Modelling health co-benefits of decarbonisation

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Project aims

1. Determine a range of plausible decarbonisation scenarios for the NZ transport sector

2. Tailor existing simulation model to examining decarbonisation scenarios

3. Estimate the impact of the different scenarios

A range of options...

Photo credit: Luke Pilkinton-Ching, University of Otago (Wellington)

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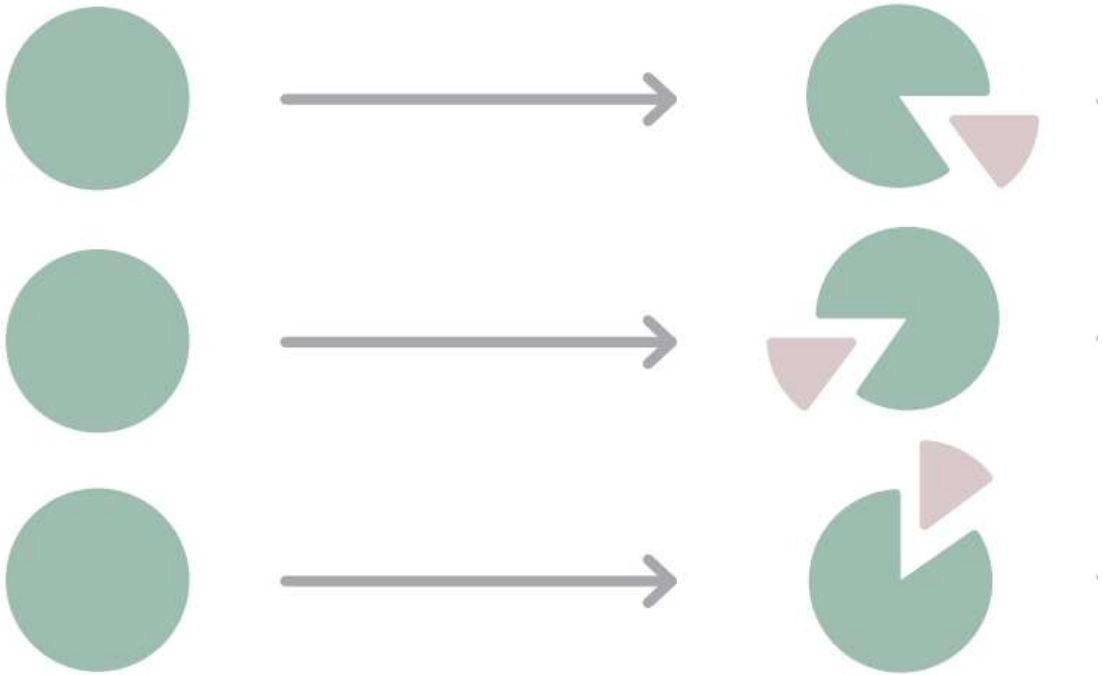
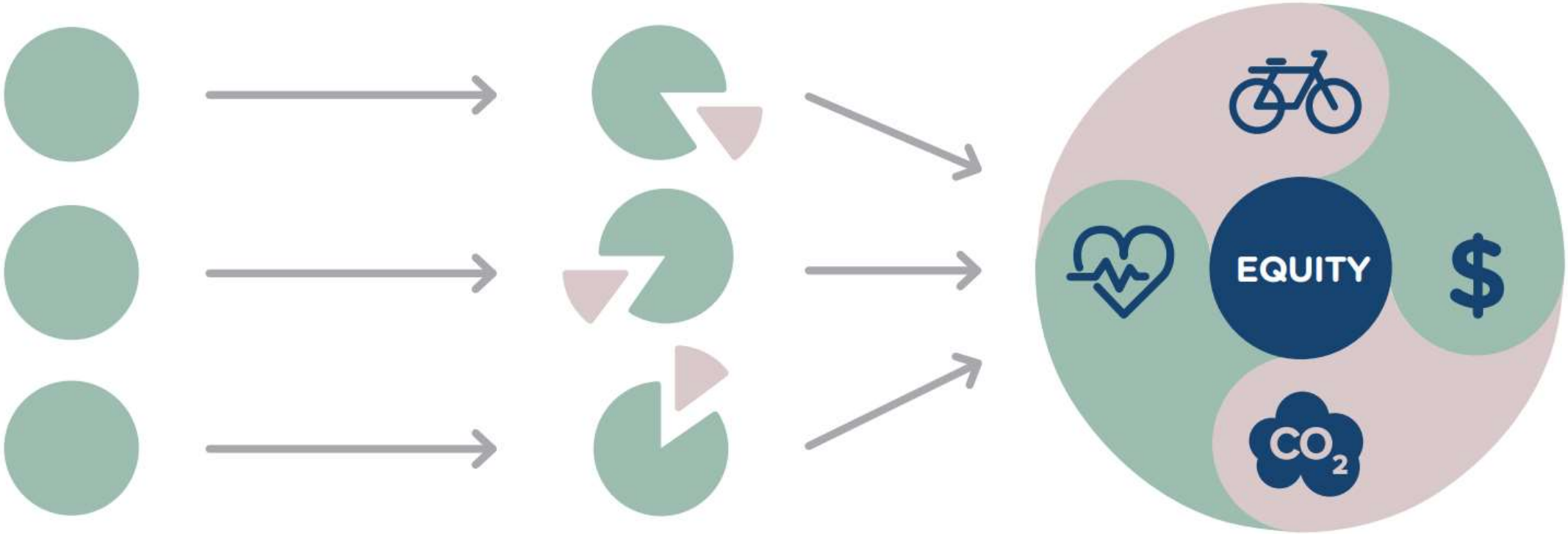
Scenarios

