A Comparative Assessment of ICER-sponsored vs Pharma-sponsored Cost-effectiveness Analyses

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BACKGROUND

The Institute for Clinical & Economic Review (ICER) has completed over 100 assessments on cost-effectiveness across numerous disease states[1]

The assessments have been criticized due to lack of transparency in reporting methods and citing pricing data[2]

Overall, ICER assessments remain controversial, with payers being more accepting while pharma critiques the quality and transparency of reports[2]

Although ICER's methods are reviewed by independent entities, there has not been a comparative review between ICER-sponsored and pharma-sponsored analyses

OBJECTIVE

To perform an assessment between ICER- and pharma-sponsored CEAs for the same drug intervention by evaluating their quality via a validated assessment tool and comparing the model structures, inputs, and outputs

METHODS

ICER assessments between 2021 and 2024 were collected and corresponding pharma-sponsored cost-effectiveness analyses (CEAs) for the same intervention and indication were identified from PubMed, Google Scholar, Tuft's CEA Registry, and health economic journals (eg, JMCP, Value in Health)

Quality assessment was performed using the Quality of Health Economics Studies Instrument (QHES)[3]

RESULTS

Comparison of CEA Results

- 15 matched pairs of ICER-sponsored and pharma-sponsored reports were analyzed

- Overall, the percentage difference between reported incremental cost-effectiveness ratios varied (Figure 1)

- Pharma-sponsored reports tended to show **more favorable** incremental cost-effectiveness ratios for the intervention of interest than ICER

Figure 1: Comparison of Incremental Cost-Effectiveness Ratios

Drug of interest	Indication	Incremental Cost-effectiveness Ratio		% difference
		ICER-reported[a]	Pharma-reported[b]	
Tirzepatide	T2DM	**-$69,549**	$63,322	+4,268%
Resmetirom	NASH	**-$40,307**	$62,431	+929%
Lovotibeglogene autotemcel	SCD	$206,324	$204,740	-<1%
Valoctocogene roxaparovec	Hemophilia A	**-$11,473,390**	**-$11,153,910**[c]	-3%
Semaglutide	Obesity	$33,140	$27,270	-19%
Atidarsagene autotemcel	Metachromatic Leukodystrophy	$131,098	$104,014	-23%
Voclosporin	Lupus nephritis	$172,791	$90,918	-62%
Betibeglogene autotemcel	Beta thalassemia	$109,977	$42,219	-89%
Paxlovid	COVID-19	$24,311	$8,662[c]	-94%
Inclisiran	ASCVD	$190,289	$55,254[c]	-110%
Lecanemab	Alzheimer's Disease	$271,535	**-$15,258**[d]	-224%
Molnupiravir	COVID-19	$70,617	**-$5,142**	-231%
Trilaciclib	Neutropenia	$1,008,313	**-$4,362,020**	-320%
Belantamab mafodotin	Multiple myeloma	$118,779	**-$35,735**	-372%
Exagamglogene autotemcel	SCD	$206,324	**-$153,617**	-1,366%

[a]All ICERs reported from healthcare system perspective
[b]All ICERs reported from third-party payer perspective unless otherwise specified
[c]Healthcare system perspective
[d]Societal perspective

