SOCIETAL IMPACTS OF HEALTH INTERVENTIONS

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Key questions

1. What wider societal impacts beyond health should be incorporated?
2. Are the wider societal impacts already reflected in measures of health?
3. How do we appropriately reflect opportunity costs?

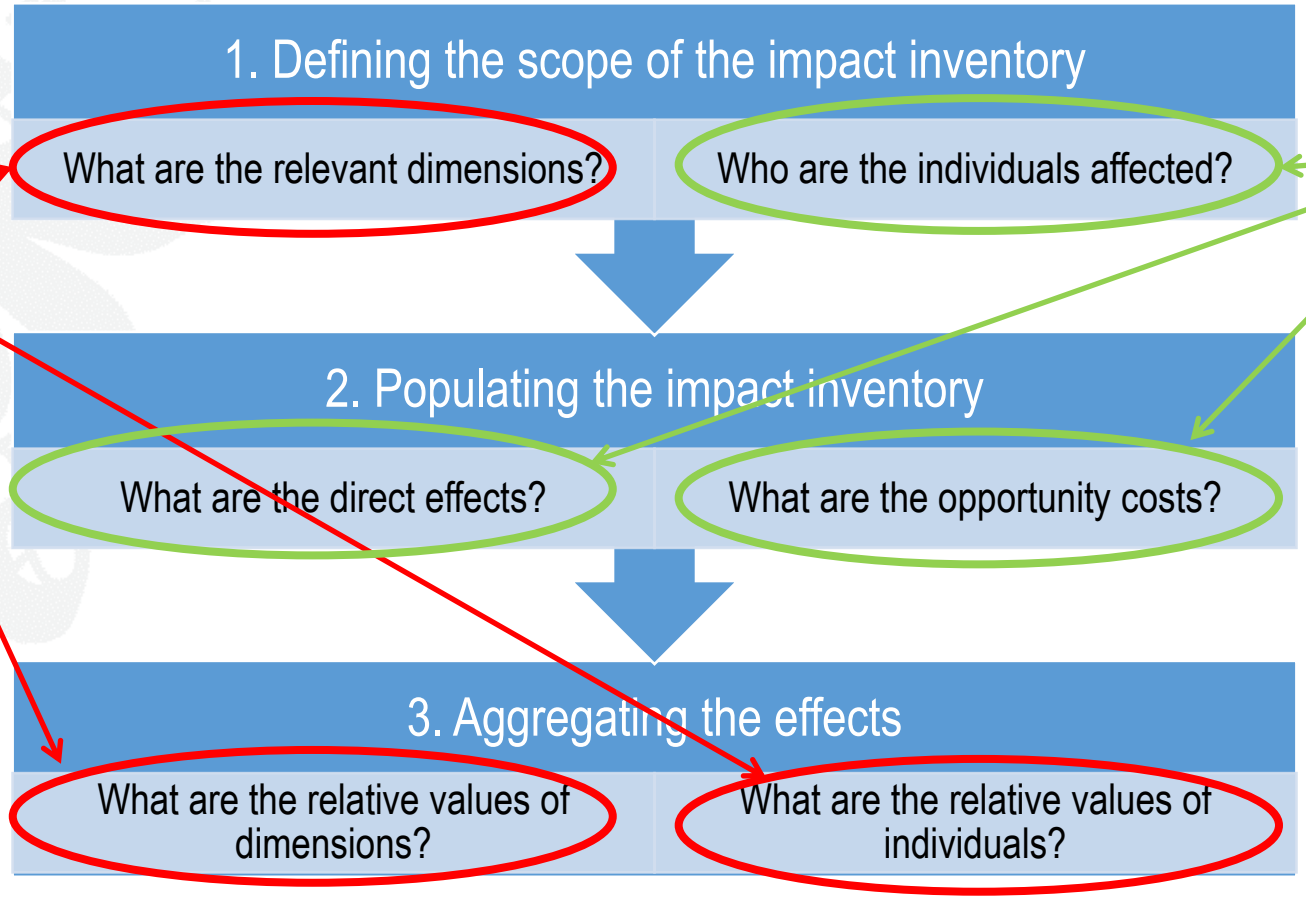
What information is required?

- What information do decision makers require?
  - To inform use of resources dedicated to health such as national health service, ring fenced funding, insurance
  - To inform use of public resources not dedicated to health, e.g. the provision of public health interventions within local authorities

- Measures of benefit
- Measures of cost
- Measures of opportunity cost

Stages of evaluation

Normative questions of value



Questions of fact

What should be included?

