AWTTC
All Wales Therapeutics & Toxicology Centre
Canolfan Therapiwteg a Thocsicoleg Cymru Gyfan

Value for Money

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IPFR value for money

- Introduction to Health Economics
- Concept of opportunity cost
- Comparative analysis
- Cost sources

- Thresholds
  - Multipliers / special cases
  - Application and decision making

IPFRs and value for money

The purpose of a rapid evidence summary in the IPFR process is to assist panels by outlining:

- Brief summary of request and patient details and background
- Clinical effectiveness
- Economic evidence and considerations
- Conclusions
- Summary of search results, terms and dates

Health economics

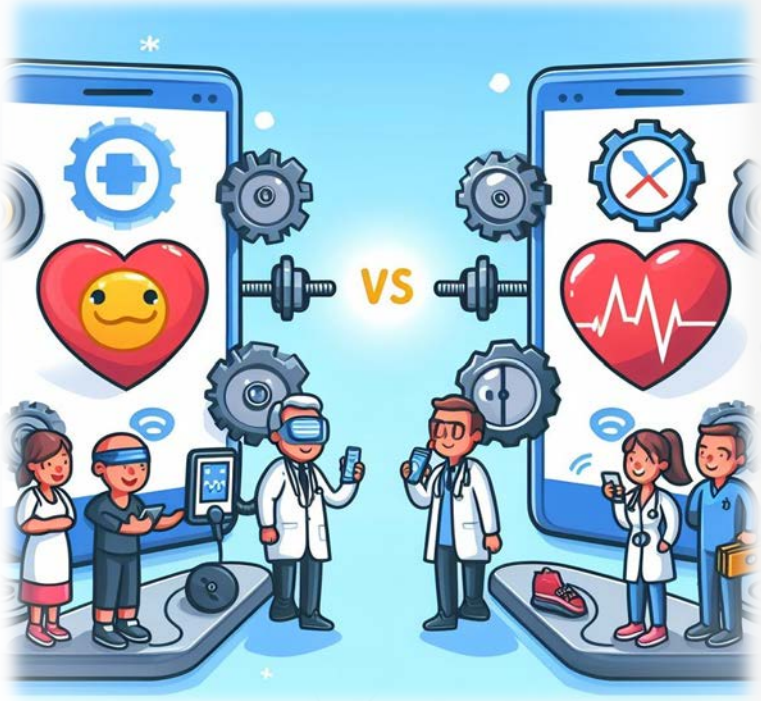
- Aiming to offer the best value for money - the most health benefit for a given budget.
- Opportunity cost – spending on one intervention requires less spending on alternatives.
- Health economic analysis looks to identify which interventions are likely to offer the best net benefit.

Myth busting

- Health economics is **NOT about saving money and spending less**
  - Money is never really ‘saved’ in the NHS budget as it would always be spent on something else
- Health economists are concerned with **maximising benefits** **NOT minimising costs**
- This means that it is possible for costly treatments to be cost-effective if they are more effective than the available treatments
- Also means that treatments may not be cost-effective just because they are cheaper. **Effectiveness matters**

Comparative Assessments

Comparative effectiveness



The study design for comparative analysis often follows the PICO framework

Patient

Intervention

Comparator

Outcomes

The net clinical benefit is calculated as the difference (typically an improvement) of the proposed intervention compared to the next best alternative (standard of care).

The difference between the two is the denominator in the ICER equation.

Comparative costs

The ICER (incremental cost effectiveness ratio)

- Difference in clinical effectiveness
- Difference in costs

$$\mathbf{ICER} = \frac{(\mathbf{C_1} - \mathbf{C_2})}{(\mathbf{E_1} - \mathbf{E_2})}$$

C_1 = cost in intervention group

C_2 = cost in control group

E_1 = effect in intervention group

E_2 = effect in control group

Sourcing costs

Commonly, IPFR evidence is of lower quality, or missing, compared to traditional HTA.

Sourcing costs : Cost considerations

- Direct intervention costs – net of control treatment costs
- Continued care costs (net)
- Adverse events
- Discounting (time preference for money)

- Where would appropriate costs come from?

Costs

Drug costs

- BNF (may not represent actual price paid)
- Pharmacy department

Non-drug intervention costs

- Supplier
- Commissioning teams

Resource use costs

- PSSRU

Procedure costs

- NHS References costs

Applicants can define what the treatments/offset costs may be without providing actual values:

Give the best description of the costs as you can.

