



ActEarly Simulation Team

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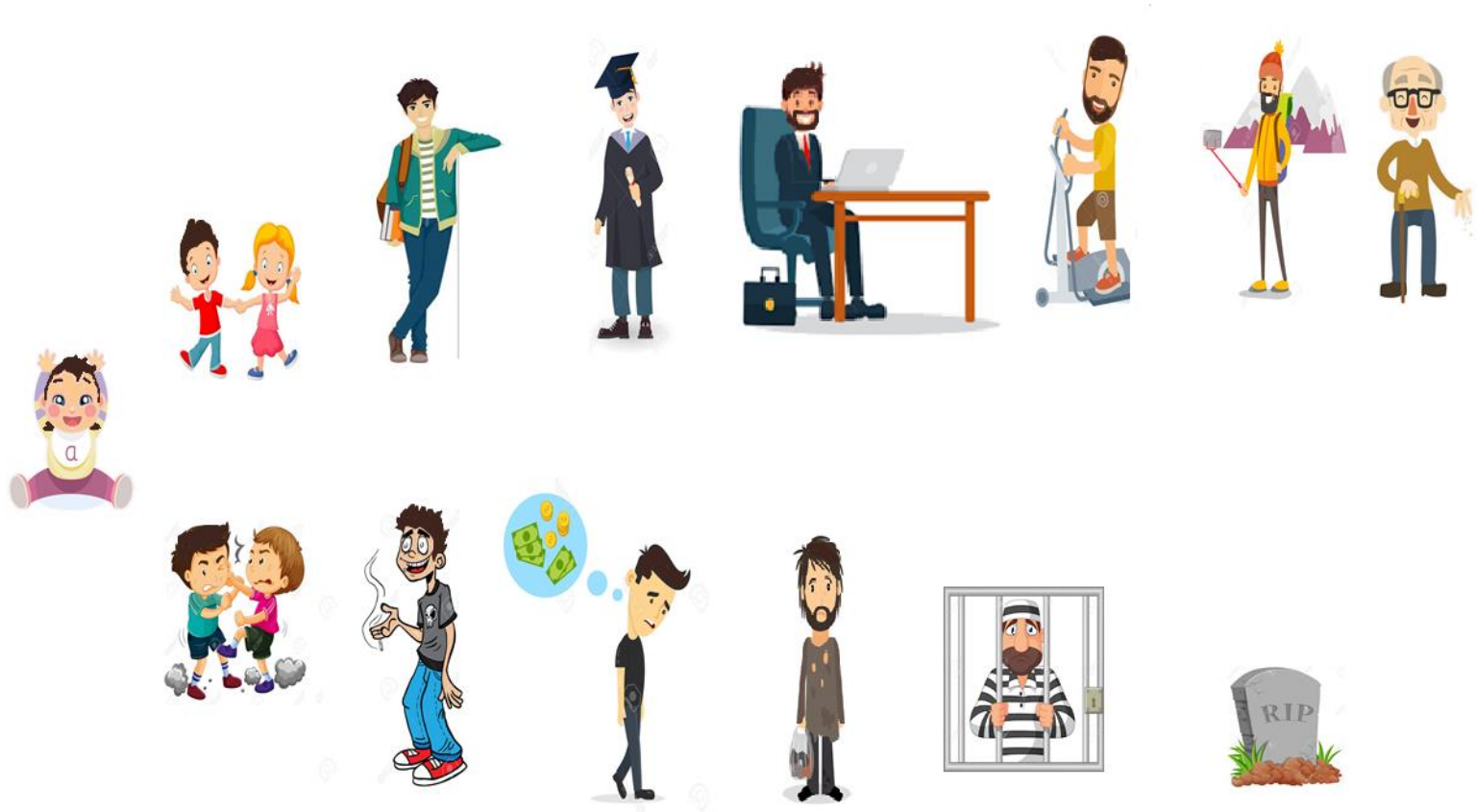
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LifeSim



A prototype lifecourse microsimulation model of a UK birth cohort born in the year 2000, developed by the University of York with funding from NIHR and Wellcome Trust

Paradigm shift in economic evaluation of childhood early interventions

- Credible modelling of long-term outcomes
 - Synthesis of scientific theory and evidence about childhood development and the lifecourse social determinants of health
 - Clustering and compounding of health and social disadvantages
- Distributional impact analysis
 - Inequalities in health, wellbeing and life chances
- Programme redesign
 - How can we target and tailor interventions more effectively to break the cycle of disadvantage?
- Portfolio evaluation
 - What happens if we implement many different interventions simultaneously?
- Systematic comparison of value for money
 - Not just a jumble of big numbers showing that all early interventions are worthwhile

