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| Austria [1] |  |  |
| **Meaning units** | **Codes** | **Categories** |
| *‘’The study design should be chosen to reflect reality as closely as possible. This means that the research question must be clearly defined’’* | Defining research question | **Approaching research question** |
| *‘’The choice of method of analysis depends on the research question and must be justified’’*  *‘’Because of these methodological difficulties, this method of analysis is not used (CBA)’’* | Choice of method depends on research question  CBA is not recommended | **Approximately all economic evaluation methods are acceptable** |
| *‘’Apart from the societal/economic perspective, which represents the most comprehensive approach, other perspectives are possible, e.g. the health system, social insurance, other service providers (hospitals), etc’’*  *‘’If several perspectives are included in the analysis, the results must be presented separately for each study perspective’’* | Societal/economic perspective as most comprehensive  Possibility of other perspectives separately | **Societal perspective with possibility of others** |
| *‘’If the standard therapy cannot be clearly established, the most frequent therapy or the most effective therapy can likewise be chosen’’* | Comparative treatments should be standard therapy or most used one | **Primarily standard therapy as comparator** |
| *‘’Direct costs include direct medical and direct non-medical costs’’*  *‘’This includes losses of productivity resulting from illness and premature death’* | Inclusion of direct medical and non-medical costs  Inclusion of indirect costs | **Inclusion of direct and indirect costs** |
| *‘’Final endpoints, intermediate endpoints and surrogate endpoints can be used as a measure of outcome. Hard clinical endpoints should be preferred’’*  *‘’If the quality of life is to serve as an outcome variable…… These individual measures are suitable for combining with quantitative objective measurements such as survival time in the form of quality adjusted life years (QALYs)’’* | Preference on hard clinical endpoints  Quality Adjusted Life Year (QALY) are suitable | **Preferred outcomes on QALYs** |
| *‘’All the data sources used must be described exactly, their choice justified and their suitability and validity assessed. This involves scrutinizing both internal and external validity. 1) Meta-analyses of randomised, controlled studies with masked assessment of the results 2) Representative, randomised, controlled studies with masked assessment of the results 3) Systematic reviews with an assessment of the results…..’’*  *‘’1) Austrian data from cost calculations published in cost studies 2) Global schedule of fees of the Central Association or a mixed tariff from several schedules of fees (e.g. Vienna, Upper Austria, Styria and Tyrol) or a tariff list from a regional health insurance fund…….’’* | Evidence sources for clinical data via randomized controlled studies (RCTs) via meta-analysis  Evidence sources for economic data from mixed tariff | **Sources for clinical, economical and epidemiological data** |
| *’The choice of time horizon depends on the research question and can range from a few weeks to several years’’*  *‘’In choosing the time horizon, it should at all events be ensured that the chosen outcome and the resource consumption of the treatment alternatives are observable in this period’’* | Time horizon-Few weeks to several years  Research question affects time horizon | **Enough time horizon as ideal** |
| *‘’As an annual discount, a rate of 5% is adopted’’*  *‘’a sensitivity analysis with higher and lower rates (e.g. 3% and 10%) should verify the robustness of the results’’* | Discount rate at 5%  Discount rate in sensitivity analysis between 3% and 10% | **Recommendation at 5% discount rate** |
| *‘’Stochastic approaches such as deterministic sensitivity analyses should examine the effect of uncertain and/or estimated parameters on the outcome of the evaluation’’* | Performing deterministic sensitivity analysis | **Uncertainty assessment** |
| *‘’The health economic evaluation can be undertaken as part of a clinical study and reflect "efficacy" or it can portray "effectiveness" statistically by means of modelling. The methodological procedures of modelling (e.g. decision analyses, stochastic simulations, etc) are not standardised as this is difficult to do in comparison with clinical trials…..’’* | Modeling process is appropriate for assessing effectiveness and efficacy | **Modeling is acceptable** |
| *’The incremental cost-effectiveness shows the difference in the cost-effectiveness of two alternatives or the additional costs of the net effect. Health economic analyses should include the description of the incremental cost-effectiveness’’* | Inclusion of ICER | **Reporting results via ICER** |
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Belgium [2]

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| **Meaning units** | | **Codes** | **Categories** |
| *‘’In economic evaluations submitted in the context of a reimbursement request…’’* | | Reimbursement decision | **Reimbursement as main purpose** |
| *‘’In economic evaluations submitted in the context of a reimbursement request, the reference case analysis should only include direct health care costs from the perspective of the health care payers. This includes payments out of the federal government’s and the communities’ health care budget as well as patients’ co-payments’’* | | perspective of the health care payers (federal government + communities + patient) | **Preference on payer’s perspective** |
| *‘’If the intervention’s effectiveness and/or costs differ between subgroups, separate subgroup analyses should be performed’’* | | Cases in which subgroup analysis is acceptable | **Subgroup analysis is acceptable** |