Scenarios

Policies



Scenarios Policies Modelling



Modelling

Modelling

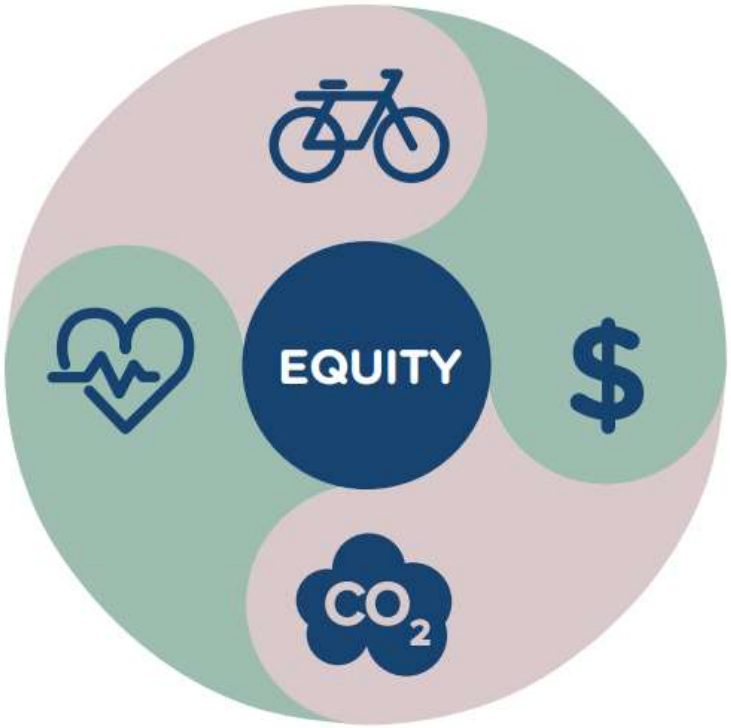
- Current systems are inequitable

- Fewer than one third of studies modelling health impacts of transport examine equity impacts

