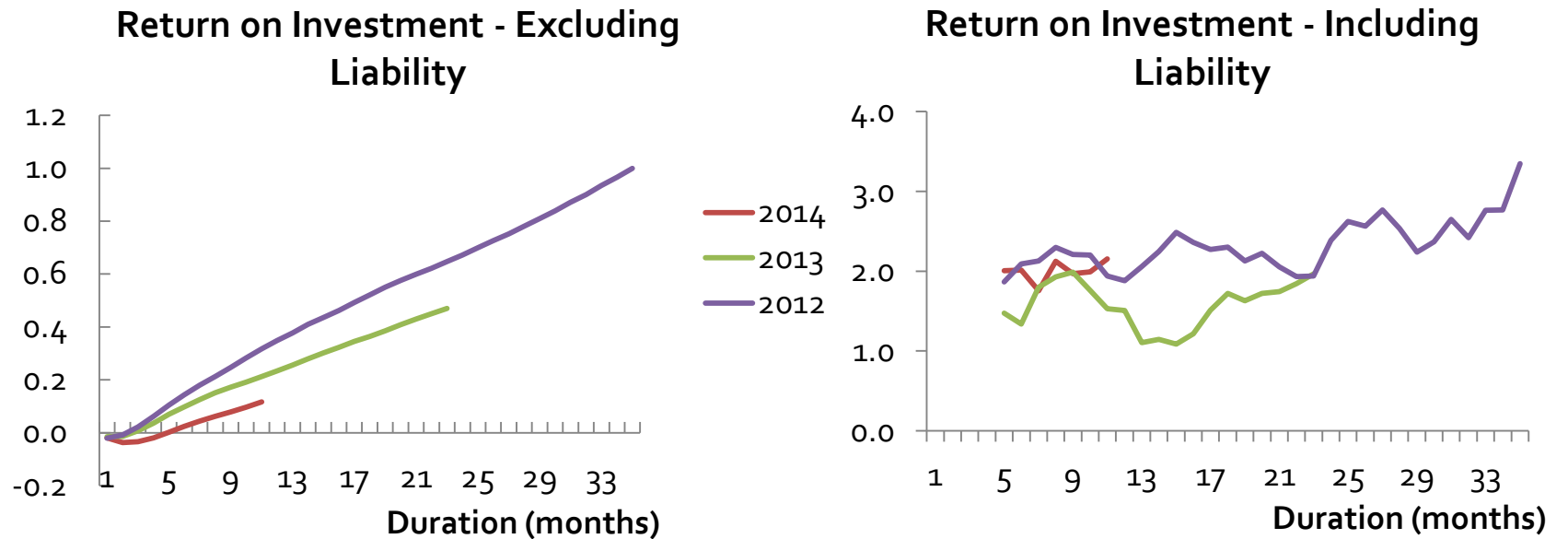
There is a growing appreciation that substantially reducing people's risk of poor outcomes in adulthood, including benefit dependency, requires a focus on their childhood experience and families.

Benefit System Actuarial Work – Level III – Return on Investment

Valuation insights have informed the design of a number of service and product trials. For example, the In-work support trial for clients with a history of churning in and out of the benefit system.

Traditional Return on Investment approaches (benefits and costs to date) are often too slow to indicate the long-term value of a trial service or product.

Incorporating estimates of future benefit system costs (liability) into the methodology has allowed us to draw conclusions sooner.

