

Systematic Literature Review of Measurement and Valuation Methods for Societal Costs: A focus on Cost-Effectiveness Analyses of Three Types of Disease Potentially Associated with Spillover Effects

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BACKGROUND AND OBJECTIVE

- Societal perspective includes all relevant costs directly and indirectly related to a condition and/or intervention regardless of who bears the costs. These costs may be borne by the patient, his or her family or other sectors of society (education, justice, work, environment, etc.)^{1,2} (Figure 1)
- Productivity losses and informal care are the main societal cost drivers in CEA/CUA³. Their inclusion, measurement and valuation might change the result of CEA/CUA, especially for health technology dedicated to disease associated with important spillover effects
- The objective of this study was twofold:
 - updating current knowledge on methods used to measure and value societal costs in CEA, in the main pathologies appearing in the systematic literature review
 - identifying, for these pathologies, the impact on ICER of adopting a societal perspective versus healthcare system perspective

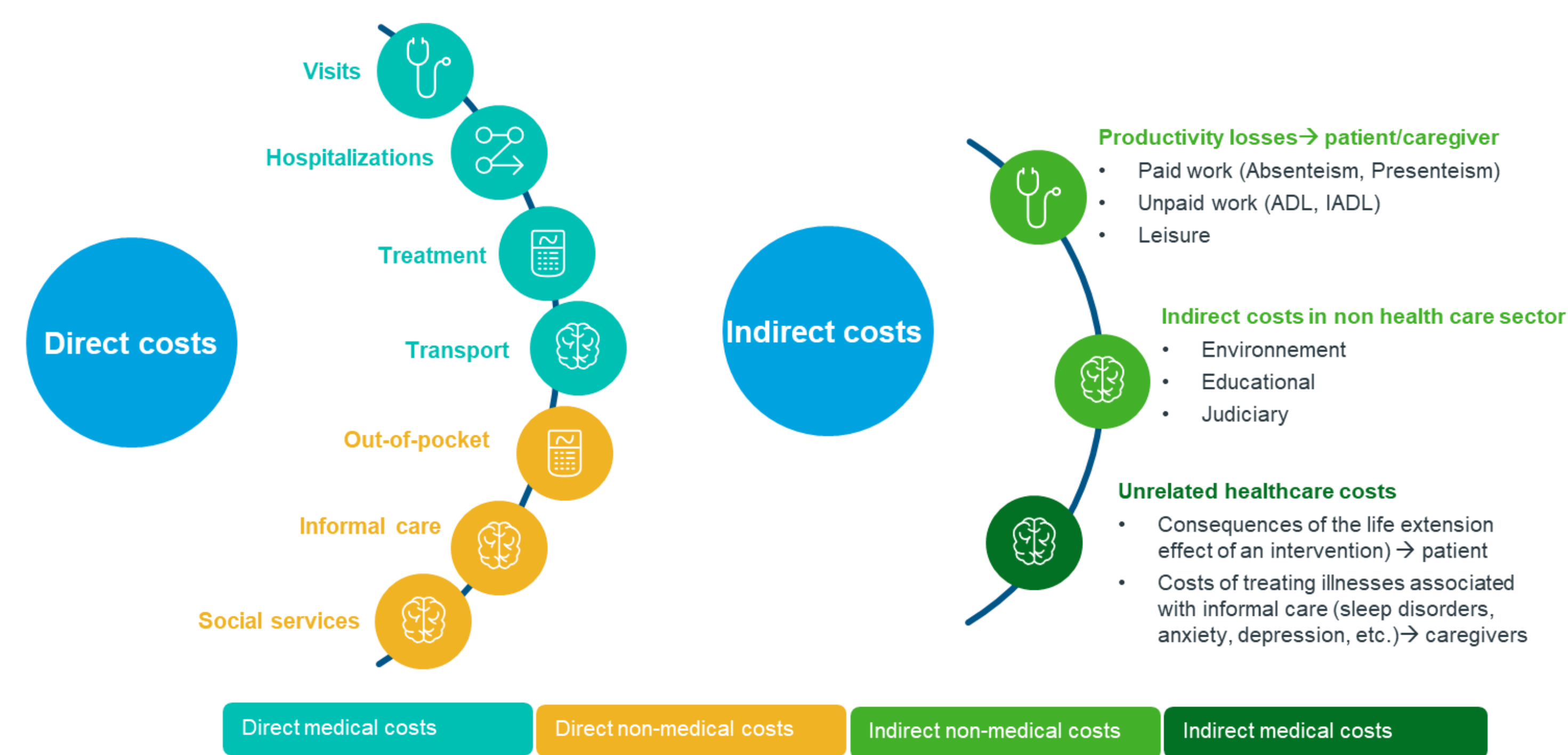


Figure 1 : Costs included in a societal perspective

METHODS

We performed an international systematic literature review, using the methodological framework outlined in the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement. A search in the MEDLINE database using PubMed was performed, covering the period from 1st January 2013 to 1st January 2023

RESULTS

Sixty-nine studies (among which 22 CEA/CUA) met the inclusion criteria (including a description of methods used to value societal costs) and were included in the review (Figure 2)

