

## **A Systematic Literature Review of Modelling Approaches to Evaluate the Cost-Effectiveness of PET/CT for Therapy Response Monitoring in Oncology**

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**Table 1** Full search strategies. Note that the searches were limited to articles published from the year 2001 onwards as this year marks the introduction of PET/CT for clinical oncology [1].

| Database | Search                                                                                                                                                                                                                                                                                                                                                                                               | Result |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| Scopus   | TITLE-ABS-KEY ((economic* OR "cost-efficacy" OR "cost-effectiveness" OR "cost-utility" OR "cost-benefit" OR pharmaeconomic* OR hta OR "health technology assessment") AND (pet* OR "positron emission tomography") AND (cancer* OR malign* OR onco* OR carcinoma OR tumor* OR neoplasm*) AND (therap* OR treat* OR immuno* OR chemo* OR hormono* OR radio* OR neoadjuvant OR induction OR adjuvant)) | N=1914 |
| PubMed   | (economic OR "cost-efficacy" OR "cost-effectiveness" OR "cost-utility" OR "cost-benefit" OR pharmaeconomic* OR hta OR "health technology assessment") AND (pet/ct OR "positron emission tomography") AND (cancer OR malign* OR onco* OR carcinoma OR tumor OR neoplasm) AND (therapy OR treatment OR immuno* OR chemo* OR hormono* OR radio* OR neoadjuvant OR induction OR adjuvant)                | N=901  |
| iHTA     | (economic* OR "cost-efficacy" OR "cost-effectiveness" OR "cost-utility" OR "cost-benefit" OR pharmaeconomic* OR hta OR "health technology assessment") AND (pet* OR "positron emission tomography") AND (cancer* OR malign* OR onco* OR carcinoma OR tumor* OR neoplasm*) AND (therap* OR treat* OR immuno* OR chemo* OR hormono* OR radio* OR neoadjuvant OR induction OR adjuvant)                 | N=30   |
| NHS-EED  | (economic* OR "cost-efficacy" OR "cost-effectiveness" OR "cost-utility" OR "cost-benefit" OR pharmaeconomic* OR hta OR "health technology assessment") AND (pet* OR "positron emission tomography") AND (cancer* OR malign* OR onco* OR carcinoma OR tumor* OR neoplasm*) AND (therap* OR treat* OR immuno* OR chemo* OR hormono* OR radio* OR neoadjuvant OR induction OR adjuvant)                 | N=114  |

**Table 2** Template to assess the extent to which the individual items from the CHEERS checklist were appropriately reported. *Adapted from:* CHEERS: Consolidated Health Economic Evaluation Reporting Standards [2].

