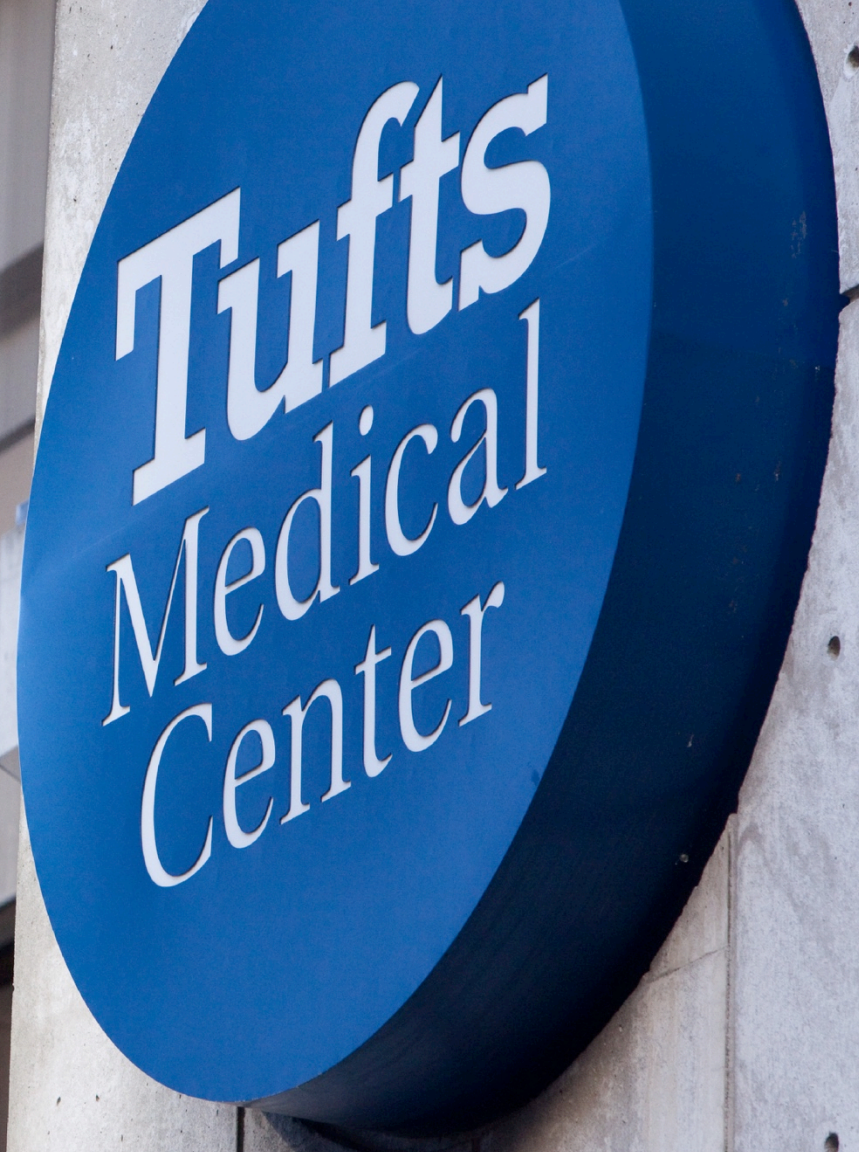


Under-characterized
uncertainty introduced by
expert judgment in HTA:

A case study of PARP inhibitors
to treat ovarian cancer

December 2, 2021

Always
Thinking
Ahead.™



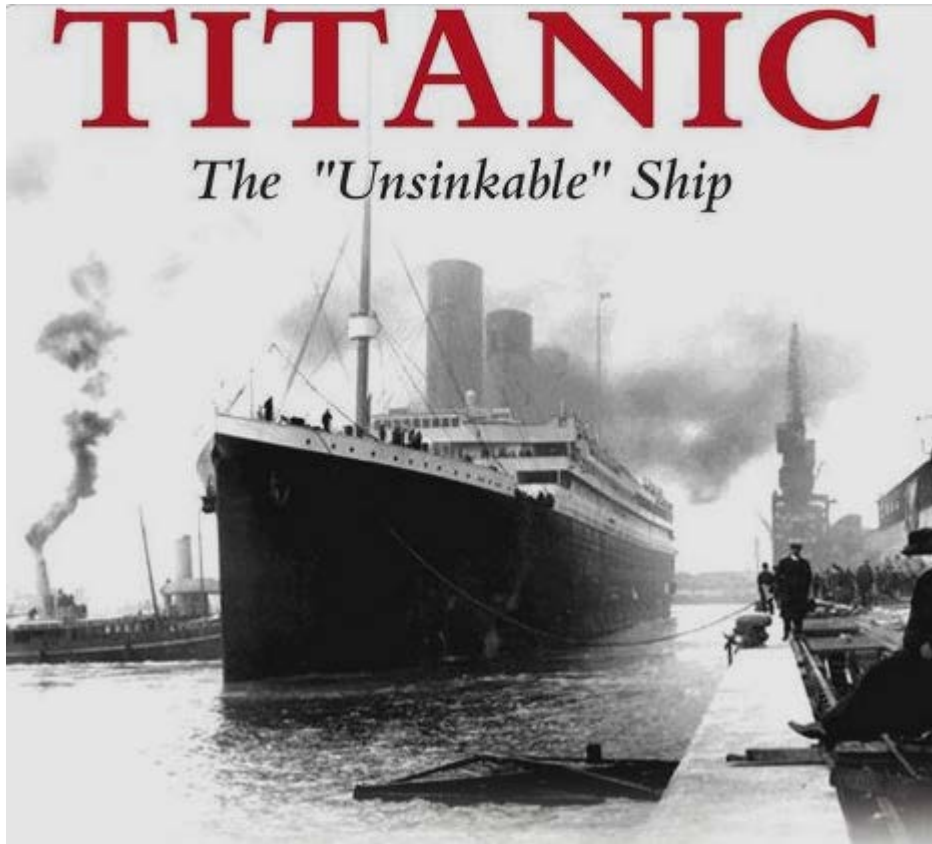
The perils of over-confidence

December 2, 2021

Always
Thinking
Ahead.™



Miss on the downside



Miss on the upside



*“... the Beatles have no future in
show business” – Decca Records*

Extrapolate beyond follow-up data to estimate:

- Survival
- Treatment duration
- Discontinuation rates

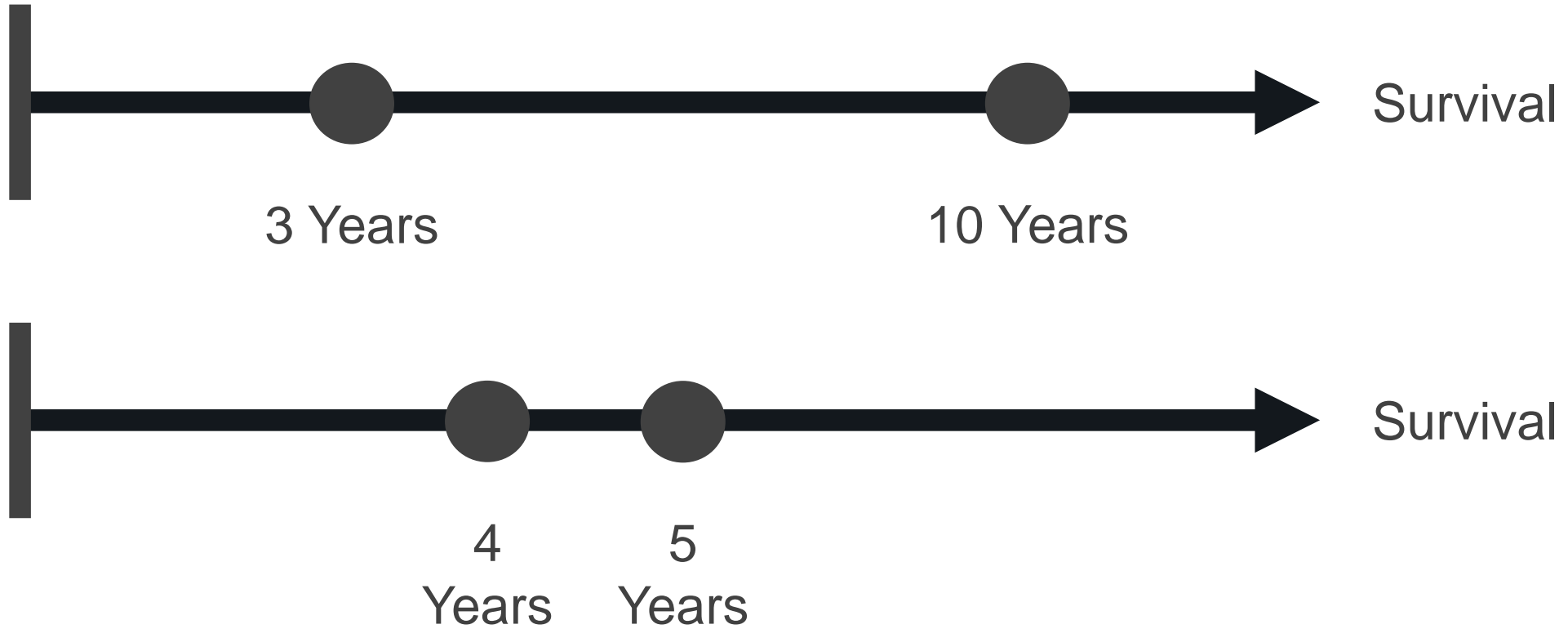
Findings in this case study

- Judgments often uncertain – ICER did not characterize some uncertainty
- ICER judgments generally pessimistic

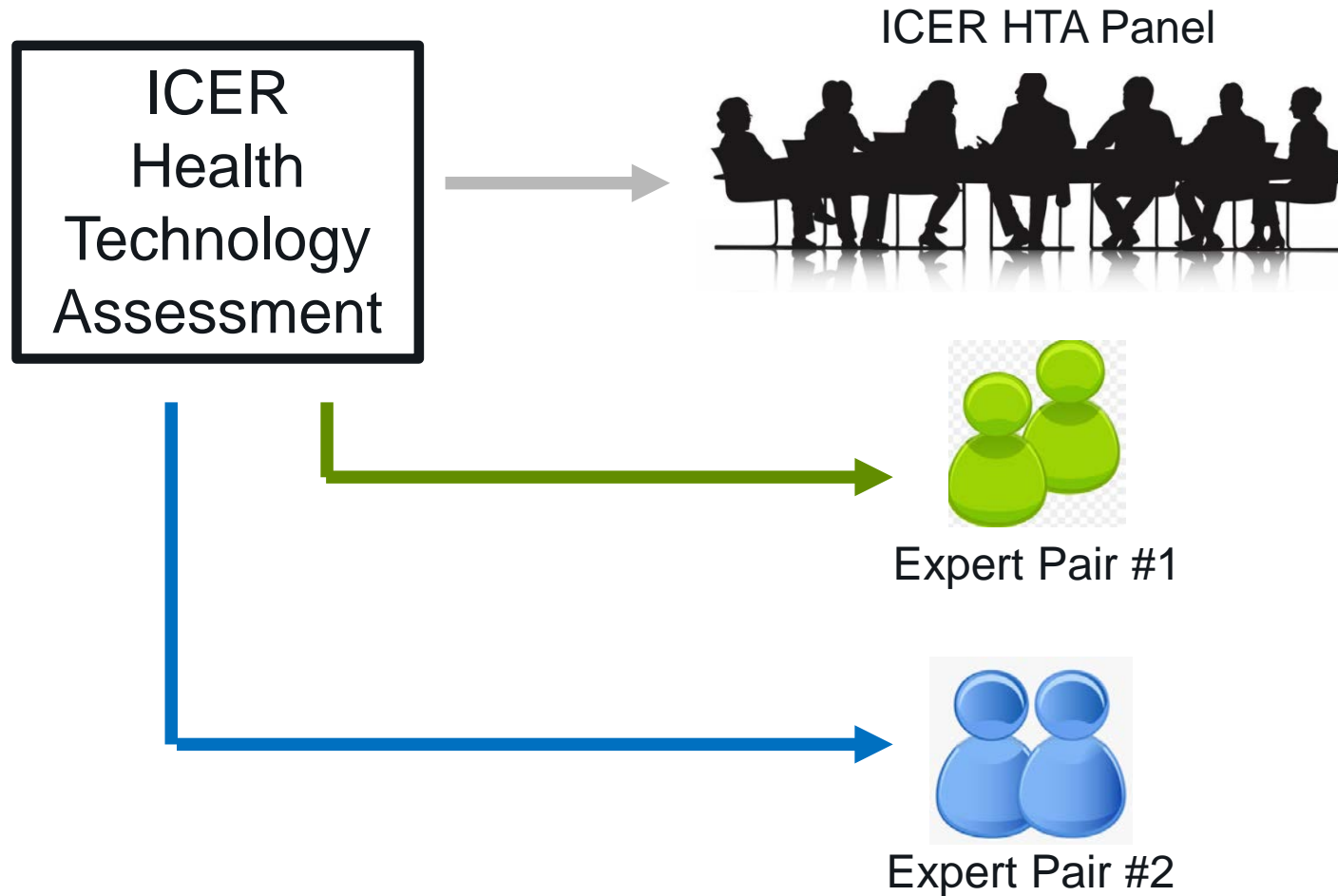
Quantifying judgment contribution to uncertainty