Thresholds

Thresholds

- Interventions with an ICER of less than **£20,000** per QALY gained are considered to be cost effective.
- Interventions with an ICER of above **£20,000** there are three considerations:
  - The degree of certainty around the ICER (certainty favoured)
  - Quality of life is inadequately captured
  - Benefits that may not have been adequately captured

  - As the ICER moves from £20,000 to £30,000 the HTA body would need to make explicit reference to the relevant factors considered above. Above £30,000 ICER the HTA body would need to make an increasingly stronger case for supporting the intervention.

Threshold multipliers and special cases

- AWMSG very rare disease policy
  - 4 criteria, all must be met.

- Severity multiplier
  - Represents societal value where a QALY =/= QALY

  - Severity based on QALY shortfall
    - Proportional shortfall
    - Absolute shortfall

Thresholds: AWMSG very rare disease

- Very rare diseases: up to £100,000 per QALY gained
  - This is incredibly uncommon to be applied
- The disease is **very rare** (fewer than 63 cases in Wales)
- Medication **usage low** (fewer than 18 in Wales for indication)
  - No more than 30 for all indications
- **Severity**: The very rare disease significantly shortens life or severely impairs quality of life
- no other satisfactory **treatment options**

Severity Multiplier

- Two levels 1.2* and 1.7*

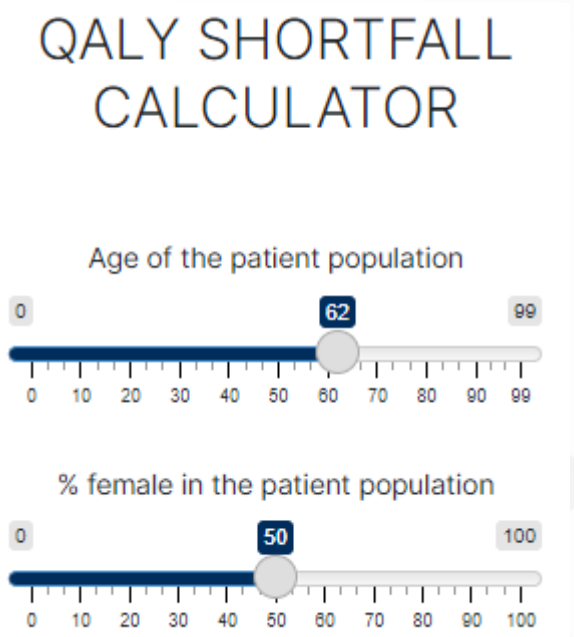
QALY weight	Proportional QALY shortfall	Absolute QALY shortfall
1	Less than 0.85	Less than 12
x1.2	0.85 to 0.95	12 to 18
x1.7	At least 0.95	At least 18

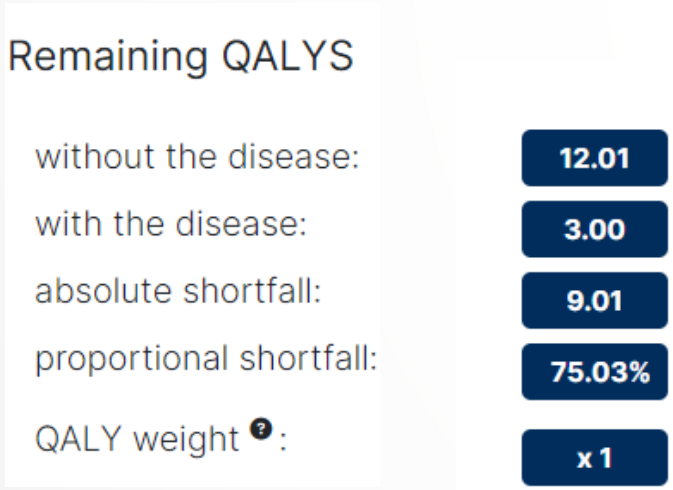
- Calculation is based on current standard of care QALY vs QALY of people without disease.