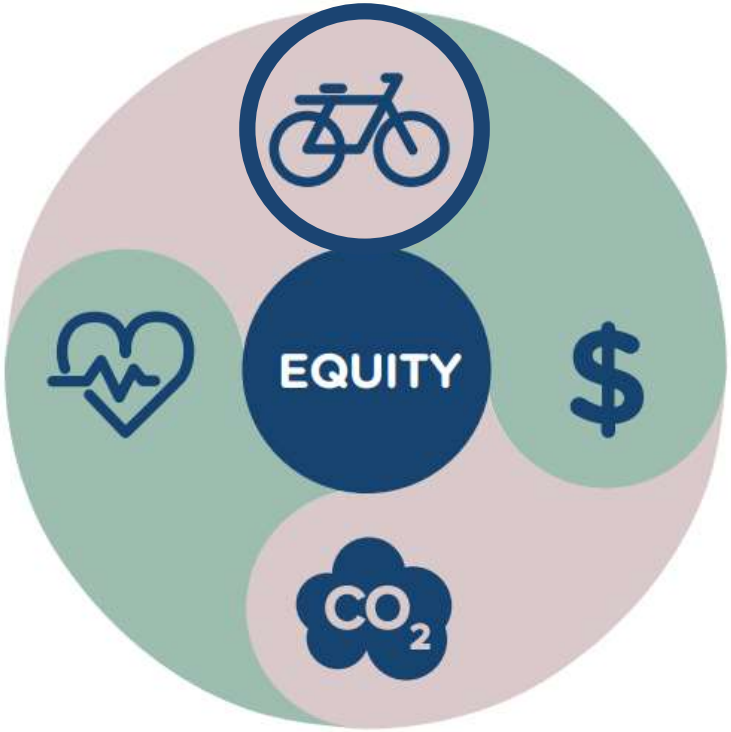
Modelling

- Modelling process and design
- Dissaggregated results

Modelling



Modelling



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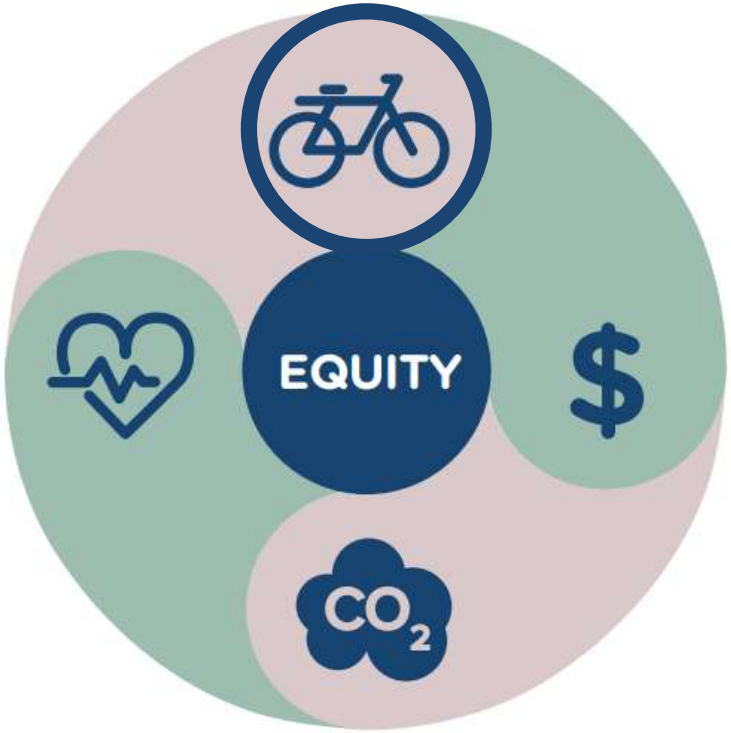
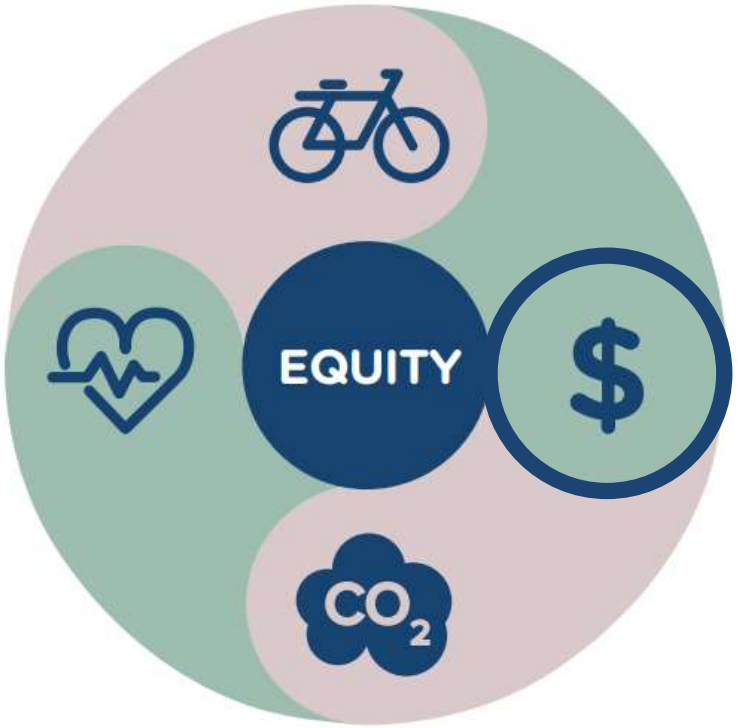


