

Health services for adults with Intellectual Disability

A system dynamics approach

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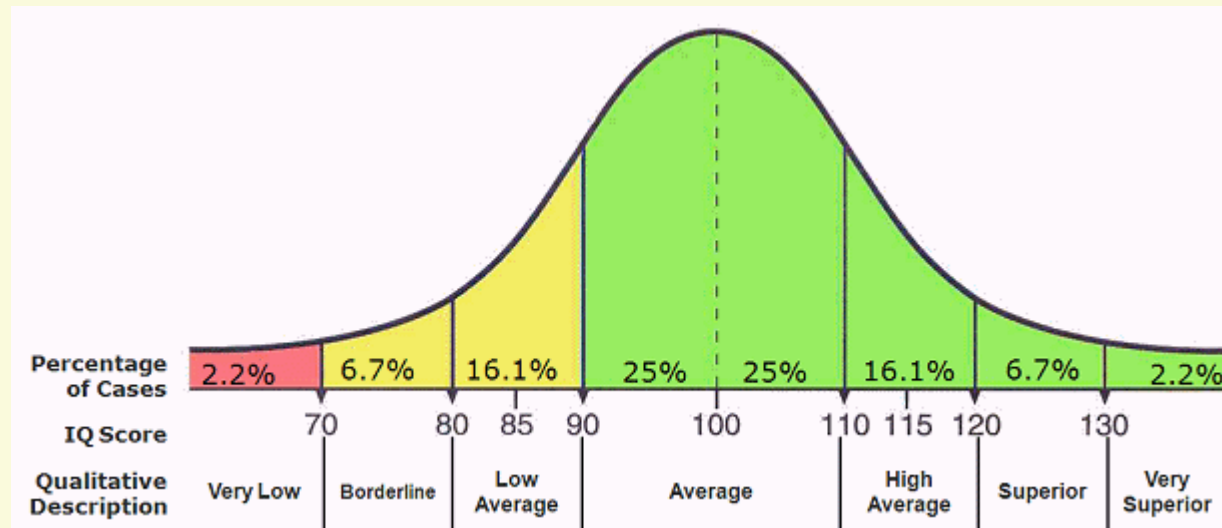
Hypothesis

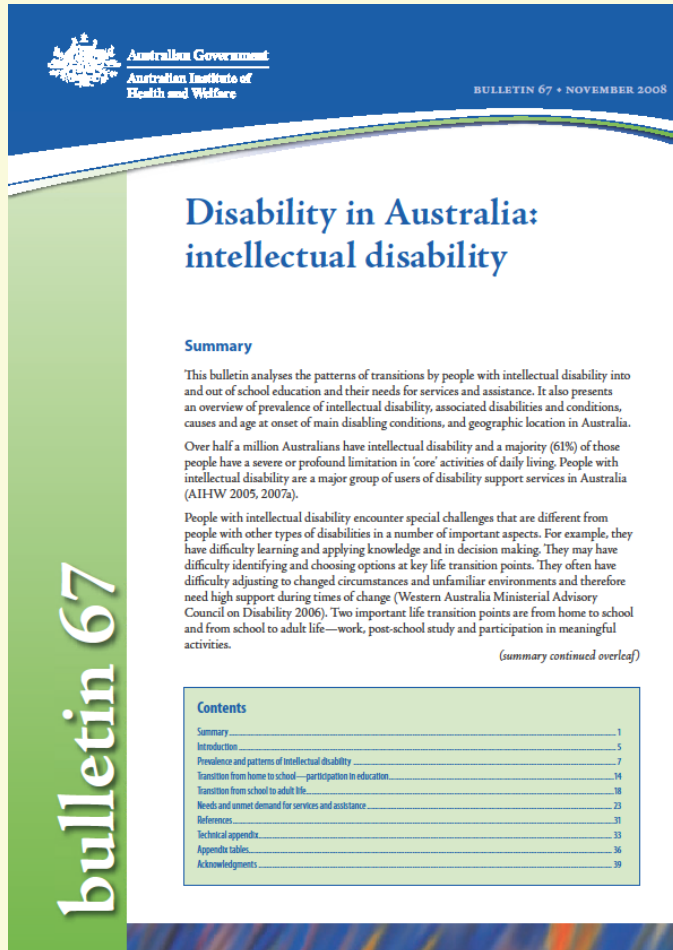
That in an environment of numerous unpredictable determinants of both health status and health support need; and a paucity of data, one can plan for service development for people with Intellectual Disability



People with Intellectual Disability

- Low cognitive function
- Arose in childhood
- Associated with other disabilities





National survey of disability, ageing and carers:

- 3% population have a learning disability
- 0.9% meet the criteria
- **0.6% have core activity limitations**



