Different Methods, Different Results?
Comparing HTAs in the United Kingdom and Germany

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Introduction and Objectives

Implementation of health technology assessments (HTAs) by official HTA agencies varies internationally, perhaps most profoundly with respect to the use of health economic evaluation methods. Whereas the UK National Institute for Health and Care Excellence (NICE) relies heavily on cost utility analysis, HTAs by the German Institute for Quality and Efficiency in Health Care (IQWiG) and the Federal Joint Committee (Gemeinsamer Bundesausschuss, G-BA) focus on comparative effectiveness based on a rigorous application of principles of evidence-based medicine (EBM). These discrepancies may be interpreted as the result of underlying differences in institutional context and value judgments.

The **objective** of the present analysis was to explore the extent to which different methodological choices are associated with different HTA outcomes.

Data and Methods

Both HTA agencies, NICE and G-BA/IQWiG, publish detailed information on HTAs on their respective websites.

We extracted data from all publicly available G-BA appraisals between January 2011 (when early benefit assessments were implemented) and April 2015, as well as all published NICE single technology appraisals (STAs) during the same period.

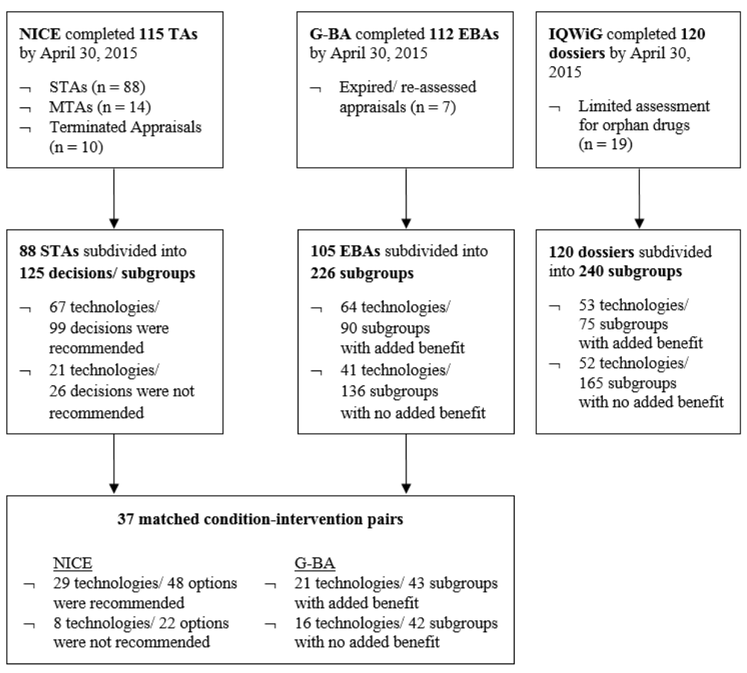
We compared health benefit assessment results of matched condition-intervention pairs by G-BA and by NICE overall, and by additional criteria including therapeutic area, clinical and *incremental* cost effectiveness, patient-relevant endpoints, and, where required, for end-of-life criteria.

Procedure for comparing matched condition-intervention pairs:

Parameter	Coding	Proceeding	Assumption
NICE decisions:			
Recommendation on health technology (Guidance)	´-´1 = not recommended 1 = recommended	When one technology was subdivided into multiple subgroups and at the same time resulting in different health benefit outcomes, we proceed as following: multiplication of benefit assessment results with subgroups (number of patient population); add up the product of multiplications to one sum.	Aggregation of recommendations for single subgroups to a final decision for the overall patient population (based on technology level): positive sum = recommended; negative sum = not recommended.
G-BA decisions:			
(Early) Benefit Assessment (Resolution / Appraisal)	Certainty (of added benefit): 3 = proof 2 = indication 1 = hint Extent (of added benefit): 4 = major 3 = considerable 2 = minor 1 = non-quantifiable ´-´1 = no added benefit ´-´2 = lesser benefit	When one technology was subdivided into multiple subgroups and at the same time resulting in different health benefit outcomes, we proceed as following: multiplication of certainty of added benefit with the extent of added benefit and subgroups (number of patient population); add up the product of multiplications to one sum.	Aggregation of appraisals for single subgroups to a final decision for the overall patient population (based on technology level): positive sum = decision for additional benefit; negative sum = no decision for additional benefit.

