

# What's Trending? Pharmacoeconomic Publications in the US between 2009–2018

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PNS49

## Objectives

- To explore the rate of pharmacoeconomic publications in the US over the last 10 years, including the types of pharmacoeconomic analyses conducted, disease areas evaluated, perspectives taken, and willingness-to-pay (WTP) thresholds cited.

## Background

- Despite the lack of formal health technology assessment (HTA) in the US, the last few years have seen an increase in the development of value frameworks by independent organizations to assess the value of health technologies in terms of cost, quality of life and clinical effectiveness. These include the Institute for Clinical and Economic Review (ICER) who, since 2014, have published their own pharmacoeconomic analyses on both current and novel health technologies.
- This research aimed to ascertain whether more pharmacoeconomic analyses are now being published in response to the increased interest in HTA in the US, with a focus on the type of pharmacoeconomic analyses conducted, disease areas evaluated, and perspectives taken, in the absence of formal HTA requirements for market access in the US.
- In addition, this research aimed to explore the use of WTP thresholds within published cost-utility analyses (CUAs) given the lack of a universally adopted WTP threshold in the US compared to other countries for example the UK, where the National Institute for Health and Care Excellence (NICE) adopts a WTP threshold of £20–30,000/quality-adjusted life-year (QALY) gained.

## Methods

- A pragmatic literature review was conducted in MEDLINE Epub-Ahead-of-Print, MEDLINE, MEDLINE In-Process, and Embase from January 01, 2009–November 11, 2018.
- Publications of cost-effectiveness analyses using clinical outcomes (CEAs), CUAs, or budget impact analyses (BIAs) of pharmaceuticals in the US were included in the review; cost-minimization and cost-benefit analyses were excluded. Studies on screening, vaccinations, or devices were also excluded.
- Abstract screening was undertaken by one reviewer, with input from a second reviewer for any uncertainties.

## Results

- A total of 8,087 records were identified, of which 649 met the review eligibility criteria. The annual number of pharmacoeconomic publications in the US gradually increased from 53 publications in 2009 to 81 publications in 2018 (Figure 1). Overall, CUAs were the most frequently published (68.7%), followed by CEAs (15.9%) and BIAs (13.6%); 1.9% of publications presented multiple analyses. Almost half (48.9%) of all BIAs identified were published in 2017 and 2018 (Figure 1).
- Oncology (29.9%), infectious diseases (15.6%), neurology/psychiatry (11.9%) and cardiology (10.8%) were the subject of 68.2% of publications (Figure 2).
- The majority of analyses (59.0%) adopted a private healthcare perspective; 12.6% and 10.0% of analyses adopted societal and public healthcare perspectives, respectively. A higher proportion of CUAs were conducted from a societal perspective (16.1%) compared with 4.5% and 5.8% of BIAs and CEAs, respectively (Figure 3).
- Of CUAs citing a WTP threshold, the most commonly-cited WTP threshold was \$100,000/QALY gained (36.8%); lower thresholds were also common (33.0%), as were thresholds greater than \$100,000/QALY gained (15.1%). The highest WTP threshold cited was \$300,000/QALY gained (Figure 4).