$$\begin{array}{l} \text{Judgment's} \\ \text{contribution to} \\ \text{uncertainty} \end{array} = \begin{array}{l} \text{Judgment} \\ \text{uncertainty} \end{array} \times \begin{array}{l} \text{Assumption} \\ \text{influence} \end{array}$$

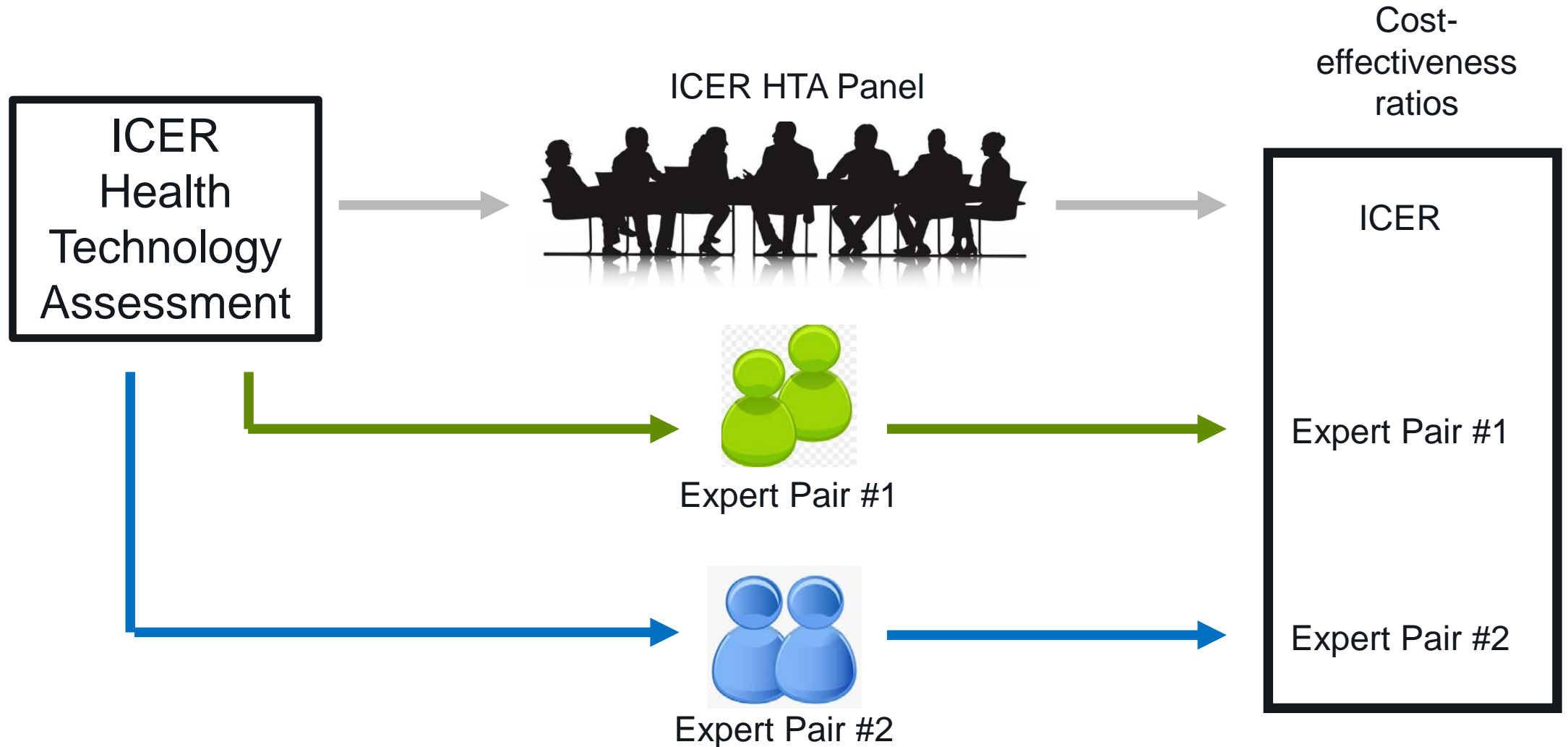
Estimating uncertainty embodied in a judgment



