

Work Package 4: Cost-Effectiveness Work Package 5: Uncertainty and Value of Information analysis

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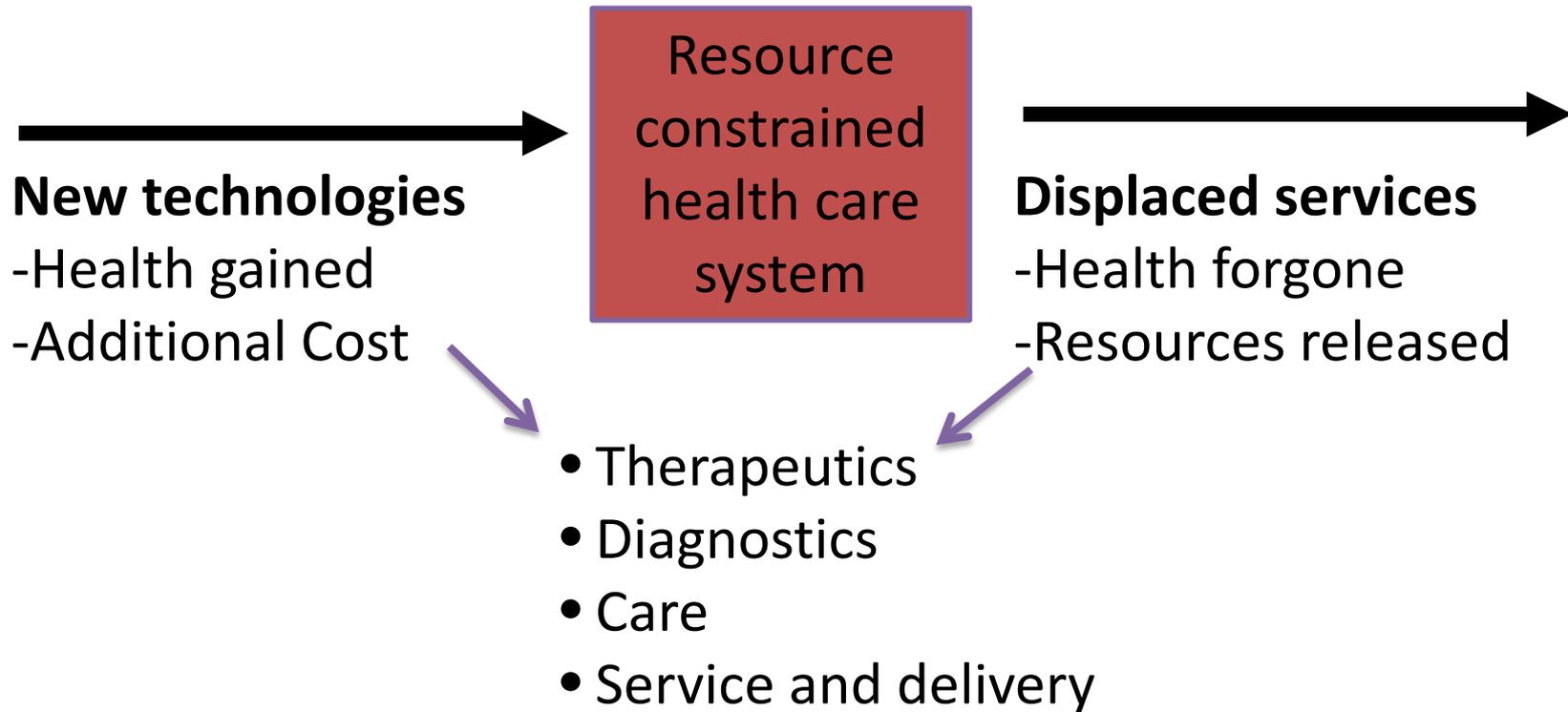
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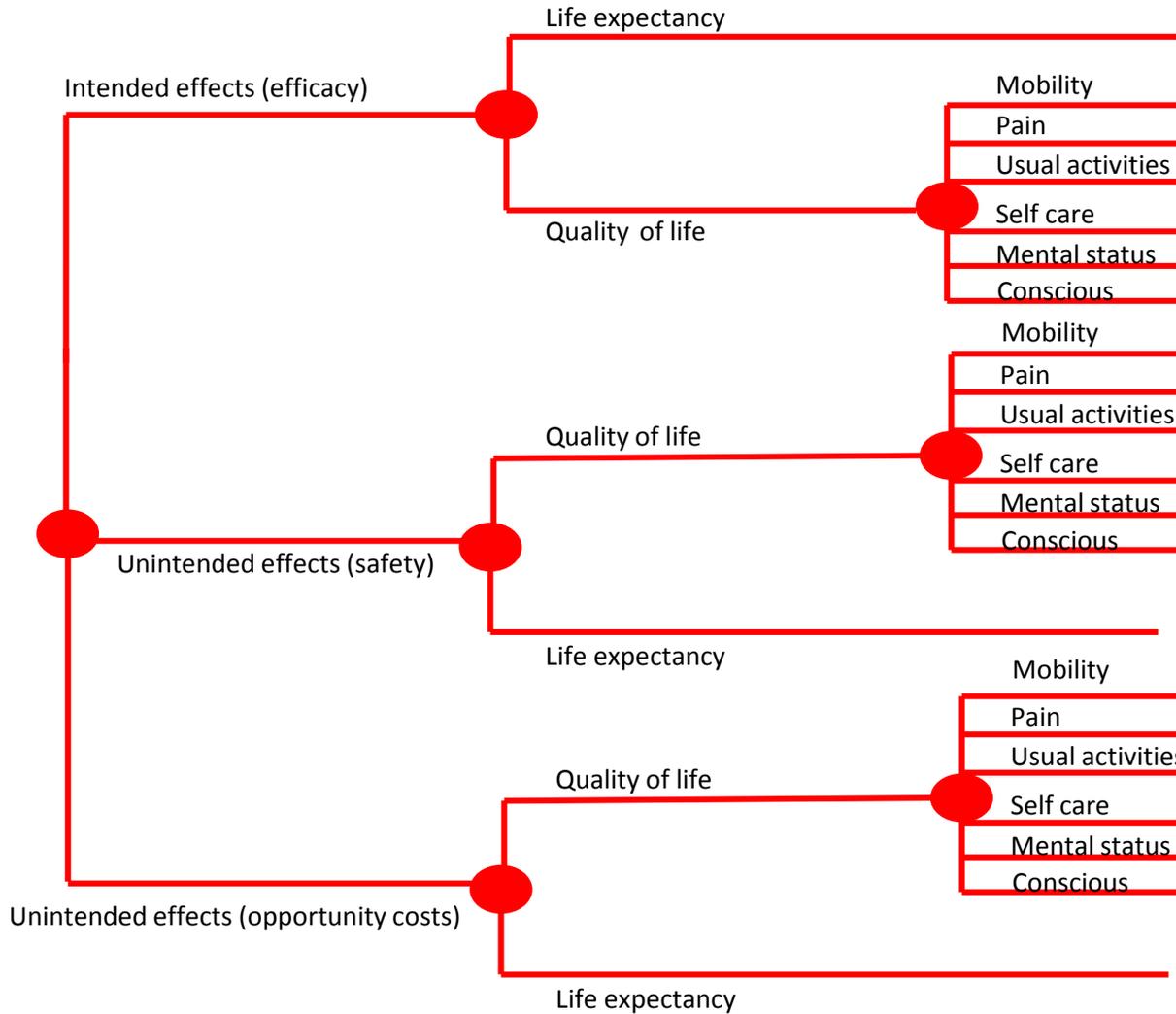
Rod Taylor