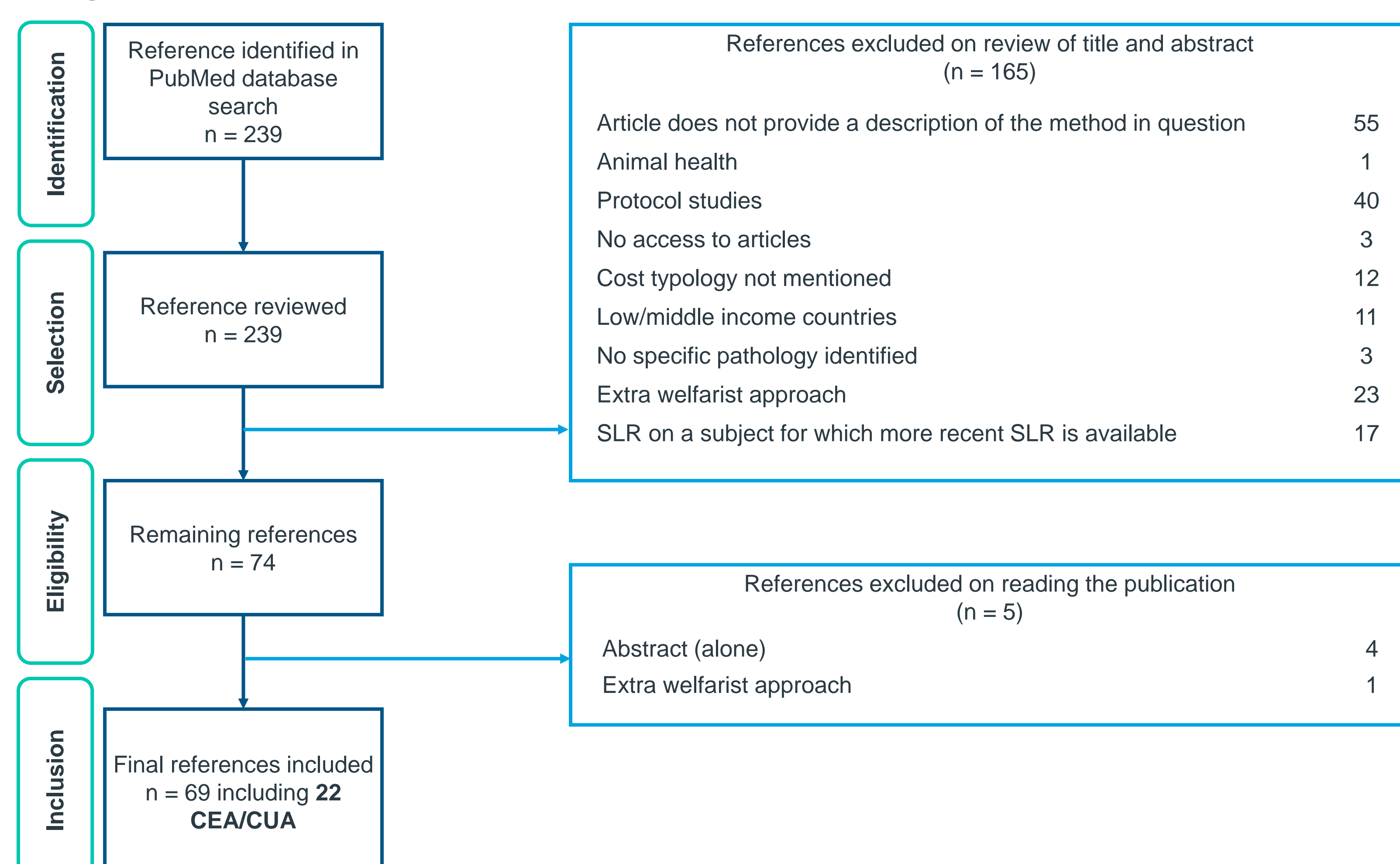


Figure 2 : Literature research methodology

CONCLUSION

Informal care and productivity losses are the most described societal costs in neurodegenerative diseases, cancer & mental health. In the articles comparing the ICER between CEA adopting societal perspective versus health care perspective, **societal costs rather positively affect the probability of the intervention being cost-effective**, irrespective of the therapeutic area. However, **there is still no clear consensus about the best methods to measure and value these costs**. This lack of consensus is partly related to the difficulty of collecting the data needed to measure and value societal costs, which is often costly and time-consuming. In this context, **many HTA bodies do not recommend the societal perspective as a reference analysis, considering that including societal costs in cost-effectiveness studies generates significant uncertainty**.

References : 1. Brouwer W. et al. Moving Forward with Taking a Societal Perspective: A Themed Issue on Productivity Costs, Consumption Costs and Informal Care Costs. *Pharmacoeconomics*. 2023 Sep;41(9):1027-1030. 2. Walker S. et al. Striving for a Societal Perspective: A Framework for Economic Evaluations When Costs and Effects Fall on Multiple Sectors and Decision Makers. *Appl Health Econ Health Policy*. 2019 Oct;17(5):577-590; 3. https://www.impact-hta.eu/_files/ugd/e1a359_b3f3da9788f64385a6784d040401f770.pdf?index=true

Acronyms : CARER-SUS : Carer System Usability Scale; CEA : Cost-Effectiveness Analysis; CSRI : Client Service Receipt Inventory; CUA : Cost-Utility Analysis ICER : Incremental Cost-Effectiveness; iVICIQ : iMTA Valuation of Informal Care Questionnaire; PRISMA : Preferred Reporting Items for Systematic Reviews and Meta-Analyses; Ratio; RUD : Resource Utilization in Dementia; RUQ : Resource Use Questionnaire;

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- We identified three main pathologies amongst the selected CEA: neurodegenerative diseases (5), mental diseases (4) and cancer (all types) (3) corresponding to twelve studies (Figure 3)