Severity multiplier

- Estimate the QALY of people without the disease (this includes age and sex)

- [QALY Shortfall Calculator (york.ac.uk)]





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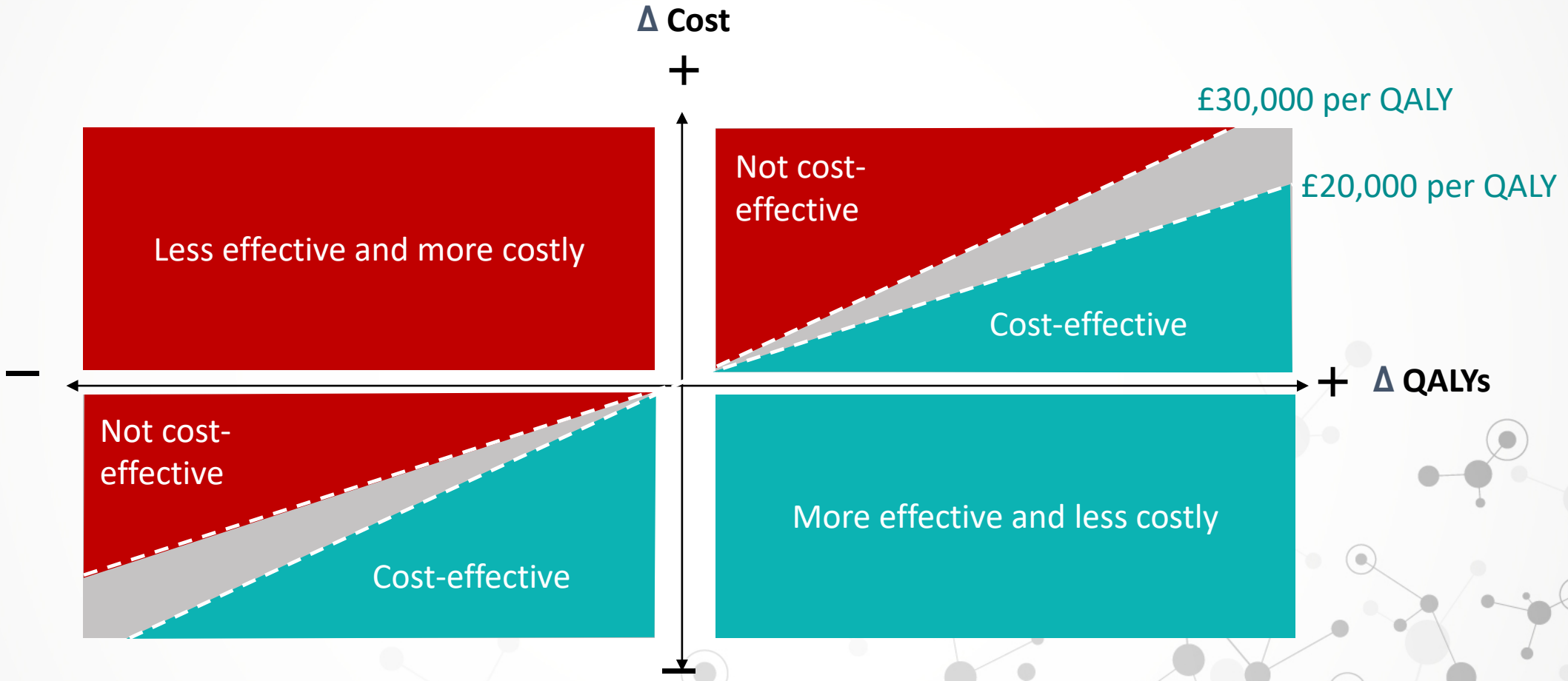
Thresholds


Δ Cost
+
£30,000 per QALY
£20,000 per QALY
Less effective and more costly
Not cost-effective
Cost-effective
−
+
Δ QALYs
Not cost-effective
Cost-effective
More effective and less costly
−

Health economics in decision-making for IPFRs

- **Why** is the patient likely to gain a significant clinical benefit from the proposed intervention?

- Does the intervention for that particular patient represent **value for money**, compared with the alternative if the IPFR is declined?

  (i.e. is the incremental cost justified by the expected clinical benefits?)

Making an economic case in IPFR applications

What is the cost of the alternative interventions or formulary alternative?	No alternative
Are there any offset costs?	~~Yes ☐~~ No ☐

No alternative? The up-front cost of the alternative is £0

Intervention cost - £0 = Intervention cost

Intervention cost - £300 = **smaller!**

If the patient is receiving any type of care, list these costs.