What is cost-effectiveness?



Is the health gain from the new treatment greater than the health foregone through displacement (opportunity costs)?

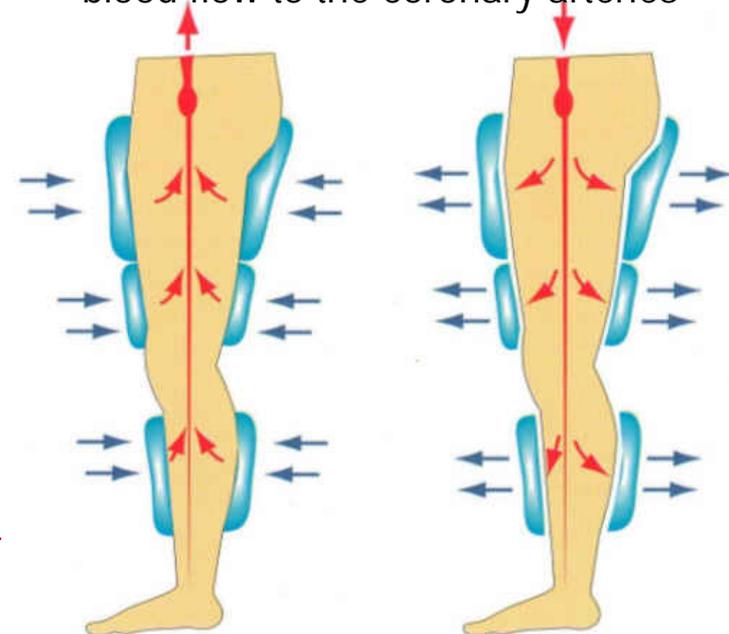
Estimating population health effects



Case study: EECP for chronic stable angina

- Enhanced external counterpulsation (EECP) is a non-invasive procedure used to treat chronic stable angina
- Primary outcome is the symptomatic relief of angina symptoms
- EECP has large initial upfront costs of treatment (£4,347 per patient), which are irrecoverable once treated
- EECP as adjunct to standard therapy vs. standard therapy alone
- One RCT showed evidence of improved HRQoL at 12 months
- Uncertain whether HRQoL benefits are sustained beyond 12 months

Long inflatable pressure cuffs are inflated and deflated to increase blood flow to the coronary arteries



Is EECP expected to be cost-effective?

- Assessment of effectiveness, potential for harm and costs over a patient time horizon

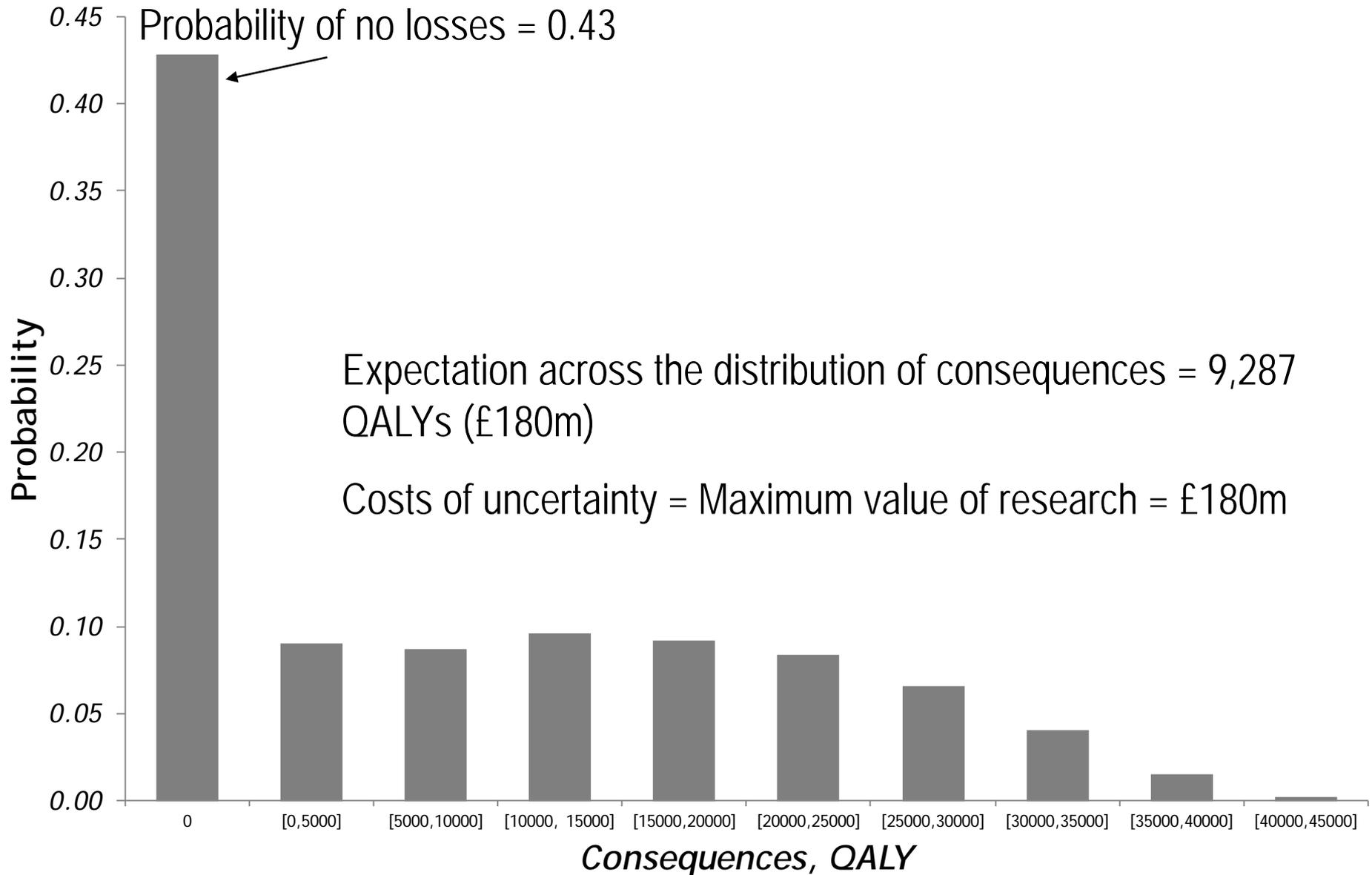
EECP:

Prevalent population, 110,000

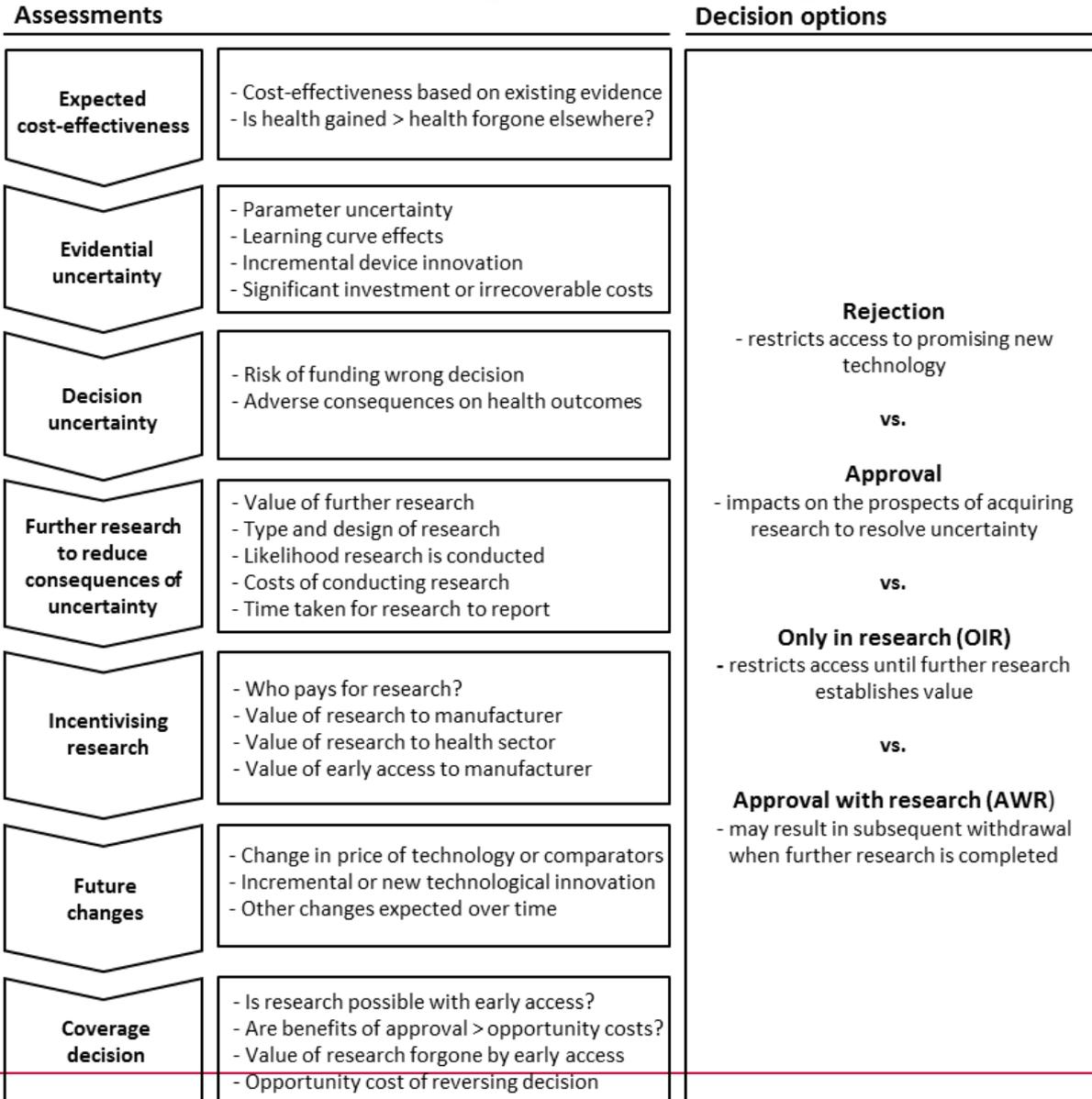
Future incidence, 9,500 per annum

Expected cost-effectiveness at population level				Cost-effectiveness threshold at £20,000 per QALY	
Treatment	Costs (£m)	QALY	ICER (£/QALY)	NHE QALYs	Incremental NHE QALY
