

Background & Objective

- Despite the recommendation from the Second Panel on Cost-Effectiveness in Health and Medicine, most published CEAs do not include societal costs.
- The variation in societal cost inclusion across disease areas, intervention types, and countries remains unclear, and its impact on incremental costs and ICERs is underexplored.
- Objective:** To examine trends in the inclusion of societal costs in published CEAs, explore factors associated with their inclusion, and assess the impact on incremental costs and ICERs

Methods

- We used the Tufts Medical Center's Cost-Effectiveness Analysis Registry to identify cost-per-QALY studies published from 2013 to 2022.
- We examined trends in the percentage of CEA studies that included societal costs and their association with study characteristics (e.g., disease area, intervention type, country, etc.) using multivariate logistic regression.
- We estimated the impact of including societal costs on incremental costs and ICERs.

Results

Figure 1. Annual trends in the number of cost/QALY studies and % that included societal costs

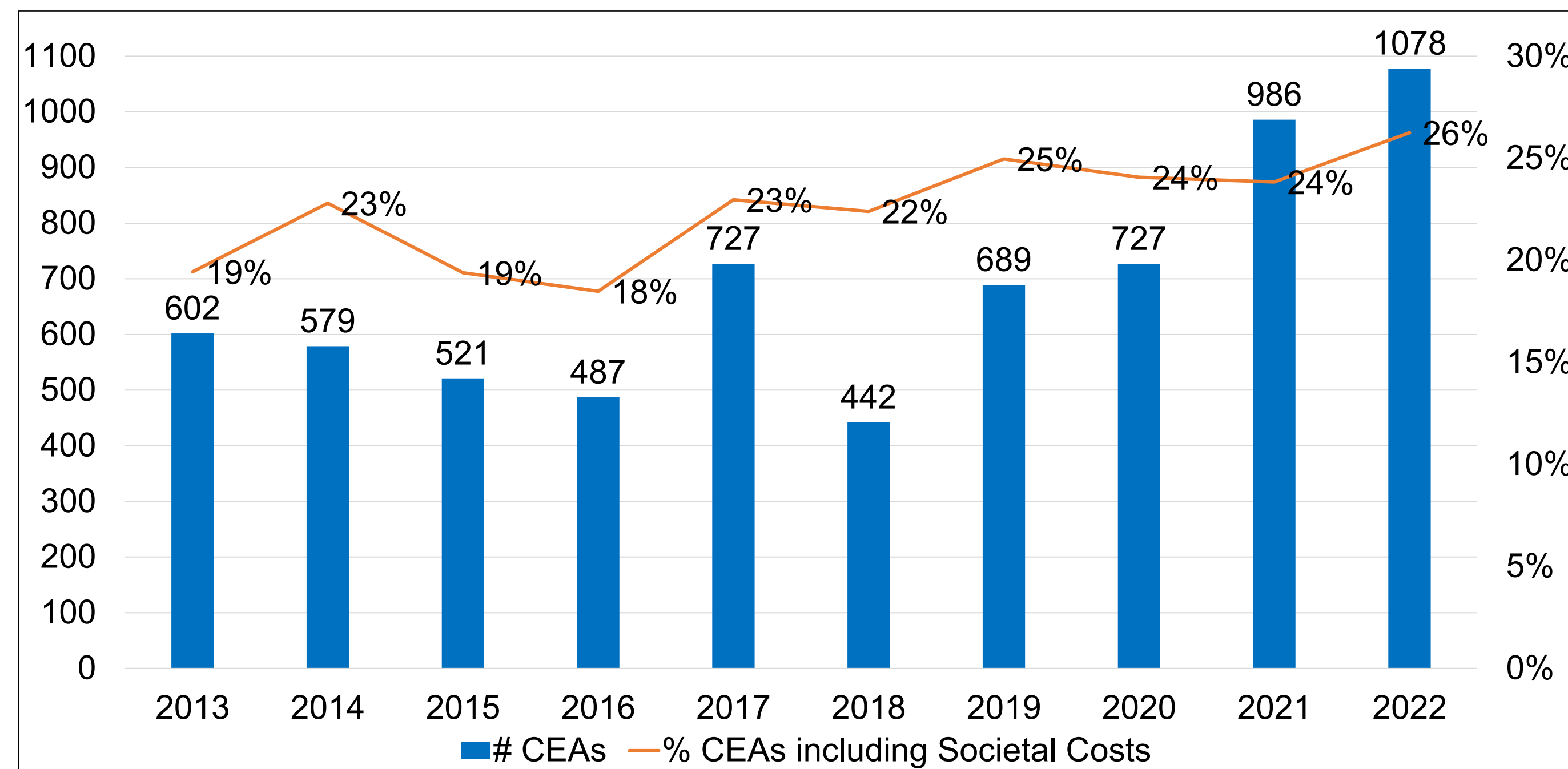
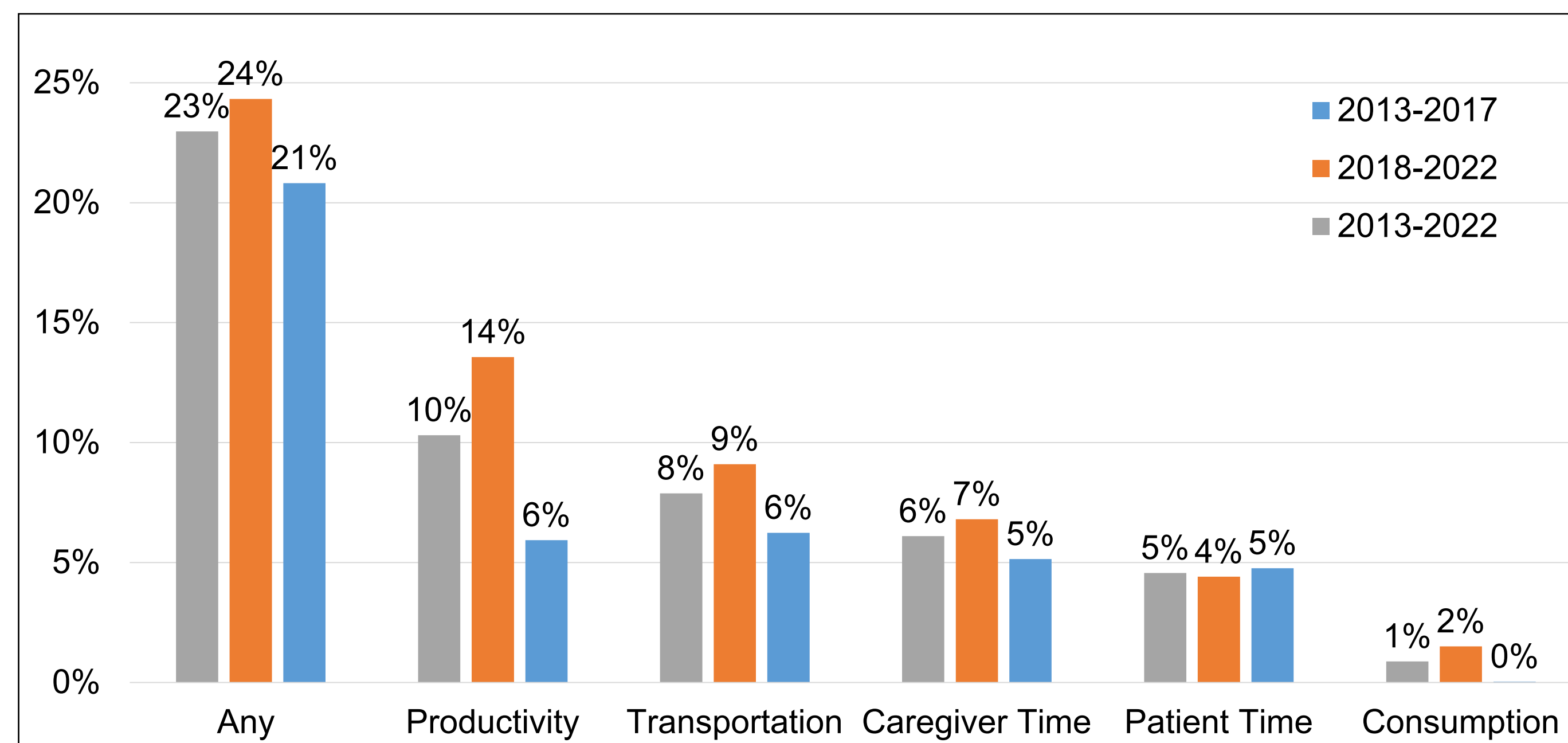