No offset costs? Less likely that the intervention will save money

If we have health economic studies…

- Do we have any health economic evidence? How well does it match the PICO for this case?
- What type of health economic study is it? Does it present just costs, or cost per QALY?
- Check scenario analyses in health economic studies, which may match your case more closely than the population in the base case
- Is the study setting applicable to the UK? Are there any obvious limitations?
- Be specific in your rationale

If we don’t have health economic studies…

- Full cost-utility analysis not likely to be feasible; try to have a qualitative discussion on value
- Try to find the costs of the intervention and the correct comparator
- Consider the effectiveness evidence and think about what the implications are for costs and QALYs. For example, does the intervention group have fewer recurrences than the comparator?
- Quality of life: Do people who receive the intervention have a better quality of life than people who receive the comparator? This may justify additional costs
- Be specific in your rationale

Useful links

- [BNF (British National Formulary) | NICE]
- [Home | PSSRU]
- [NHS England » National Cost Collection for the NHS]

- Very rare disease policy: 

- [6 Committee recommendations | NICE health technology evaluations: the manual | Guidance | NICE]

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Examples and group work

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Technoleg Iechyd Cymru
Health Technology Wales

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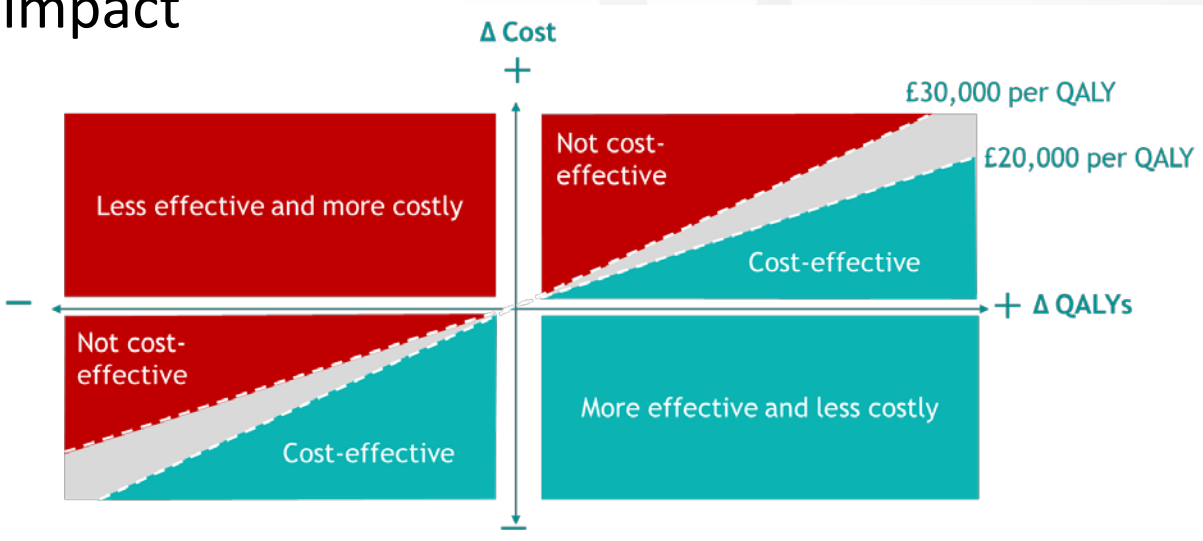
All Wales Medicines Strategy Group

Examples

- The aim of the session is to think about the full cost and benefit implications of approving an IPFR. More specifically, we want to consider:
  - **comparative costs and benefits** i.e. what the proposed technology offers over and above the alternative
  - **lifetime impact of the proposed technology** - downstream consequences on costs and benefits as well as the initial impact
- We will work through an example, discussing the likely implications of approving the IPFR and where it may sit on the CE plane



HIFU for prostate cancer

- High intensity focused ultrasound for treatment of local recurrence of prostate cancer.
- Alternative treatment: robotic prostatectomy
- HIFU = £6,000
- Robotic prostatectomy = £
- HIFU could be curative for this patient.

HIFU for prostate cancer – Economic evidence

- Economic evidence:
  - One cost utility analysis compared HIFU with robotic prostatectomy over a lifetime.

	HIFU	RP	Incremental
Costs	£19,860	£26,507	-£6,647
QALYs	3.86	3.44	0.42
ICER			Dominates

HIFU for prostate cancer - PICO

- **Population:** Patient with recurrent prostate cancer
- **Intervention:** High intensity focused ultrasound
- **Comparator:** Robotic prostatectomy
- **Outcomes:** Adverse events, survival, quality of life, costs

HIFU for prostate cancer – Comparative benefits

Robotic Prostatectomy

- Associated with a wide range of adverse events, particularly as patient has undergone previous radiotherapy.
- Not curative
- Strong evidence

HIFU

- Fewer adverse events
- Potentially curative
- Improved QALYs
- Limited evidence