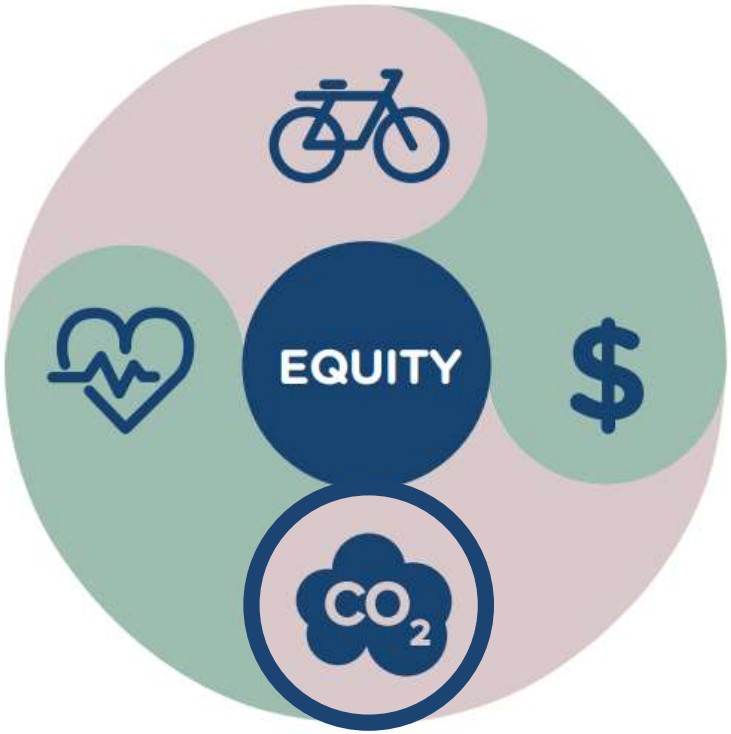
- Vehicle kilometres travelled (VKT)
- Mode distribution
- Speed
- Distribution of changes in transport patterns

Modelling



- Implementation costs for the transport sector
- Health system costs

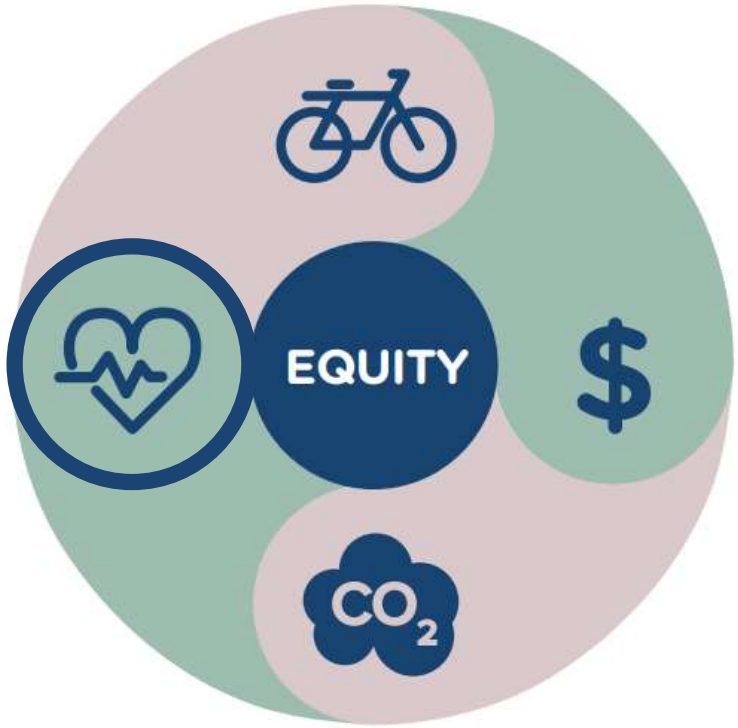
Modelling



- What scenario(s) result in the ***biggest*** emissions reductions?

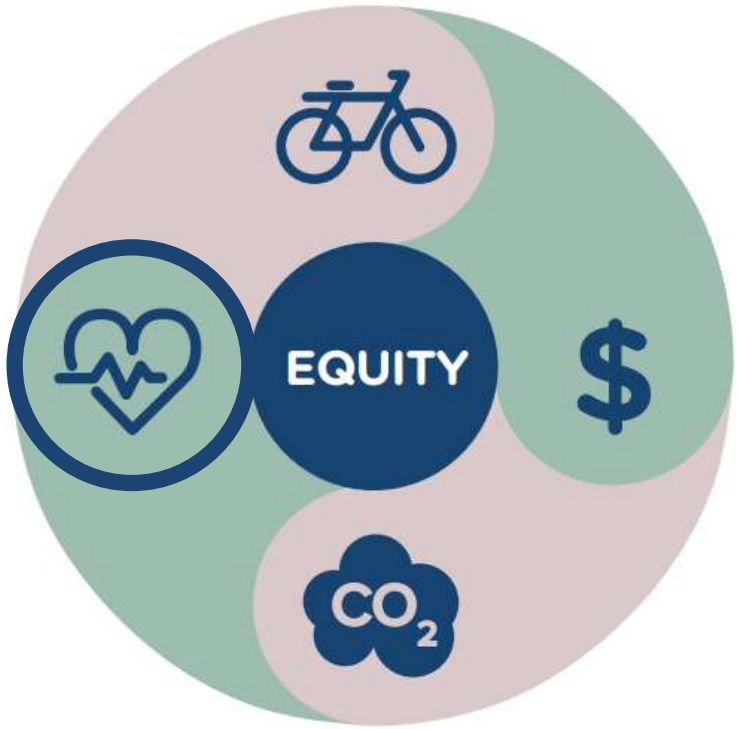
- What scenario(s) result in the ***fastest*** emissions reductions?