Figure 2. Percent of cost/QALY studies that reported societal cost



Results

Figure 3. Inclusion of societal costs by disease area

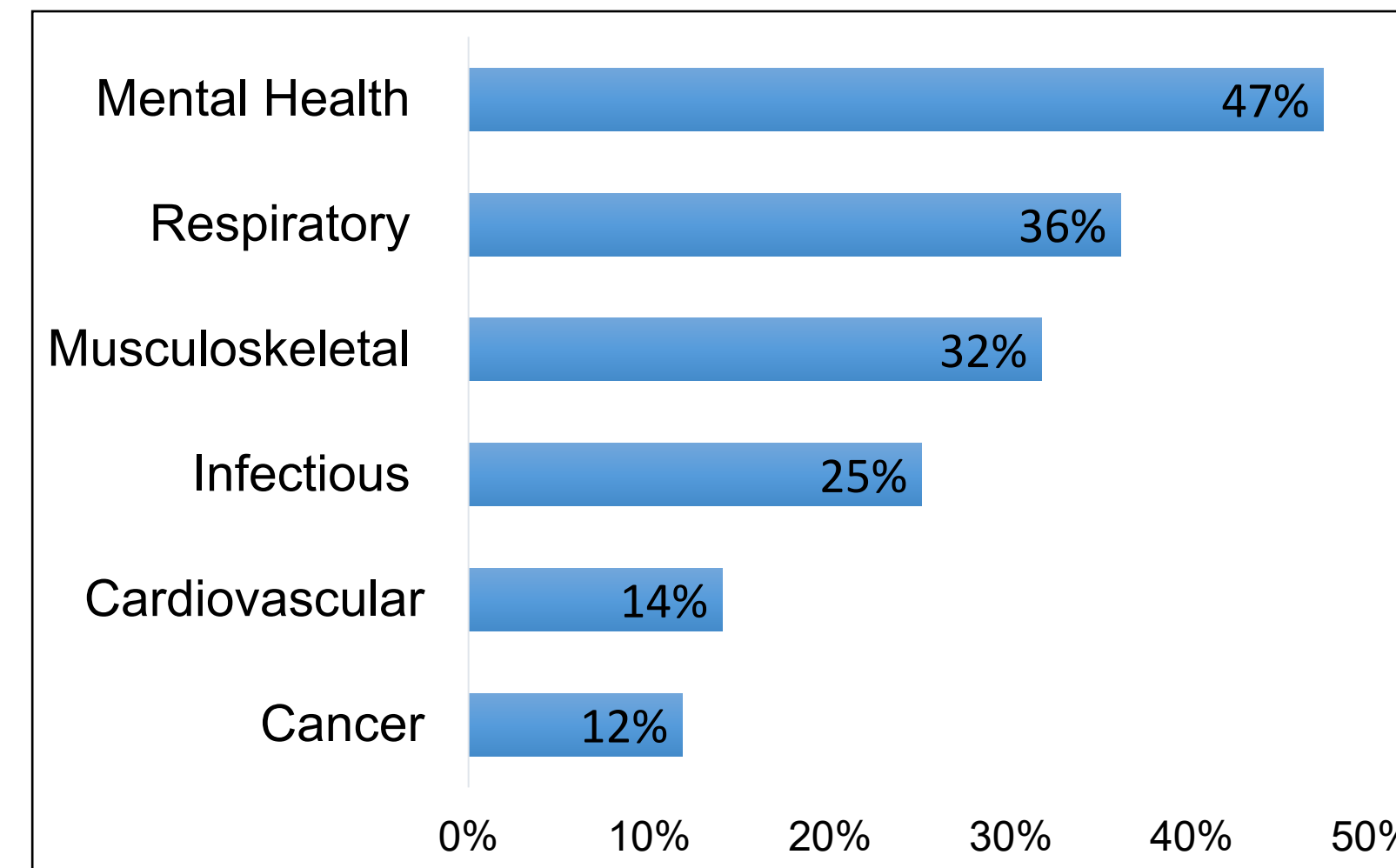