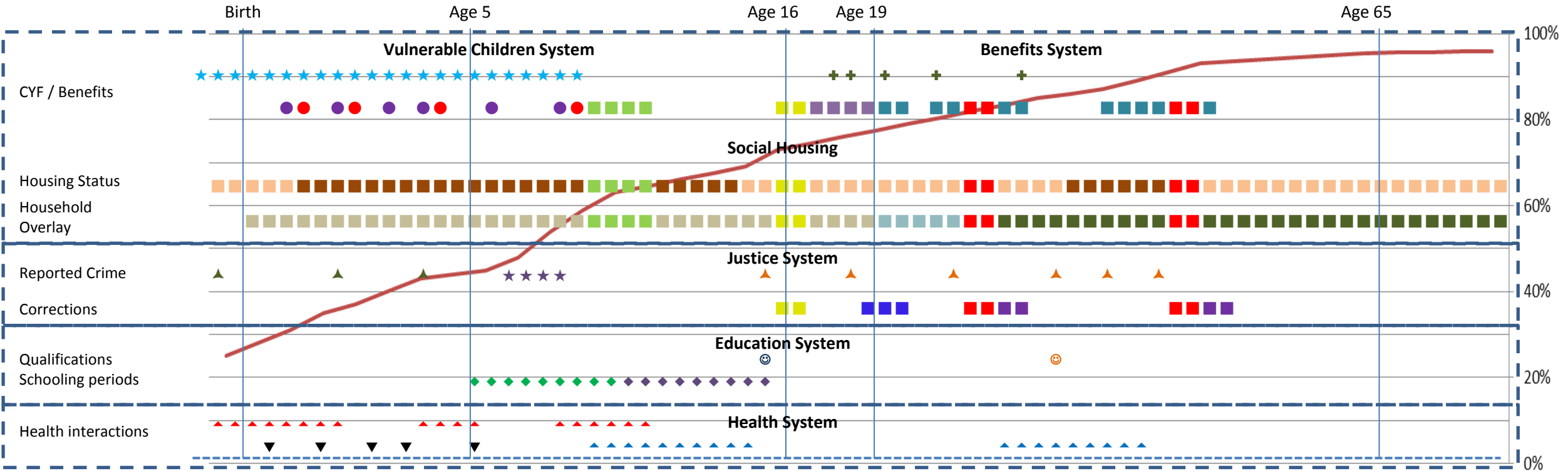


Social Investment & Big Data

Social Investment is about improving the lives of New Zealanders by applying rigorous and evidenced-base investment practices to social services.

"Our goal is to shift from social spending to social investment. Less money on paying benefit or locking people up. More money to invest in social services which improve people's lives in the long-term.....the way we have designed our social service system is preventing us from making a meaningful difference in the lives of people with multiple, interdependent problems"

Hon Bill English, Treasury Guest Lecture Series, 17th September 2015



- Notification to CYF ● Finding of abuse ● Spell in Care ● Youth Justice Spell
- ▼ Accident treatment ▲ Mental Health treatment
- ▲ Reported Crime - self ▲ Reported Crime-Parent ★ Parent incarcerated
- ◆ Primary Education ◆ Secondary Education 😊 NCEA L1 achieved 😊 Trade Certificate
- ★ Parent on benefit ■ In Private Housing ■ In Social Housing ■ Child - Secondary tenant
- Youth benefit spell ■ Adult benefit spell + One off Payment
- Adult – Secondary Tenant
- Community Service ■ Corrections Spell ■ Probation
- Predictive Power —