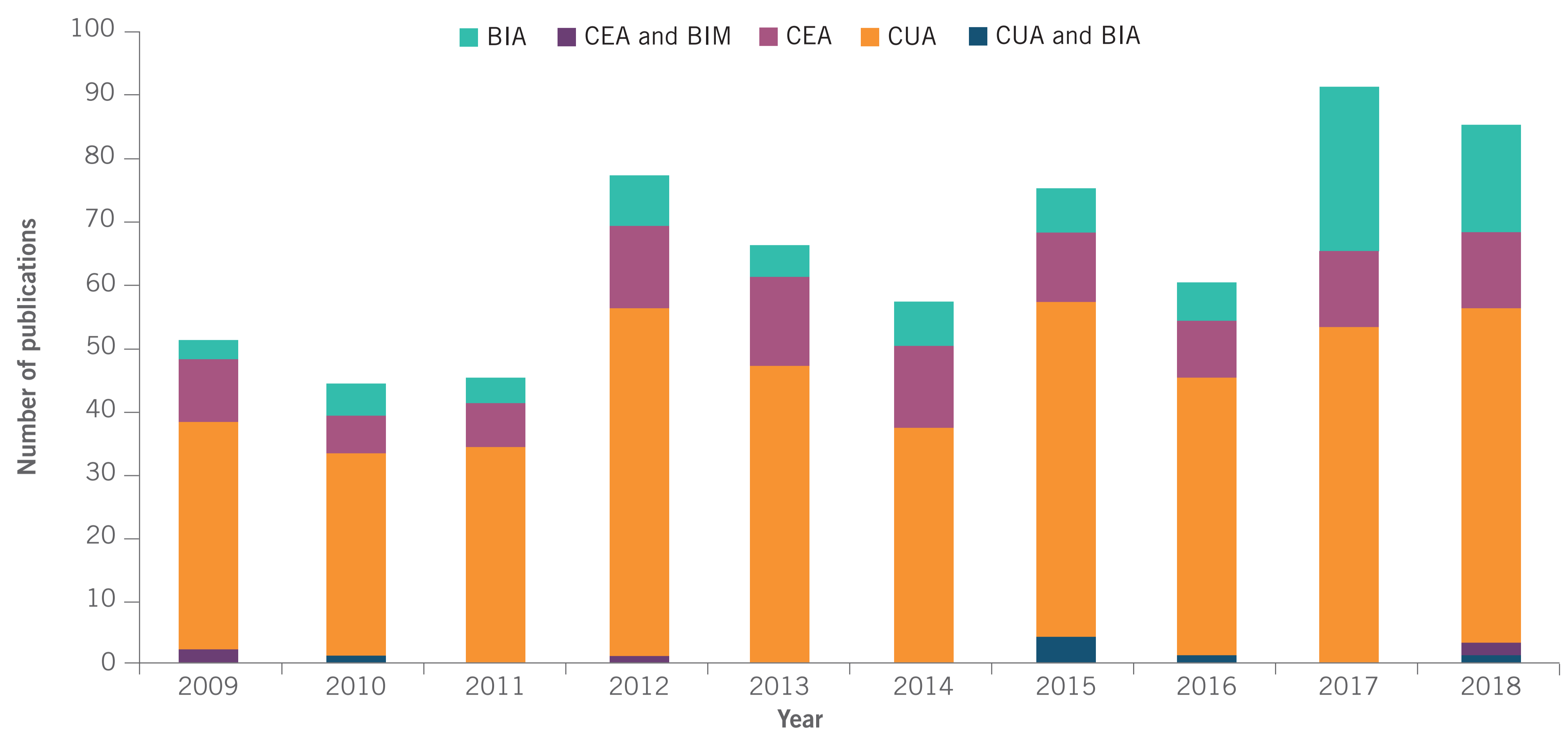
## Conclusions

- The publication of pharmacoeconomic analyses in the US has only gradually increased since 2009, despite growing interest in HTA in the US and the publication of pharmacoeconomic analyses from organizations such as ICER since 2014.
- Although there are no formal HTA requirements in the US, CUAs adopting a cost/QALY framework were the most frequently published pharmacoeconomic analyses over the last 10 years, possibly mirroring HTA approaches in other countries.
- A wide range of WTP thresholds were cited, reflective of the absence of a universally adopted WTP threshold in the US; the majority of published CUAs cited a \$100,000/QALY gained WTP threshold, far higher than the £20–30,000/QALY threshold adopted by NICE in the UK.
- This research omitted a quality assessment of each included publication. Further analysis could include the assessment of publication reporting quality against established guidelines such as the Consolidated Health Economic Evaluation Reporting Standards (CHEERS) checklist.