Figure 4. Inclusion of societal costs by Intervention type

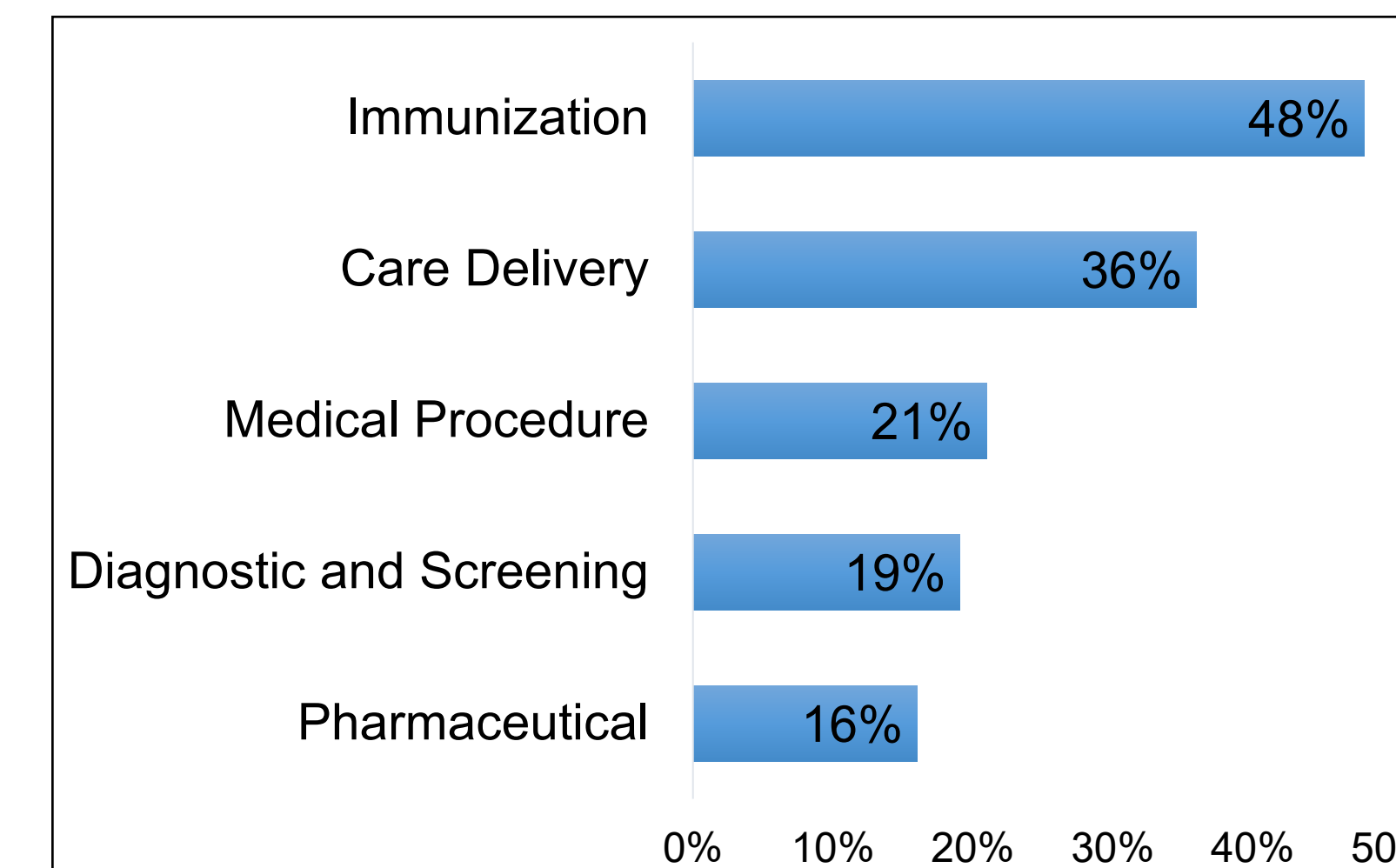


Figure 5. Inclusion of societal costs by country in CEAs.