Social Sector Actuarial Work – Areas of Development

1. Social Housing Valuation
2. Justice Sector Valuation
3. Vulnerable Children's Valuation

1. Social Housing Valuation - Basics



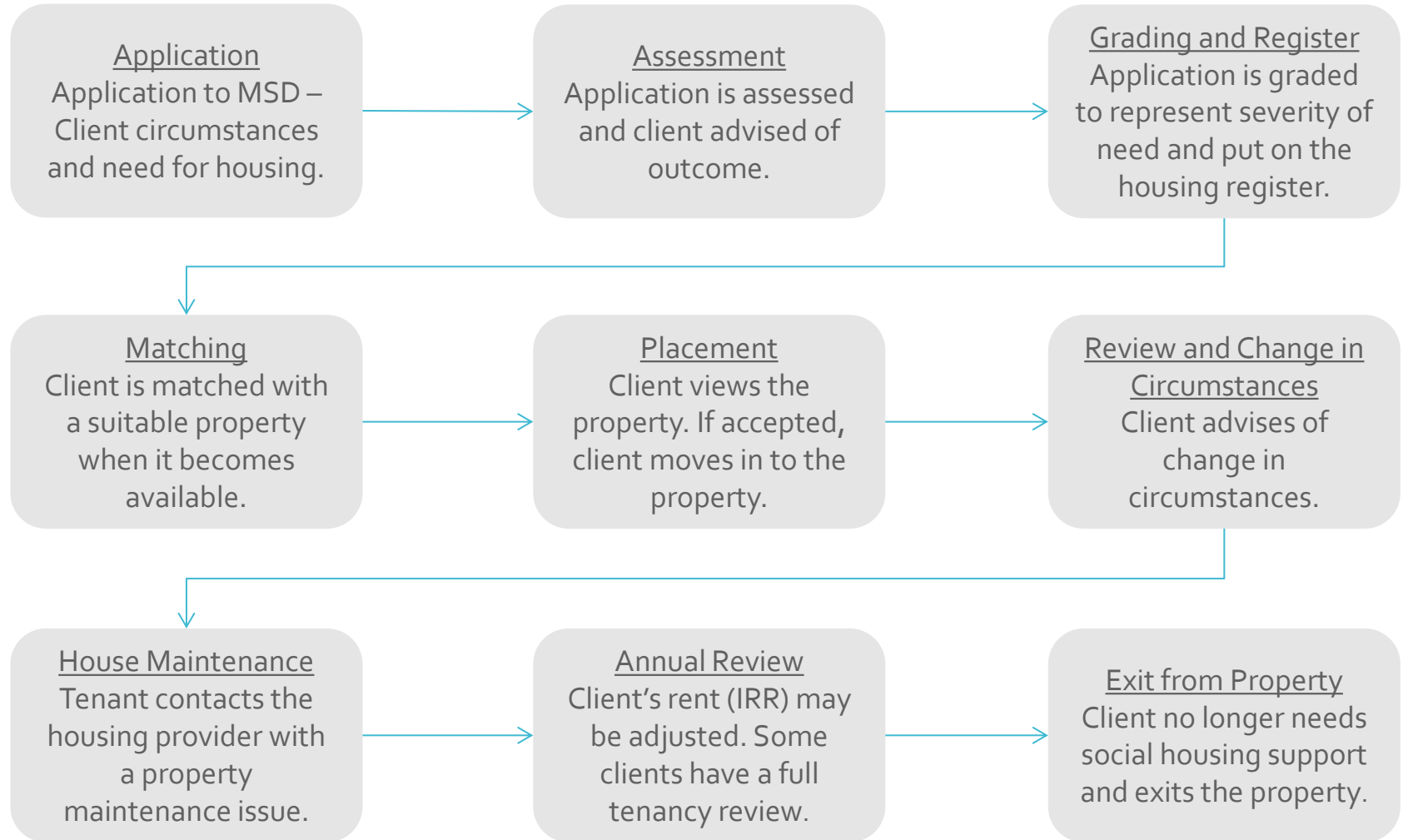
There are about 65,000 state or community group houses in New Zealand housing approx. 190,000 people. The vast majority are provided by the Housing New Zealand Corporation (crown agency).

Market rent on social housing properties is set with reference to the rent of comparable properties in that area.

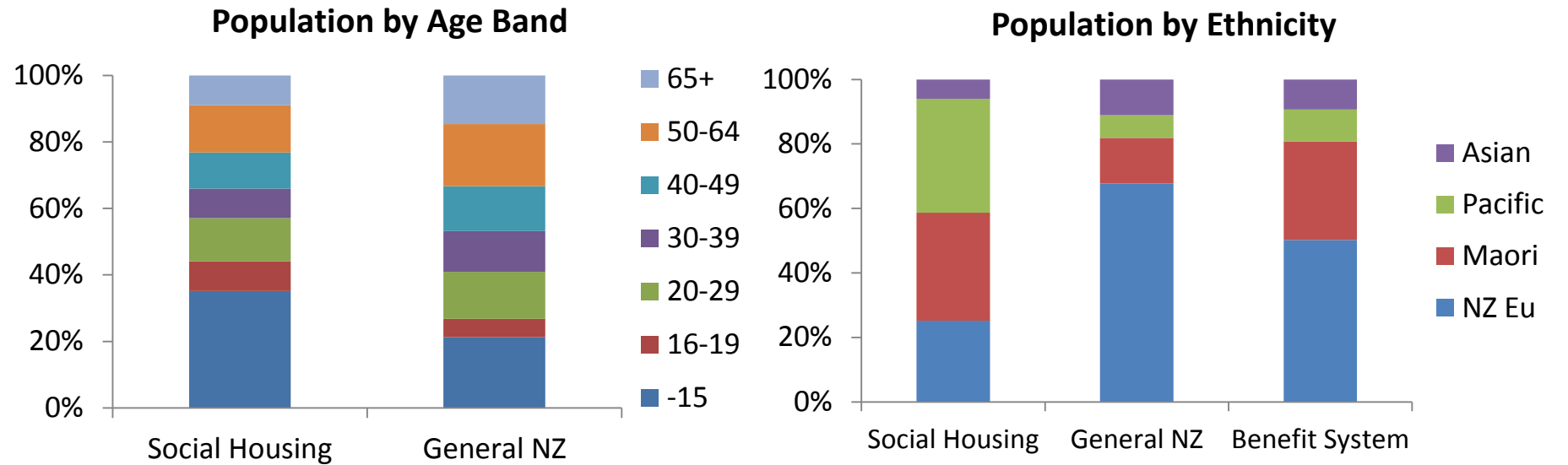
Payment of rent is split between a portion paid by the tenant based on their income level – Income Related Rent (IRR), and the residual portion paid on behalf of the tenant by the Ministry of Social Development – Income Related Rent Subsidy (IRRS), i.e. $IRR + IRRS = \text{Market Rent}$.

