theta

Toronto Health Economics and
Technology Assessment Collaborative

Rethinking the methods of cost-effectiveness analysis

A six part seminar series presented at the Cancer Care Ontario Pharmacoeconomics Unit

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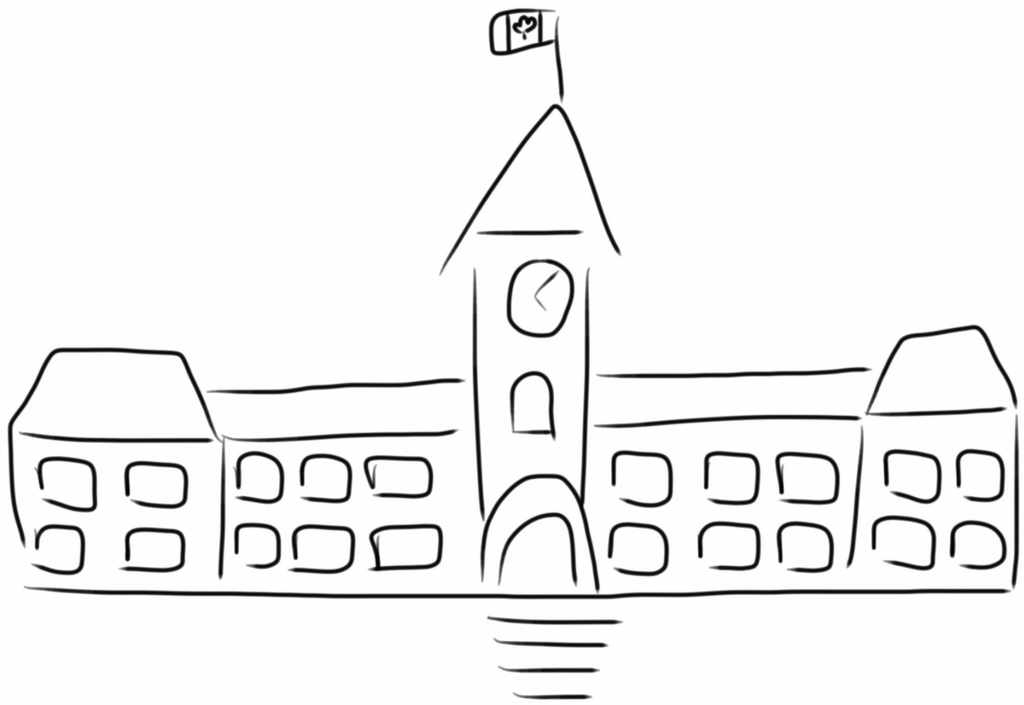
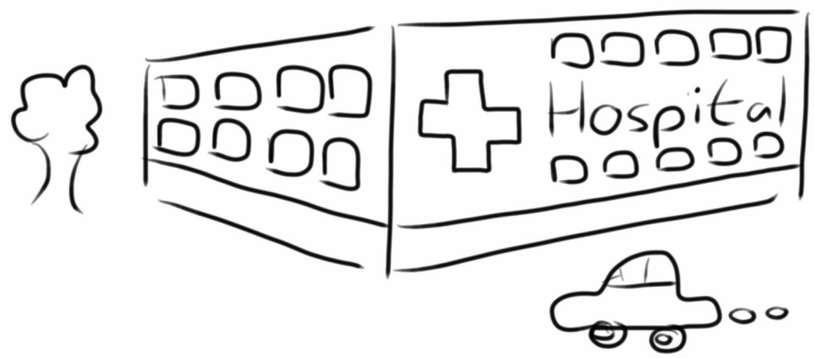
A social decision making perspective