|                               | Item | Guidance for Assessment                                                                                                                  | Assessment Criteria<br>(meeting the criteria yes/no/not applicable)                                                                                                                                                                   |
|-------------------------------|------|------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Title &amp; Abstract</b>   |      |                                                                                                                                          |                                                                                                                                                                                                                                       |
| Title                         | 1    | Identify the study as an economic evaluation (i) and specify the diagnostics being compared (ii)                                         | Satisfy (i), (ii), (iii), (iv), (v) and (vi). More specifically, the title and abstract were assessed as correctly reported if they defined all imaging, tumour biomarkers or tracers, and the therapy line of focus (abstract only). |
| Abstract                      | 2    | Provide a structured summary that highlights context (iii), key methods (iv), results (v) and alternative analyses (vi).                 |                                                                                                                                                                                                                                       |
| <b>Introduction</b>           |      |                                                                                                                                          |                                                                                                                                                                                                                                       |
| Background and objectives     | 3    | Give the context for the study (i), the study question (ii) and its practical relevance for decision making in policy or practice (iii). | Satisfy (i), (ii), (iii).                                                                                                                                                                                                             |
| <b>Methods</b>                |      |                                                                                                                                          |                                                                                                                                                                                                                                       |
| Health economic analysis plan | 4    | Indicate whether a health economic analysis plan was developed (i) and where available (ii).                                             | Satisfy (i) and (ii). More specifically, the health economic analysis plan was assessed as correctly reported if it included a comprehensive description of the pre-planned analyses.                                                 |
| Study population              | 5    | Describe characteristics of the study population (such as age range, demographics, socioeconomic, or clinical characteristics).          | Satisfy all relevant elements.                                                                                                                                                                                                        |
| Setting and location          | 6    | Provide relevant contextual information that may influence findings.                                                                     | Satisfy all relevant elements.                                                                                                                                                                                                        |
| Comparators                   | 7    | Describe the diagnostics or strategies being compared (i) and why chosen (ii).                                                           | Satisfy (i) and (ii). More specifically, the comparators must be relevant, wisely chosen and collectively exhaustive.                                                                                                                 |
| Perspective                   | 8    | State the perspective(s) adopted by the study (i) and why chosen (ii).                                                                   | Satisfy (i) and (ii). More specifically, the perspective(s) must be in line with the relevant National Institutes of Health.                                                                                                          |
| Time horizon                  | 9    | State the time horizon for the study (i) and why appropriate (ii).                                                                       | Satisfy (i) and (ii). More specifically, the time horizon must be in line with the relevant National Institutes of Health.                                                                                                            |
| Discount rate                 | 10   | Report the discount rate(s) (i) and reason chosen (ii).                                                                                  | Satisfy (i) and (ii). More specifically, the discount rates must be in line with the relevant National Institutes of Health.                                                                                                          |
| Selection of outcomes         | 11   | Describe what outcomes were used as the measure(s) of benefit(s) and harm(s).                                                            | Self-explanatory. More specifically, the selection of health outcomes was assessed as correctly reported if the choice of primary health outcomes was explained where this was not QALYs.                                             |
| Measurement of outcomes       | 12   | Describe how outcomes used to capture benefit(s) and harm(s) were measured.                                                              | Self-explanatory. More specifically, the measurement of effectiveness was assessed as correctly reported if a search and analysis of relevant studies was described.                                                                  |
| Valuation of outcomes         | 13   | Describe the population and methods used to measure and value outcomes.                                                                  | Self-explanatory. More specifically, the valuation of effectiveness was assessed as                                                                                                                                                   |

|                                                                       |    |                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                        |
|-----------------------------------------------------------------------|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                       |    |                                                                                                                                                                                   | correctly reported if a search and analysis of relevant studies was described.                                                                                                                                                                                                                                         |
| Measurement and valuation of resources and costs                      | 14 | Describe how costs were valued.                                                                                                                                                   | Self-explanatory. More specifically, the measurement and valuation of resources and costs were assessed as correctly reported if a search and analysis of relevant studies was described.                                                                                                                              |
| Currency, price date, conversion                                      | 15 | Report the dates of the estimated resource quantities and unit costs (i), plus the currency and year of conversion (ii).                                                          | Satisfy (i) and (ii).                                                                                                                                                                                                                                                                                                  |
| Rationale and description of model                                    | 16 | If modelling is used, describe in detail (i) and why used (ii). Report if the model is publicly available (iii) and where it can be accessed (iv).                                | Satisfy (i), (ii), (iii) and (iv).                                                                                                                                                                                                                                                                                     |
| Analytics and assumptions                                             | 17 | Describe any methods for analysing or statistically transforming data (i), any extrapolation methods (ii), and approaches for validating any model used (iii).                    | Satisfy (i), (ii) and (iii).                                                                                                                                                                                                                                                                                           |
| Characterizing heterogeneity                                          | 18 | Describe any methods used for estimating how the results of the study vary for sub-groups.                                                                                        | Self-explanatory. Note that the reflection of heterogeneity may not be applicable (i.e., in case of no stratification for sub-groups).                                                                                                                                                                                 |
| Characterizing distributional effects                                 | 19 | Describe how impacts are distributed across different individuals or adjustments made to reflect priority populations.                                                            | Self-explanatory. Note that the reflection of distributional effects may not be applicable (i.e., in case of no characterization of distributional effects).                                                                                                                                                           |
| Characterizing uncertainty                                            | 20 | Describe methods to characterize any sources of uncertainty in the analysis.                                                                                                      | Self-explanatory.                                                                                                                                                                                                                                                                                                      |
| Approach to engagement with patients and others affected by the study | 21 | Describe any approaches to engage patients or service recipients, the general public, communities, or stakeholders (e.g., clinicians or payers) in the design of the study.       | The inclusion of patient preferences and engagement could be not applicable.                                                                                                                                                                                                                                           |
| <b>Results</b>                                                        |    |                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                        |
| Study parameters                                                      | 22 | Report all analytic inputs (e.g., values, ranges, references) including uncertainty or distributional assumptions.                                                                | Satisfy all relevant elements.                                                                                                                                                                                                                                                                                         |
| Summary of main results                                               | 23 | Report the mean values for the main categories of costs and outcomes of interest (i) and summarize them in the most appropriate overall measure (ii).                             | Satisfy (i) and (ii).                                                                                                                                                                                                                                                                                                  |
| Effect of uncertainty                                                 | 24 | Describe how uncertainty about analytic judgments, inputs, or projections affect findings (i). Report the effect of choice of discount rate and time horizon, if applicable (ii). | Satisfy (i) and (ii). More specifically, uncertainty in the results was considered to be correctly reported if confidence intervals were provided for the primary health economic outcomes or if an incremental cost-effectiveness plane was presented including the distribution of outcomes or a confidence ellipse. |
| Effect of engagement                                                  | 25 | Report on any difference patient/service recipient, general public, community, or                                                                                                 | The inclusion of patient preferences and engagement could be not applicable.                                                                                                                                                                                                                                           |