The valuation liability is an estimate of future lifetime IRRS and accommodation supplement costs for people who have been in social housing or on the social housing register in the year preceding the valuation date.

1. Social Housing Valuation – Client Flow



1. Social Housing Valuation Work – Population

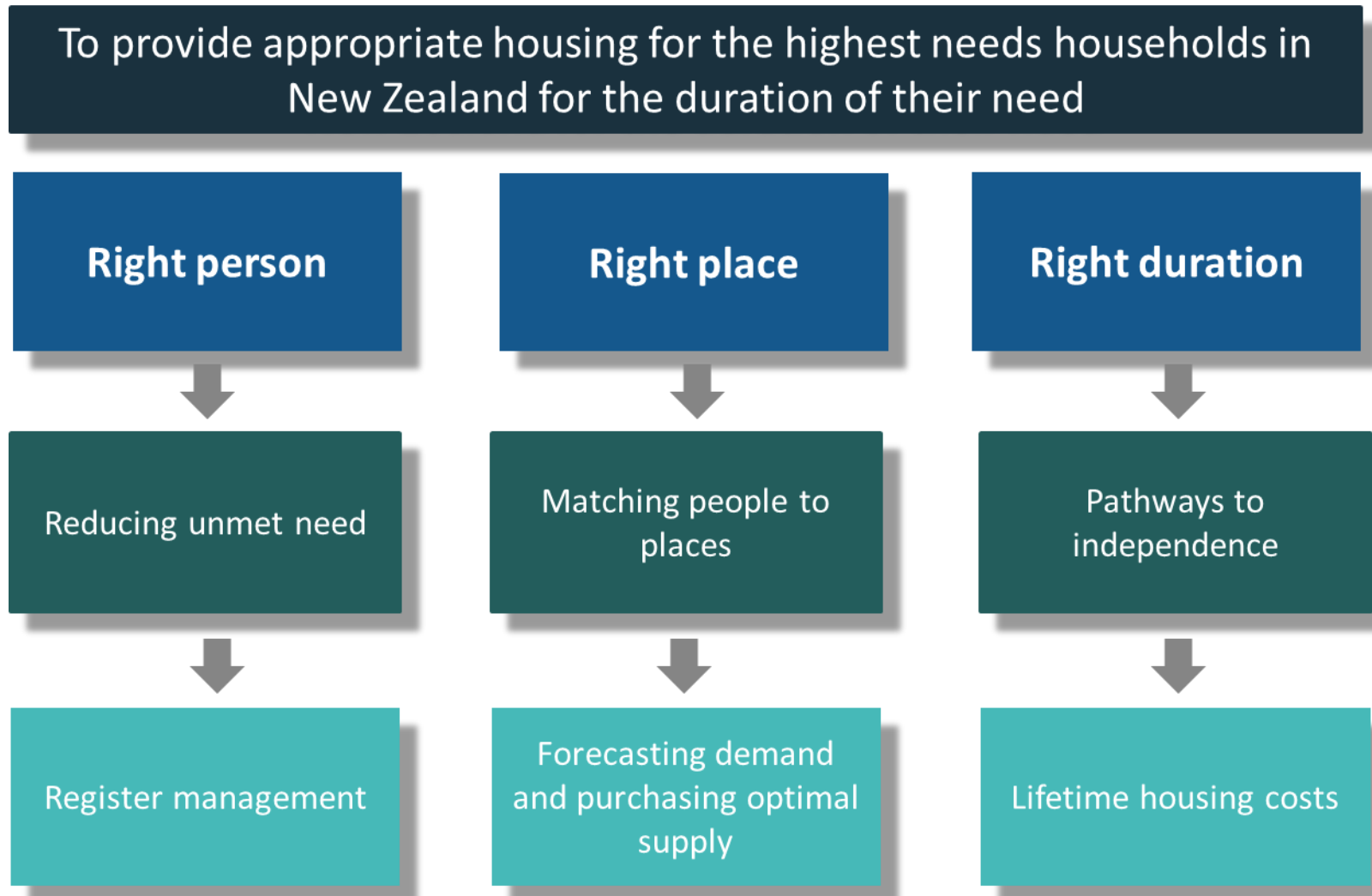


The social housing population is significantly younger than the general population. Children and teenagers are more than twice as likely to be social housing tenants than people aged 20 and over.