- Determine which health interventions to prioritise for funding
  - Aim to identify those that provide most value for money
  - What do we value?

WELLBEING
- Satisfaction
- Happiness
- Self-esteem

HEALTH
- Physical health
- Mental health

CAPABILITY
- Freedom
- Opportunity
- Control over life

GOODS AND SERVICES
- Formal production
- Informal production (e.g. caring)

SOCIETY
- Distribution of health
- Distribution of goods and services

Which of these and other aspects of value should be routinely used to determine the use of health resources?

Are the wider societal impacts already reflected in measures of health?

- Different measures exist for different concepts, e.g. EQ5D for health and ASCOT for social care quality of life
- Measures are highly correlated and cannot simply be added
  - In absence of an agreed shared overall measure, measures specific to each perspective could be useful
- Different measures used in health care, social care etc make it difficult to compare across sectors
- When we talk about production and consumption
  - Need to be careful about language
  - Helpful to distinguish by category, e.g. consumption of specific Government services, to enable consideration that a pound consumed in one area might not have equivalence to a pound consumed from another.
- Very challenging to determine whether people include income effects and effects of health on their ability to consume other things in their stated values, and may be impossible to avoid
- Need to clearly distinguish internal individual income effects from externalities and being a net contributor/consumer from a societal perspective

Estimating direct effects and opportunity costs

- Research on the direct effects of policies is required to estimate the impact on the outcomes of interest (once those to include in the evaluation have been agreed upon).
- Estimating the opportunity costs can be more challenging
  - requires consideration of what would alternatively be done with the resources if the policy is not introduced
- Decision makers are not typically tasked with identifying what they would disinvest from to fund new policies
- Further, the policies that will be disinvested from or forgone may be beyond their remit
- In general, an estimate of the change in outcomes on average per pound taken from different budgets can be used to translate costs to opportunity costs.

Productivity

- The amount of resources produced by a person net of the resources they utilise or consume are available for others in society to use and benefit from
- And conversely, if an individual consumes more than they produce, resources are not available for others and this represents a cost
- When a person engages in productive activity, they produce things of value, i.e. resources
- Productive activity can be paid or unpaid
  - **Paid production** e.g. labour provided for a salary
  - **Unpaid production** e.g. domestic work (cooking, cleaning), childcare, volunteering
- Consumption can be paid or unpaid (often distinguish care from other consumption)
  - **Formal care** e.g. social care paid for privately or by the Government
  - **Informal care** e.g. care provided by family and friends
  - **Personal paid consumption**
  - **Personal unpaid consumption** e.g. consuming a meal produced by family member's labour
  - **Government consumption** e.g use of services provided by Government

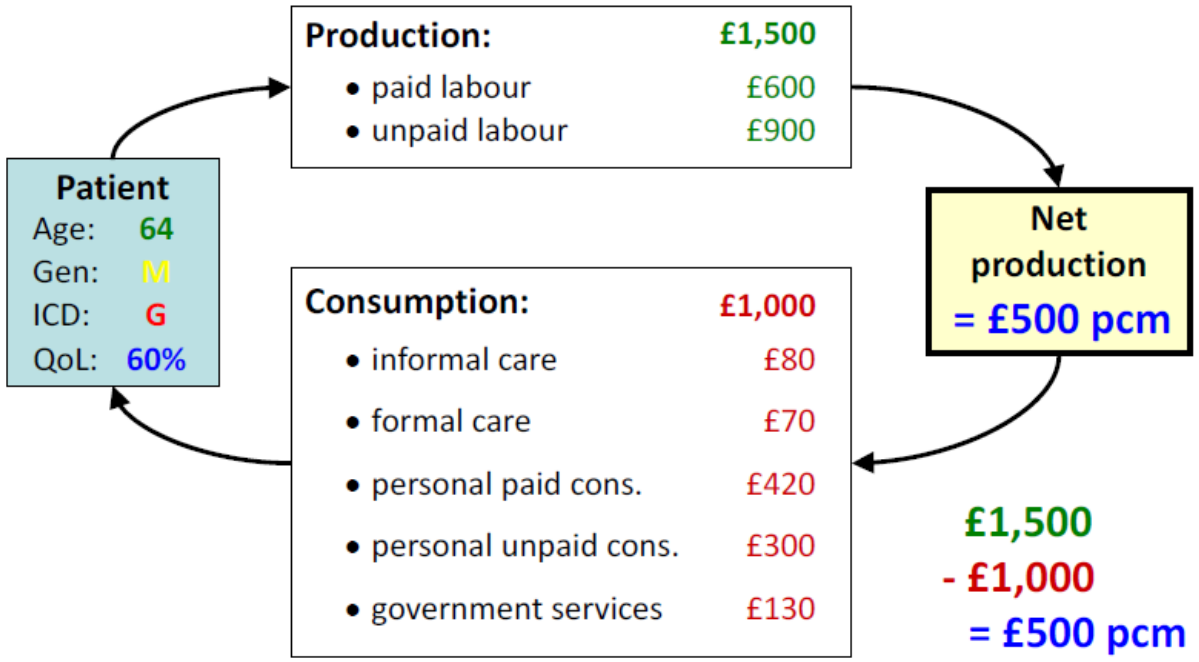
How value productivity?