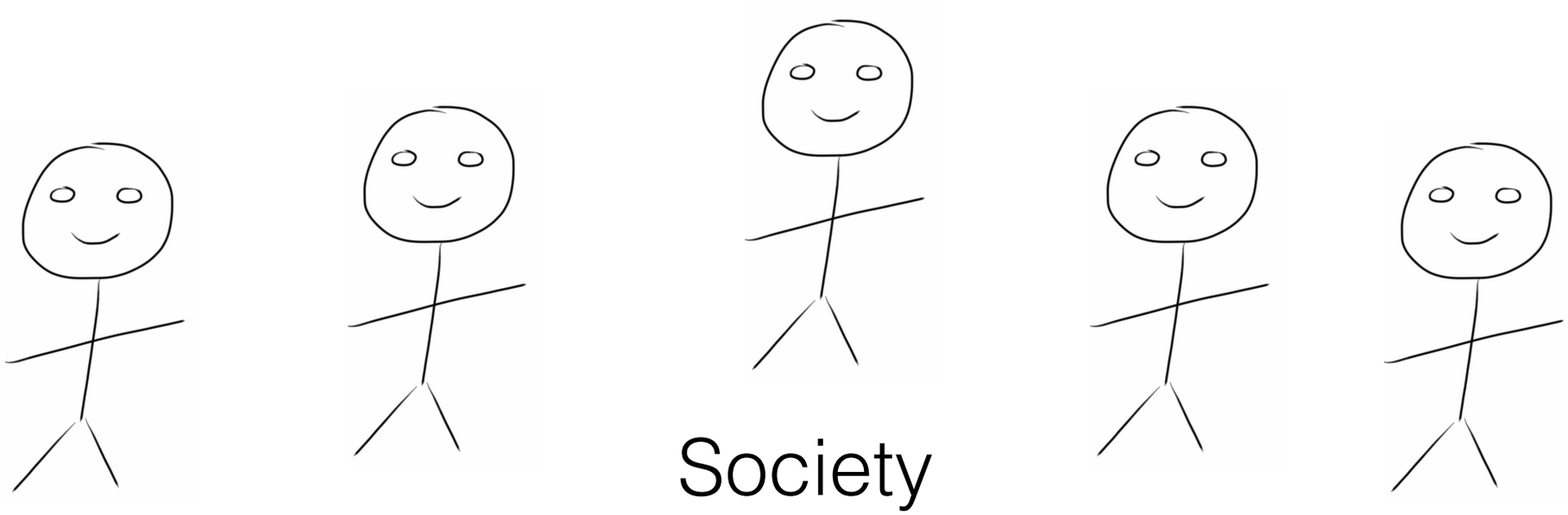
Socially legitimate government



Publicly funded health care system



HTA agency



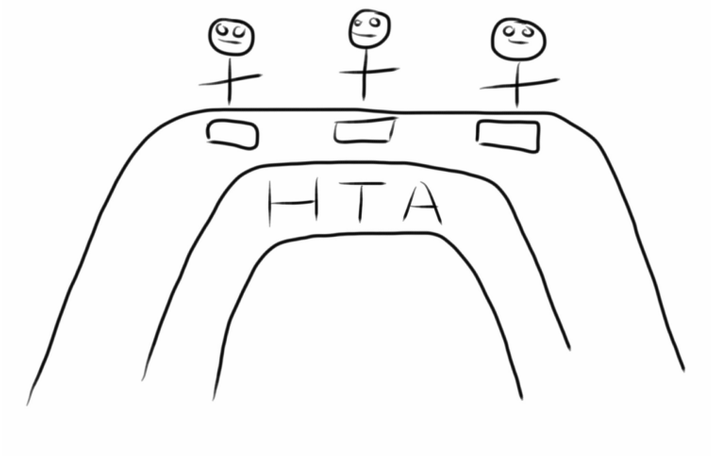
Society

	Tech	Comp	Difference
Costs	C_A	C_B	$\Delta C = C_A - C_B$
Health	h_A	h_B	$\Delta h = h_A - h_B$

Cost-effective if: $\frac{\Delta c}{\Delta h} < \lambda$ ← ICER decision rule

OR

Net benefit decision rule → $\Delta h > \frac{\Delta c}{\lambda}$



Cost-effectiveness analysis (CEA)

CEA in Canada

- Cost-effectiveness is primarily determined using ICERs
- Technologies CE if ICER is less than $50,000 per QALY
- Costs and health outcomes are discounted at 5%
- Budget impact analysis is conducted separately to CEA
- CEA is often seen as inherently discriminating against patients with shorter life expectancy
- This series will question *all* of these existing practices

Outline of the series

- March: Advancing the methods of cost-effectiveness analysis: why it's time to move on from ICERs and thresholds
- April: Does CEA discriminate against those with short life expectancy?
- May: Cost-effectiveness analysis and budget impact assessment: a graphical way to combine the two for the aid of decision makers
- June: Discounting and decision making in cost-effectiveness analysis
- July: Budget allocation and the social rate of time preference for health
- August: Investment and disinvestment of health technologies: the need for *two* cost-effectiveness thresholds

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Advancing the methods of cost-effectiveness analysis