Results and Key Findings

HTA outcomes by NICE (United Kingdom) and G-BA/IQWiG (Germany)

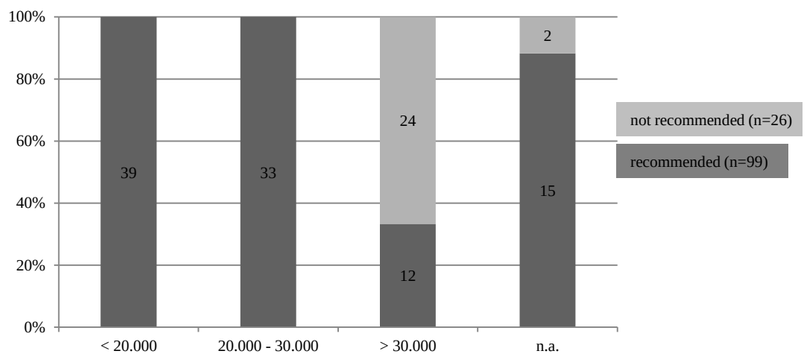


Matched condition-intervention pairs (n=37) by therapeutic area

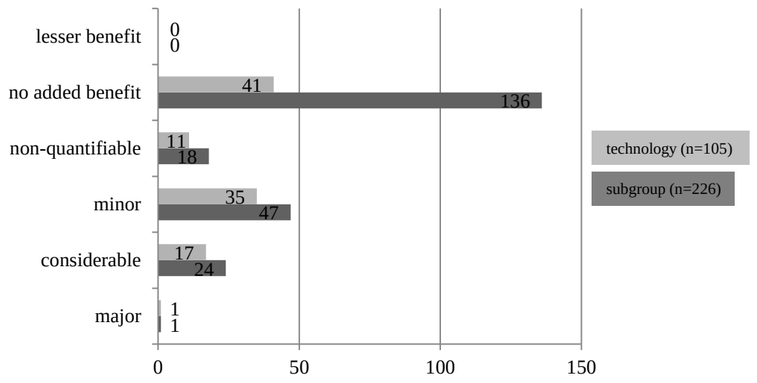
Therapeutic Area: Conditions and Diseases	Quantity	G-BA Appraisal: Additional Benefit		NICE Guidance: Recommendation	
		+	-	+	-
Respiratory	1	1		1	
Eye	3	1	2	3	
Hematological/Oncological	3	2	1	1	2
Cardiovascular	3	3		3	
Infections	4	3	1	4	
Neurological	4		4	4	
Oncological	14	11	3	8	6
Alcohol	1		1	1	
Metabolic	3		3	3	
Urological	1		1	1	
Total	37	21	16	29	8
Relative share (%)		57%	43%	78%	22%
Total: oncological conditions*	17	13	4	9	8
Relative share (%)		76%	24%	53%	47%

Definitions:
*oncological conditions = hematological / oncological conditions;
G-BA appraisal: + additional benefit, - no additional benefit;
NICE guidance: + recommendation; - no recommendation

NICE guidance (n=125) by ICER threshold



G-BA appraisals by benefit category



Key Findings:

During the study period, NICE issued guidance for 88 technologies (125 subgroups); G-BA completed 105 appraisals (226 subgroups). We identified 37 matched condition-intervention pairs. Of those, 24 were evaluated differently by NICE and G-BA. NICE recommended 29/37 treatments, whereas G-BA confirmed additional benefit for 21/37 only. By therapeutic area, interventions for hematological and oncological diseases were relatively more likely to be evaluated positively by G-BA/IQWiG. In contrast, NICE appraisals were relatively more favorable towards treatments for metabolic and neurological disorders. Results including all interventions were consistent with the findings reported for matched pairs. NICE recommended 67/88 technologies (99/125 subgroups); G-BA proved additional benefit for 64/105 drugs (90/226 subgroups), IQWiG for 53/120 drugs (75/240 subgroups).

Summary and Conclusion

Overall, NICE tends to evaluate new drugs more favorably than G-BA/IQWiG. However, treatments for some therapeutic areas like cancer were evaluated more favorably by G-BA/ IQWiG. Our results lend support to the hypothesis that different HTA methods contribute to systematic differences in decision-making.

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