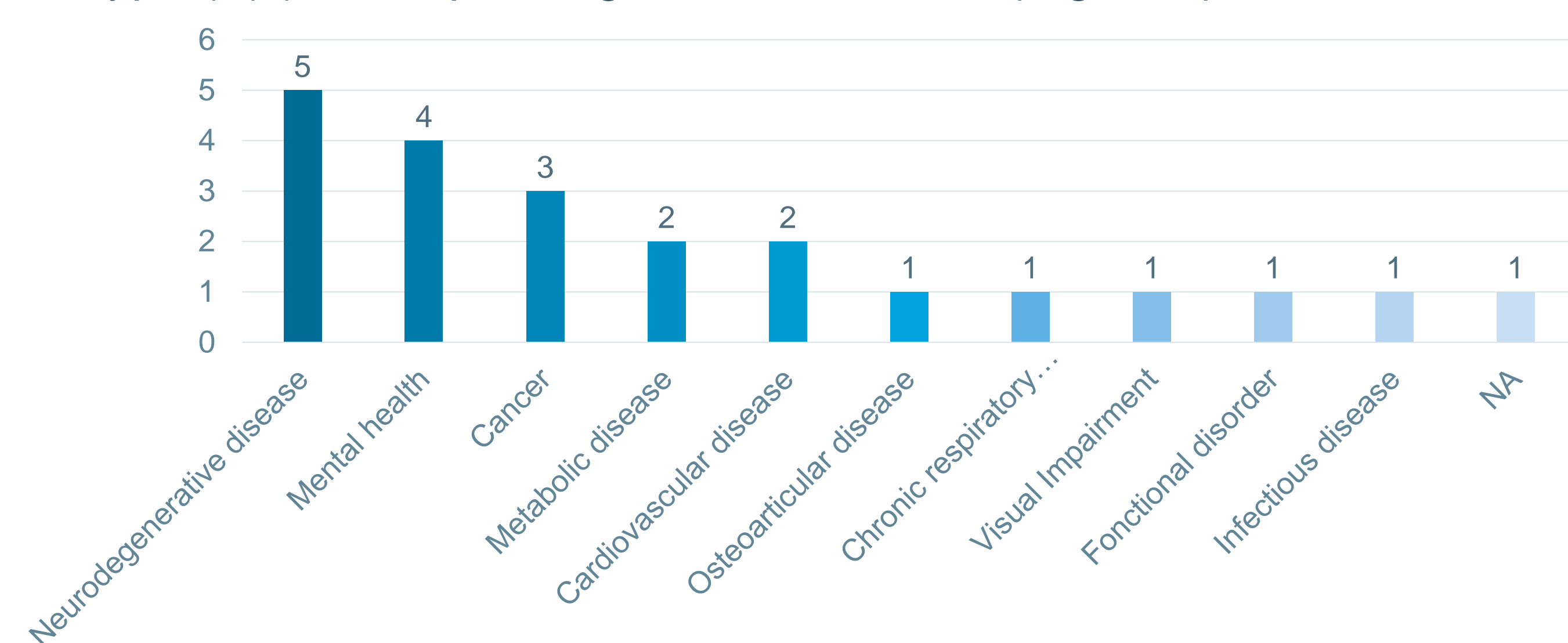


Figure 3 : Distribution of CEA/CUA by pathologies (n=22)

Measurement and valuation methods for informal care

- Informal care was always included in the CEA concerning these three main pathologies
- Eleven of these twelve studies defined a measurement method for informal care and nine defined a valuation method (Figure 4 – 5) → **No consensus on the best methods emerged from the review of these articles**