There is a significant skew towards Pacific people compared to both the general population and benefit system population. This is partly due to the fact that most Pacific people live in Auckland where housing affordability issues are more acute.

43% of working age social housing tenants are receiving a main benefit.

1. Social Housing Valuation Work – Objectives



Source: Taylor Fry

1. Social Housing Valuation – Complexities

	Benefit System	Social Housing System
Liability Proxy	Funding for benefits is uncapped	Funding for IRRS is capped and number of social houses is limited Replacing a low IRRS household with a high IRRS household increases liability
Timing	Time between benefit application and benefit receipt is minimal	People may need to wait for a house for a prolonged period of time On the register is a model state. Notional liability concept.
High-Level Need	Financial	Need is more complex. Affordability is core, but adequacy and suitability of existing living arrangements, and personal circumstances are also relevant.
Modelling Dynamics	Focus on individual Projection horizon – 16 to 65 yrs old	Need to consider both individual and households Projection horizon – Full lifetime
Data	Established datasets with single source Data back to 1993	New datasets with multiple sources Application process migrated to MSD in 2014 Data back to about 2000

2. Justice Sector Valuation



The Justice sector includes NZ Police, the Ministry of Justice and the Department of Corrections.

It is implementing an investment approach supported by an actuarial valuation, with the core aim of reducing the harm caused by crime. It will consider offending and victimisation. Intended outputs include:

1. Identification of key predictors of crime and victimisation
2. Forecasts of crime across individuals and places
3. Development of segmentation models
4. Simulation of impacts of potential policy changes

Models incorporate the whole NZ population. Modelling is within Statistics New Zealand's Integrated Data Infrastructure (IDI). The IDI includes Work and Income, Social housing, CYF, Justice, Health, Education and Inland Revenue datasets amongst others.

3. Vulnerable Children's Valuation – Expert Advisory Panel Report



Dear Honourable AnneTolley,
When reviewing the final report I would like you to remember
It takes a strong, bold individual to have a good
idea and hold on to it. You have the power to
do what so many people have wanted to happen
for such a long time now. Please remember that every
person has the potential to best version of themselves
that they can be, and we just need to give them the
love and support that they deserve. With this restructuring,
New Zealand has the opportunity to become a world leader
in taking care of its youth and developing their
futures, as well as its own. Everyone is different
and should have the help discovering who they are
and where they belong, children in care are no different.
Genuine care and affection is the best way to raise
anyone in this day and age, and I only wish others have
what I had little of. Don't compromise for anything
because you have the lives and emotions of young
people in your hands, and because the legacy of today's
youth will affect the world forever.

Source: Expert Panel Final Report: Investing in NZ's Children and their Families, December 2015

