

Is List Price the Key Driver of ICER Assessments?

Exploring Drivers of Cost-Effectiveness

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Background

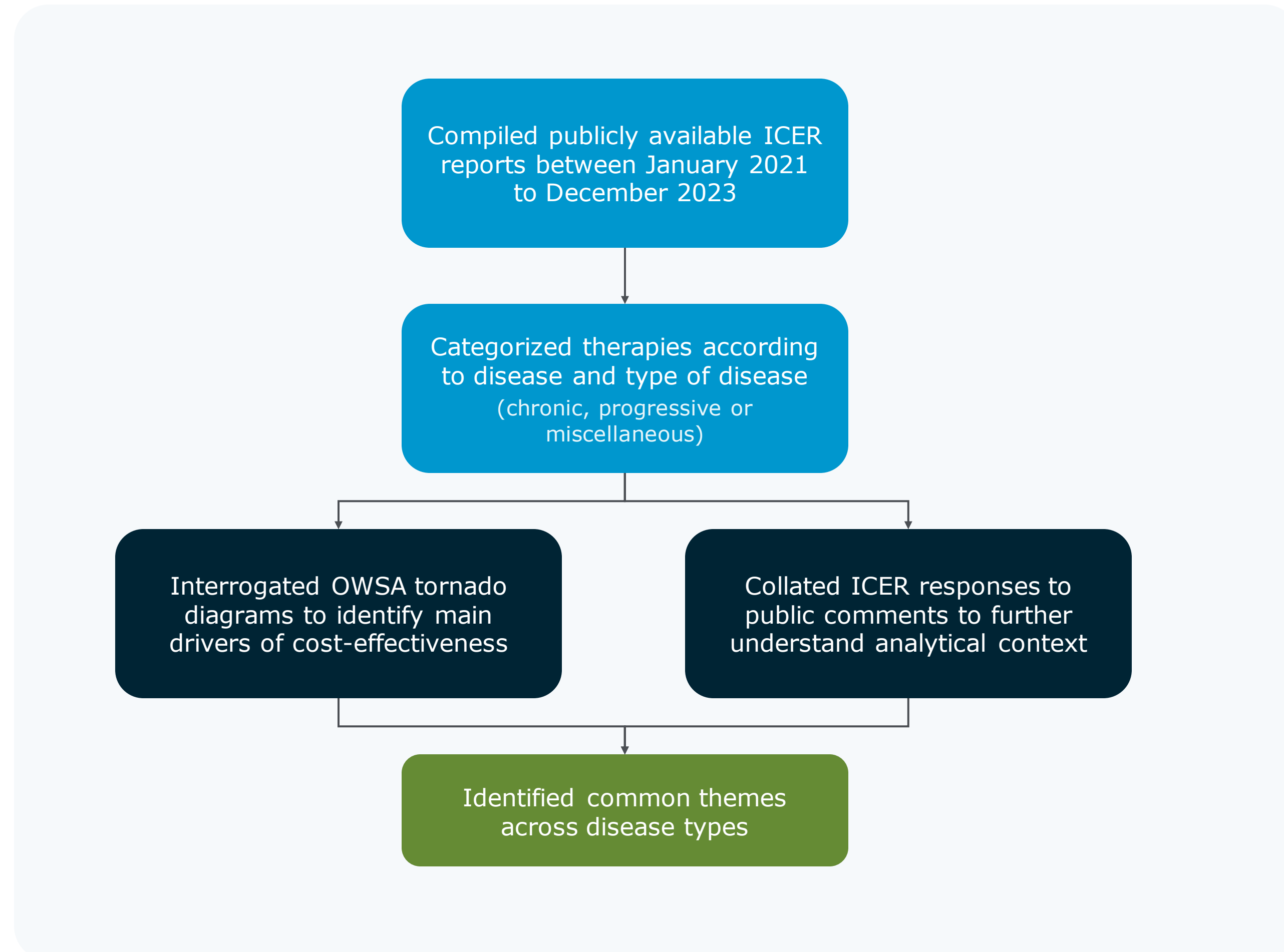
Headlines for new pharmaceutical products often emphasize product list prices as ‘too high’ to support cost-effectiveness, citing ICER appraisals as evidence; perpetuating an impression that price is the key driver of results. This review of ICER assessments seeks to understand the extent to which product list price is the key driver of cost-effectiveness ratios in ICER assessments.