Accommodation in 1981



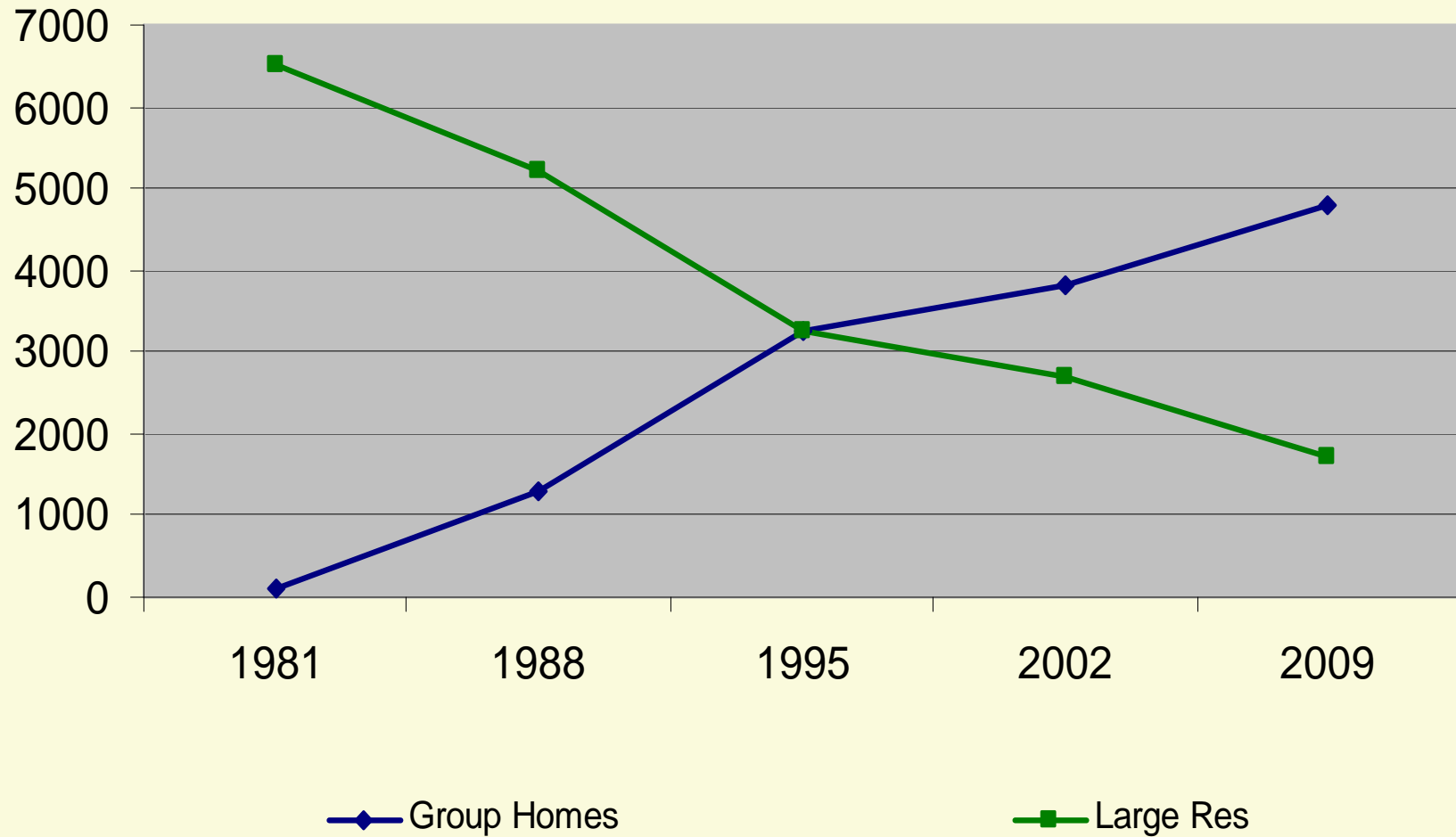


Accommodation in 2009



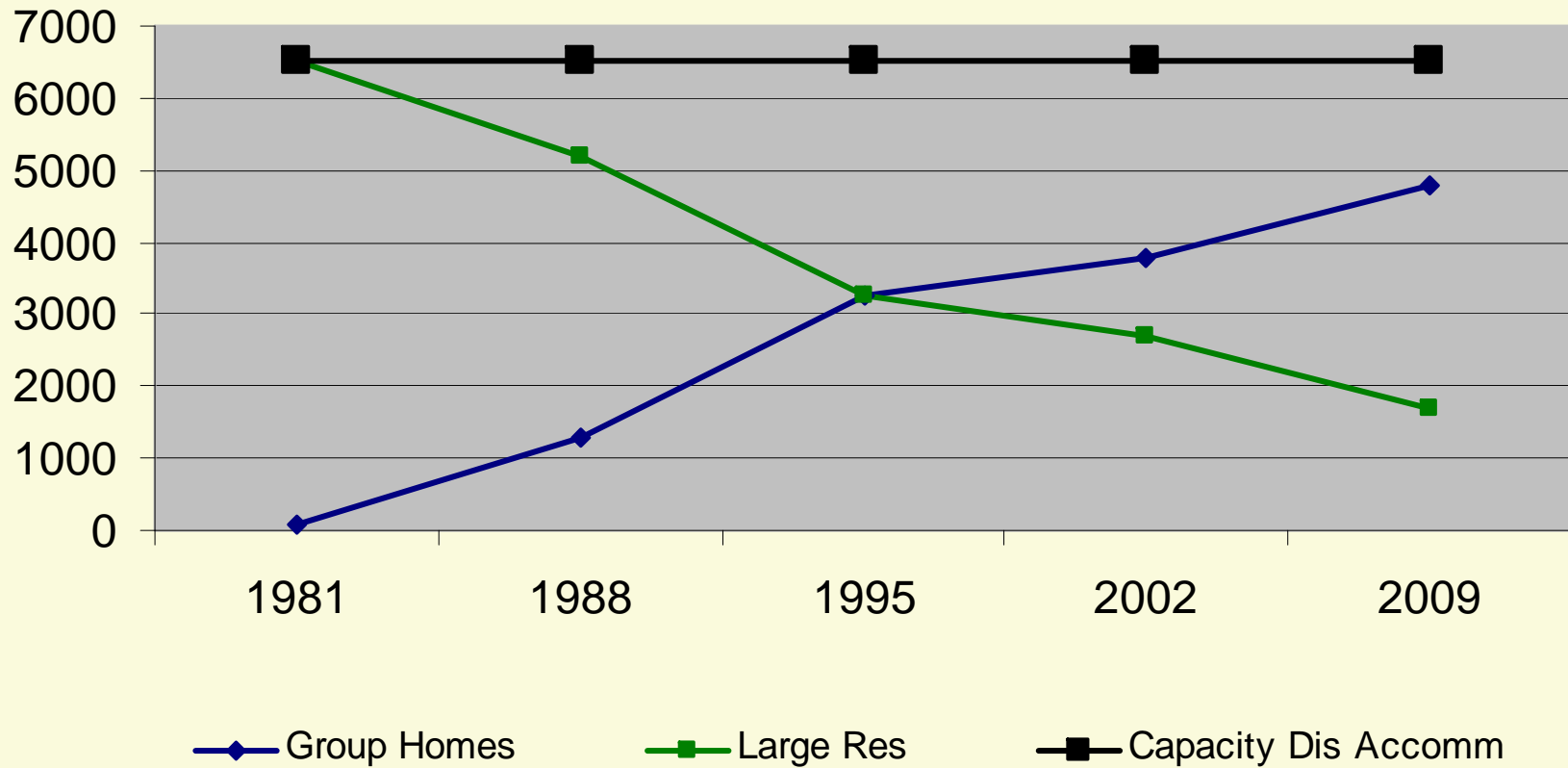


Accommodation for people with profound disability, under 65 years NSW 1981-2009



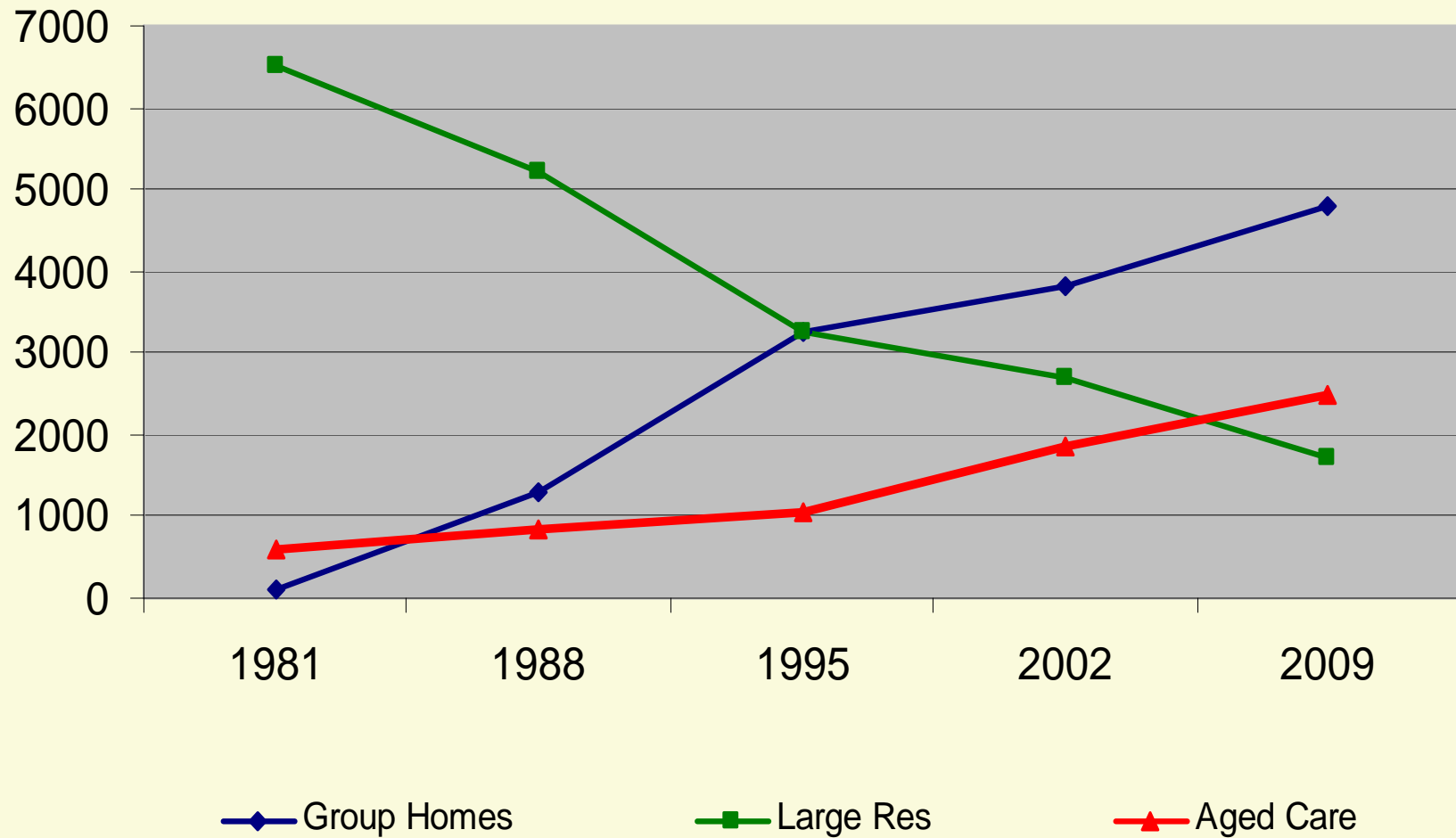


Capacity did not change





Accommodation for people with profound disability, aged less than 65 years NSW 1981-2009





Funding

- Cost of nursing home care
\$55,000/person/year
- Cost of group home care
\$110,000/person/year
- Cost of group home care staffed by RNs
\$180,000/person/year