## Acknowledgements

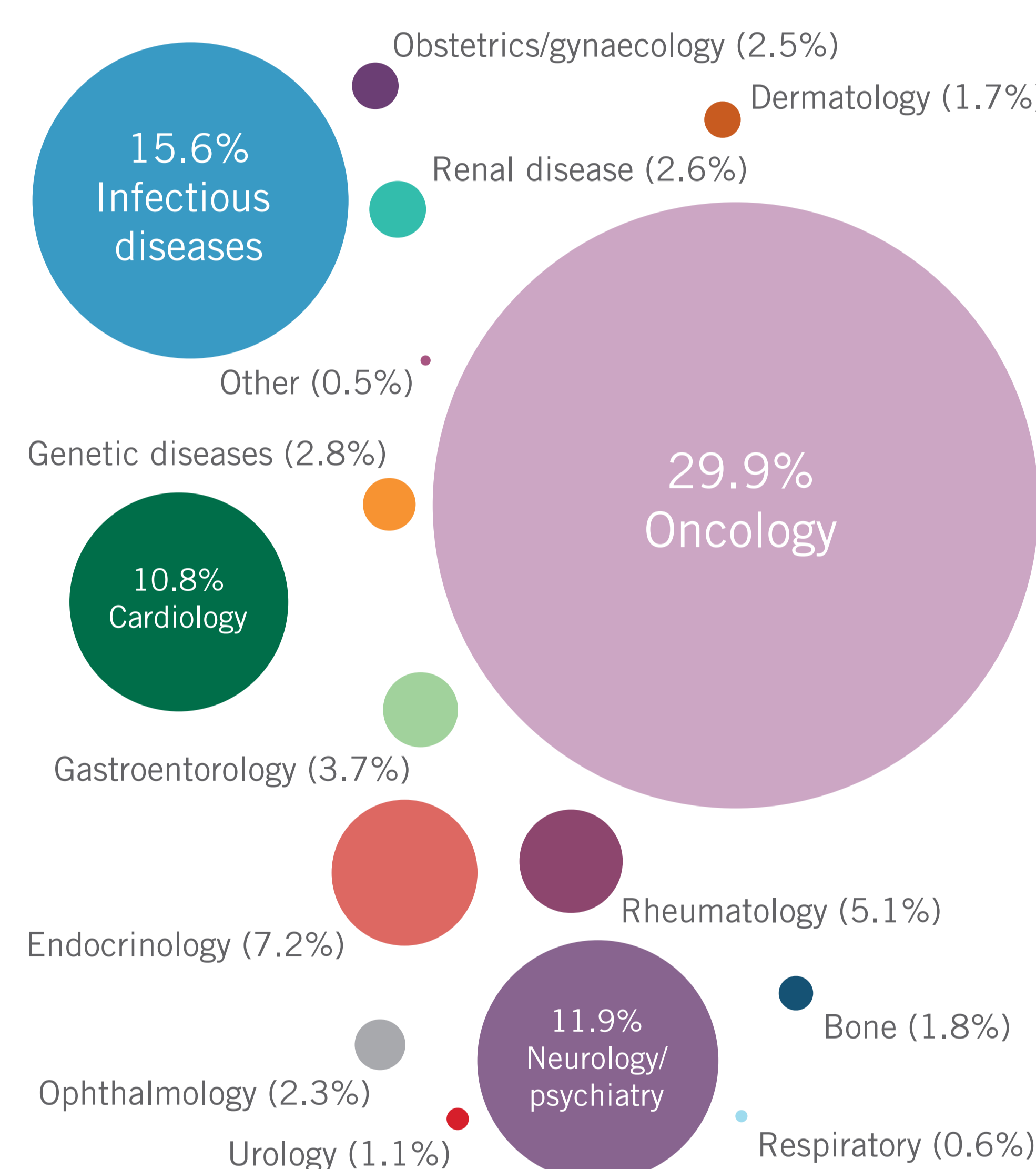
The authors thank Marta Labuda, Costello Medical, Cambridge, for graphic design assistance with the development of this poster.