Objective

To understand the extent to which product list price is the key driver of cost-effectiveness ratios in ICER assessments.

Methods

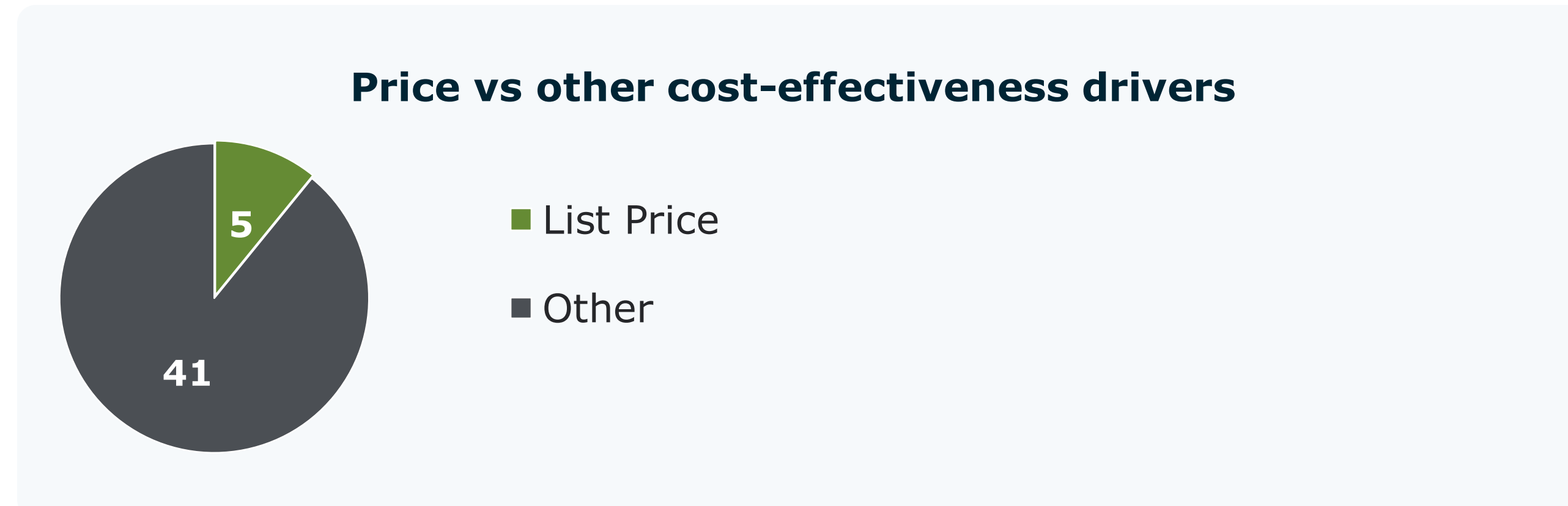
Figure 1: Flow diagram of research strategy



Results

ICER assessments since January 2021 referenced 47 therapies, utilized across 24 conditions, with only 5 listing price as a main driver (**Figure 2**).