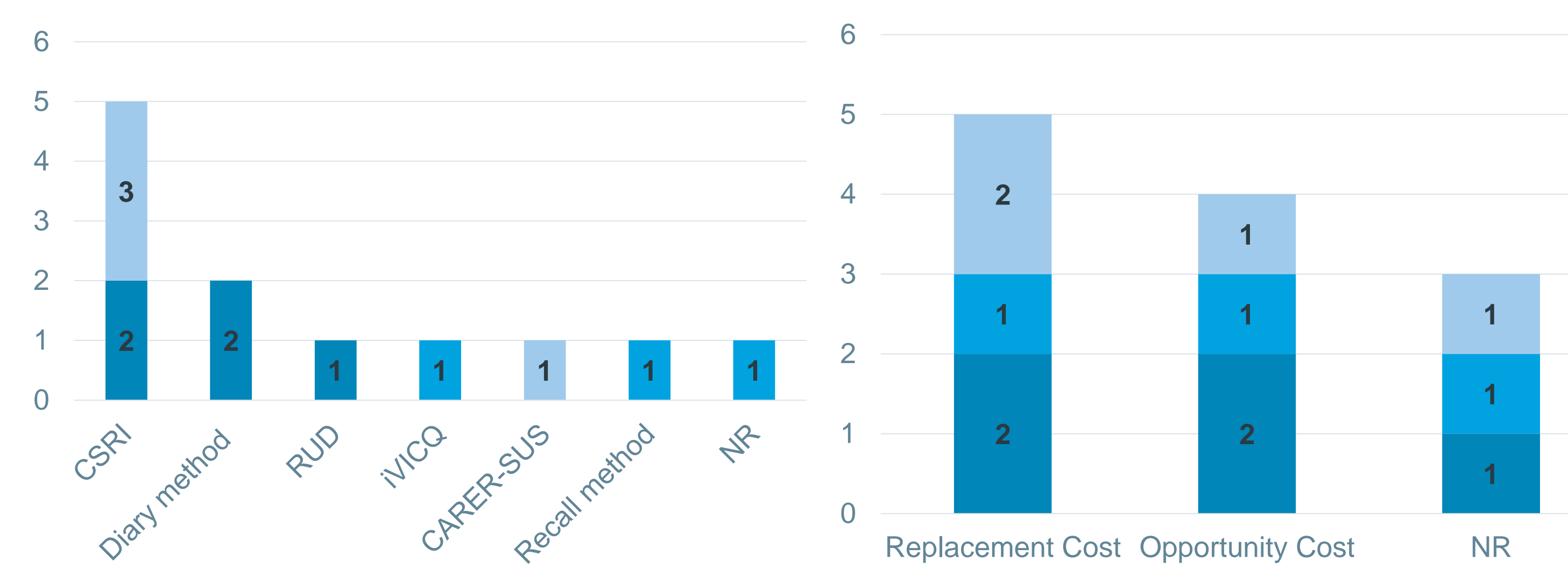


Figure 4 : Measurement Method for Informal Care (n=12)