HIFU for prostate cancer – Comparative costs

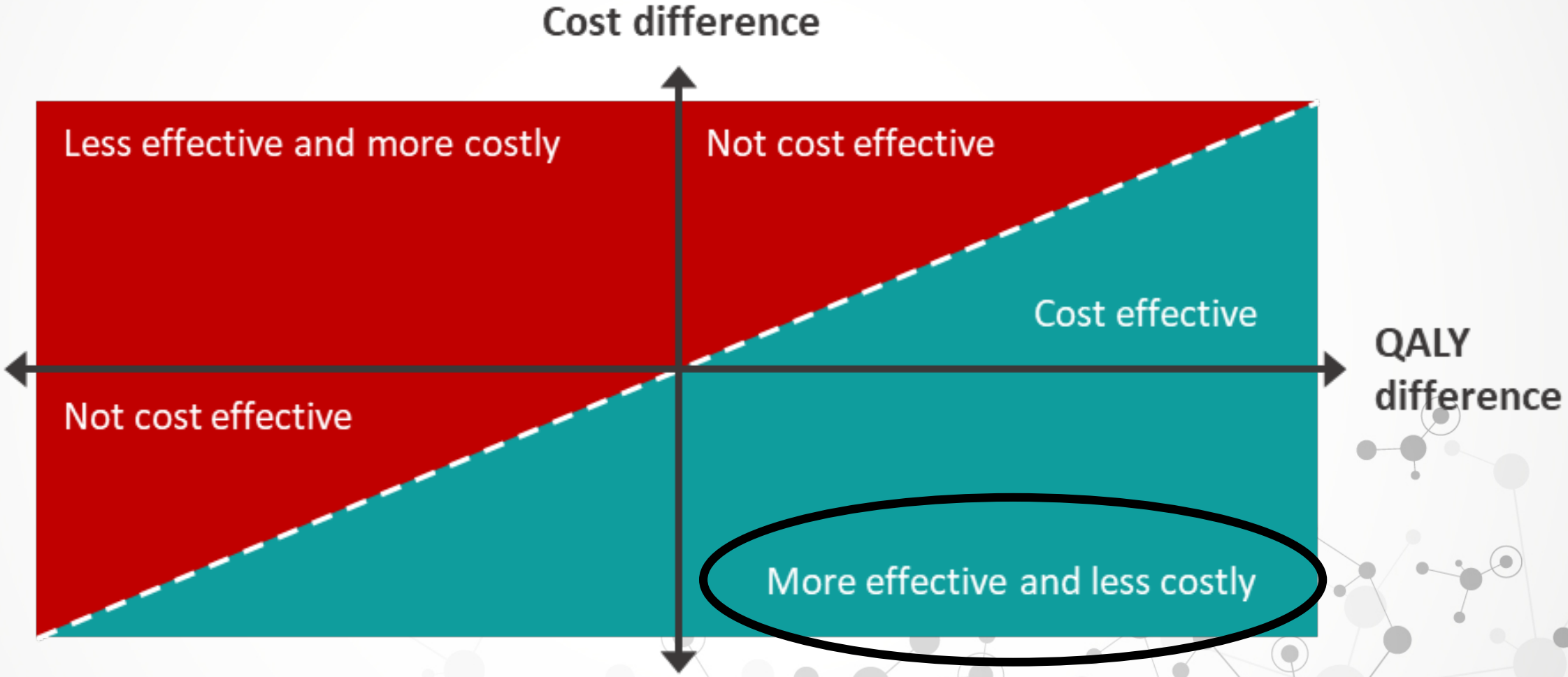
Robotic Prostatectomy

- £
- Not curative – lifetime cancer treatment costs
- Costs of treating adverse events

HIFU

- £6,000
- Potential to be curative – prevent further cancer costs.
- Fewer adverse event costs

HIFU for prostate cancer



gammaCore for intractable cluster headaches

- Non-invasive vagus nerve stimulator.
- Alternative treatment: SoC – pain medication and prednisolone.
- Economic evidence:
  - No economic evidence identified during NICE MTG.
  - Clinical evidence suggests a reduced frequency of attacks and less intense pain during attacks.
  - Company submitted model suggested cost savings with gammaCore compared to SoC (£3,500 compared to £4,000)
  - Model conducted from a UK NHS perspective over a 1-year time horizon.
  - Not cost saving without 93-day free trial period.

gammaCore for intractable cluster headaches

- What is the PICO?
- What are the comparative benefits between gammaCORE and SoC?
- What are the comparative costs between gammaCORE and SoC?
- Where is this likely to sit on the CE plane?
- Are there any uncertainties that should be taken into account?