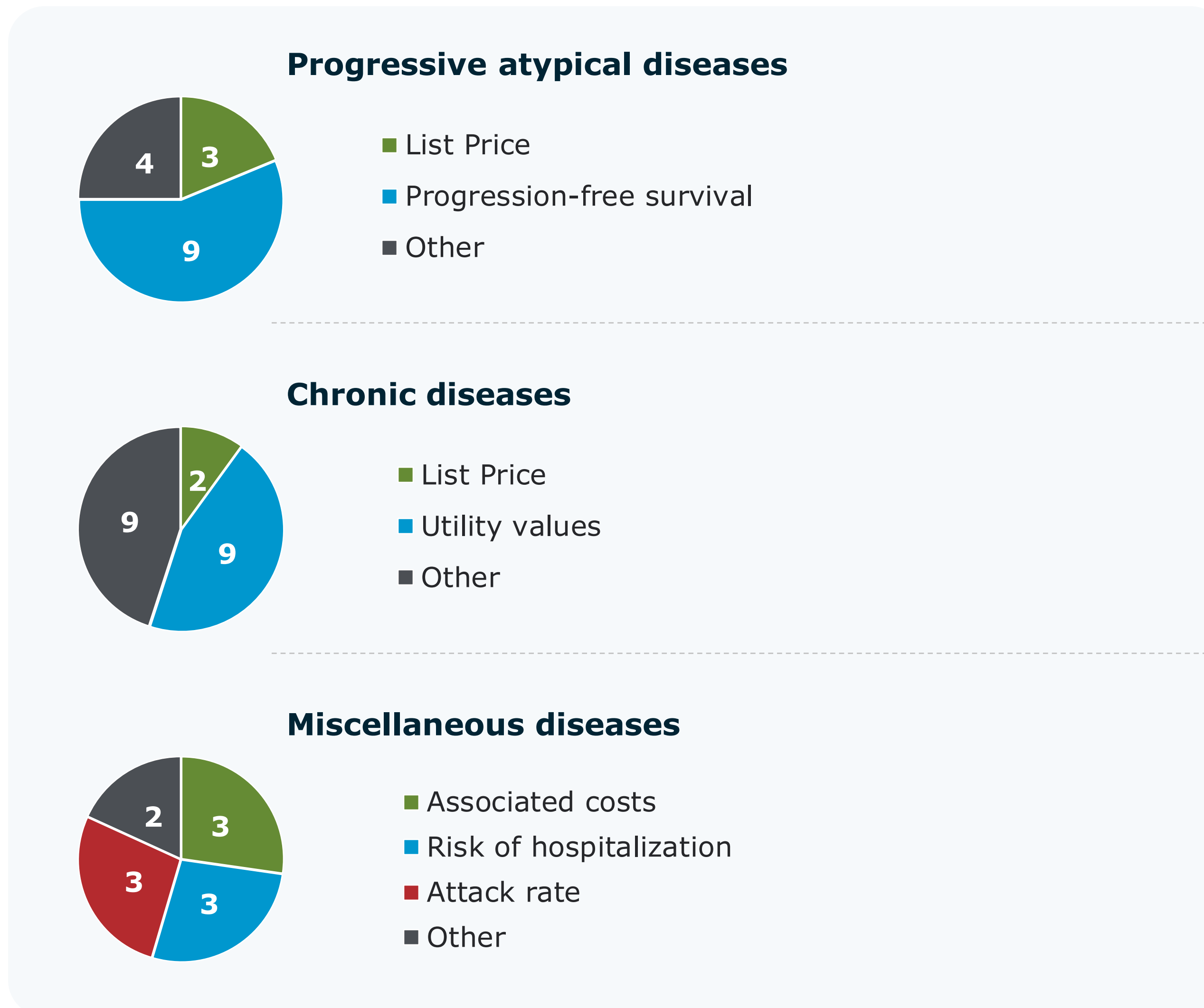
Figure 2: Price vs other cost-effectiveness drivers identified across 47 therapies



A summary of products and their indications that were investigated are provided in **Table 1**.

Presented at ISPOR 2024

Figure 3: Main drivers of cost-effectiveness categorized by disease area type



As highlighted above (in **Figure 3**):

- **Utility values** were the most common driver among chronic widespread conditions.
- **Progression-free survival** was the main driver of cost-effectiveness among progressive diseases.
 - Whilst often not the main driver, **hazard ratio values** also had a large influence on progressive diseases.
- The remaining 11 diseases showed more varied drivers for cost-effectiveness.
 - Within this category, acute diseases were often driven by **hospitalization rates**.
 - Relapse-remitting diseases were more influenced by **associated costs**.

Conclusion

Headlines skew perceptions about pharmaceutical price as the key driver of cost-effectiveness in the US. In the majority of ICER reviews, sensitivity analysis endorsed by the organization show that price is not the primary driver of results. This is true for progressive conditions that will be costly over time, and for chronic conditions with inadequate standard care.

Early cost-effectiveness modelling can identify these alternative drivers to price prior to clinical trial and commercialization strategy.