EECP	896	1,435,787	£19,391	1,391,001	1,405
Standard	-	1,389,596		1,389,596	

Extent and consequences of evidential uncertainty



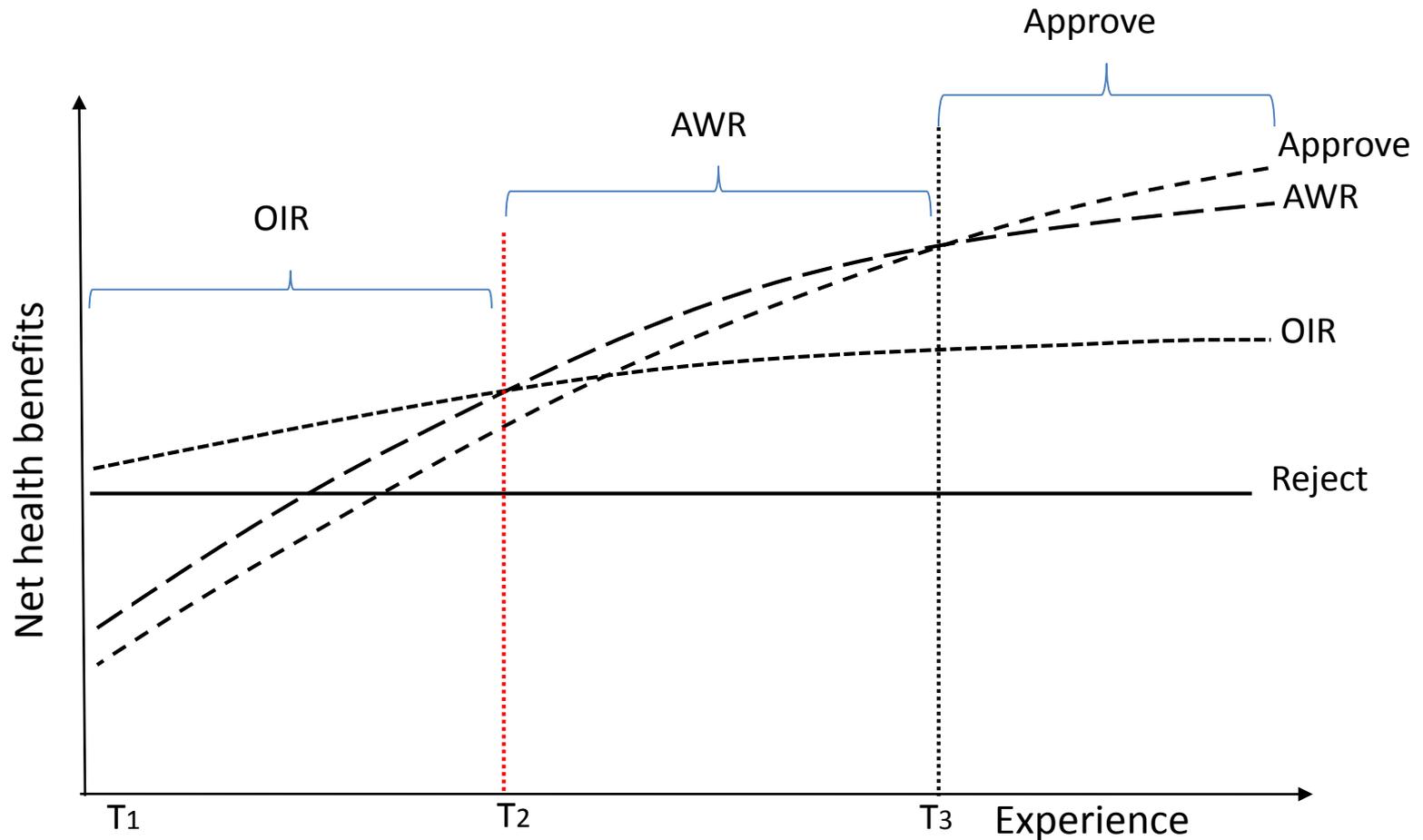
Framework for characterising uncertainty