Support staff in 1981





Carers in 2009



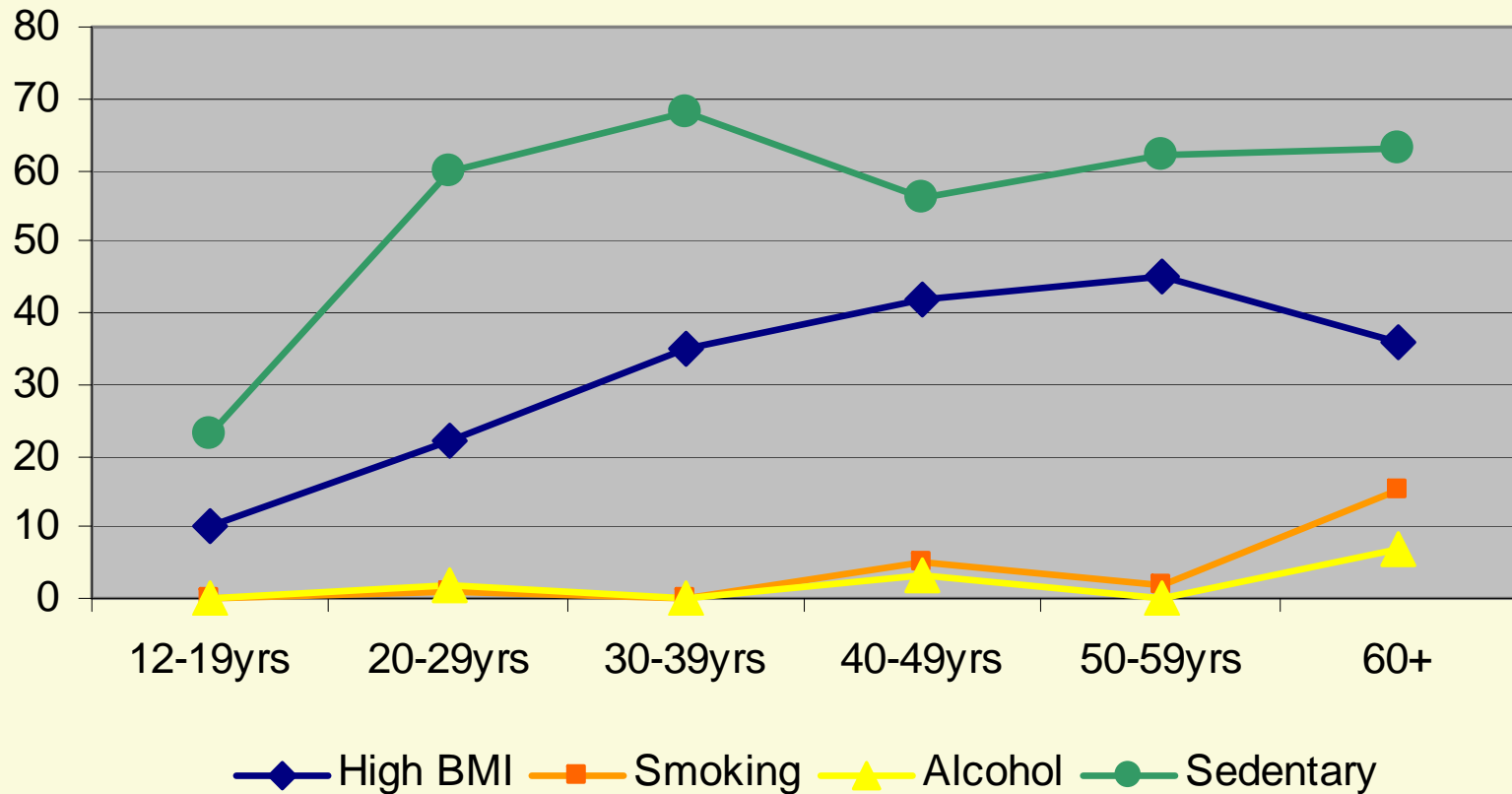


Medical care in 2009





Lifestyle factors contributing to ill health more prevalent in older group

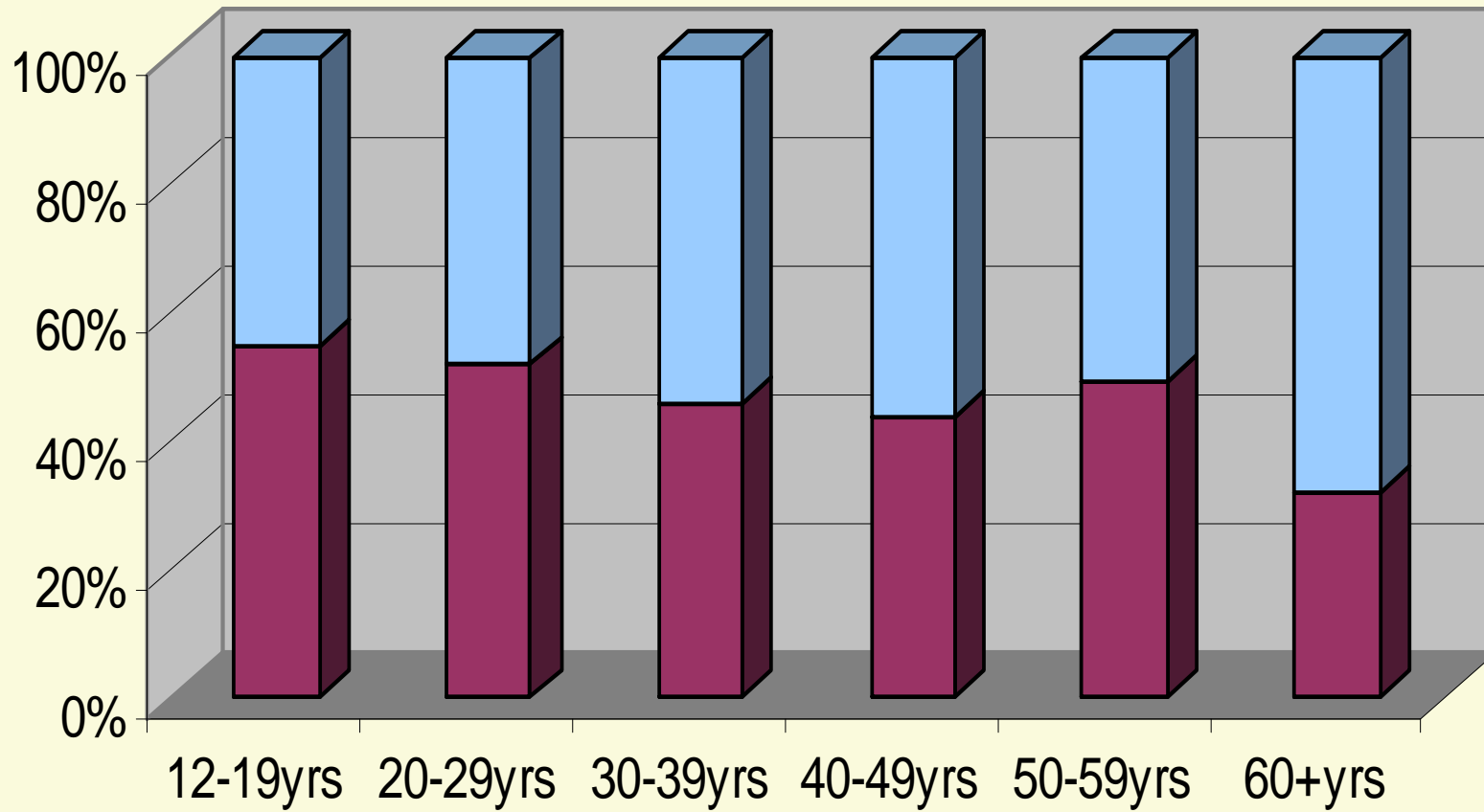




- Ageing and Behaviour Changes in Developmental Disability (ABCD) Clinic
- 400 people with Intellectual Disability
- Cross sectional observations on health and functional status