PARENTAL CHARACTERISTICS

Parental income
Parental education
Parental mental health

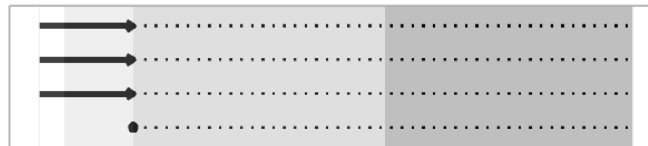


Life Stages

Pre-School Years
School Years
Working Years
Retirement

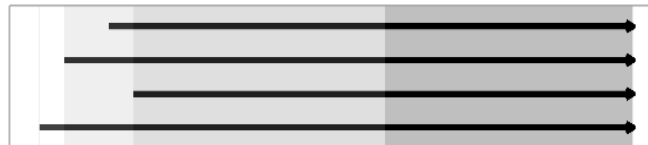
SKILLS AND EDUCATION

Conduct problems
Conduct disorder
Cognitive skills
University degree



HEALTH

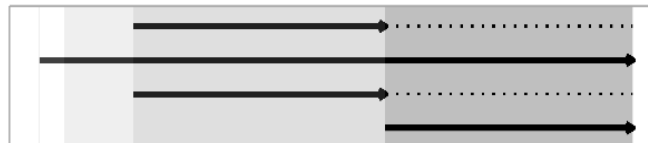
Unhealthy behaviour: smoking
Mental illness: depression
Physical illness: CHD
Mortality



Outcome evolving

ADVERSE LIFE EXPERIENCES

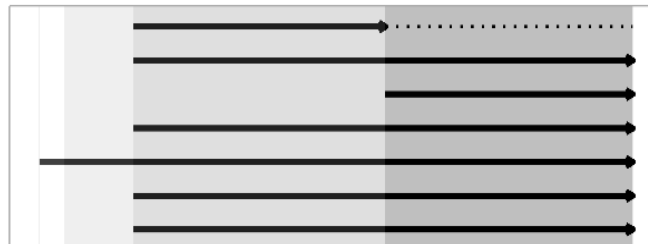
Unemployment
Poverty
Prison
Residential care