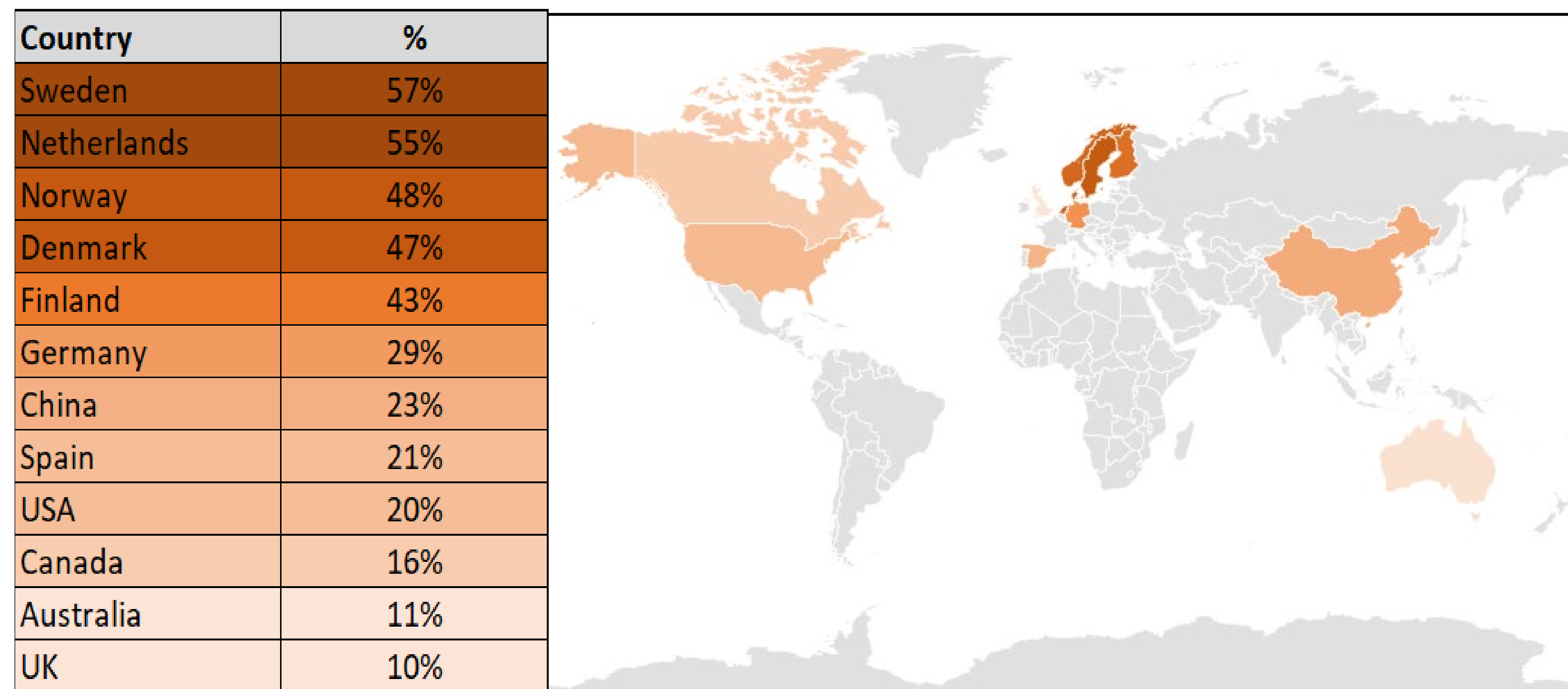


Table 1: Association between study characteristics and inclusion of societal costs

Variable	Odds ratio (95% CI)	P value
Disease Area		
Cancer	1 (reference)	
Mental Health Disorders	6.828 (5.011, 9.305)	<.0001
Musculoskeletal diseases	4.081 (3.078, 5.411)	<.0001
Respiratory Diseases	3.109 (2.224, 4.346)	<.0001
Infectious Disease	1.766 (1.351, 2.31)	<.0001
Intervention Type		
Pharmaceutical	1 (reference)	
Immunization	4.34 (3.192, 5.902)	<.0001
Care Delivery	2.145 (1.534, 3.001)	<.0001
Medical Procedure	1.529 (1.212, 1.931)	0.0003
Diagnostic & Screening	1.314 (1.016, 1.7)	0.0375
Target Population Age		
Adults (18-64 years)	1 (reference)	
Pediatric (<18 years)	1.655 (1.269, 2.157)	0.0002
Elderly (>= 65 years)	0.682 (0.532, 0.873)	0.0024
Funding		
Pharmaceutical	1 (reference)	
Government	1.684 (0.107, 1.605)	<.0001
Country		
United States of America	1 (reference)	
United Kingdom	0.362 (0.276, 0.475)	<.0001
Canada	0.667 (0.478, 0.931)	0.0172
Australia	0.588 (0.381, 0.907)	0.0163
Netherlands	5.348 (4.069, 7.03)	<.0001
Scandinavian Countries	3.685 (2.715, 5)	<.0001
Year	1.056 (1.030, 1.082)	<.0001

Figure 6. Distribution of percent change in incremental cost and ICER after including societal cost