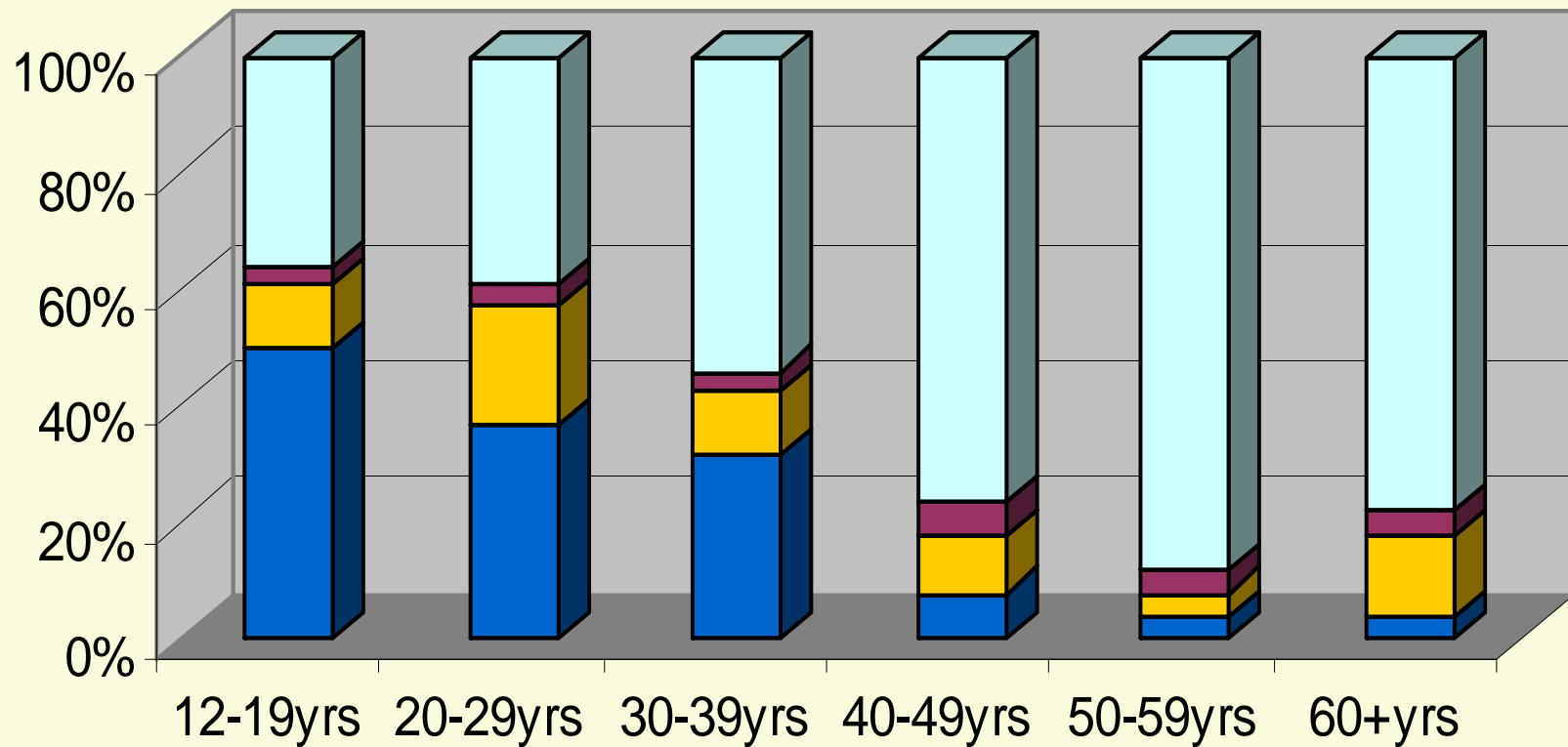


Antiepileptic medication use is high in all age groups





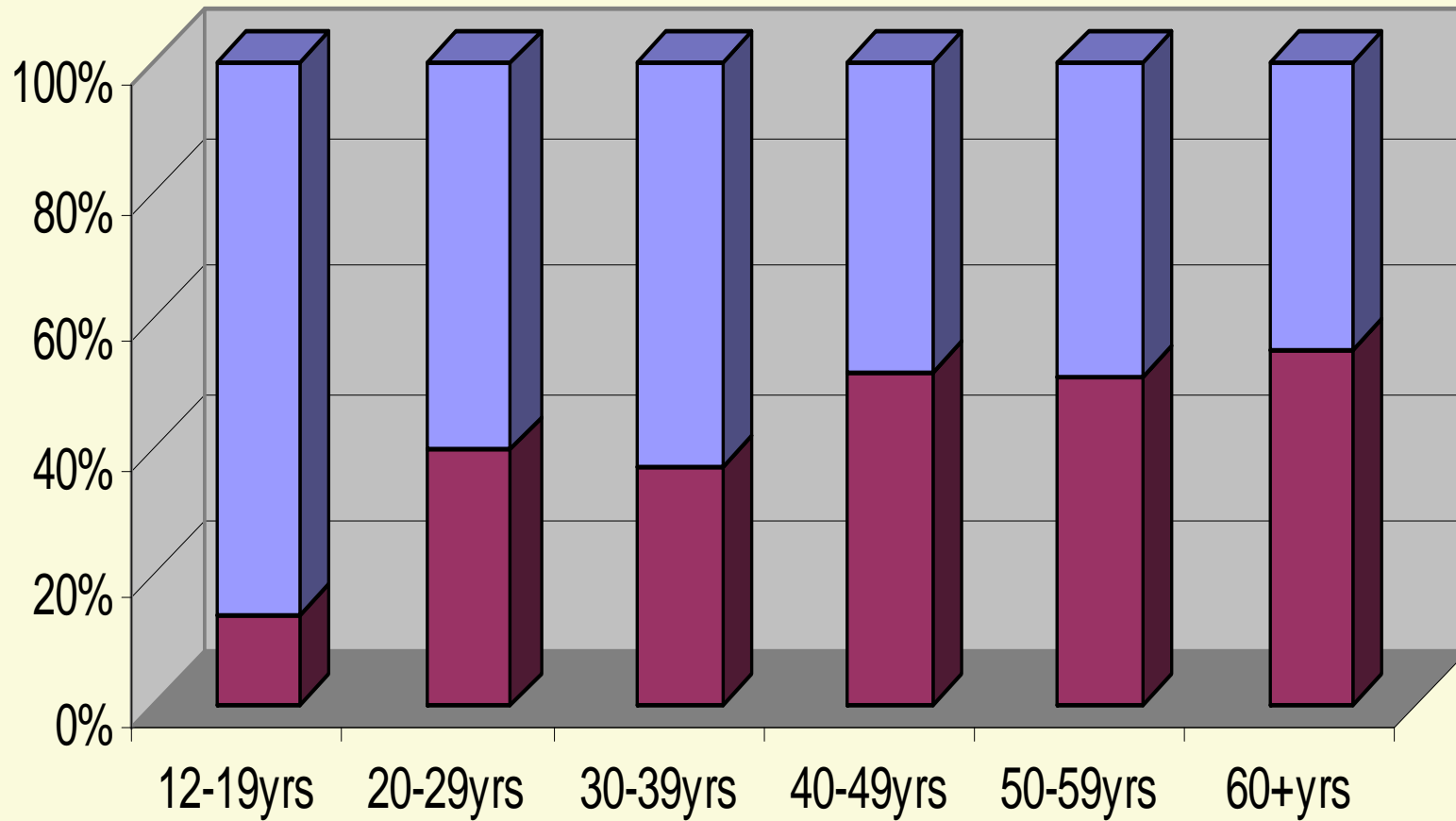
Spasticity levels are high in all age groups