Modelling



- Physical activity
- Air pollution
- Road injury
- And more...

Modelling



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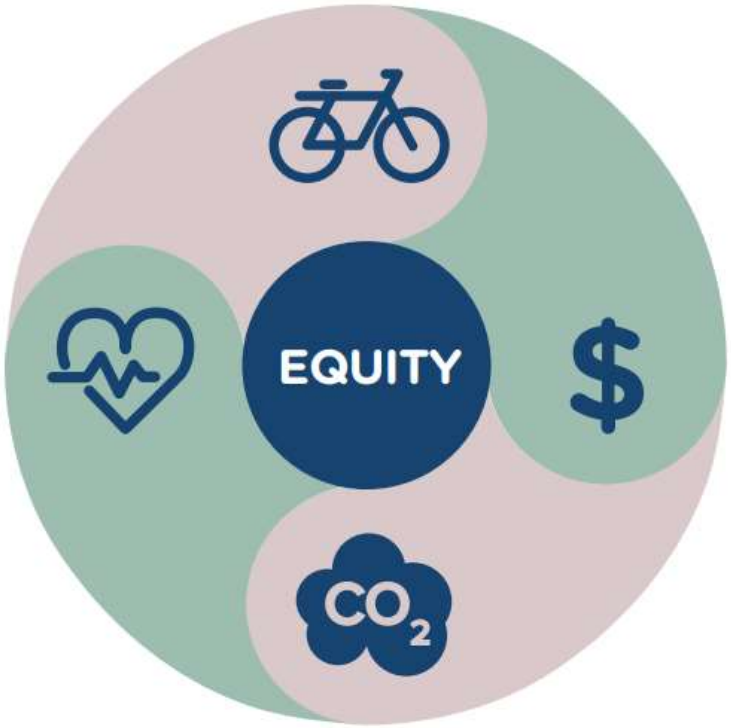
- Road injury
- And more...

Health-adjusted life years (HALYs)

Modelling



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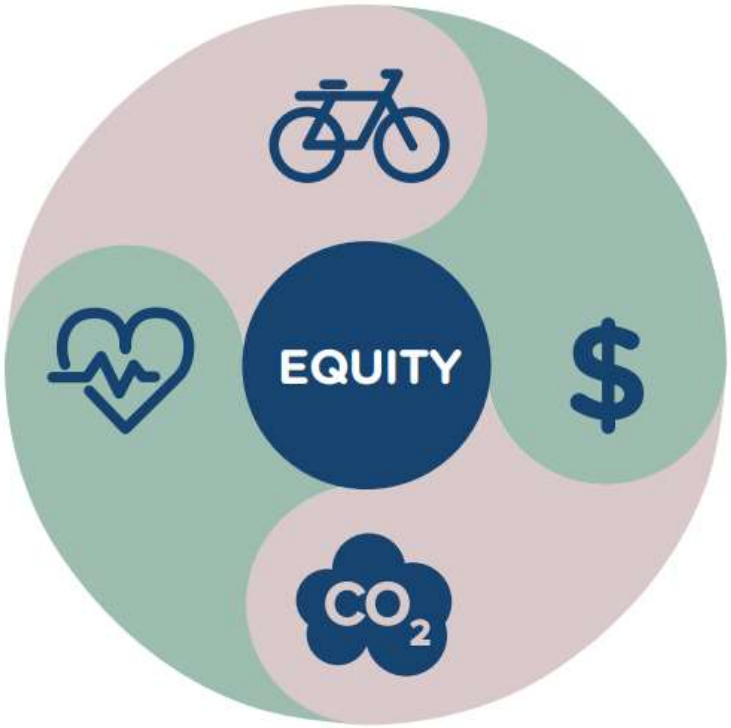

- Transport patterns
- Costs
- Greenhouse gas emissions
- Health impacts

Nuts and bolts

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- Proportional multi-state life table

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- Wide range of data inputs

Nuts and bolts

- Proportional multi-state life table
- Wide range of data inputs
- Built in Python

Where are we up to?

- International review
- Updating data inputs
- Model extensions

Acknowledgements

- Health Research Council
- Stakeholders, advisors, and data providers
- Project team