Recognising the Broader Value of Meningococcal Vaccination: a Matter of Evidence, Ability or Willingness?

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RATIONALE AND OBJECTIVES

- It is widely argued that the value of meningococcal vaccination extends beyond the *narrow* value elements traditionally considered in health technology assessment (HTA) [1,2].
- However, measuring broader value presents challenges, while assessment methods and outcomes vary widely across countries [2,3].
- This methodological work investigated the extent to which the broader value of meningococcal vaccination is recognised as a function of three enabling factors: (1) **evidence** demonstrating the value (2) decision maker's **methodological approach** to assess this evidence and (3) **ability** to consider it.

METHODS

Broader Value Framework

We defined broad value based on a framework including both independent of disease [4] and meningococcal vaccine-specific value elements [1,2,5].

Evidence

Literature review and classification of broader value elements according to their relevance to meningococcal vaccination and the quality of evidence

Identification of relevant value elements with good evidence

Case Studies Assessing the Impact of Value Elements

Case studies on HTA of meningococcal B vaccination in England and the Netherlands reviewing if these value elements were considered, how they were evaluated and if alternative approaches captured value more comprehensively.

RESULTS

Broader Value Framework

- The resulting framework consists of four categories of value: 1) **healthcare sector value elements**: capturing the patient's health effects and costs to the healthcare system, 2) **health-related externalities**: capturing the health benefits beyond the vaccinated individuals; 3) **allocative value**: capturing the fulfilment of societal preferences for prioritising health improvement in certain patient populations; and 4) **societal economic effects**: capturing the economic effects beyond the health system.
- Value elements of high relevance to meningococcal vaccination with good quality evidence include **caregivers' health gains**, **patients' lifetime productivity gains**, and **disease severity** (as part of burden of disease).
- Meningococcal vaccination is also likely to impact social equity, health system capacity value, caregiver' productivity gains, but more evidence is needed.
- Due to a combination of evidence gaps and challenges related to methods, the relevance of several value elements remains unclear for now.

	Judgement	Coding
Relevance	High	
	Mixed	
	Low	
	Unclear	

	Judgement	Coding
Evidence Quality	Good	○ ○ ○
	Medium	○ ○
	Low	○

Value categories	Value Elements	Heatmap
Healthcare sector value elements	Health system capacity value	●
Health-related externalities	Transmission value	● ● ●
	Caregivers' health gains	● ● ●
	Risk reduction gains	●
	Prevention of changes to and emergence of previously underrepresented serogroup variants	●
Allocative value elements	Burden of disease	● ● ● *
	Social equity	● ●
Societal economic effects	Macroeconomic effects	●
	Patients' lifetime productivity gains	● ● ●
	Caregivers' productivity gains	●
	Public sector costs	● ●
	Indirect patient costs	●

* Mixed relevance burden of disease results from low prevalence of IMD and high severity of IMD.

Case Studies Assessing the Impact of Value Elements

Caregivers' Health Gains

Considered in the case of Men B Vx

Not considered in the case of Men B Vx

Methodology

- In England, a multiplication factor of Men B vaccine QALY gains was used to consider caregivers' quality of life loss due to long term sequalae (1.48) and bereavement (1.09) [6,7].

ICER w/o carer's QoL **£221,000/QALY**

27% reduction

ICER w carer's QoL included **£161,500/QALY**

Disease Severity (as Part of Burden of Disease)

Considered in the case of Men B Vx

Not considered in the case of Men B Vx

Methodology

- Use of a quality-of-life adjustment factor, inflating QALY gains of Men B vaccine accrued to survivors with long-term sequelae by three [4].

ICER w/o adjustment factor **£365,300/QALY**

39.5% reduction

ICER w adjustment factor **£221,000/QALY**

Patients' Lifetime Productivity Gains

Not considered through societal perspective

Considered through friction cost approach

Methodology

- Assessment of Men B vaccination in the Netherlands included only productivity gains from averting the **acute disease phase** [8], evaluated according to the friction cost approach [9].
- We re-estimated productivity gains including also premature death and long-term sequalae [10].

	Acute Disease Phase Only	Including Premature Death and Long-term Sequalae	
Friction cost approach	€44,779	€91,698	x2 increase
Human capital approach	€44,779	€3,520,444	x78 increase

CONCLUSION

- Current evidence confirms that the value of meningococcal vaccination spans beyond healthcare sector effects to health-related externalities, allocative value and societal economic benefits.
- Methodological approach and ability to incorporate broader value-elements into value assessments have been mixed. This is often attributable to the scope of the value assessment perspective which does not allow the inclusion of broader value elements.
- To ensure that the most efficient resource allocation outcomes are achieved, countries should consider how to widen their perspective to include all the societal costs and benefits and improve the methodological approaches to assess broader value elements more accurately.

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DISCLOSURES

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