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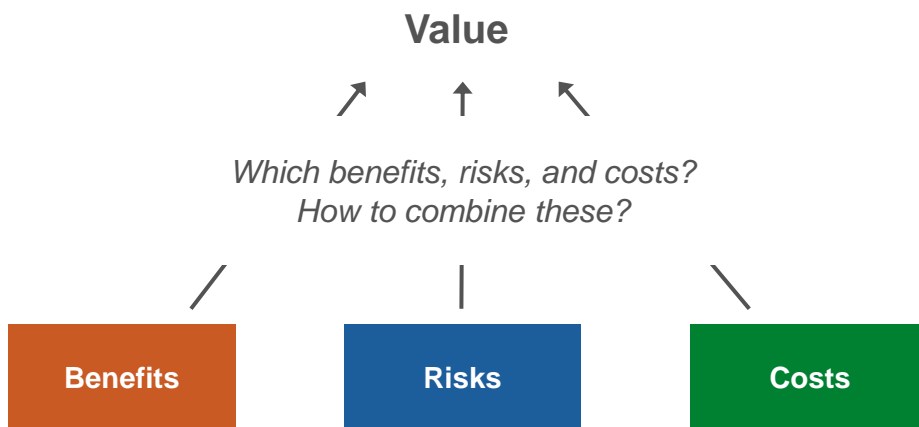
Novel Approaches to Value Assessment, Within the Cost-Effectiveness Framework



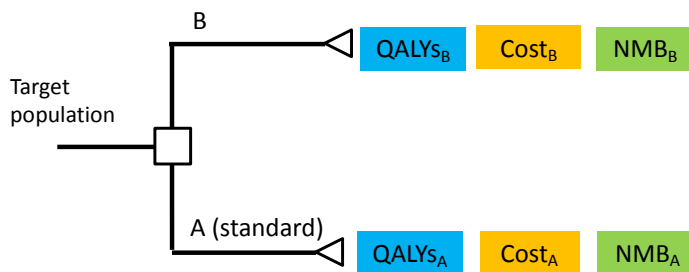
Moving beyond conventional cost-effectiveness analysis?

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Value assessment? Yes, but how?



Conventional cost-effectiveness analysis



Net Monetary Benefit = QALYs * Willingness-to-pay - Costs

Treatment A			Treatment B			Incremental CE ratio
QALYs	Costs	NMB	QALYs	Costs	NMB	$\frac{Cost_B - Cost_A}{QALYs_B - QALYs_A}$
4	20,000	380,000	6	200,000	400,000	90,000

Willingness-to-pay for a QALY is 100k

Patient diversity

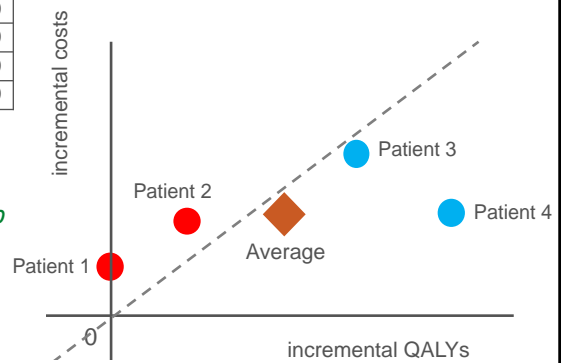
- > Variation in patient characteristics
- > Heterogeneous treatment effects
- > Heterogeneous preferences

Beyond averages

	Treatment A			Treatment B			Individualized care	
	QALYs	Costs	NMB	QALYs	Costs	NMB	Best Tx	NMB
Average	4	20,000	380,000	6	200,000	400,000		
Patient 1	4	20,000	380,000	4	100,000	300,000	Tx A	380,000
Patient 2	4	20,000	380,000	5	200,000	300,000	Tx A	380,000
Patient 3	4	20,000	380,000	7	300,000	400,000	Tx B	400,000
Patient 4	4	20,000	380,000	8	200,000	600,000	Tx B	600,000

Value that can be obtained by providing patients the treatment that is on average cost-effective: **400,000**

Value that can be obtained by providing patients the treatment that is cost-effective for that particular individual: **440,000**



Willingness-to-pay for a QALY is 100k

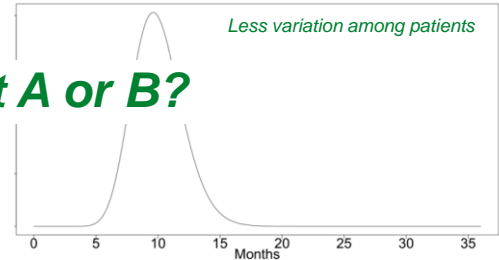
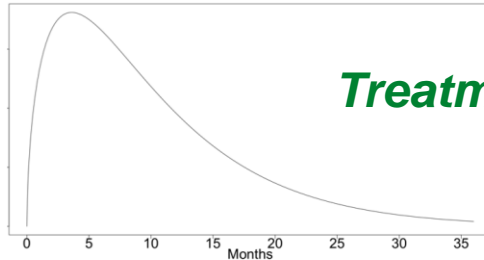
Source: Basu A, Meltzer D. Value of information on preference heterogeneity and individualized care. Med Decis Making. 2007;27:112-27.