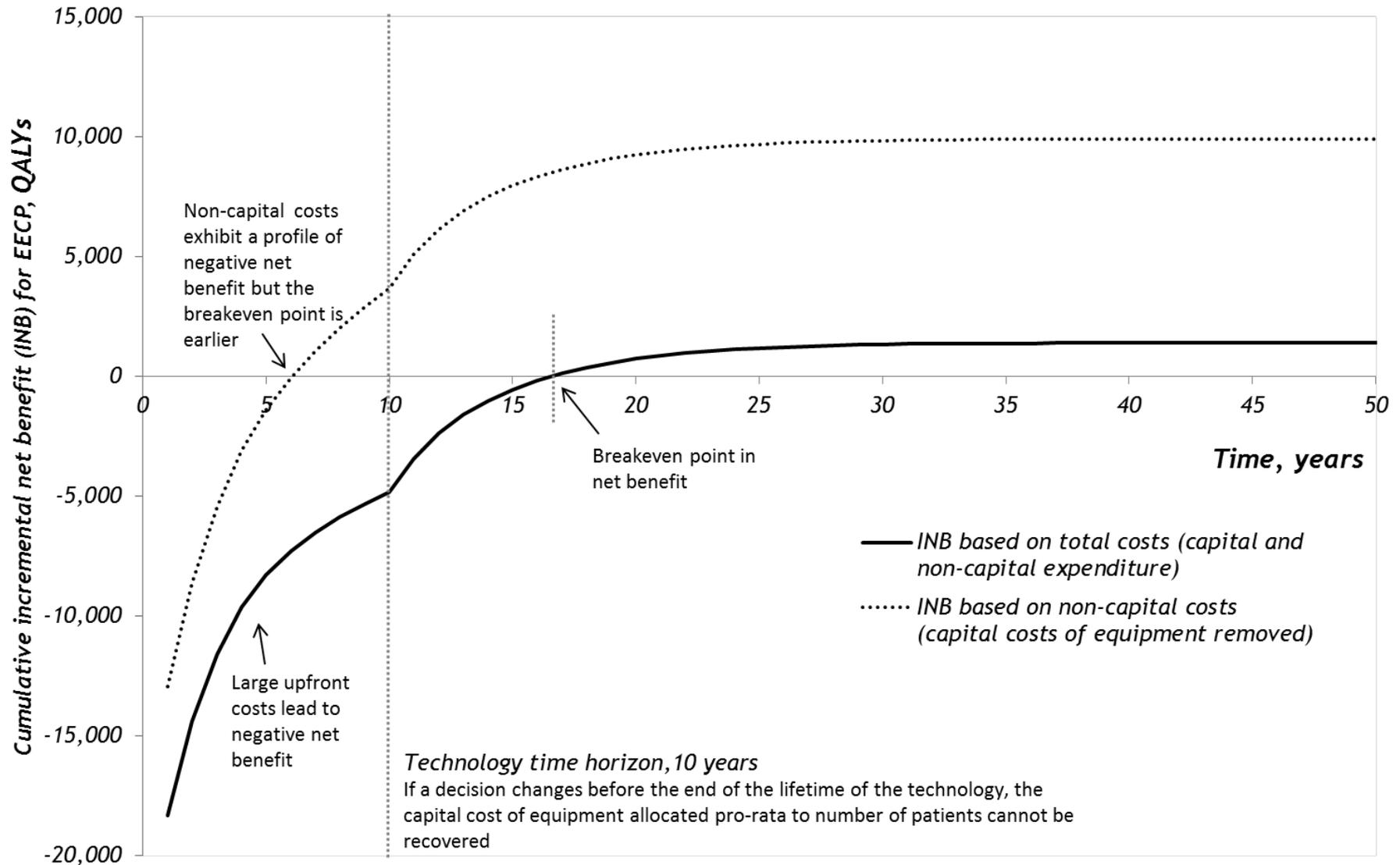
Comparing decision options for EECp

EECP	Approve	OIR	AWR	Reject	Value of AWR	Uncertainty resolved at launch	Value of evidence at launch
Expressed in QALY							
T=3	1,391,001	1,397,192	1,393,578	1,389,596	-3,614	1,400,288	3,096
T=7	1,391,001	1,393,608	1,392,030	1,389,596	-1,578	1,400,288	6,680