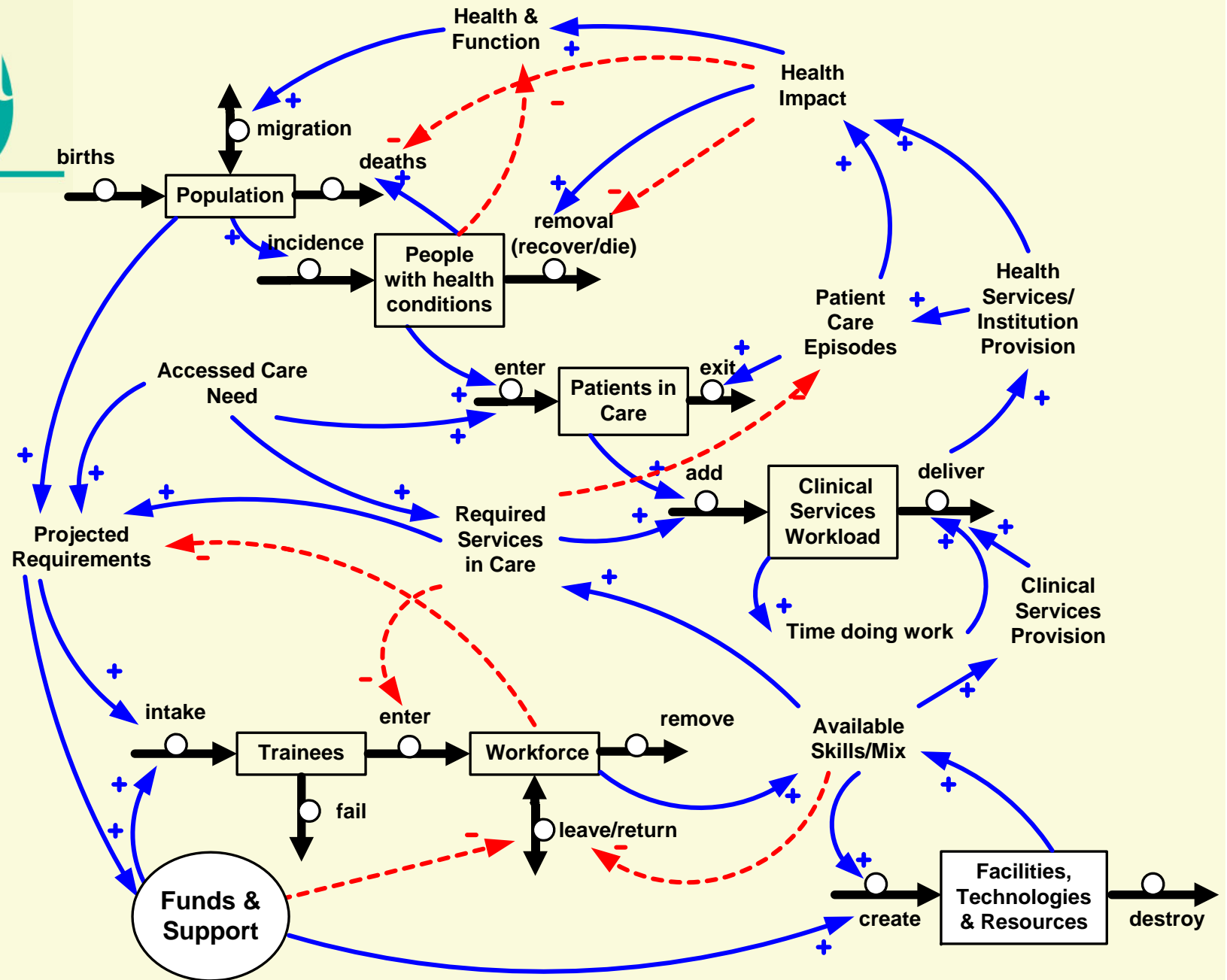


■ Quadriplegia ■ Diplegia ■ Hemiplegia ■ No spasticity



Prescription of antidepressants or antipsychotics is high in all age groups

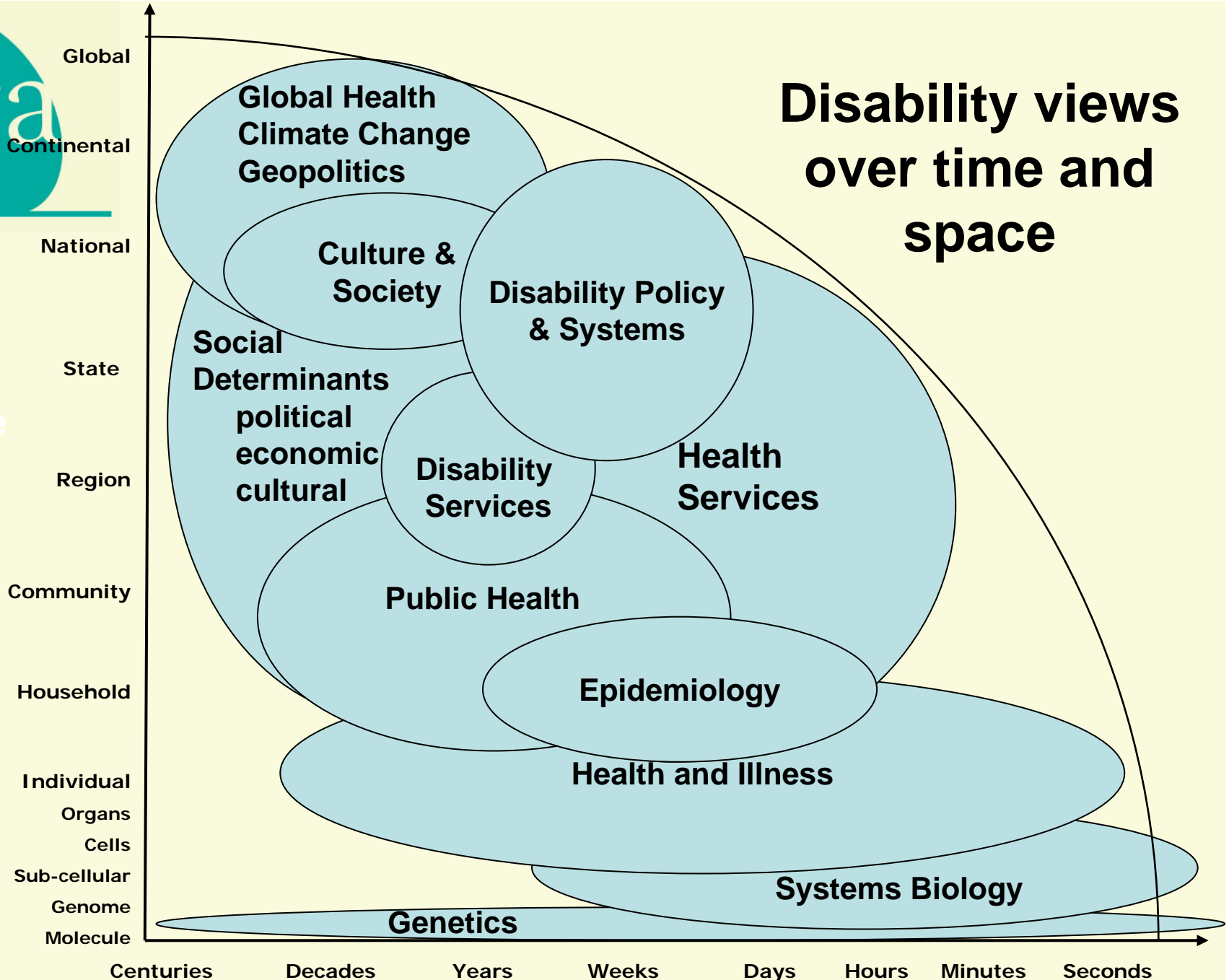






Disability views over time and space

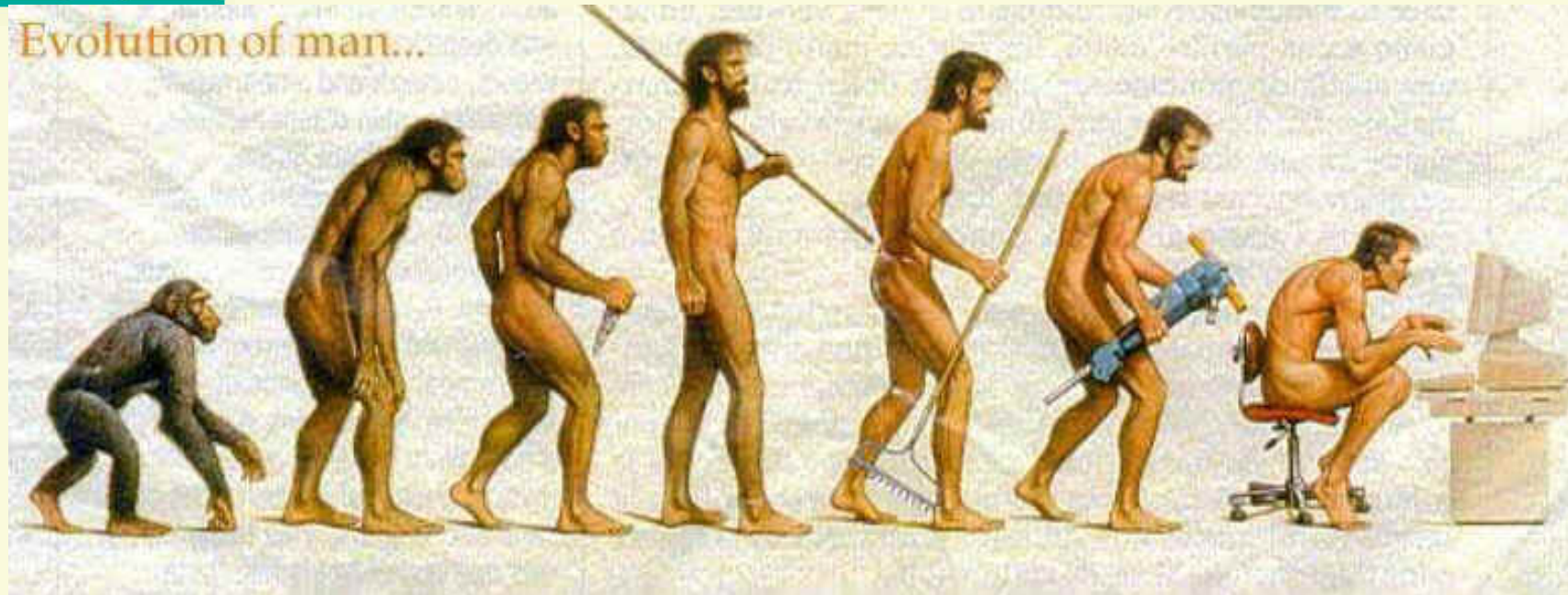
Scope



Timescale



As with evolution of Man