- Paid production
  - Proportion of working time spent working * gross wage(age, gender) * oncosts(employment overhead adjustment)
- Unpaid production
  - Time spent on unpaid production * value of time
    - Value is opportunity cost of individual's time, i.e. net wage
- Issues in estimating valuing of production
  - Time use surveys, surveys of earnings
  - Human capital approach values hour lost to illness from worker perspective – each hour lost reduces production by certain amount
  - Friction cost values productive hours lost from employer perspective – loss of production less than human capital approach given replacement
  - Presenteeism – reduces value produced with each hour of work

What is feasible and practical?

- As well as limited resources for interventions, there is limited time and resource to evaluate all the interventions
- Primary research that elicits/measures all aspects of value for every new intervention may not feasible
- Using existing and readily available data sources, what can we determine?

Wider societal impacts



Bringing multiple outcomes to bear on decisions

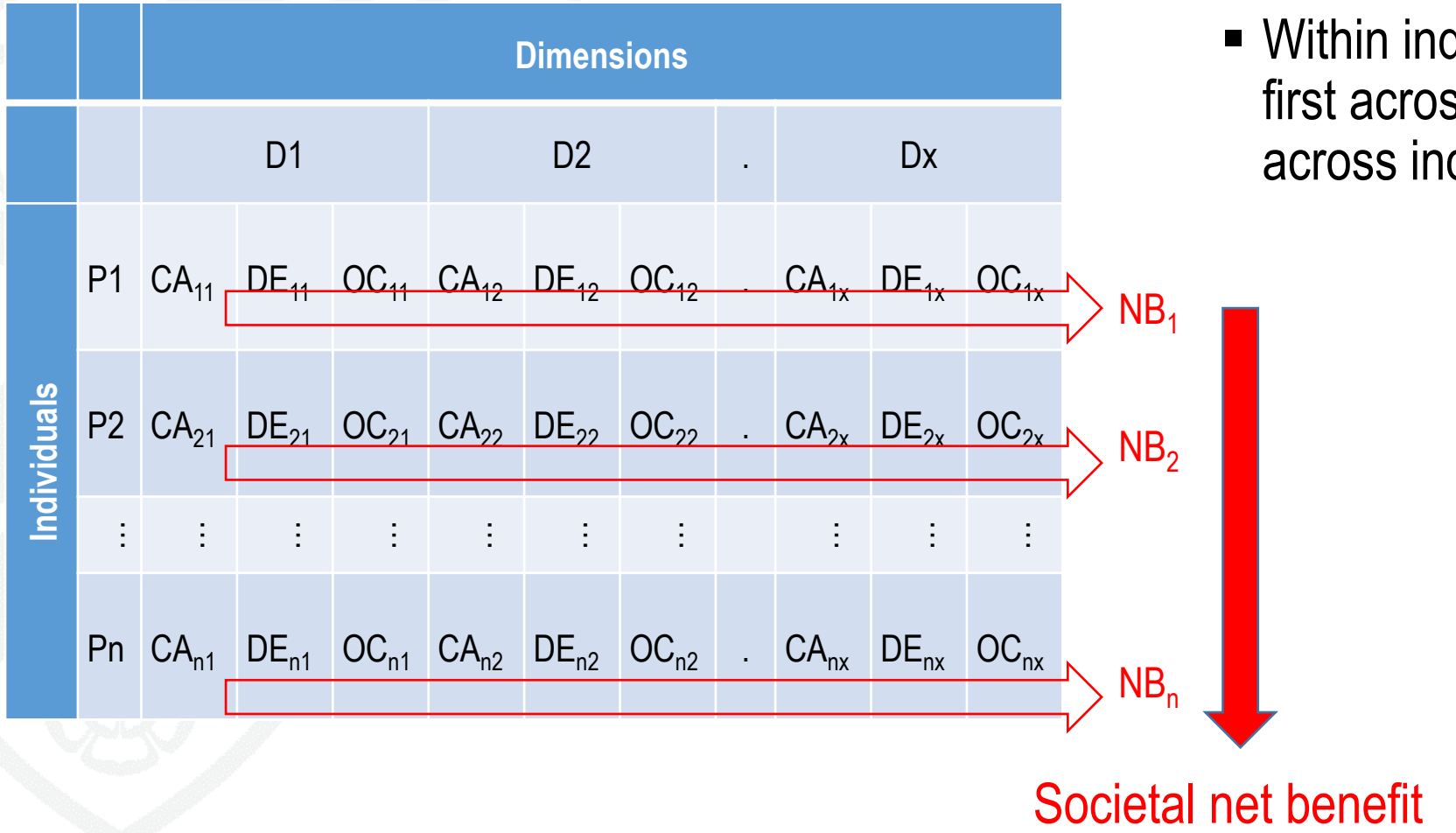
- Separate spending from outcomes rather than just net figures, i.e. present breakdown by outcomes and costs and the combination
  - Disaggregating the spending can illustrate any cost shifting between different sectors/stakeholders
- Showing impacts in natural units can be useful, e.g. number of children in care under each intervention, instead of costs of care
- Demonstrate cost of generating the same level of outcome from different sources
  - E.g. for an NHS funded intervention that generates X QALYs, you might show the cost of generating X QALYs from public health spending