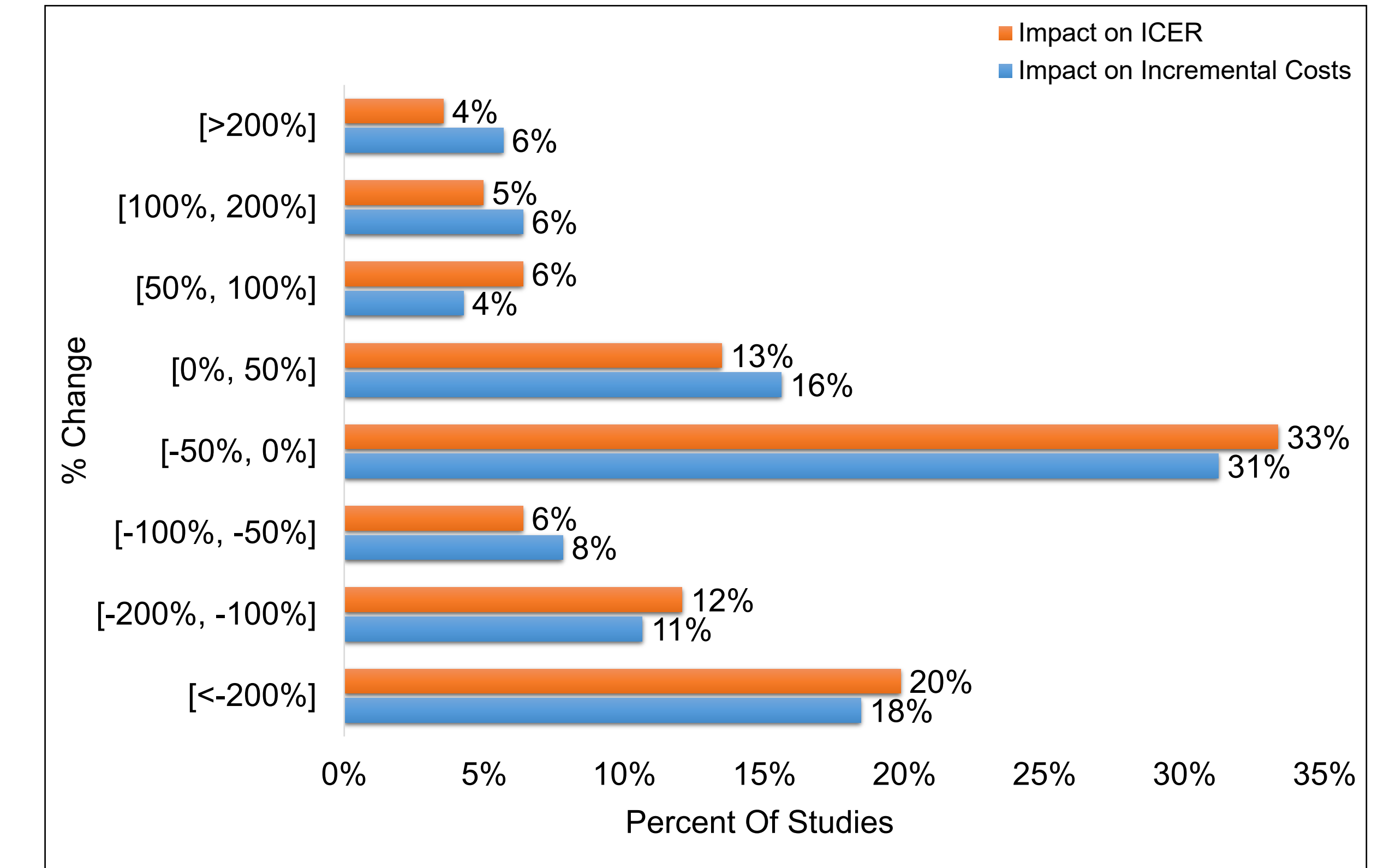


Table 3. Number of studies that reported ICERs from both healthcare and societal perspective (N=141)

Impact of Including societal costs on ICER	After inclusion of societal cost (\$/QALY)			Total studies before inclusion of societal cost	
	<50k	50k-100k	>100k		
Before inclusion of societal costs (\$/QALY)	<50k	96	2	1	99
	50k-100k	9	5	3	17
	>100k	4	1	20	25
Total studies after inclusion of societal cost	109	8	24	141	

Discussion

- Inclusion of societal cost in CEAs has increased modestly but remains infrequent, with wide variation across diseases, interventions, and countries. Incremental cost and ICERs decrease for the more effective treatment upon inclusion of societal costs in most, though not all, studies.
- The variation by disease and intervention type could be due to societal costs being perceived to have different levels of relevance in different diseases and for different interventions.
- The country-level variation seems to correlate with a country's HTA agency's position on societal costs.
- By overlooking the impact of medications on societal costs, we risk unfairly penalizing products with substantial societal value, potentially distorting incentives for drug development in certain areas.
- Standardized methods and more data are needed to better quantify societal costs in CEAs.