So has there been an evolution of experimentation for learning and planning



Comprehensive, safe experiments



Control-group
experiments

True
experiments

Statistics

'What if'
virtual
experiments

Computer
modelling



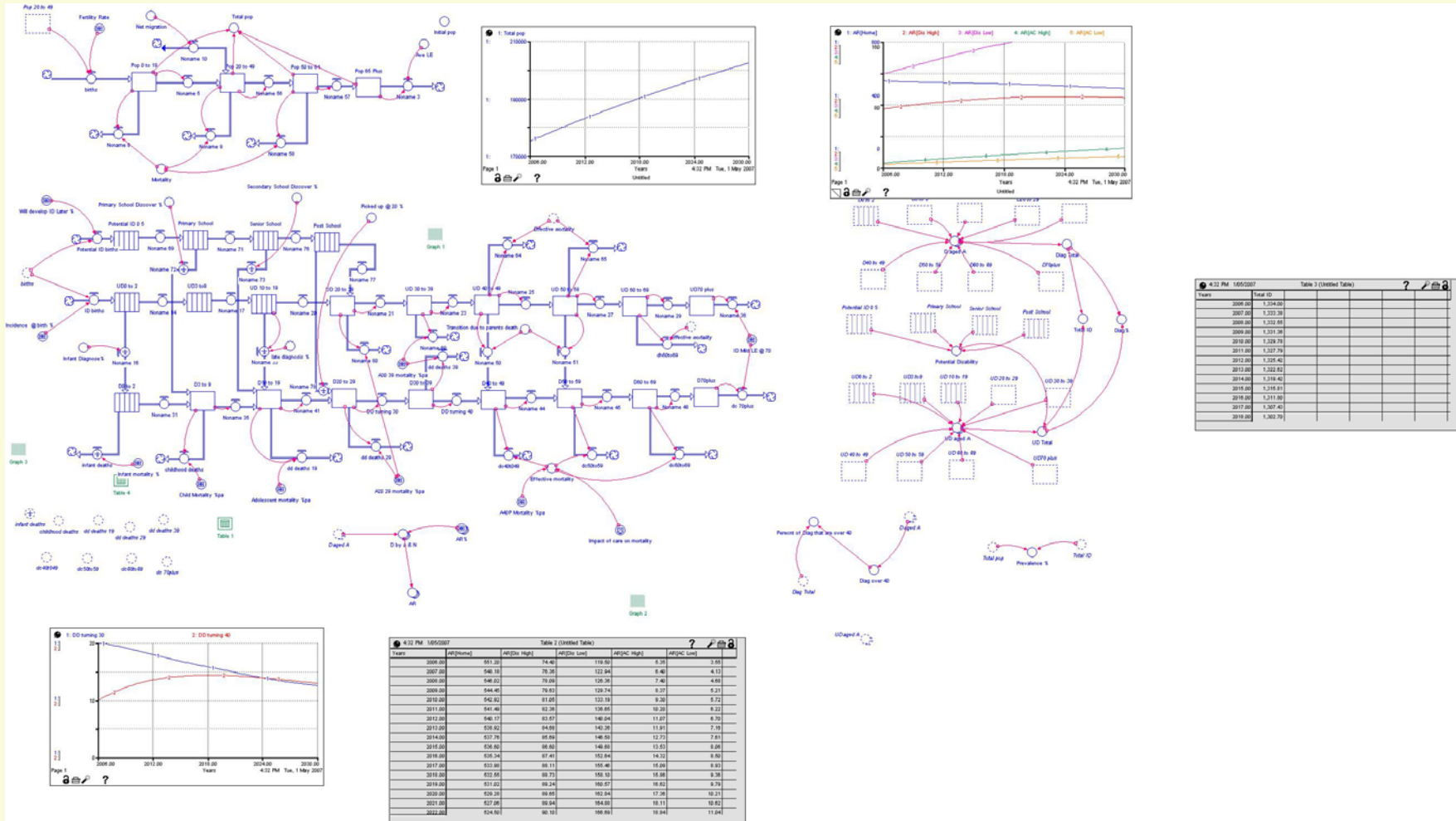


System dynamics modelling

- Population with Intellectual Disability
- Health status
- Policies concerning care
 - Site
 - Funds