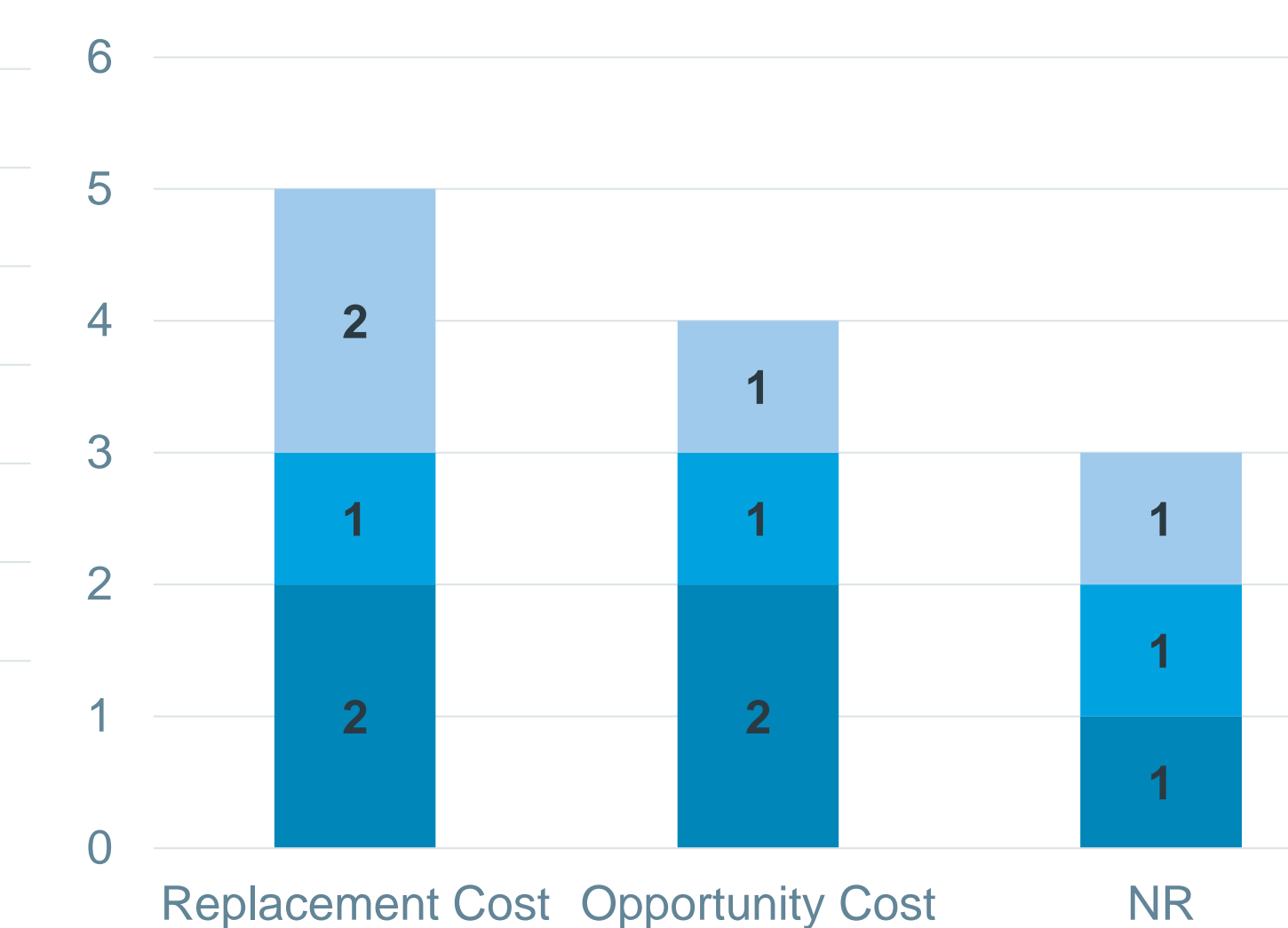


Figure 5 : Valuation Method for Informal Care (n=12)

Measurement and valuation methods for productivity losses

- Eight of these twelve studies included productivity losses