Figure 1 | Number and type of pharmacoeconomic analyses published in the US over the last 10 years



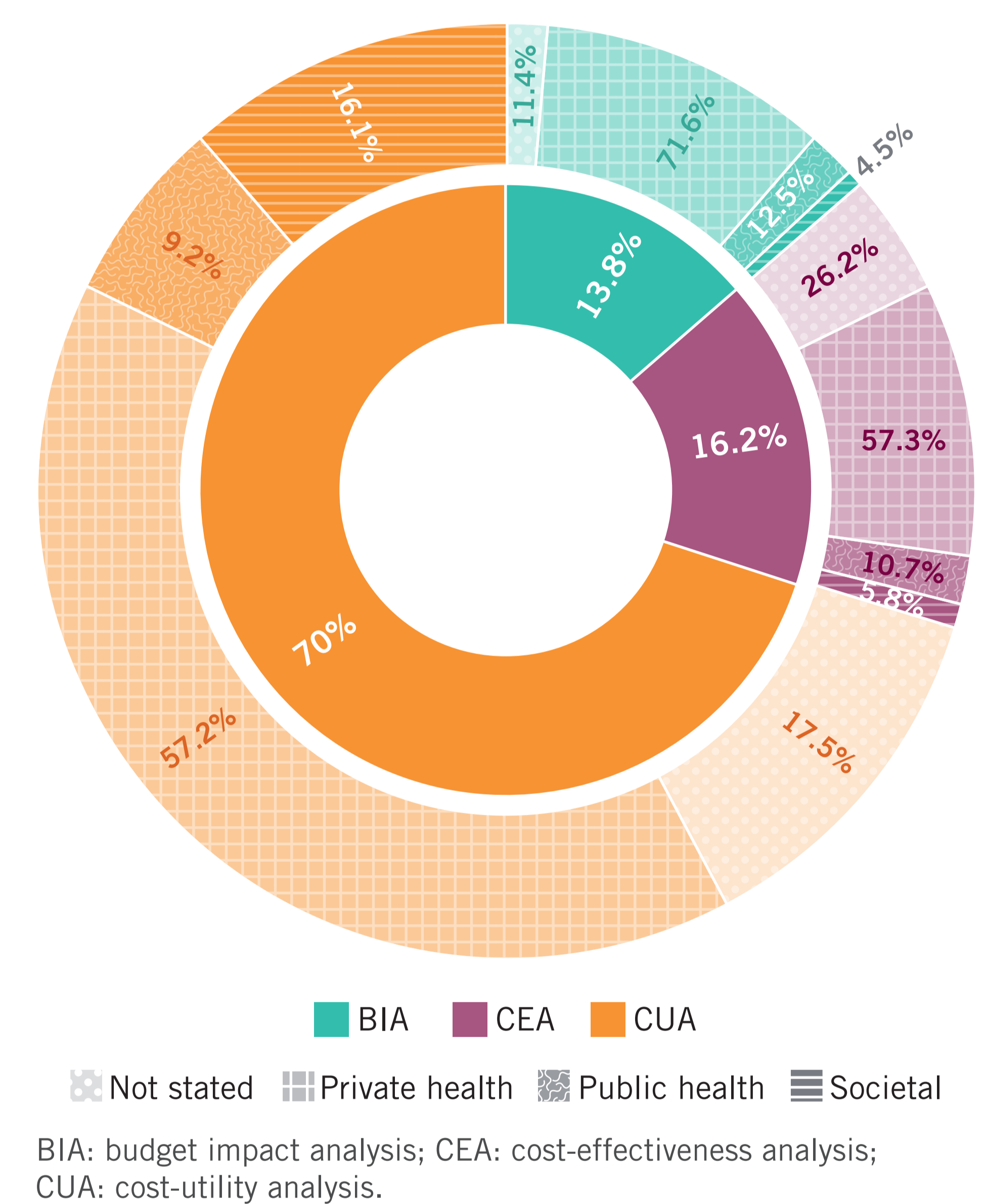
BIA: budget impact analysis; CEA: cost-effectiveness analysis; CUA: cost-utility analysis.