Impact inventory (stages 1 and 2)

		Dimensions								
		D1			D2			.	Dx		
Individuals	P1	CA_{11}	DE_{11}	OC_{11}	CA_{12}	DE_{12}	OC_{12}	.	CA_{1x}	DE_{1x}	OC_{1x}
	P2	CA_{21}	DE_{21}	OC_{21}	CA_{22}	DE_{22}	OC_{22}	.	CA_{2x}	DE_{2x}	OC_{2x}
	⋮	⋮	⋮	⋮	⋮	⋮	⋮		⋮	⋮	⋮
	Pn	CA_{n1}	DE_{n1}	OC_{n1}	CA_{n2}	DE_{n2}	OC_{n2}	.	CA_{nx}	DE_{nx}	OC_{nx}

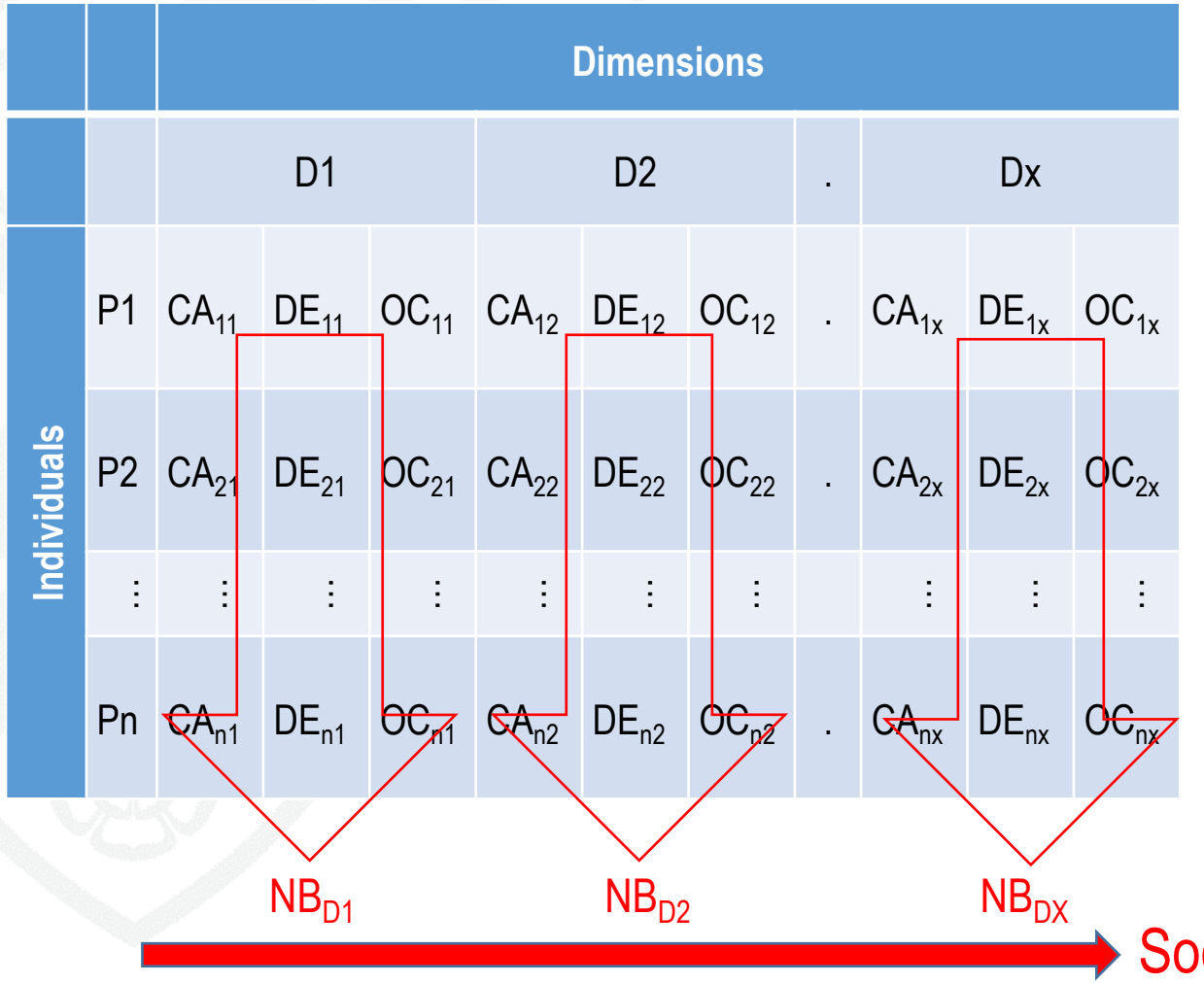
- Relevant dimensions (D_j), ideally measured in natural units
  - Keep values separate for consistency and SA
  - E.g. ensure health impact from motor vehicle accidents valued in same way as direct QALY benefit
- Opportunity costs (OC) do not necessarily fall on individuals (P_i) who directly benefit (DE)
- For some aggregation additional information required on affected individuals
  - E.g. current allocation (CA) to evaluate equity

Impact inventory (stage 3)



- Within individual approach sums first across dimensions, then across individuals