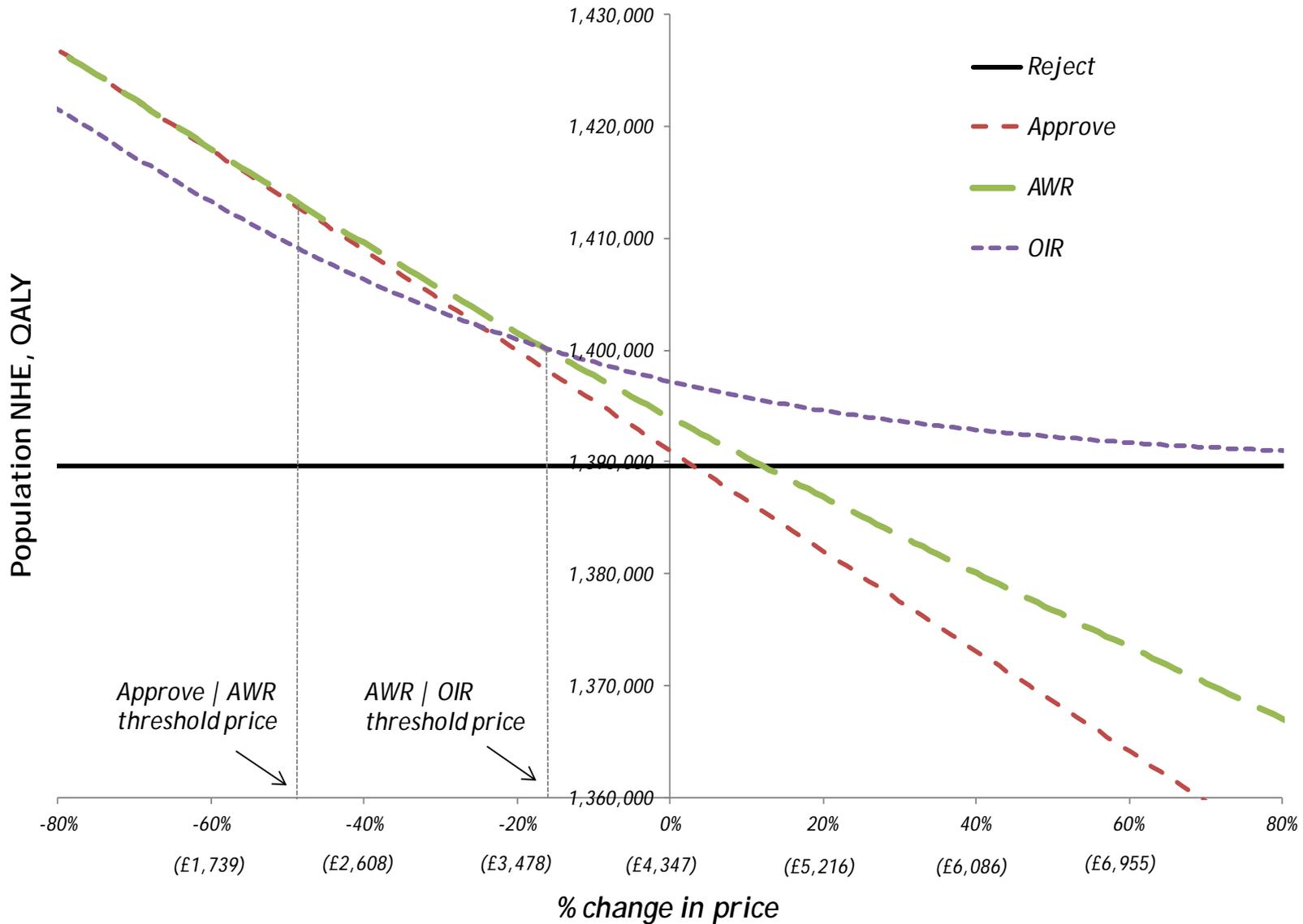
Implications of learning curve on coverage decisions



Investment profile for EECP



Price thresholds for EECP



Conclusions

- Value = cost-effectiveness = maximising population health
- Evidential uncertainty => decision uncertainty => population health loss
- Need to assess the value of research and policies most suitable to result in valuable research
- Key features of devices need to be factored into these assessments