Abbreviations: CE – Cost-effectiveness; COVID-19 – Coronavirus disease; ICER – Institute for Clinical and Economic Review; ISPOR – The Professional Society for Health Economics and Outcomes Research; MCI – Mild cognitive impairment; N/A – Not applicable; OWSA – One way sensitivity analysis; QMG – Quantitative myasthenia gravis score

Table 1: Summary of therapies investigated

Product Name	Company Name	Indication	Main driver of CE
Abrocitinib	Pfizer	Atopic dermatitis	Utility values
Aducanumab	Biogen	Alzheimer's disease	Hazard ratio on MCI to mild transition
AMX0035	Amylyx Pharmaceuticals, Inc.	Amyotrophic lateral sclerosis	Relative risk of progression
Atidarsagene Autotemcel	Orchard Therapeutics	Metachromatic leukodystrophy	List price
Baricitinib	Eli Lilly	Atopic dermatitis	Utility values
Belantamab mafodotin	GSK	Multiple myeloma	Progression-free survival
Belimumab	GSK	Lupus nephritis	Medical costs (not related to product)
Bempedoic acid	Esperion Therapeutics	High cholesterol	List price
Betibeglogene autotemcel	Bluebird bio	Beta thalassemia	Transfusions per year
Ciltacabtagene autoleucl	Johnson & Johnson Legend Biotech Corp	Multiple myeloma	Progression-free survival
Cinryze	Shire	Hereditary angioedema	Attack rate
Eculizumab	Alexion Pharmaceuticals, Inc.	Myasthenia gravis	Proportion of patients achieving 3 points or more QMG reduction by week 4
Efgartigimod	Argenx	Myasthenia gravis	Proportion of patients achieving 3 points or more QMG reduction by week 4
Etranacogene Dezaparvovec	CSL Behring	Hemophilia A and B	Comparator cost
Exagamglogene autotemcel	Vertex Pharmaceuticals CRISPR Therapeutics	Sickle cell disease	Medical costs (not related to product)
Fezolinetant	Astellas Pharma Inc.	Menopause: vasomotor symptoms	Medical costs (not related to product)
Fluvoxamine	Investigator initiated	COVID-19	Risk of hospitalisation
Haegerda	CSL Behring	Hereditary angioedema	Attack rate
Idecabtagene vicleucl	Bristol-Myers Squibb Bluebird bio	Multiple myeloma	Progression-free survival
Inclisiran	Novartis	High cholesterol	List price
Lanadelumab	Shire	Hereditary angioedema	Attack rate
Lecanemab	Eisai Co., Ltd	Alzheimer's disease	Treatment effectiveness in slowing progression
Liraglutide	Novo Nordisk	Obesity management	Utility values
Lovotibeglogene autotemcel	Bluebird bio	Sickle cell disease	Medical costs (not related to product)
Mavacamten	MyoKardia	Hypertrophic cardiomyopathy	List price – discount rate
Molnupiravir	Merck	COVID-19	Risk of hospitalisation
Naltrexone	Curax Pharma	Obesity management	Utility values
Natalizumab	Biogen	Multiple sclerosis	Risk of progression
Obeticholic Acid	Intercept Pharmaceuticals	Non-alcoholic steatohepatitis	Utility values
Ocrelizumab	Genentech	Multiple sclerosis	Risk of progression
Ofatumumab	Novartis	Multiple sclerosis	Risk of progression
Oral edavarone	Mitsubishi Tanabe Pharma Development America, Inc.	Amylotrphic lateral sclerosis	Risk of progression
Plinabulin	BeyondSpring Pharmaceuticals	Chemotherapy-induced neutropenia	N/A
Resmetirom	Madrigal Pharmaceuticals	Non-alcoholic steatohepatitis	List price
Ritonavir	Pfizer	COVID-19	Risk of hospitalisation
Ruxolitinib	Incyte Corporation	Atopic dermatitis	N/A
Semaglutide	Novo Nordisk	Obesity management	Utility values
Sotatercept	Merck & Co	Pulmonary arterial hypertension	Effect on functional class
Tezepelumab	Amgen AstraZeneca	Asthma	Utility values
Tirzepatide	Eli Lilly	Type 2 diabetes	Comparator cost
Topiramate	Vivus Pharmaceuticals	Obesity management	% weight reduction
Tralokinumab	LEO Pharma	Atopic dermatitis	Utility values
Trilaciclib	G1 Therapeutics	Chemotherapy-induced neutropenia	N/A
Ublituximab	TG Therapeutics	Multiple sclerosis	Risk of progression
Upadacitinib	AbbVie	Atopic dermatitis	Utility values
Valoctocogene Roxaparvovec	BioMarin	Hemophilia A and B	Comparator cost
Voclosporin	Aurinia Pharmaceuticals	Lupus nephritis	Medical costs (not related to product)