All costs reported in 2024 USD
Bold indicates dominant therapies

Comparison of Quality Assessment

Figure 2: Comparison of Quality Assessment Scores measured by QHES 2003

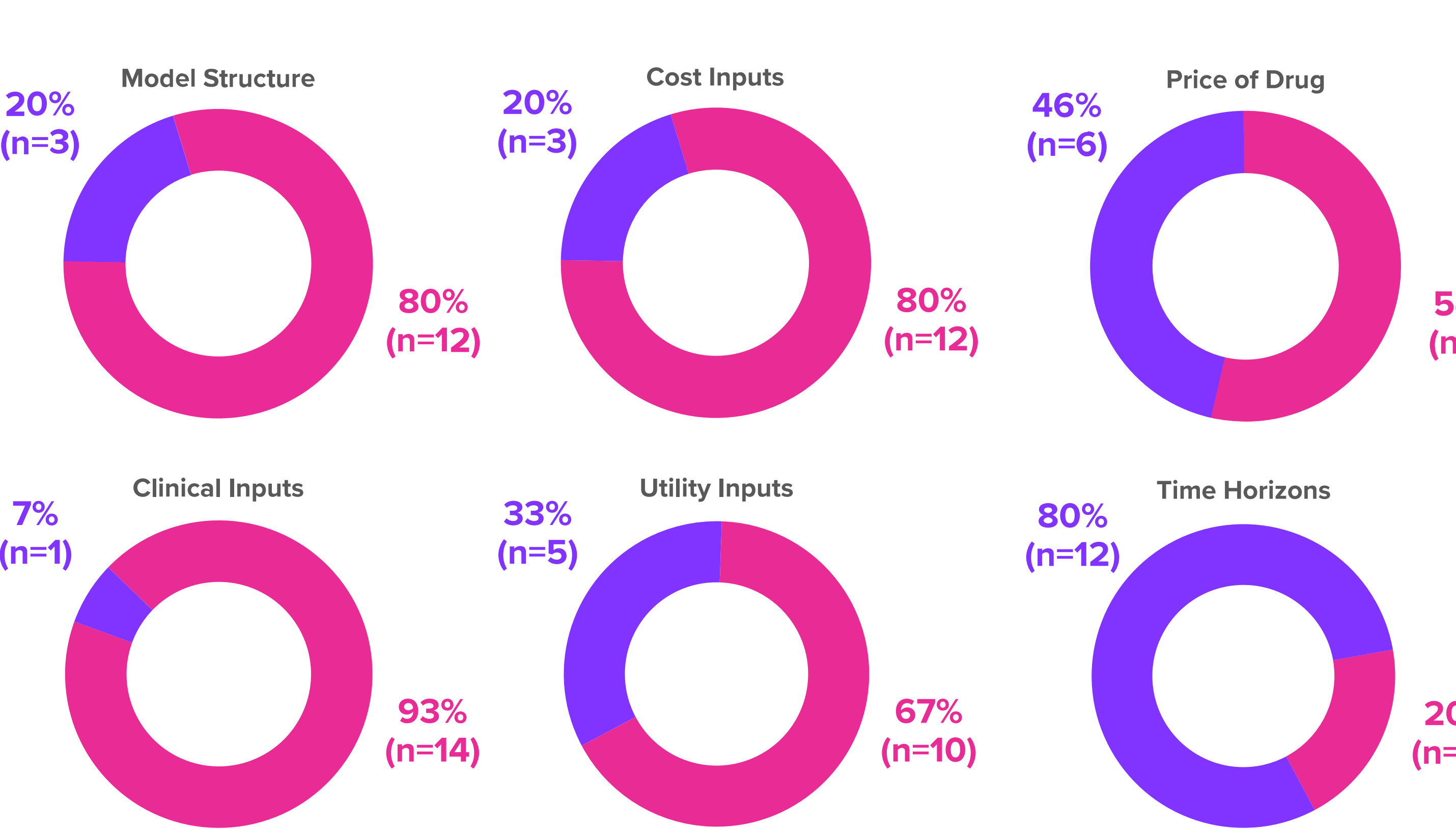| Drug of interest	Indication	QHES Score[a]	
		ICER-reported	Pharma-reported
Tirzepatide	T2DM	90	94
Resmetirom	NASH	82	92
Lovotibeglogene autotemcel	SCD	96	100
Valoctocogene roxaparovec	Hemophilia A	90	88
Semaglutide	Obesity	90	90
Atidarsagene autotemcel	Metachromatic Leukodystrophy	82	82
Voclosporin	Lupus nephritis	90	90
Betibeglogene autotemcel	Beta thalassemia	82	100
Paxlovid	COVID-19	90	90
Inclisiran	ASCVD	90	96
Lecanemab	Alzheimer's Disease	90	75
Molnupiravir	COVID-19	90	94
Trilaciclib	Neutropenia	96	90
Belantamab mafodotin	Multiple myeloma	90	90
Exagamglogene autotemcel	SCD	96	82

[a]QHES scores range from 0-100 (scores ≥75 indicate high quality)

- All reports analyzed met the scoring threshold to be considered **high quality** (Figure 2)

- Overall, both pharma-sponsored and ICER-sponsored reports scored similarly with median (range) scores of **90 (82-96)** and **90 (75-100),** respectively

- Areas where both types of reports scored lower include:
  ° Providing justification for analysis perspective
  ° Having appropriate costs and cost methodology described clearly
  ° Explicitly discussing direction and magnitude of bias

Comparison of Model Structures and Inputs

- Between the matched pair of reports, ICER tended to report **higher incremental costs** of an intervention (78.6%) compared to pharma (21.4%) (Figure 3)

- Similarly, pharma tended to report **higher incremental QALYs** (71.4%) than ICER (28.6%)

- Matched pairs of reports tended to use different clinical, economic, and humanistic inputs from each other

Figure 3: Congruence of Model Structures and Inputs

● Same ● Different

Model Structure: 20% (n=3) Same / 80% (n=12) Different
Cost Inputs: 20% (n=3) Same / 80% (n=12) Different
Price of Drug: 46% (n=6) Same / 54% (n=7) Different
Clinical Inputs: 7% (n=1) Same / 93% (n=14) Different
Utility Inputs: 33% (n=5) Same / 67% (n=10) Different
Time Horizons: 80% (n=12) Same / 20% (n=13) Different

CONCLUSION & NEXT STEPS

Despite having wide **variances in results** for the same drug intervention, ICER-sponsored and pharma-sponsored models **grade similarly** on a quality-level

Overall, all analyses reviewed were considered **high quality** according to the QHES (2003) checklist

Differences in results may be driven by **factors** such as:
° Model structure
° Model assumptions
° Clinical and cost inputs

REFERENCES
1. Who We Are. Institute for Clinical and Economic Review. Accessed January 20, 2024. https://icer.org/who-we-are/
2. Sangonowsky E. Fierce Pharma. Published September 10, 2019. Accessed January 20, 2024. https://www.fiercepharma.com/pharma/icer-s-blasted-pharma-s-pricing-for-years-but-now-drugmakers-are-rolling-up-their-sleeves-to
3. Chiou CF, Hay JW, Wallace JF, et al. Development and validation of a grading system for the quality of cost-effectiveness studies [published correction appears in Med Care. 2003 Mar;41(3):446]. Med Care. 2003;41(1):32-44. doi:10.1097/00005650-200301000-00007

ABBREVIATIONS IN TABLES AND FIGURES
ASCVD, atherosclerotic cardiovascular disease; CEA, cost-effectiveness analysis; ICER, Institute for Clinical & Economic Review; ICER, incremental cost-effectiveness ratio; NASH, non-alcoholic steatohepatitis; QALY, quality-adjusted life year; QHES, Quality of Health Economics Studies; SCD, sickle cell disease; T2DM, type 2 diabetes mellitus.

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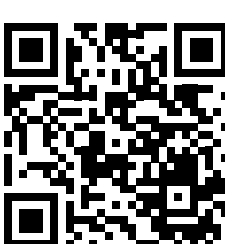
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