|                                                                      |    |                                                                                                                                                                |                                 |
|----------------------------------------------------------------------|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| with patients and others affected by the study                       |    | stakeholder involvement made to the approach or findings of the study.                                                                                         |                                 |
| <b>Discussion</b>                                                    |    |                                                                                                                                                                |                                 |
| Study findings, limitations, generalizability, and current knowledge | 26 | Report key findings (i), limitations (ii), ethical or equity considerations not captured (iii), and how these could impact patients, policy, or practice (iv). | Satisfy (i), (ii), (iii), (iv). |
| <b>Other relevant information</b>                                    |    |                                                                                                                                                                |                                 |
| Source of funding                                                    | 27 | Describe how the study was funded and any role of the funder in the identification, design, conduct, and reporting of the analysis                             | Satisfy all relevant elements.  |
| Conflicts of interest                                                | 28 | Report authors conflicts of interest according to journal or International Committee of Medical Journal Editors requirements.                                  | Satisfy all relevant elements.  |

**Table 3** Template to assess the extent to which the individual items from the ECOBIAS checklist were appropriately reported. *Adapted from:* ECOBIAS: Bias in Economic Evaluation checklist [3].

| Type of bias                                                         | Item | Criteria for assessment                                                                                                                                             | Meeting the assessment criteria? |
|----------------------------------------------------------------------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| <i>PART A. Overall checklist for bias in economic evaluation</i>     |      |                                                                                                                                                                     |                                  |
| Narrow perspective bias                                              | 1    | Was a societal perspective adopted? If not, has a different perspective been justified?                                                                             | Yes/no                           |
| Inefficient comparator bias*                                         | 2    | Was the best alternative chosen as comparator? Was current practice chosen as a comparator? Have all comparators been described in sufficient detail?               | Yes/no                           |
| Cost measurement omission bias                                       | 3    | Were all costs relevant to the disease and diagnostics identified and considered?                                                                                   | Yes/no                           |
| Intermittent data collection bias                                    | 4    | Was the resource use measured continuously?                                                                                                                         | Yes/no                           |
| Invalid valuation bias                                               | 5    | Is the price calculation presented in a detailed manner? Have reference prices been used?                                                                           | Yes/no                           |
| Ordinal ICER bias                                                    | 6    | Have cardinal scales for the outcomes measure in a CEA been used?                                                                                                   | Yes/no                           |
| Double-counting bias                                                 | 7    | Are variables adequately checked for double-counting?                                                                                                               | Yes/no                           |
| Inappropriate discounting bias                                       | 8    | Have discounting rates from guidelines been applied?                                                                                                                | Yes/no                           |
| Limited sensitivity bias**                                           | 9    | Have the four principles of uncertainty (methodological, structural, heterogeneity, parameter) been considered in sufficient detail?                                | Yes/no                           |
| Sponsor bias                                                         | 10   | Have sponsorships been disclosed? Is the study protocol freely accessible?                                                                                          | Yes/no                           |
| Reporting and dissemination bias                                     | 11   | Has the study/trial been listed in a trial register? Have all results been reported according to the study protocol?                                                | Yes/no                           |
| <i>Part B. Model-specific aspects of bias in economic evaluation</i> |      |                                                                                                                                                                     |                                  |
| <b>I Bias related to structure</b>                                   |      |                                                                                                                                                                     |                                  |
| Structural assumptions bias                                          | 12   | Is the model structure in line with coherent theory? Do care pathways reflect the nature of disease?                                                                | Yes/no                           |
| No diagnostic comparator bias*                                       | 13   | Is there an adequate comparator, i.e. care as usual?                                                                                                                | Yes/no                           |
| Wrong model bias                                                     | 14   | Is the model chosen adequate regarding the decision problem?                                                                                                        | Yes/no                           |
| Limited time horizon bias                                            | 15   | Was a lifetime horizon chosen? Were shorter time horizons adequately justified?                                                                                     | Yes/no                           |
| <b>II Bias related to data</b>                                       |      |                                                                                                                                                                     |                                  |
| Bias related to data identification                                  | 16   | Are the methods of data identification transparent? Are all choices justified adequately? Do the input parameters come from high-quality and well-designed studies? | Yes/no                           |
| Bias related to baseline data                                        | 17   | Are probabilities, for example, based on natural history data? Is transformation of rates into transition probabilities done accurately?                            | Yes/no                           |
| Bias related to diagnostic effects                                   | 18   | Are relative diagnostic effects synthesized using appropriate meta-analytic techniques? Are extrapolations documented and well justified? Are                       | Yes/no                           |