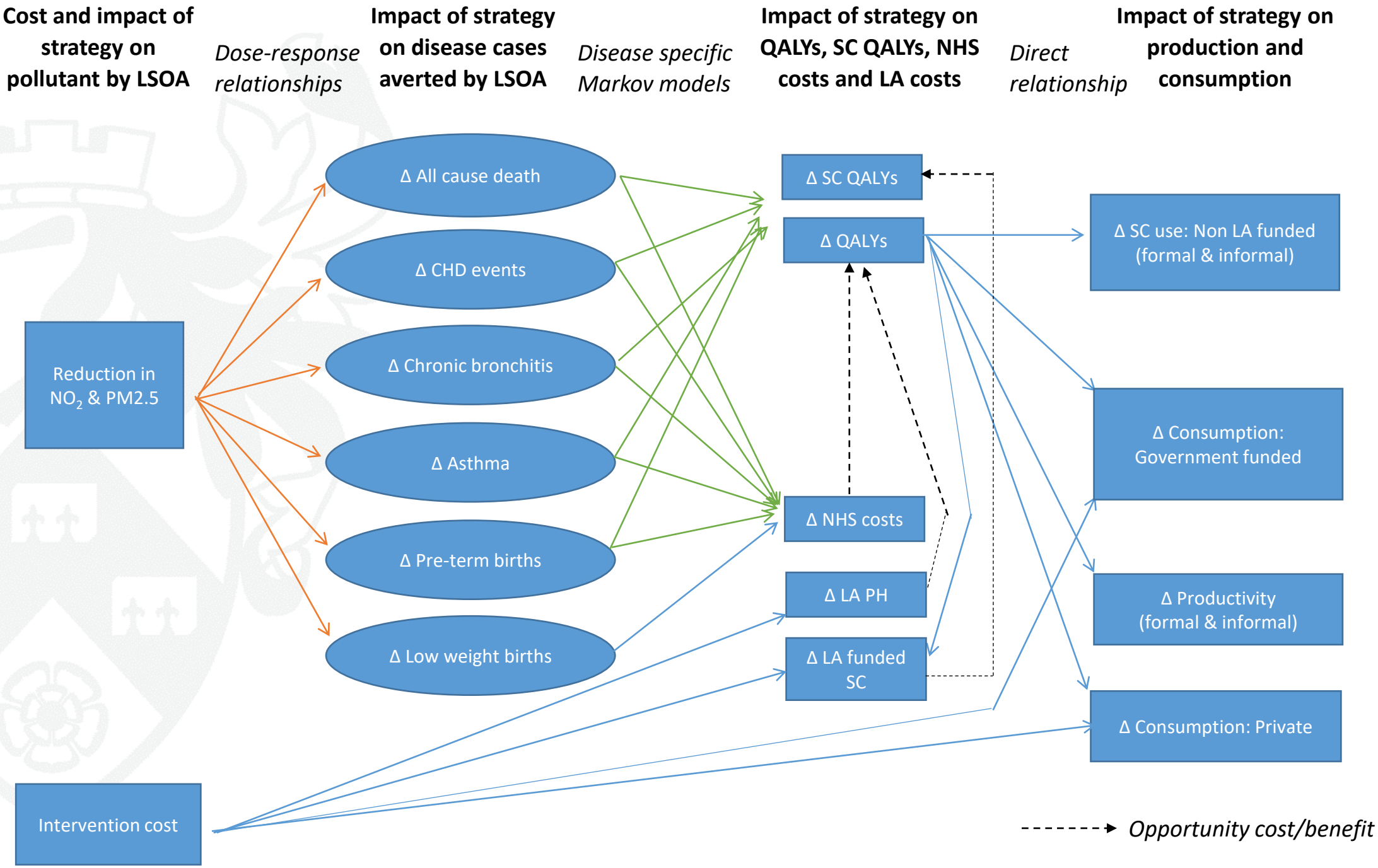
Impact inventory (stage 3)



- Within dimension approach sums across individuals, then across dimensions
- Consideration required on normative foundations and values imposed in aggregation
- May not be possible to agree fully specified SWF

What wider societal impacts beyond health should be incorporated?

- Include all impacts avoids cherry picking
- Health interventions may rely on co-production
  - Multiple outcomes, and the breakdown by alternative viewpoints may be required to inform and effectively communicate to different audiences.
- Important to consider wider benefits such as improving systems and processes, sustainability, social cohesion, etc.
- Need to get balance between simplifying complexity in order to provide useful and timely evidence for deliberation against over-simplification and risk of introducing bias and misleading decision makers.


Cost and impact of strategy on pollutant by LSOA
Dose-response relationships
Impact of strategy on disease cases averted by LSOA
Disease specific Markov models
Impact of strategy on QALYs, SC QALYs, NHS costs and LA costs