Why it's time to move on from ICERs and thresholds

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A problem with ICERs

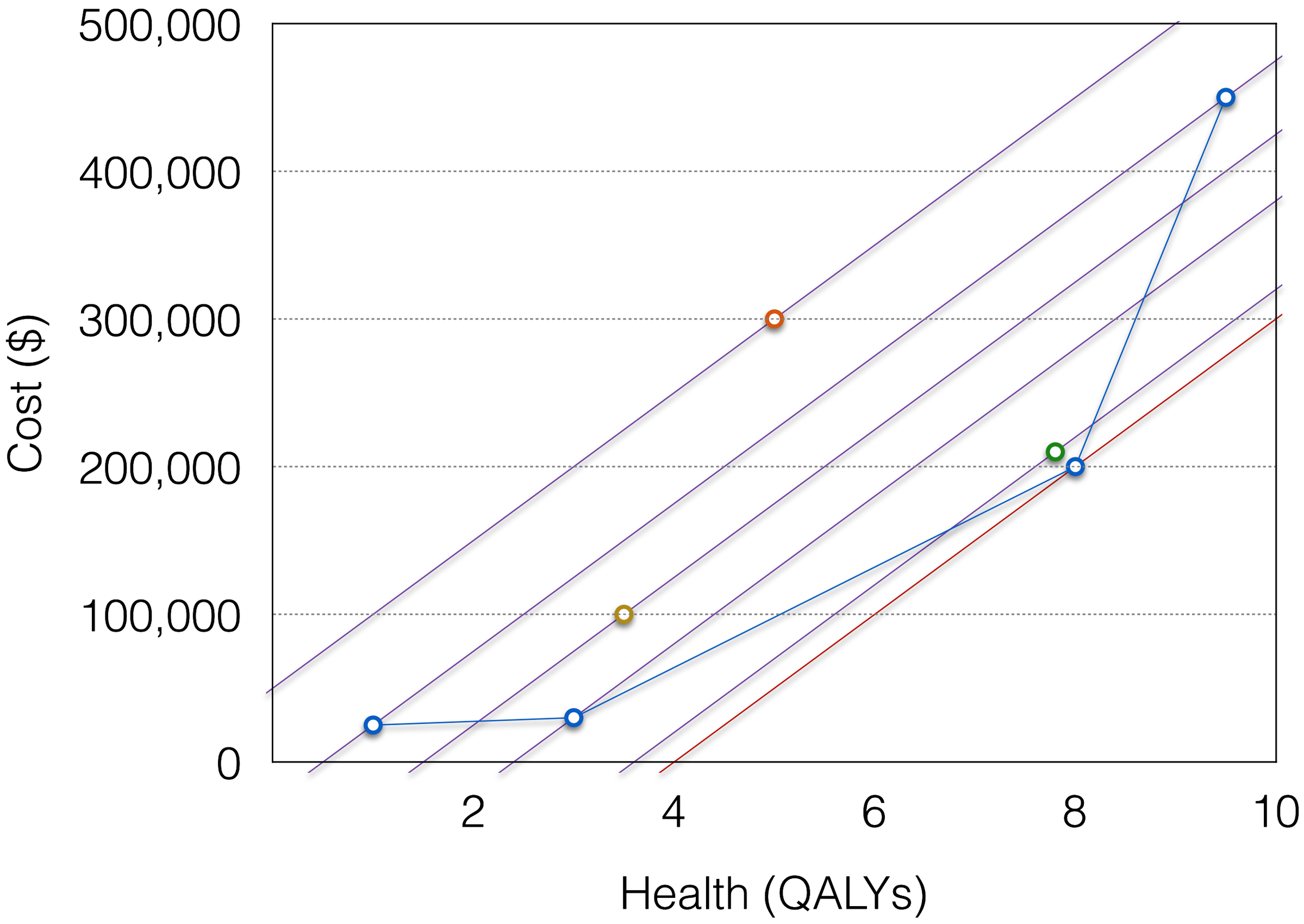
- Consider a CEA with 3 strategies: A, B and C.
  - Strategy A costs $10,000 and provides 1 QALY
  - Strategy B costs $11,000 and provides 101 QALYs
  - Strategy C costs $11,001 and provides 100.9 QALYs
- C is dominated, A and B are not
- B has an ICER of just $10 per QALY versus A
- **Which is <u>more</u> cost-effective, A or C?**