gammaCore for intractable cluster headaches

- **Population:** Patient with intractable cluster headaches, not responding to treatment
- **Intervention:** gammaCore
- **Comparator:** SoC – pain medication and prednisolone
- **Outcomes:** Adverse events, pain, number of headache episodes, quality of life, costs

gammaCore – Comparative benefits

SoC

- Not effective in patient
- Patient still experiences headaches and pain

gammaCORE

- Potential to be effective
- Evidence suggests reduction in headaches and pain

HIFU for prostate cancer – Comparative costs

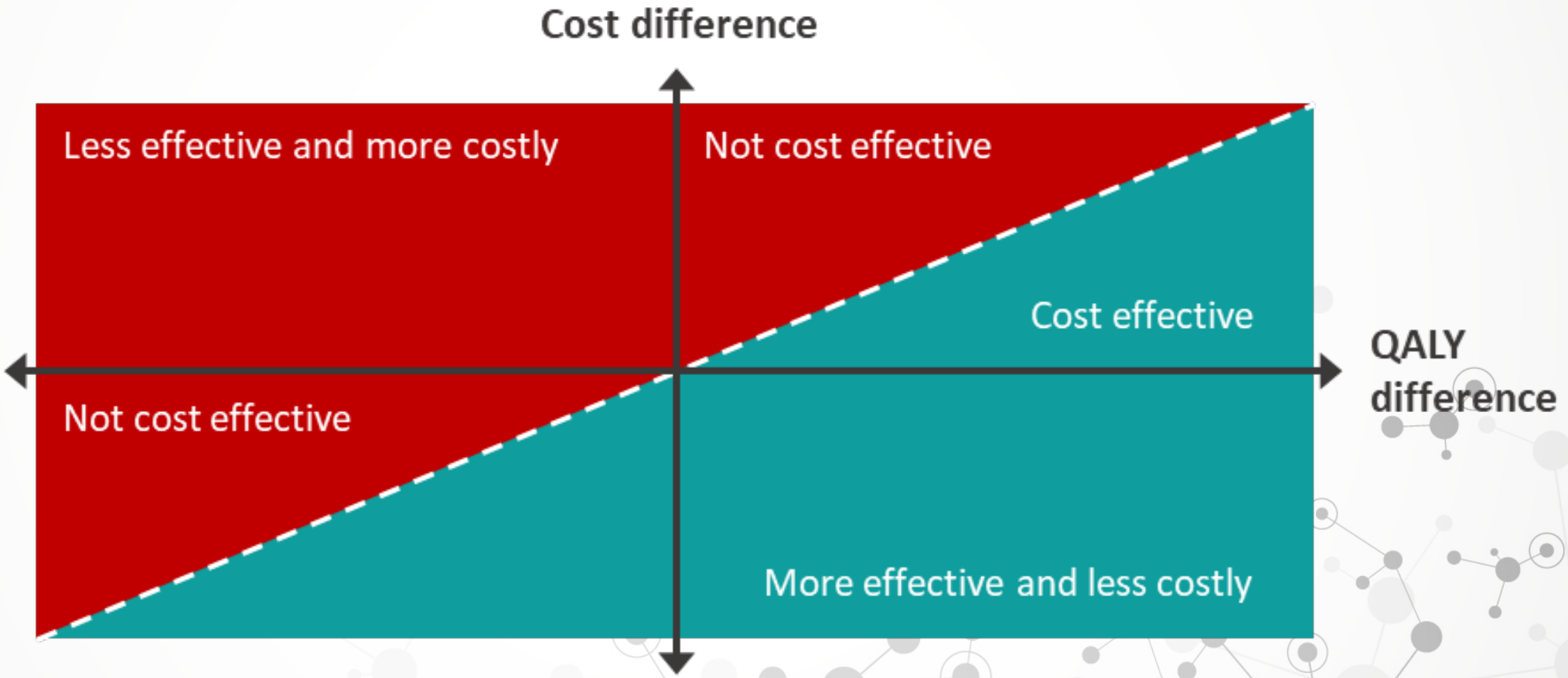
SoC

- £4,000
- Continuous costs of medication which may not be working

gammaCore

- £3,500
- Costs assume a free trial period.
- May reduce the need for SoC

gammaCore for intractable cluster headaches



gammaCore for intractable cluster headaches

Clinical evidence suggests gammaCore is likely to be **more effective overall**.

The **overall effect on costs is uncertain**.

- Manufacturer model suggests cost savings compared to SoC.
- Without free trial period, no longer cost saving.
- Model could be associated with bias.