Estimating uncertainty embodied in a judgment



Estimating influence on cost-effectiveness



How expert pair CE ratios differ:

- From each other?



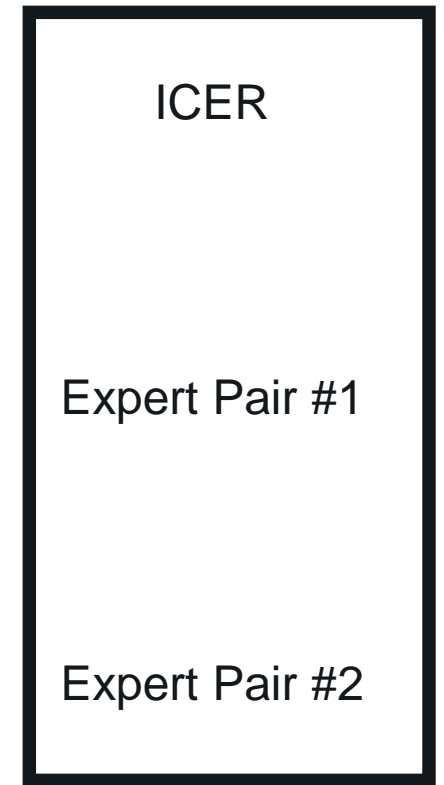
Indicator of
uncertainty
from judgment

- From ICER's CE ratios?



Indicator of
how
conservative
ICER might be

Cost-
effectiveness
ratios



Key assumption areas

1. Select adverse event costs
2. Treatment duration
3. Treatment discontinuation rates
4. Overall survival
5. Utility weights

Survival rate assumptions

Treatment	Have Progression Free Survival Rate?	Have Overall Survival Rate?
Olaparib	YES	YES
Rucaparib	YES	NO
Niraparib	YES	NO

Judgment alternatives:

1. Overall survival is the same for all 3 treatments
2. Rucaparib and Nicaparib confer no added survival
3. Overall survival is proportional to progression free survival