|                                                     |    |                                                                                                                 |                       |
|-----------------------------------------------------|----|-----------------------------------------------------------------------------------------------------------------|-----------------------|
|                                                     |    | alternative assumptions explored regarding extrapolation?                                                       |                       |
| Bias related to quality-of-life weights (utilities) | 19 | Are the utilities incorporated appropriate for the specific decision problem?                                   | Yes/no/not applicable |
| Non-transparent data incorporation bias             | 20 | Is the process of data incorporation transparent? Are all data and their sources described in detail?           | Yes/no                |
| Limited scope bias**                                | 21 | Have the four principles of uncertainty (methodological, structural, heterogeneity, parameter) been considered? | Yes/no                |
| <b>III Bias related to consistency</b>              |    |                                                                                                                 |                       |
| Bias related to internal consistency                | 22 | Has internal consistency in terms of mathematical logic been evaluated?                                         | Yes/no                |

\* These biases are overlapping regarding their content.

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**Table 4** Conducted validation efforts. Except for one study [4], all studies reported their validation efforts [5–11]. Most studies reported at least face validity testing (except for [4,10]) and cross validity testing (except for [4,6,9]). The majority of studies also relied on validation against empirical data (except for [4,9]). Noteworthy, one study also reported model fit testing [6].

| Study                       | Face validity testing                                    | Cross validity testing             | Model fit testing                                             | Other validation techniques                                                                                                                       |
|-----------------------------|----------------------------------------------------------|------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Van Loon (2010) [9]         | Input data                                               | Not reported                       | Not reported                                                  | Not reported                                                                                                                                      |
| Rabalais (2012) [4]         | Not reported                                             | Not reported                       | Not reported                                                  | Not reported                                                                                                                                      |
| Auguste & Meads (2014) [6]  | (1) Conceptual model, (2) input data, (3) model outcomes | Not reported                       | (1) External review/expert opinion, (2) extreme value testing | Validation against outcomes using alternative input data                                                                                          |
| Greuter (2017) [7]          | Input data                                               | Input data                         | Not reported                                                  | (1) Validation against a priori expectations, (2) validation against empirical data, (3) validation against outcomes using alternative input data |
| Smith & Mehanna (2017) [11] | (1) Conceptual model, (2) input data, (3) model outcomes | Model outcomes                     | Not reported                                                  | (1) Validation against empirical data, (2) validation against outcomes using alternative input data                                               |
| Fu (2021) [8]               | Input data                                               | Model outcomes                     | Not reported                                                  | (1) Validation against empirical data, (2) validation against outcomes using alternative input data                                               |
| Greuter (2022) [5]          | (1) Input data, (2) model outcomes                       | (1) Input data, (2) model outcomes | Not reported                                                  | (1) Validation against empirical data, (2) validation against outcomes using alternative input data, (3) threshold analysis                       |
| Rosen (2022) [10]           | Not reported                                             | Model outcomes                     | Not reported                                                  | Validation against outcomes using alternative input data                                                                                          |

**Table 5** The extent to which individual items from the CHEERS checklist were reported appropriately after reaching consensus between the reviewers. *Adapted from:* CHEERS: The Consolidated Health Economic Evaluation Reporting Standards [2].