3. Vulnerable Children's Valuation – Expert Advisory Panel Report

Key conclusions

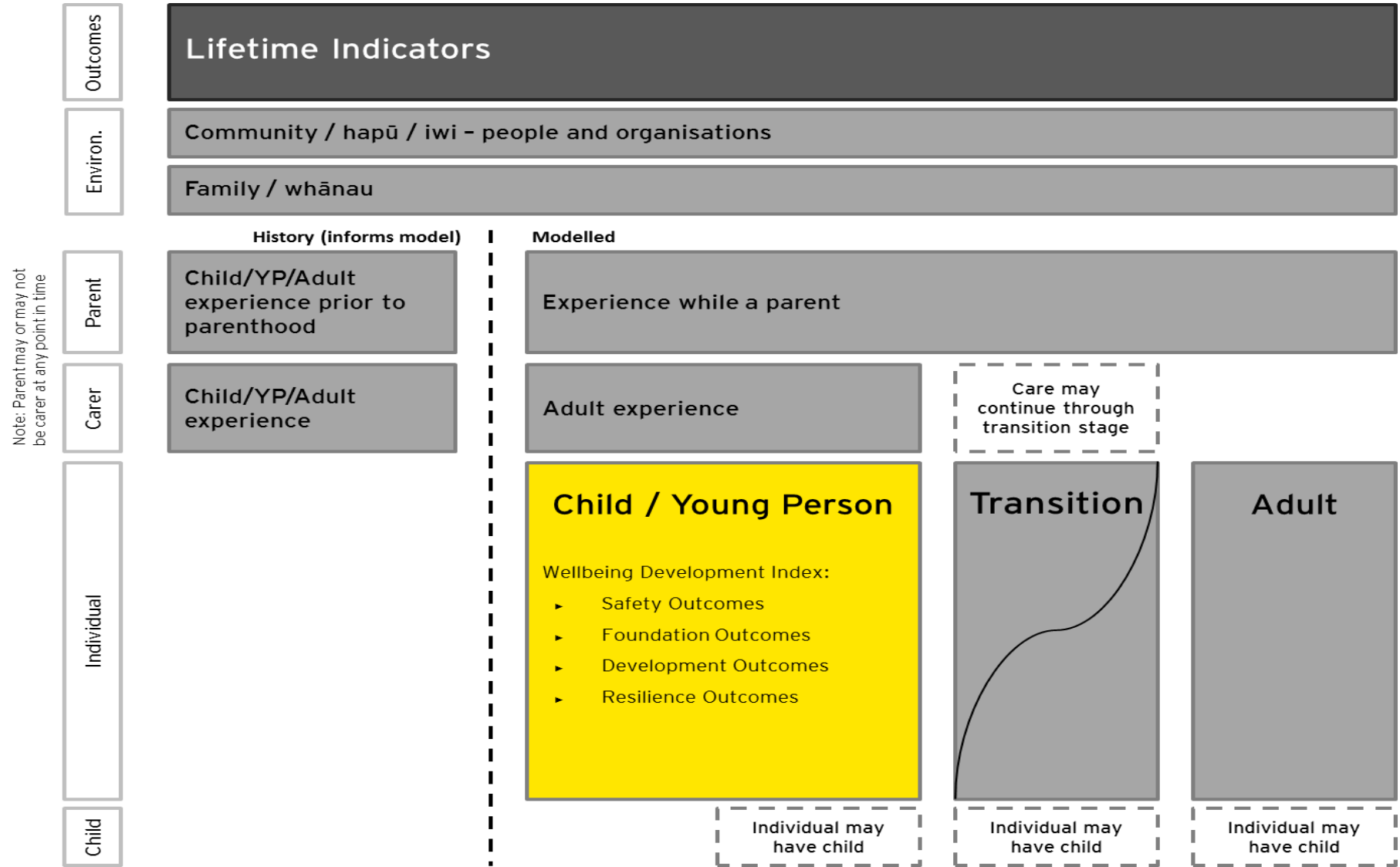
1. The current system does not meet the needs of vulnerable children and young people, or help them grow into flourishing adults
2. The overhaul of the system must place the child and their need for a stable, loving family at its centre
3. Implementing the changes to the system for vulnerable children and young people requires a new operating model

3. Vulnerable Children's Valuation – Expert Advisory Panel Report

Recommendations

1. Creation of a new department providing a single point of accountability for vulnerable children. The department should have significantly expanded mandate, funding and governance.
2. Raise the minimum age of transition to independence from 17 to 18 with a right to remain in, or return to, care up to age 21, with transitional support up to age 25.
3. Adopt a social investment approach to meeting the needs of vulnerable children and young people that is based on a view of lifetime costs.
4. Build an actuarial valuation model for vulnerable children and young people.
5. Establish the new role of Chief Government Actuary and an actuarial centre of expertise.

3. Vulnerable Children's Valuation – Feasibility Study – Dynamics



Source: Ernst & Young, Investment approach for vulnerable children, December 2015

3. Vulnerable Children's Valuation – Feasibility Study – Proposed Lifetime Indicators

A measure of liability

Fiscal costs only tell part of the story

Net present value of future expected government spending, along with financial proxies for certain other poor outcomes not captured by the fiscal measure, such as early mortality

