

# Supplementary material

## Cost-utility analysis of deep learning and trained human graders for diabetic retinopathy screening in a nationwide program

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## **Consolidated Health Economic Evaluation Reporting Standards (CHEERS) 2022 Checklist.**

Topic	No.	Item	Location where item is reported
<b>Title</b>	1	Identify the study as an economic evaluation and specify the interventions being compared.	Title
<b>Abstract</b>	2	Provide a structured summary that highlights context, key methods, results, and alternative analyses.	ABSTRACT
<b>Introduction</b>			
<b>Background and objectives</b>	3	Give the context for the study, the study question, and its practical relevance for decision making in policy or practice.	Introduction; paragraph 1-6
<b>Methods</b>			
<b>Health economic analysis plan</b>	4	Indicate whether a health economic analysis plan was developed and where available.	Methods: Model Structure; paragraph 1-3
<b>Study population</b>	5	Describe characteristics of the study population (such as age range, demographics, socioeconomic, or clinical characteristics).	Methods; Target Population; paragraph 1
<b>Setting and location</b>	6	Provide relevant contextual information that may influence findings.	Methods: paragraph 1
<b>Comparators</b>	7	Describe the interventions or strategies being compared and why chosen.	Methods: Screening Strategies; paragraph 1
<b>Perspective</b>	8	State the perspective(s) adopted by the study and why chosen.	Methods: Model Structure; paragraph 1
<b>Time horizon</b>	9	State the time horizon for the study and why appropriate.	Methods: Model Structure; paragraph 1
<b>Discount rate</b>	10	Report the discount rate(s) and reason chosen.	Methods: Model Structure; paragraph 1
<b>Selection of outcomes</b>	11	Describe what outcomes were used as the measure(s) of benefit(s) and harm(s).	Methods: Result Presentation
<b>Measurement of outcomes</b>	12	Describe how outcomes used to capture benefit(s) and harm(s) were measured.	Methods: Model Input Parameters (Health Utilities); paragraph 1 and Result Presentation
<b>Valuation of outcomes</b>	13	Describe the population and methods used to measure and value outcomes.	Methods: Model Input Parameters (Health Utilities); paragraph 1 and Result Presentation
<b>Measurement and valuation of resources and costs</b>	14	Describe how costs were valued.	Methods: Model Input Parameters (Costs); paragraph 1-5, Figure 2
<b>Currency, price date, and conversion</b>	15	Report the dates of the estimated resource quantities and unit costs, plus the currency and year of conversion.	Methods: Model Input Parameters (Costs); paragraph 1-5
<b>Rationale and description of model</b>	16	If modelling is used, describe in detail and why used. Report if the model is publicly available and where it can be accessed.	Methods: Model Structure; paragraph 1-3, Figure 1a and 1b
<b>Analytics and assumptions</b>	17	Describe any methods for analyzing or statistically transforming data, any extrapolation methods, and approaches for validating any model used.	Methods: Model structure, Model Input Parameters, Uncertainty analyses

Topic	No.	Item	Location where item is reported
<b>Characterizing heterogeneity</b>	18	Describe any methods used for estimating how the results of the study vary for subgroups.	Not applicable
<b>Characterizing distributional effects</b>	19	Describe how impacts are distributed across different individuals or adjustments made to reflect priority populations.	Not applicable
<b>Characterizing uncertainty</b>	20	Describe methods to characterize any sources of uncertainty in the analysis.	Methods: Uncertainty Analyses (Parameter uncertainty; Scenario analysis)
<b>Approach to engagement with patients and others affected by the study</b>	21	Describe any approaches to engage patients or service recipients, the general public, communities, or stakeholders (such as clinicians or payers) in the design of the study.	Not applicable (However, authors included retina specialists, a representative from the Ministry of Public Health, academia, and researchers)
<b>Results</b>			
<b>Study parameters</b>	22	Report all analytic inputs (such as values, ranges, references) including uncertainty or distributional assumptions.	Methods: Model Input Parameters and Table 1
<b>Summary of main results</b>	23	Report the mean values for the main categories of costs and outcomes of interest and summarize them in the most appropriate overall measure.	Results; paragraph 1-2; Table 2 and Figure 3
<b>Effect of uncertainty</b>	24	Describe how uncertainty about analytic judgments, inputs, or projections affect findings. Report the effect of choice of discount rate and time horizon, if applicable.	Results: paragraph 3-4; Figure 4-7
<b>Effect of engagement with patients and others affected by the study</b>	25	Report on any difference patient/service recipient, general public, community, or stakeholder involvement made to the approach or findings of the study	Not applicable
<b>Discussion</b>			
<b>Study findings, limitations, generalizability, and current knowledge</b>	26	Report key findings, limitations, ethical or equity considerations not captured, and how these could affect patients, policy, or practice.	Discussion; paragraph 1-8
<b>Other relevant information</b>			
<b>Source of funding</b>	27	Describe how the study was funded and any role of the funder in the identification, design, conduct, and reporting of the analysis	Funding
<b>Conflicts of interest</b>	28	Report authors conflicts of interest according to journal or International Committee of Medical Journal Editors requirements.	Disclosures

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