| Item                                                                  | #  | Van Loon<br>[9] | Rabalais<br>[4] | Auguste<br>[6] | Greuter<br>[7] | Smith<br>[11] | Fu<br>[8] | Greuter<br>[5] | Rosen<br>[10] |
|-----------------------------------------------------------------------|----|-----------------|-----------------|----------------|----------------|---------------|-----------|----------------|---------------|
| Year of publication *                                                 | -  | 2010            | 2012            | 2014           | 2017           | 2017          | 2021      | 2022           | 2022          |
| Title                                                                 | 1  | ✓               | ✓               | ✓              | ✓              | ✓             | ✓         | ✓              | ✓             |
| Abstract                                                              | 2  | ✓               | ✓               | ✓              | ✓              | ✓             | ✓         | ✓              | X             |
| Background and objectives                                             | 3  | ✓               | X               | ✓              | ✓              | ✓             | ✓         | ✓              | X             |
| Health economic analysis plan                                         | 4  | ✓               | X               | ✓              | ✓              | ✓             | ✓         | ✓              | X             |
| Study population                                                      | 5  | ✓               | ✓               | ✓              | ✓              | ✓             | ✓         | ✓              | ✓             |
| Setting and location                                                  | 6  | ✓               | ✓               | ✓              | ✓              | ✓             | ✓         | ✓              | ✓             |
| Comparators                                                           | 7  | ✓               | X               | ✓              | ✓              | ✓             | ✓         | ✓              | X             |
| Perspective                                                           | 8  | ✓               | X               | ✓              | ✓              | ✓             | ✓         | ✓              | ✓             |
| Time horizon                                                          | 9  | ✓               | ✓               | ✓              | X              | ✓             | ✓         | ✓              | X             |
| Discount rate                                                         | 10 | ✓               | X               | ✓              | X              | ✓             | ✓         | ✓              | X             |
| Selection of outcomes                                                 | 11 | ✓               | X               | ✓              | ✓              | ✓             | ✓         | ✓              | X             |
| Measurement of outcomes                                               | 12 | ✓               | X               | ✓              | ✓              | ✓             | ✓         | ✓              | X             |
| Valuation of outcomes                                                 | 13 | X               | X               | ✓              | X              | ✓             | X         | X              | X             |
| Measurement and valuation of resources and costs                      | 14 | ✓               | X               | ✓              | ✓              | ✓             | ✓         | ✓              | ✓             |
| Currency, price date, conversion                                      | 15 | ✓               | X               | ✓              | ✓              | ✓             | ✓         | ✓              | X             |
| Rationale and description of model                                    | 16 | X               | X               | ✓              | X              | ✓             | ✓         | X              | X             |
| Analytics and assumptions                                             | 17 | X               | X               | X              | X              | X             | X         | ✓              | X             |
| Characterizing heterogeneity                                          | 18 | ✓               | n/a             | ✓              | X              | n/a           | n/a       | ✓              | n/a           |
| Characterizing distributional effects                                 | 19 | X               | n/a             | ✓              | n/a            | ✓             | X         | ✓              | X             |
| Characterizing uncertainty                                            | 20 | ✓               | X               | ✓              | ✓              | ✓             | ✓         | ✓              | ✓             |
| Approach to engagement with patients and others affected by the study | 21 | n/a             | n/a             | n/a            | n/a            | n/a           | n/a       | n/a            | n/a           |
| Study parameters                                                      | 22 | ✓               | X               | ✓              | ✓              | ✓             | ✓         | ✓              | X             |
| Summary of main results                                               | 23 | ✓               | ✓               | ✓              | ✓              | ✓             | ✓         | ✓              | ✓             |
| Effect of uncertainty                                                 | 24 | ✓               | X               | ✓              | ✓              | ✓             | ✓         | ✓              | X             |
| Effect of engagement with                                             | 25 | n/a             | n/a             | n/a            | n/a            | n/a           | n/a       | n/a            | n/a           |

|                                                                      |    |   |   |   |   |   |   |   |   |
|----------------------------------------------------------------------|----|---|---|---|---|---|---|---|---|
| patients and others affected by the study                            |    |   |   |   |   |   |   |   |   |
| Study findings, limitations, generalizability, and current knowledge | 26 | X | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | X |
| Source of funding                                                    | 27 | X | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | X |
| Conflicts of interest                                                | 28 | X | ✓ | ✓ | ✓ | ✓ | ✓ | X | ✓ |

\* It should be denoted that publications were published before the updated CHEERS checklist was published to support the reporting of health economic studies.