Direct relationship
Impact of strategy on production and consumption
Reduction in NO_2 & PM2.5
Δ All cause death
Δ CHD events
Δ Chronic bronchitis
Δ Asthma
Δ Pre-term births
Δ Low weight births
Δ SC QALYs
Δ QALYs
Δ NHS costs
Δ LA PH
Δ LA funded SC
Δ SC use: Non LA funded (formal & informal)
Δ Consumption: Government funded
Δ Productivity (formal & informal)
Δ Consumption: Private
Intervention cost
Opportunity cost/benefit

Wider outcomes

	Health outcomes				Non health outcomes				
	Change in QALYs compared to no intervention		Change in equity weighted QALY compared to no intervention		Social care perspective			Production less consumption	
Strategy	QALYs	Rank	EDE QALYs	Rank	LA expenditure	Social care QALYs[†]	Rank by social care QALYs	Net production[‡]	Rank
10	1049	5	1150	5	-£130,662	9	6	£2,826,334	9
11	1278	1	1391	1	-£170,300	14	1	£9,181,722	2
12	1023	8	1130	8	-£133,998	0	15	£2,656,160	11
13	1087	2	1188	3	-£135,017	13	2	£3,679,144	8
14	1084	3	1196	2	-£145,008	0	14	£3,761,783	7
15	1058	4	1157	4	-£129,039	12	3	£8,780,689	3
16	1040	6	1140	6	-£128,975	9	7	£2,644,130	12
17	1036	7	1132	7	-£125,632	12	4	£2,754,903	10