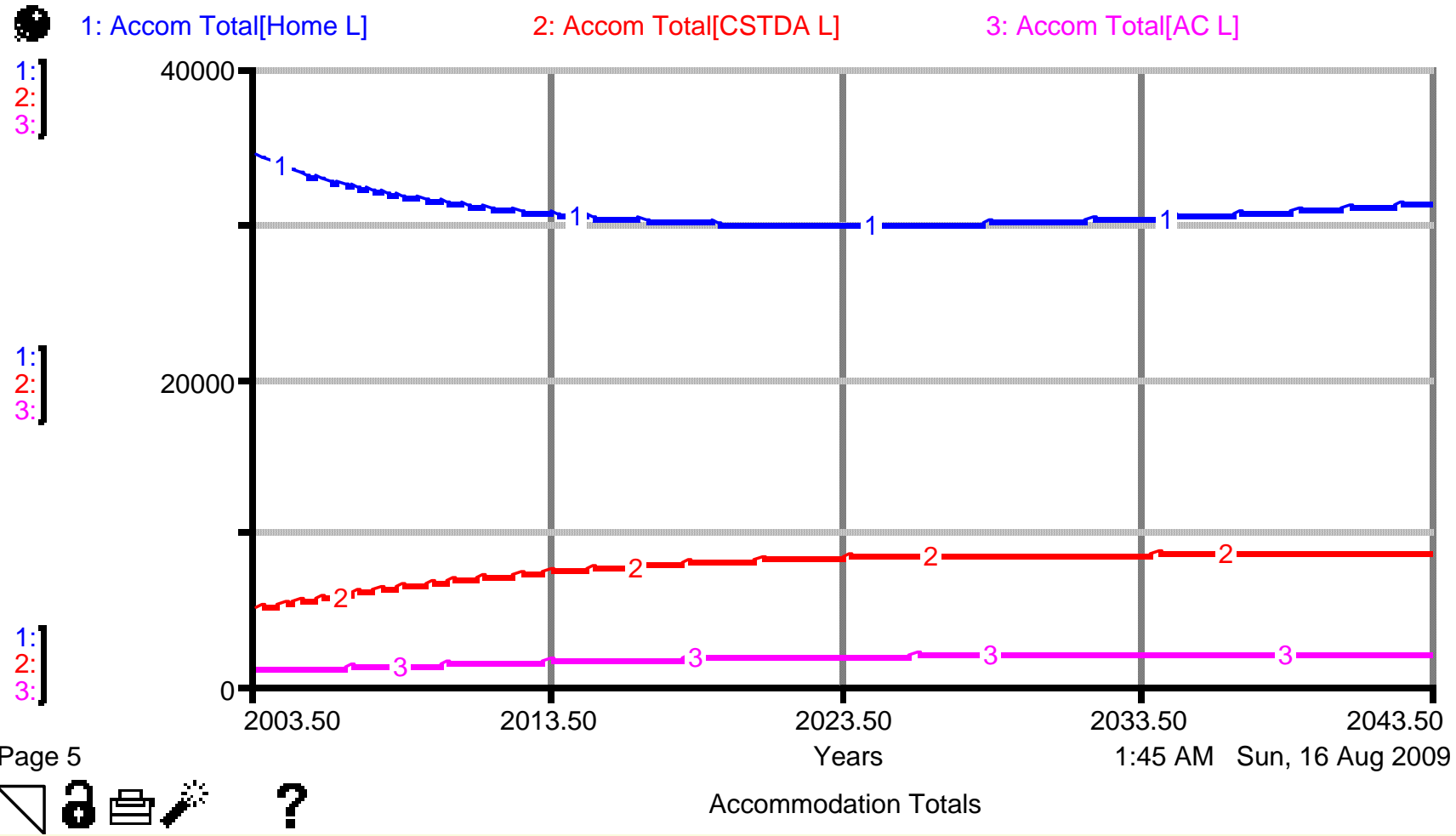


Model



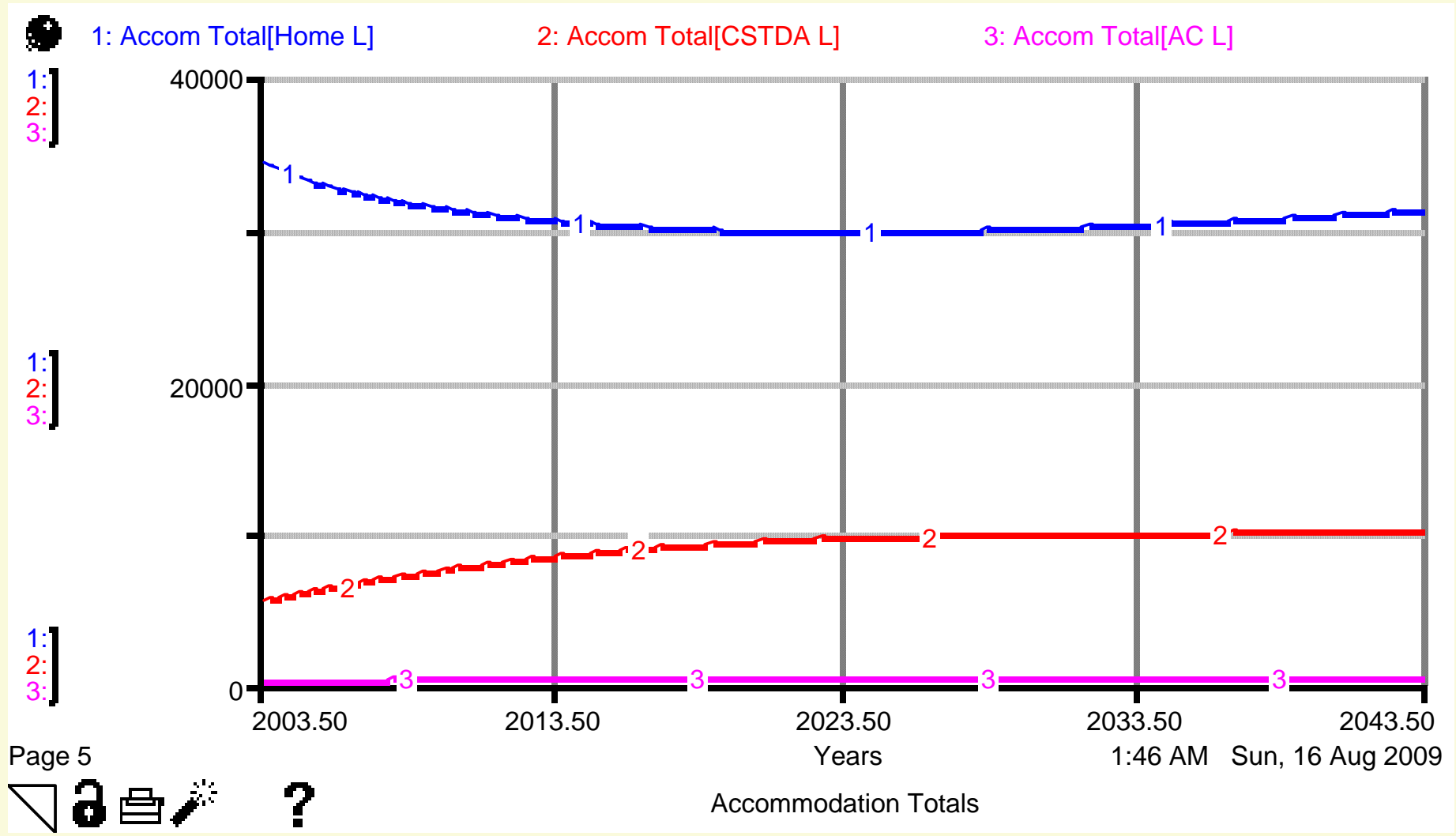


No change to policy





No more admissions to nursing homes





Functional Independence Measure

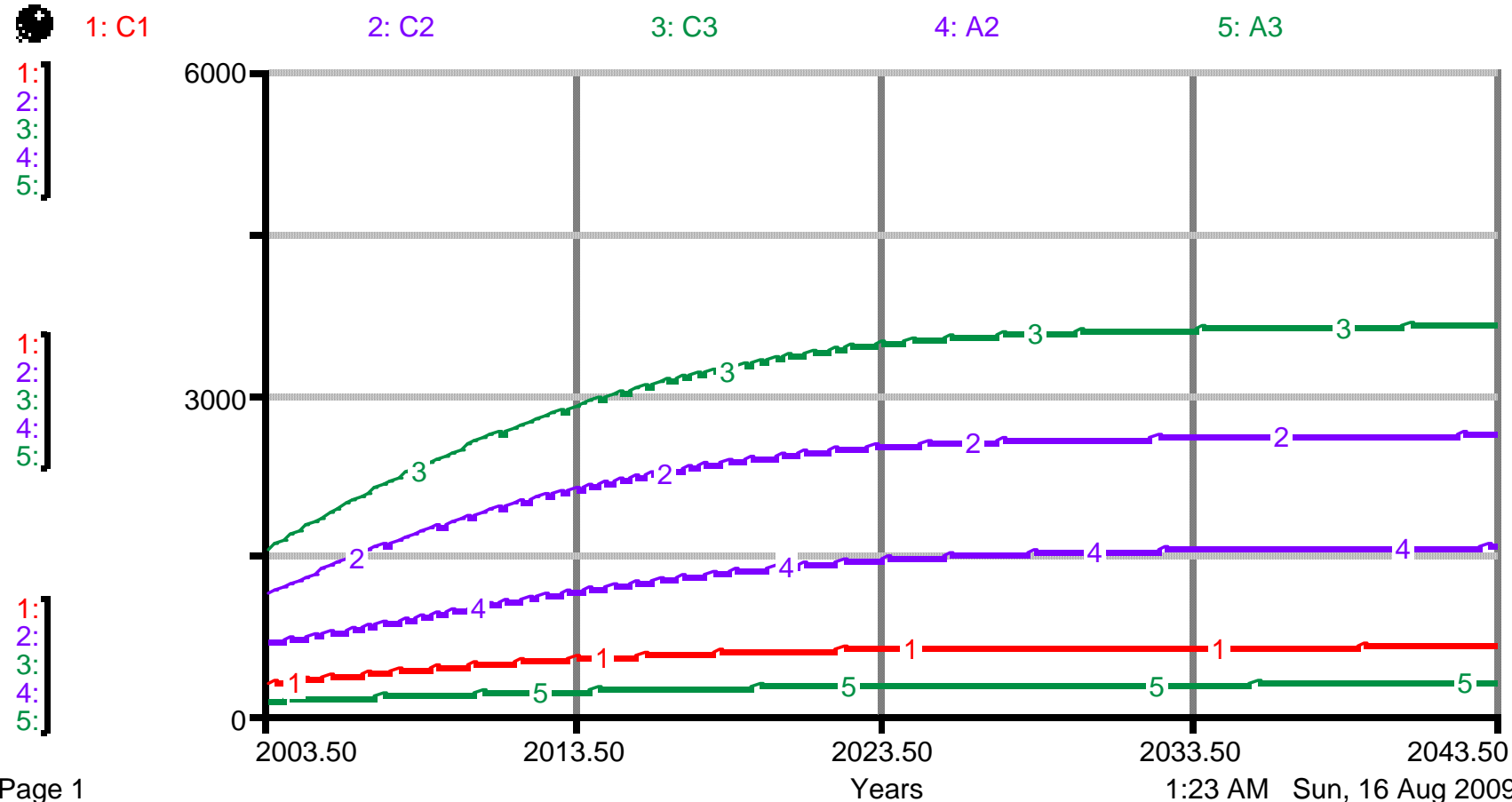
- Eating
- Grooming
- Bathing
- Dressing upper body
- Dressing lower body
- Toileting
- Bladder management
- Bowel management
- Transfer bed/chair/wlchr
- Transfer toilet
- Transfer tub/shower
- Walk/wlchr
- Stairs
- Comprehension
- Expression
- Social interaction
- Problem solving
- Memory

- 7 - Independence
- 6 – Modified independence Helper
- 5 – Supervision or set up
- 4 – Minimal contact assistance
- 3 – Moderate contact assistance
- 2 – Maximal contact assistance
- 1 – Total contact assistance

Aggregated FIM profile of <30
(out of possible 126)