**Table 6** The extent to which individual items from the ECOBIAS checklist were reported appropriately after reaching consensus between the reviewers. *Adapted from:* ECOBIAS: Bias in Economic Evaluation checklist [3].

| Item                                                          | #  | Van Loon<br>[9] | Rabalais<br>[4] | Auguste<br>[6] | Greuter<br>[7] | Smith<br>[11] | Fu<br>[8] | Greuter<br>[5] | Rosen<br>[10] |
|---------------------------------------------------------------|----|-----------------|-----------------|----------------|----------------|---------------|-----------|----------------|---------------|
| Year of publication *                                         | -  | 2010            | 2012            | 2014           | 2017           | 2017          | 2021      | 2022           | 2022          |
| PART A. Overall checklist for bias in economic evaluation     |    |                 |                 |                |                |               |           |                |               |
| Narrow perspective bias                                       | 1  | X               | X               | ✓              | ✓              | ✓             | ✓         | ✓              | X             |
| Inefficient comparator bias                                   | 2  | ✓               | X               | ✓              | ✓              | ✓             | ✓         | ✓              | X             |
| Cost measurement omission bias                                | 3  | ✓               | X               | ✓              | X              | ✓             | ✓         | ✓              | ✓             |
| Intermittent data collection bias                             | 4  | X               | X               | ✓              | ✓              | ✓             | ✓         | X              | X             |
| Invalid valuation bias                                        | 5  | X               | X               | ✓              | X              | ✓             | X         | X              | X             |
| Ordinal ICER bias                                             | 6  | X               | X               | ✓              | ✓              | ✓             | ✓         | ✓              | X             |
| Double-counting bias                                          | 7  | ✓               | ✓               | ✓              | ✓              | ✓             | ✓         | ✓              | ✓             |
| Inappropriate discounting bias                                | 8  | ✓               | X               | ✓              | X              | ✓             | ✓         | ✓              | X             |
| Limited sensitivity bias                                      | 9  | X               | X               | ✓              | X              | ✓             | X         | ✓              | X             |
| Sponsor bias                                                  | 10 | X               | ✓               | ✓              | ✓              | ✓             | ✓         | X              | X             |
| Reporting and dissemination bias                              | 11 | ✓               | X               | ✓              | ✓              | ✓             | ✓         | ✓              | ✓             |
| Part B. Model-specific aspects of bias in economic evaluation |    |                 |                 |                |                |               |           |                |               |
| Structural assumptions bias                                   | 12 | X               | X               | ✓              | X              | ✓             | X         | X              | X             |
| No diagnostic comparator bias                                 | 13 | ✓               | ✓               | ✓              | ✓              | ✓             | ✓         | ✓              | X             |
| Wrong model bias                                              | 14 | X               | X               | ✓              | X              | ✓             | ✓         | X              | X             |
| Limited time horizon bias                                     | 15 | ✓               | X               | ✓              | X              | ✓             | ✓         | ✓              | X             |
| Bias related to data identification                           | 16 | X               | X               | ✓              | ✓              | ✓             | ✓         | ✓              | ✓             |
| Bias related to baseline data                                 | 17 | X               | X               | ✓              | X              | ✓             | X         | ✓              | X             |
| Bias related to diagnostic effects                            | 18 | X               | X               | X              | ✓              | ✓             | ✓         | X              | X             |
| Bias related to quality-of-life weights (utilities)           | 19 | ✓               | n/a             | ✓              | n/a            | ✓             | ✓         | ✓              | n/a           |
| Non-transparent data incorporation bias                       | 20 | ✓               | X               | ✓              | ✓              | ✓             | ✓         | ✓              | X             |
| Limited scope bias                                            | 21 | X               | X               | ✓              | X              | ✓             | ✓         | ✓              | X             |

|                                      |    |   |   |   |   |   |   |   |   |
|--------------------------------------|----|---|---|---|---|---|---|---|---|
| Bias related to internal consistency | 22 | ✓ | X | ✓ | ✓ | ✓ | ✓ | ✓ | X |
|--------------------------------------|----|---|---|---|---|---|---|---|---|

\* It should be denoted that publications were published before the ECOBIAS checklist was published to support a decrease in the risk of bias.

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