A measure of well-being

Understanding vulnerability is complex

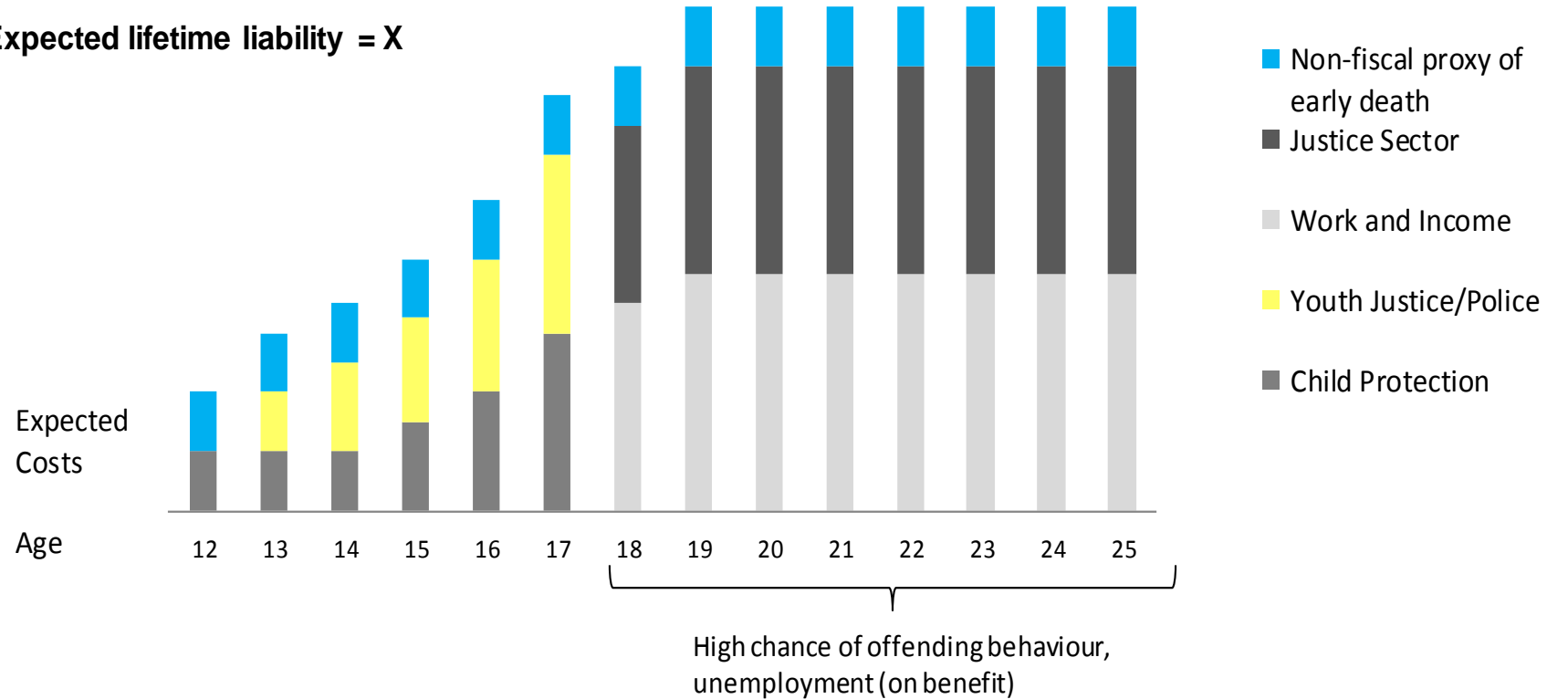
A Wellbeing Development Index including measures of:

- Safety (such as a safe environment)
- Foundational aspects (such as adequate housing, food and health)
- Development (such as education and social skills)
- Resilience (such as belonging, participation in society and feeling safe)