Outcome determined in the previous life years, but still relevant

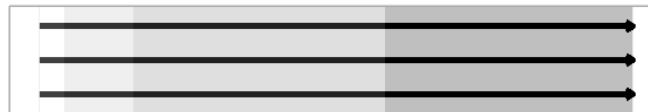
FINANCIAL

Earnings: work
Earnings: interest
Pension
Savings
Family wealth
Taxes
Benefits



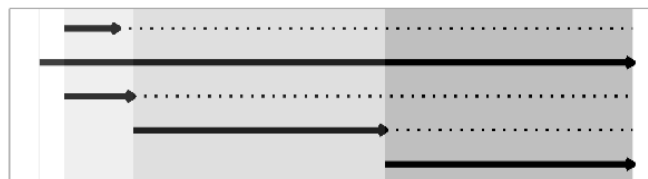
WELLBEING

Consumption
Health quality: in healthy life-years
Wellbeing: in good life-years



COSTS

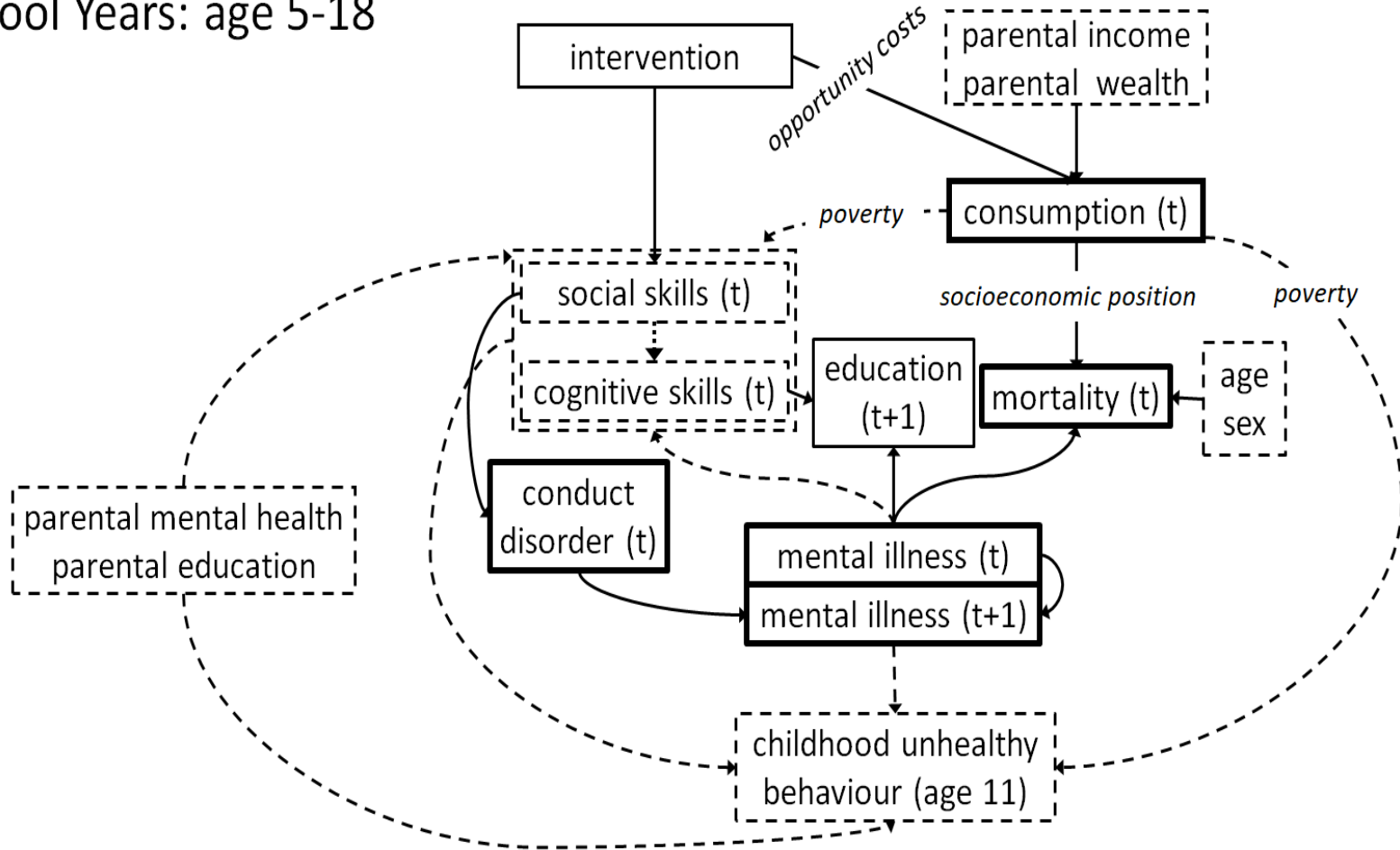
Opportunity cost of parent training
NHS healthcare costs
Conduct disorder costs
Prison costs
Residential care costs