- Eight of them described a measurement method and eight described a valuation method: (Figure 6 – 7) → **Human Capital appears to be the most used method in Mental Health**

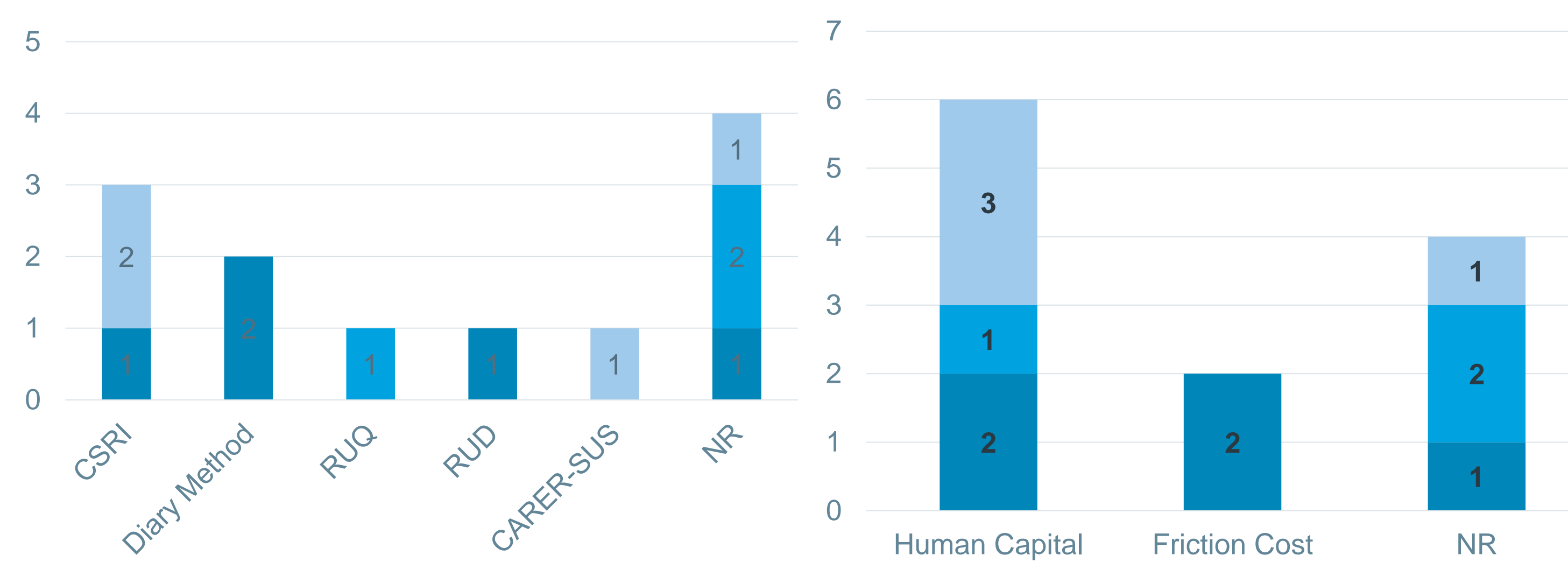


Figure 6 : Measurement Method for Productivity Losses (n=12)