Figure 2 | Disease areas evaluated in pharmacoeconomic publications in the US over the last 10 years



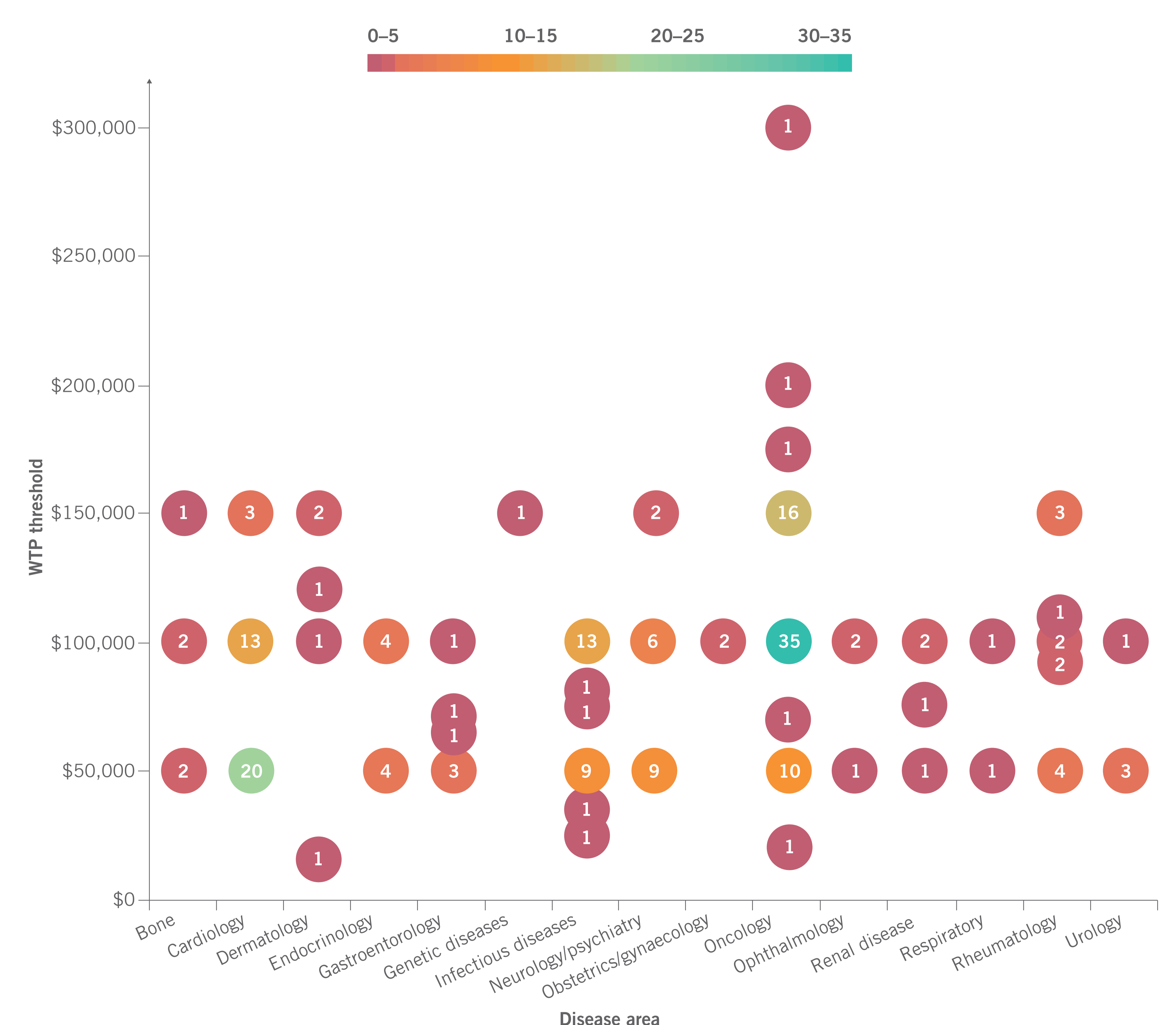
Total number of publications = 649

Figure 3 | Perspective taken in pharmacoeconomic publications in the US over the last 10 years



BIA: budget impact analysis; CEA: cost-effectiveness analysis; CUA: cost-utility analysis.

Figure 4 | Cited WTP threshold by disease area for CUAs published in the US over the last 10 years



Analysis includes only publications that cited a WTP threshold in the abstract. Numbers relate to the number of publications citing a particular WTP threshold. CUA: cost-utility analysis; WTP: willingness-to-pay.