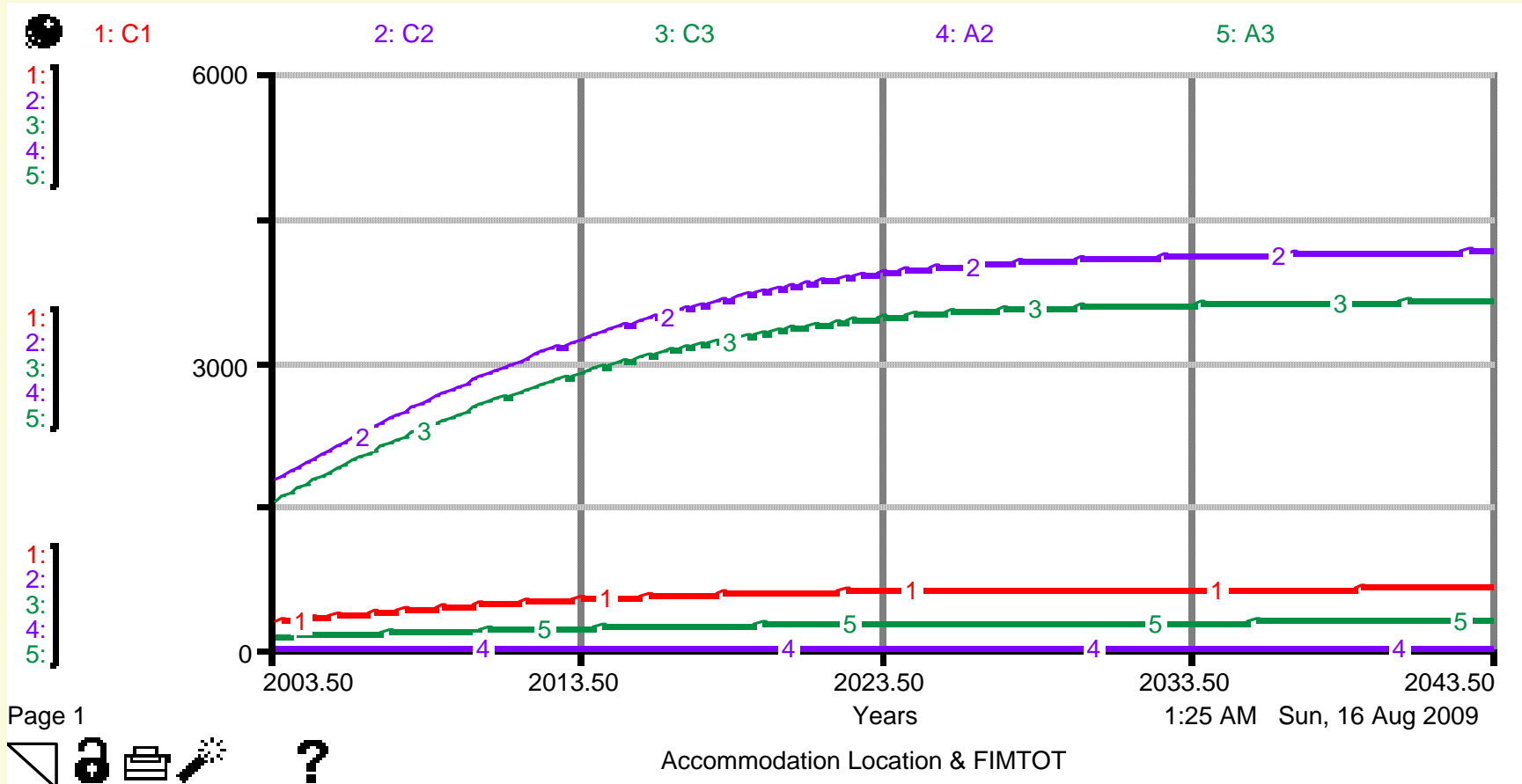


Beds needed if no change to policy





No more admissions to nursing homes if FIMTOT > 60



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C1 – CSTDA Accom FT 13-59

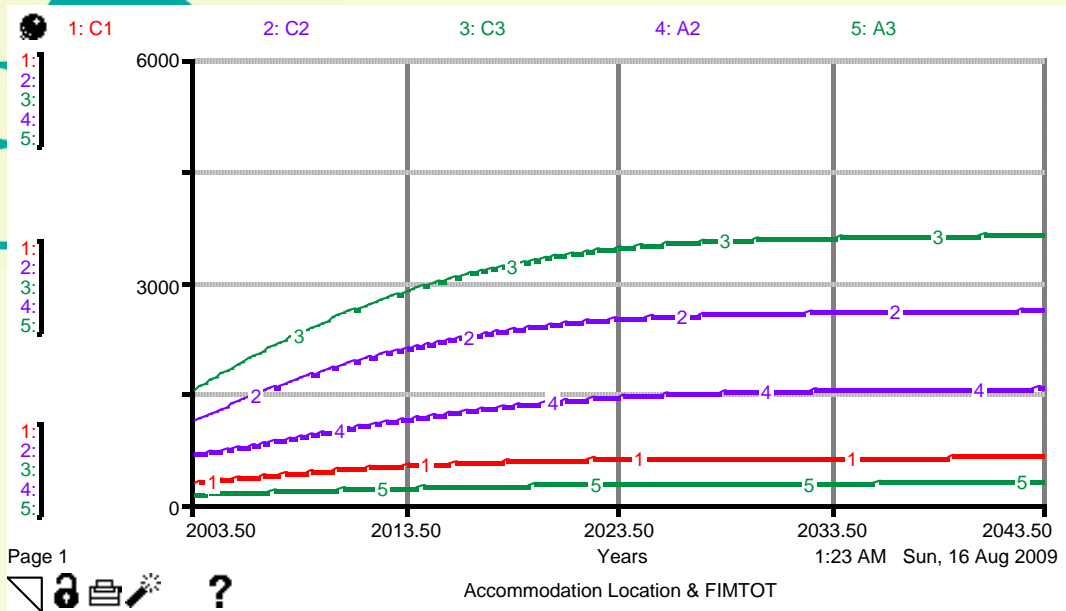
C2 - CSTDA Accom FT 60-99

C3 CSTDA Accom 100+

A1 – Aged Care FT 13-59

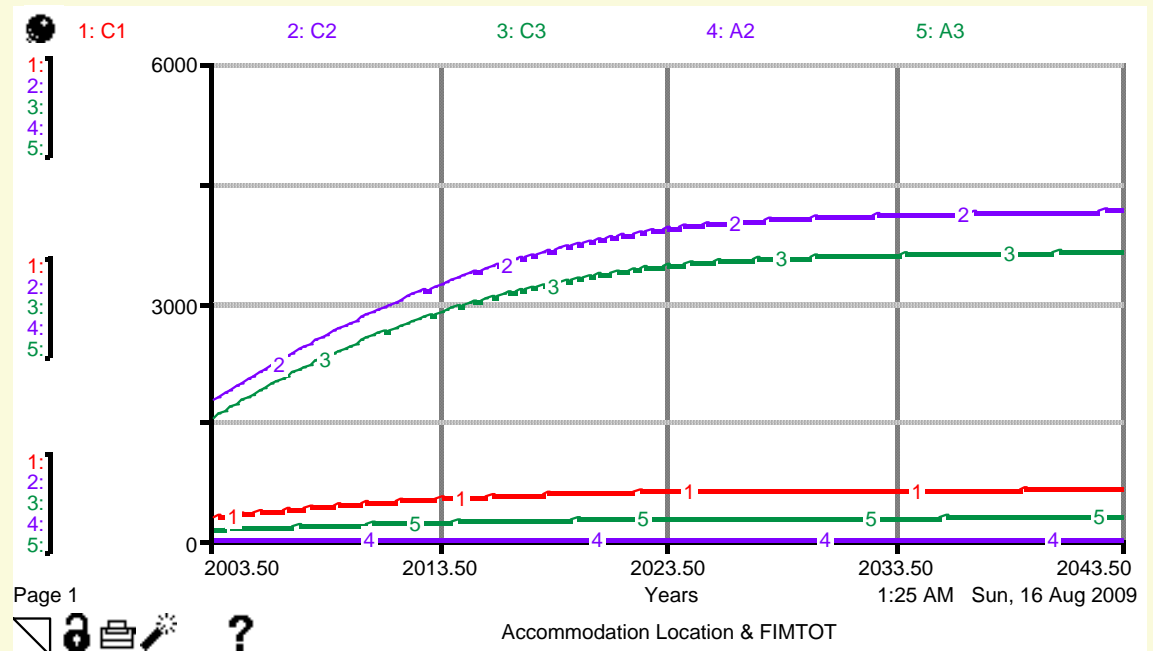
A2 – Aged Care FT 60-99

Aged Care FT 100+



With the flick of the switch, in the computer simulation

Can predict numbers of places needed in CSTDA accommodation





Methodology

System dynamics modelling

- Build a model
- Populate it with data, different planes:
 - Population of people with Intellectual Disability
 - Accommodation sites
 - Illness status
- Test practice and policy scenarios safely



Next stages

- Enhance current clinical study to include data for a representative view of health status
- Develop the plane of health status and health service need to inform health service development in NSW



Acknowledgments

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