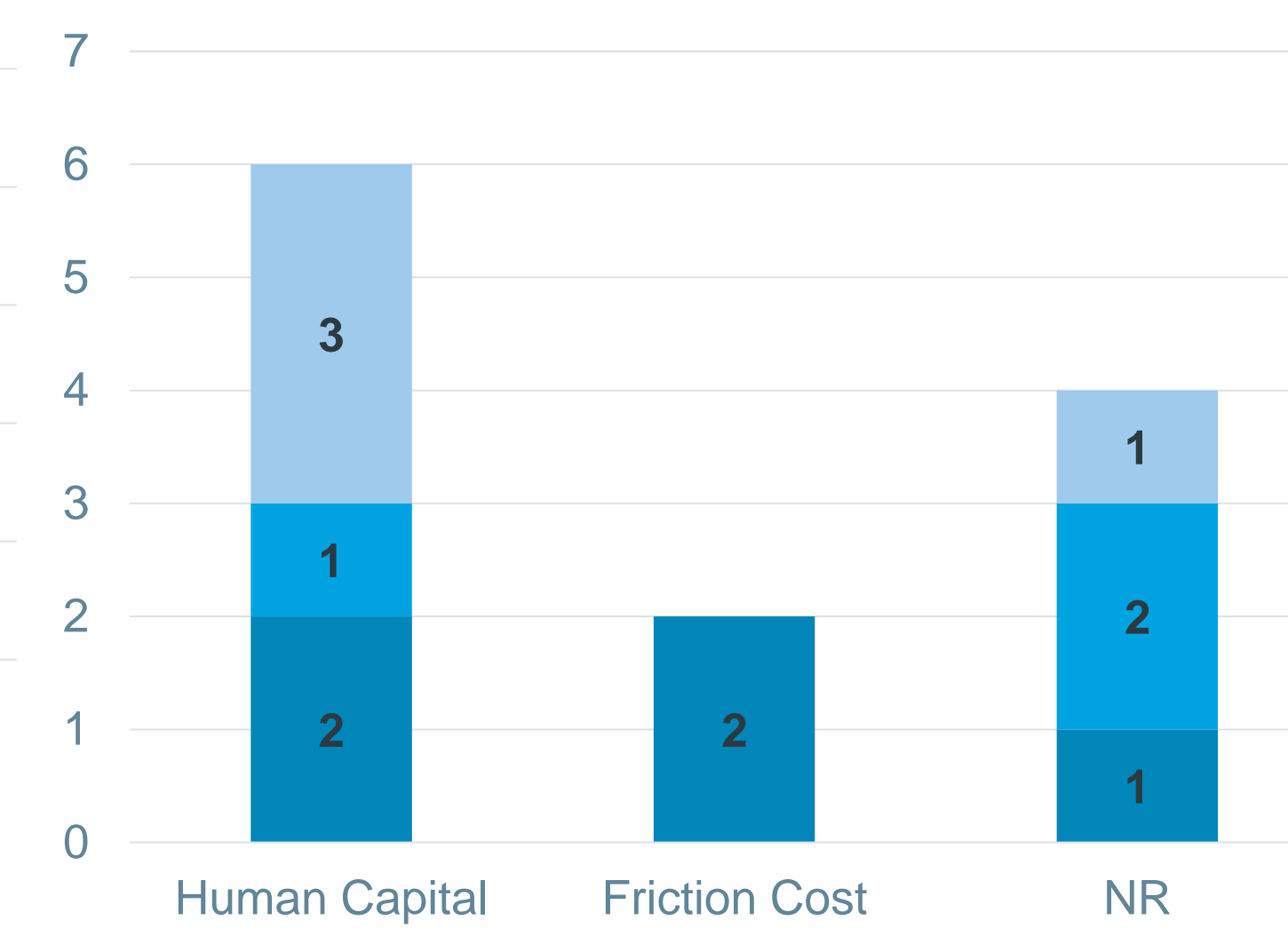


Figure 7 : Valuation Method for Productivity Losses (n=12)

Impact of societal costs on the ICER

- When it was integrated within the CEA/CUA (9/12 studies), Informal care was the societal cost having the greatest impact on the ICER in these three pathologies
- Compared to health care system perspective, adopting the societal perspective decreased the ICER but increased uncertainty in studies where the comparison was presented (4/12 studies)
- Compared to health care system perspective, adopting the societal perspective increased the probability of being cost-effective (5/12 studies)