Value of hope

Treatment A: Mean survival of 10 months

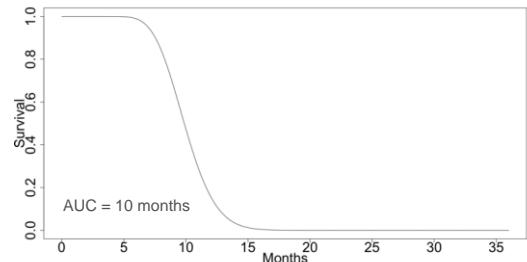
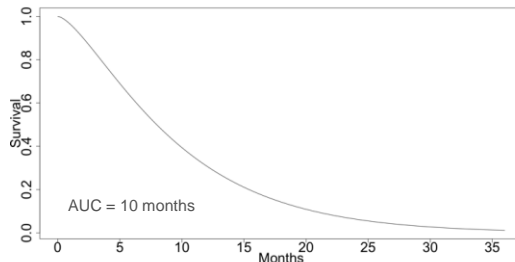
Treatment B: Mean survival of 10 months

Distribution of survival times



Treatment A or B?

Survival curve



Source: Lakdawalla, D.N., Romley, J.A., Sanchez, Y. et al. How cancer patients value hope and the implications for cost-effectiveness assessments of high-cost cancer therapies. *Health Aff (Millwood)*. 2012; 31: 676-682

Value to the healthy

- > Cost-effectiveness analyses typically estimate the value of a treatment to patients.
- > However, availability of an efficacious treatment for a specific disease provides some degree of protection against the *physical risk* among healthy individuals at risk for the disease.
- > In addition, an efficacious treatment converts an uninsurable physical risk (getting sick) into an insurable *financial risk*.
- > Together, these two components—physical risk protection and financial risk protection—constitute the “insurance value”.

Source: Lakdawalla, D., Malani, A., and Julian, R. The insurance value of medical innovation. *J Public Econ*. 2017; 145: 94-102

How do we implement these concepts in CEA?

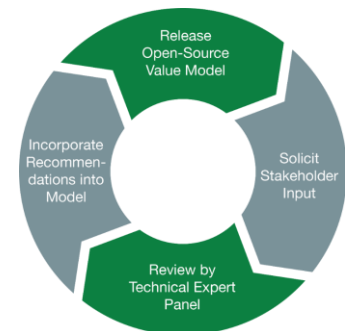
What is the impact on estimates of value?

Open Source Value Project (OSVP)

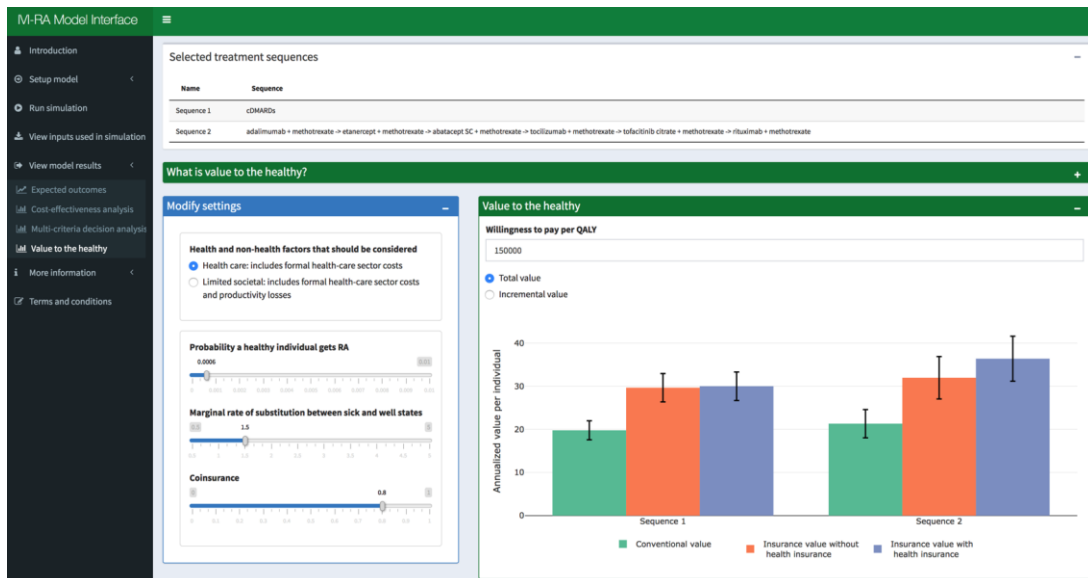
“Open, collaborative, iterative”

> Development of flexible open-source models for value assessment

- ➔ 1. To enable a more constructive dialogue between stakeholders with different beliefs about relevant clinical data, modeling approaches, and value perspectives
2. To provide local decision-makers with means to credible value assessment that reflects the local setting



IVI-RA model - Attempt to incorporate “value to the healthy”



<http://www.thevalueinitiative.org/ivi-ra-value-model/>

Conclusion

- > Acknowledge patient diversity
- > Novel and potentially relevant concepts of value have been introduced
- > How to incorporate these in CEA?
- > Flexible open-source models to facilitate iterative development, collaboration, and constructive debate can help getting a better understanding how to incorporate novel concepts of value in CEA and evaluate the impact on estimates of value.

Thanks for your attention

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