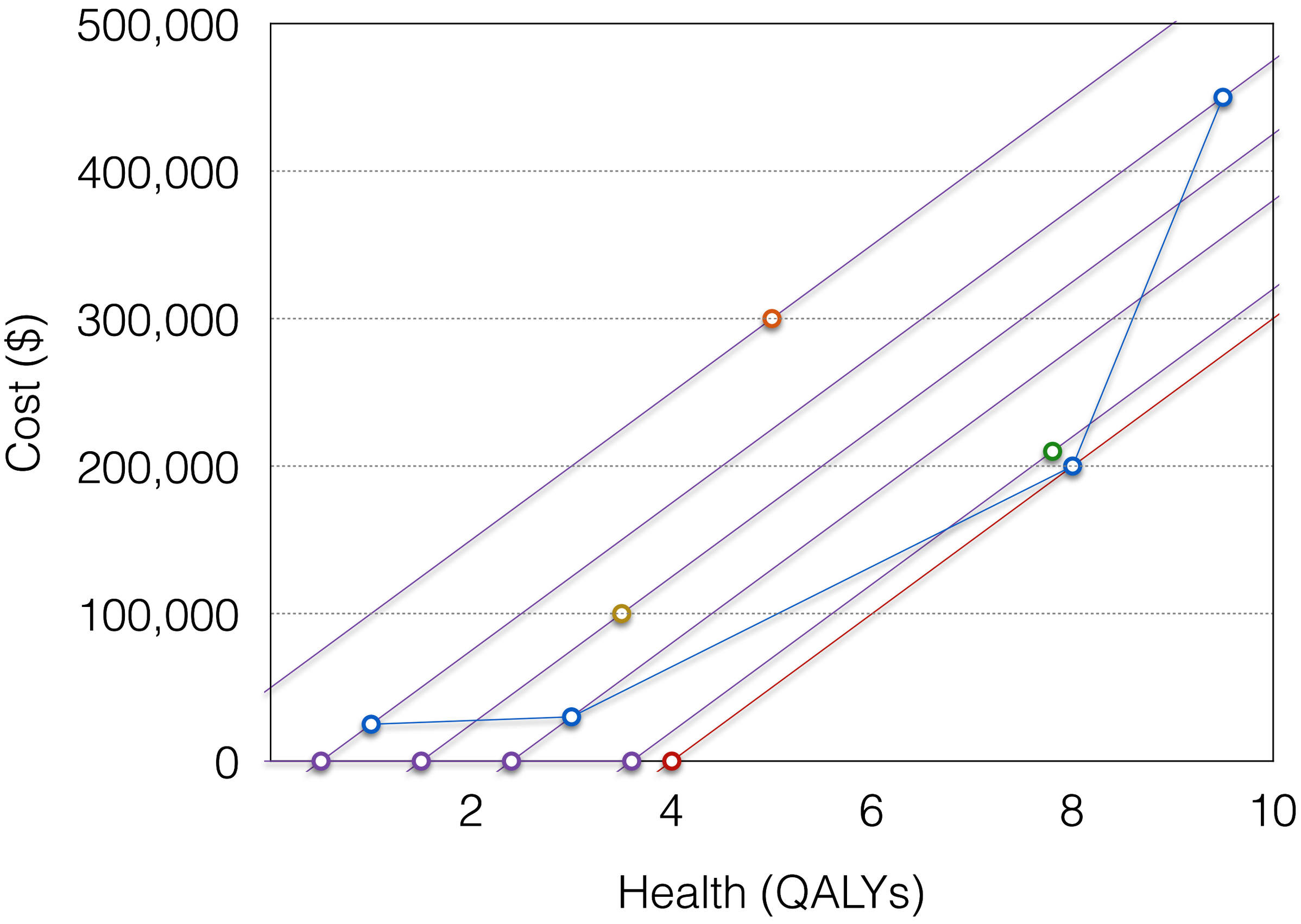
Solving this problem

- Where we have multiple strategies, ideally we would like to be able to do three things:

    1. Determine the *most* cost-effective (CE) strategy
    2. *Rank* the strategies from most CE to least CE
    3. See *how much more* CE each strategy is compared to others

- ICERs can only help us with the **first** of these
- To achieve all three, we must return to basics...


500,000
400,000
300,000
200,000
100,000
0
Cost ($)
2
4
6
8
10
Health (QALYs)


500,000
400,000
300,000
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100,000
0
Cost ($)
2
4
6
8
10
Health (QALYs)

Conclusions

- ICERs help us determine the *most* CE strategy
- But they do **not** allow us to *rank* the strategies, **nor** do they show *how much more* CE each strategy is compared to others
- Plotting **indifference curves** on the CE plane allows us to easily do all three of these things
- This is entirely equivalent to using **net benefit**