Assumptions for overall survival

ICER HTA Panel



Assumption 1

Overall survival gains the same for all 3 treatments



Expert Pair #1

Assumption 2

Rucaparib and Nicaparib confer no added survival

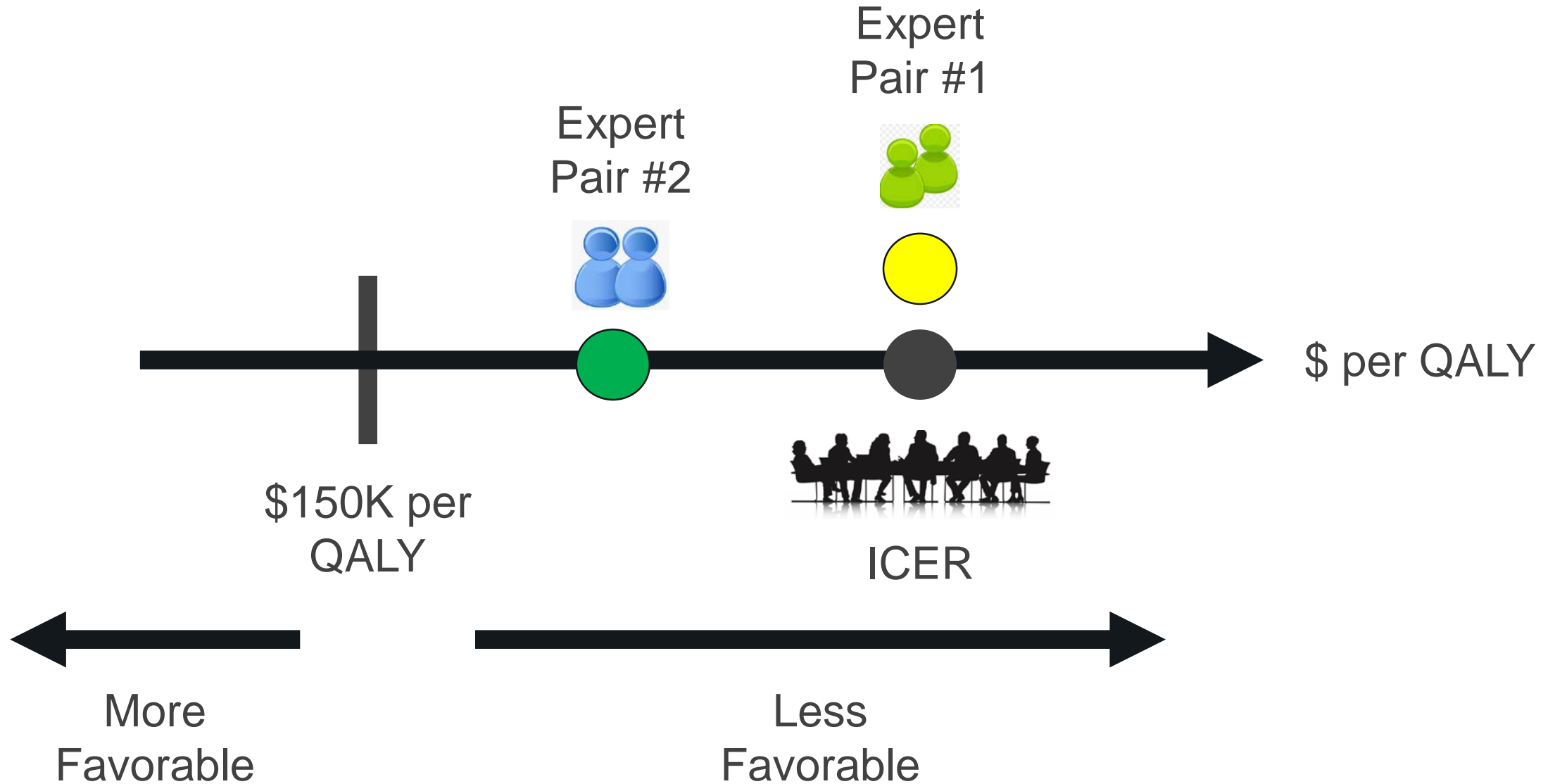


Expert Pair #2

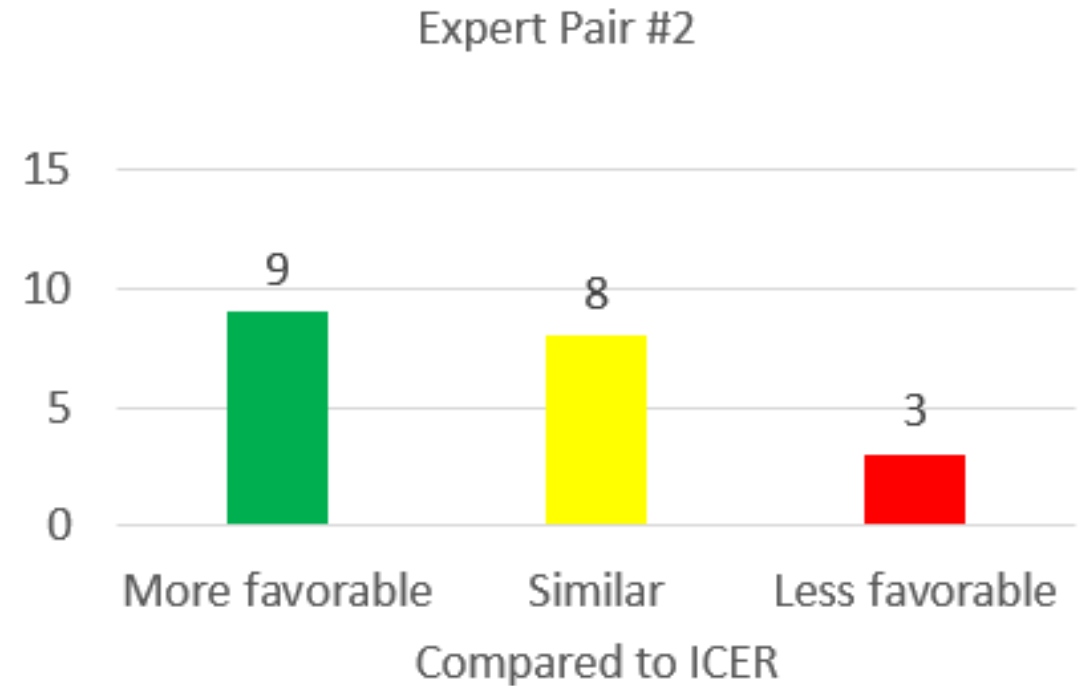
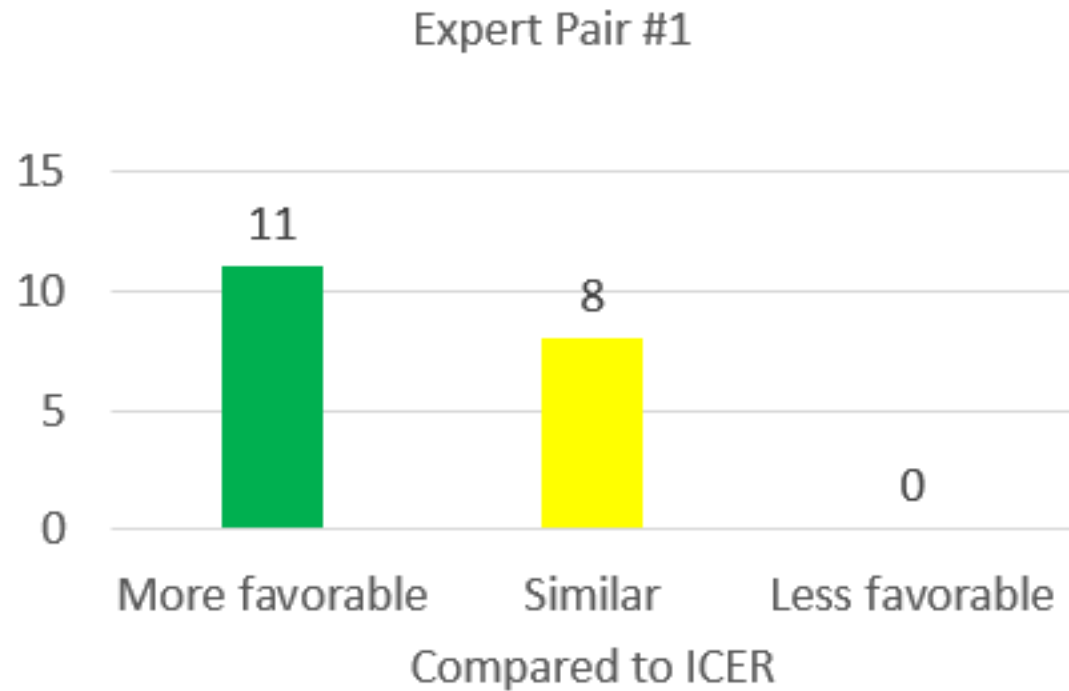
Assumption 3

Overall survival is proportional to progression free survival

Results for overall survival



Impact of Expert Pair Assumptions on CE Ratios



Findings

- Judgments are often uncertain – ICER did not characterize some uncertainty
- ICER judgments were generally pessimistic in this case study

Implication

ICER should more completely characterize uncertainty introduced by judgements

Future work

More case studies

Thank you!

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