3. Vulnerable Children's Valuation – Feasibility Study – Investment Concept

Without additional investment

Expected lifetime liability = X

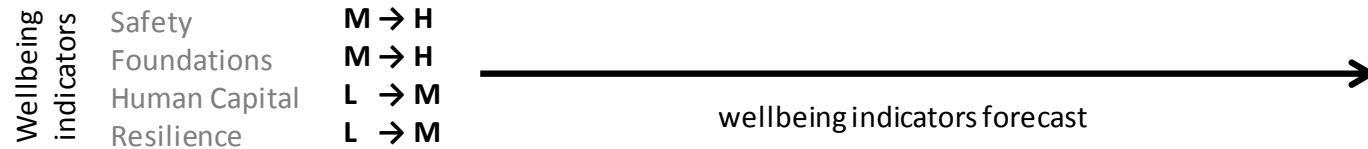
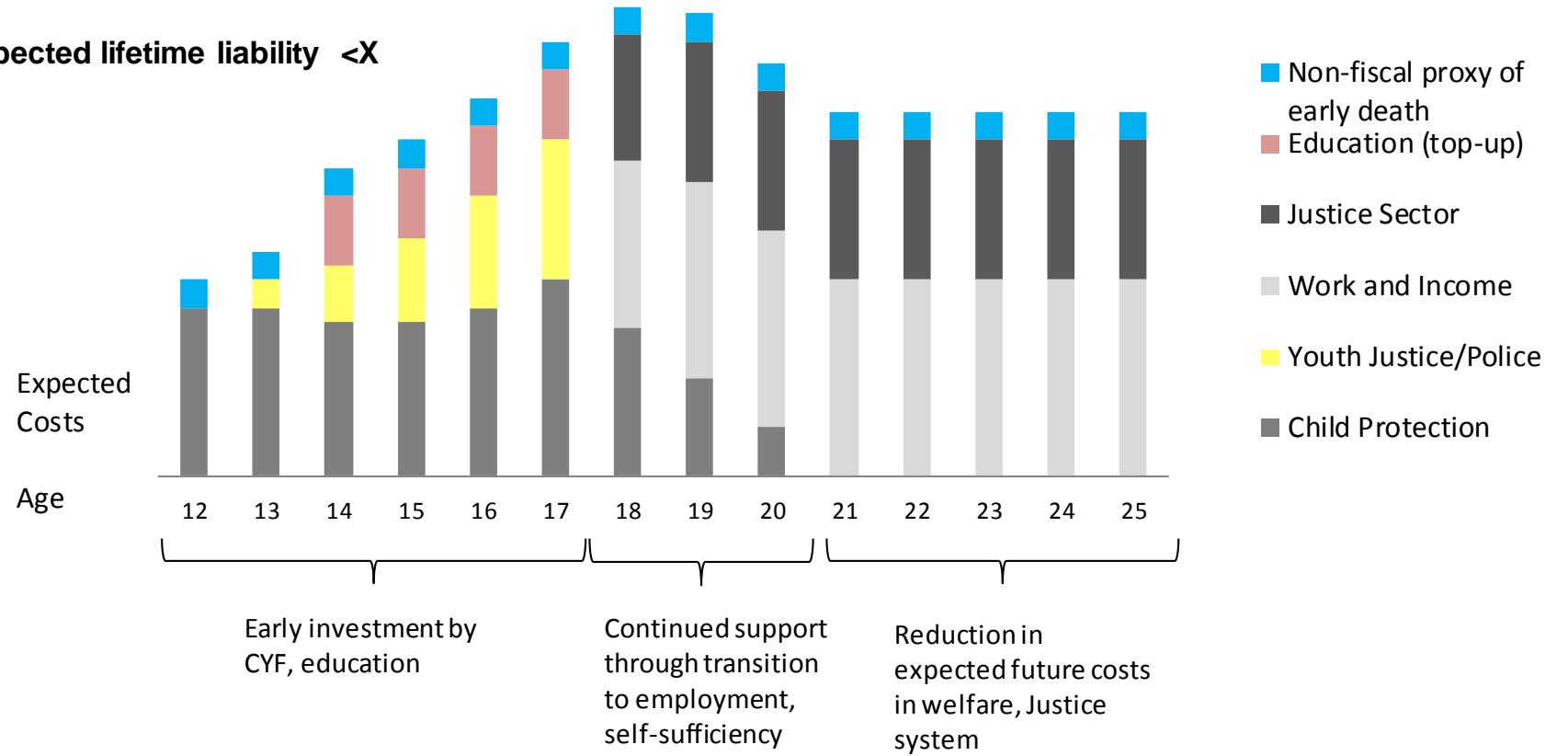


Source: Ernst & Young, Investment approach for vulnerable children, December 2015

3. Vulnerable Children's Valuation – Feasibility Study – Investment Concept

With additional investment

Expected lifetime liability < X



Source: Ernst & Young, Investment approach for vulnerable children, December 2015

What we want you to take away from this presentation

1. Actuarial involvement in the Government social sector is increasing – Now involved in work on the benefit system, social housing, criminal justice and vulnerable children.
2. Actuarial work is increasingly complex – Moving from a single sector view toward a person-centric view across all social sectors.
3. Arguably this is a once-in-a-lifetime opportunity for the profession to positively influence the lives of vulnerable people.