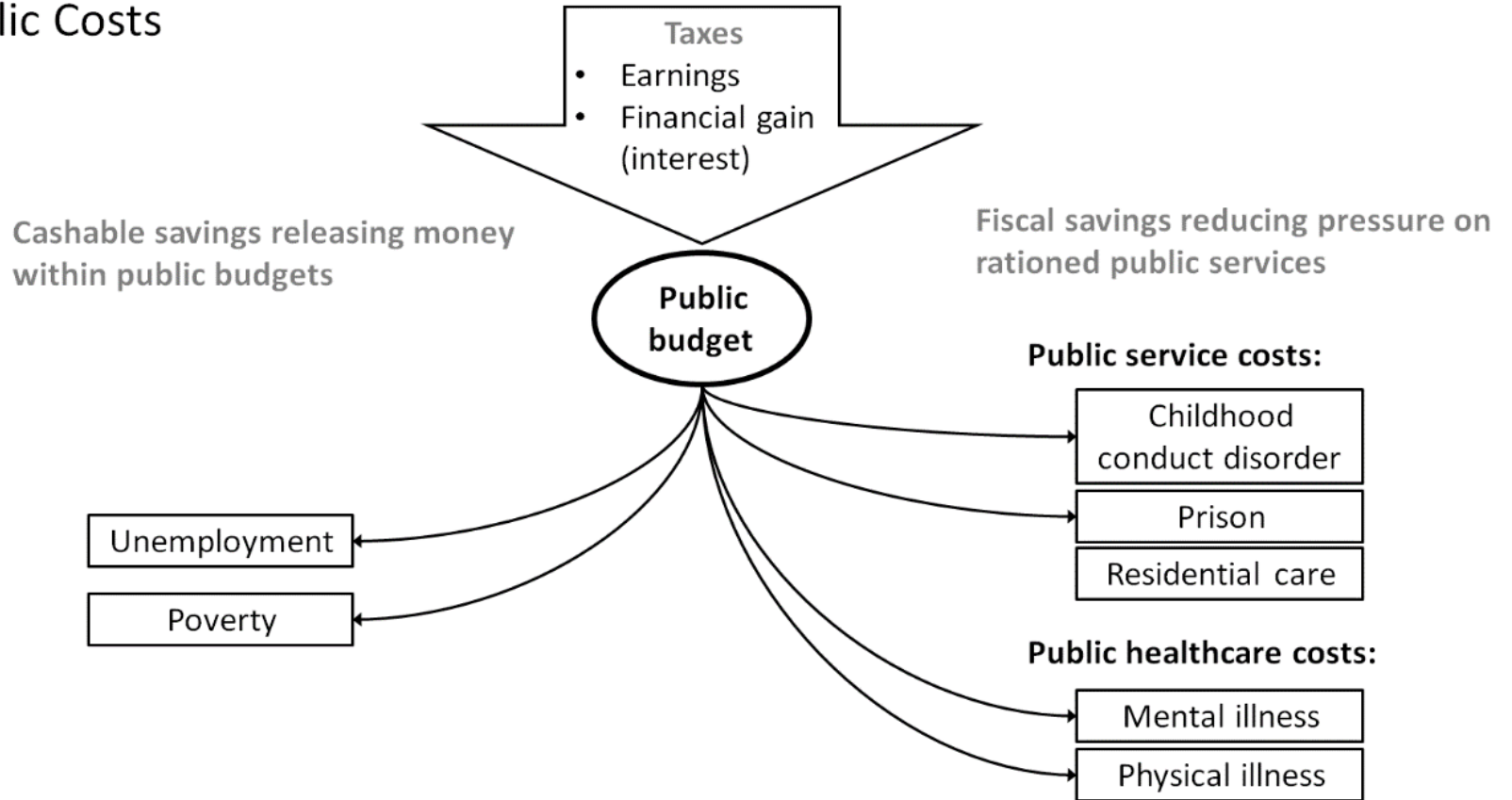
0 5 19 70 120

Age

School Years: age 5-18



Public Costs





ActEarly Simulation Team

Aims for years 1, 2 and 3

- To develop lifecourse microsimulation models capable of simulating the long-term consequences for children of diverse early intervention policies in Bradford and England, based on information about the short-term consequences
- To get these models ready to perform credible and useful lifecourse economic evaluation of interventions in all three ActEarly work programmes – healthy livelihoods, healthy learning and healthy places.
- To conduct illustrative lifecourse economic evaluations of one or two flagship ActEarly interventions, based on existing evidence and assumptions about the likely short-term outcomes, probably starting with universal basic income +/- life skills training in Bradford.



Aims for years 4 and 5

- To conduct a small number of credible and useful lifecourse economic evaluations of selected ActEarly interventions; to be determined in consultation with ActEarly partners.
- To conduct “redesign” evaluation of intervention variants and “portfolio” evaluation of intervention combinations
- To show how our lifecourse model can be tailored to local authorities other than Bradford, using the illustrative example of Tower Hamlets.



Priorities for years 1-3

- Redesign causal pathways to suit ActEarly
 - New outcomes (e.g. exam results, neighbourhood quality, partner, obesity, NEET 18-24)
 - Detailed pathways 0-24; simpler pathways 25-100
- Parameterise using detailed longitudinal data
 - Epidemiological modelling of England cohort data: MCS (0-14) and LSYPE/Next Steps (14-25)
 - Validation / calibration using Bradford micro data
- Fine-tune the economic evaluation capacity
 - Opportunity cost; redesign and portfolio evaluation
 - Multiple age cohorts
 - ? Modelling of behavioural responses (e.g. parental investment & labour supply responses to public benefits and services)
 - ?? Migration, family formation etc.

Lifecycle economic evaluation: from exotic fruit to staple diet?