| *‘’For the identification of the appropriate comparator, the efficiency frontier should be constructed’’*  *‘’Whenever possible, health economic evaluations should always be based on data from randomized controlled trials comparing the study intervention and a relevant comparator’’* | | Construction of efficiency frontier  Randomized controlled studies (RCTs) are appropriate for data sources | **Considering efficiency frontier and RCTs as source for efficacy and safety** |
| *‘’The report should specify whether a cost-effectiveness or cost-utility analysis is used’’*  *‘’For cost-utility analyses, QALYs should be calculated. In cost-effectiveness analyses the outcome should be expressed in terms of life years gained’’*  *‘’the Belgian guidelines explicitly encourage the use of the EQ-5D instrument. The health state description should be made by patients on a generic descriptive system such as the EQ-5D (for adults) and the EQ-5D-Y (for youngsters) or SF-6D’’*  *‘’If the EQ-5D instrument is not considered suitable, then the use of another generic utility instrument or direct measurement of utilities by means of time-trade-off (TTO) or standard gamble (SG) can be considered’’*  *‘’Outcomes in economic evaluations should be expressed in terms of final endpoints instead of intermediary outcomes’’* | | Preference on cost-effectiveness (CEA) and cost-utility analysis (CUA)  QALY and LYG should be chosen  Preference instrument is EQ-5D for adults and youngs  Time-trade-off or Standard Gamble are acceptable techniques  Preference valuation in final endpoints | **Appropriate types of techniques, outcomes and generic instruments** |
| *‘’Whenever possible, health economic evaluations should always be based on data from randomized controlled trials comparing the study intervention and a relevant comparator’’* | | Randomized controlled studies (RCTs) are appropriate for data sources | **Preference on RCTs for sources for efficacy and safety** |
| *‘’Modeling should be applied if the available data are insufficient to allow a full assessment of the cost-effectiveness or cost-utility of an intervention’’*  *‘’In order to know the effects of a treatment on long-term mortality or other long-term outcomes, extrapolation modelling may be necessary’’*  *‘’ ‘’Each economic evaluation should be accompanied by a description of the disease and the interventions studied and a systematic review of the existing relevant clinical literature. Meta-analysis of clinical trials may increase the reliability of the clinical evidence and thereby the validity of the economic model’’* | | Modelling is appropriate in case of insufficient data  Cases of performing extrapolation modelling  Systematic review process is mandatory | **Modelling is acceptable in some cases** |
| *Irrespective of the study design, the uncertainty surrounding the cost effectiveness/ cost-utility estimates should be analysed using appropriate statistical techniques*  *‘’For models, probabilistic sensitivity analyses should be presented’’*  *‘’is usually handled by presenting results from a methodological reference case and other scenarios handled through one-way sensitivity analyses’* | | Uncertainty must be examined via statistical methods  Preference on probabilistic sensitivity analyses  Dealing with structural and methodological uncertainty via one-way sensitivity analyses | **Assessing uncertainty** |
| *‘’The time horizon of the economic evaluation should be in concordance with the period over which the main differences in costs and health consequences between the intervention under consideration and its comparator are expected’’*  *‘’Treatments for chronic diseases or acute diseases with long term squeal mostly have consequences over a patient’s lifetime. In these cases, a lifetime time horizon should be adopted for the economic evaluation’’* | | Time horizon should cover the whole analysis  Adaptation of lifetime horizon | **Long time horizon for consideration** |
| *‘’Future costs should be discounted at a rate of 3%; future benefits at a rate of 1.5%’’*  *‘’Alternative scenarios include a 0% discount rate for both costs and benefits or a 5% discount rate for both costs and benefits’’* | | Discount rate for costs 3% and for benefits at 1,5%  Alternative discount rates at 0% or 5% for both costs/benefits | **Recommended discount rates** |
| *‘’For the decision maker it is important to keep in mind that, if he wishes to compare the ICER of a new product with the ICER of a product for which a decision has already been taken (based on the ICER and other elements), he should always compare the ICERs of the reference case analyses of both products’’* | | Incremental cost-effectiveness ratio (ICER) is acceptable | **ICER is helpful for presenting results** |
| Croatia [3] |  | |  | |
| **Meaning units** | **Codes** | | **Categories** | |
| *‘’Estimating clinical and cost effectiveness should begin with a clear statement of the decision problem’’* | Decision problem should be first priority | | **Definition of decision problem** | |
| *‘’In the analysis, the costs and outcomes of therapies routinely used in the Croatian health care system, including technologies regarded as current best practice should be compared with the costs and outcomes of new technology’’* | Current best practice or therapies routinely used | | **Current clinical practice as comparator** | |
| *‘’The perspective adopted on direct costs should be that of the Croatian Institute for Health Insurance (Croatian Institute for Health Insurance as public payer’’*  *‘’For the reference case, the perspective on outcomes should be all direct health effects on patients. If relevant, also the health effects on other individuals (principally caregivers) should be included in the evaluation as well’’* | Croatian Institute for Health Insurance as appropriate perspective on costs  All direct health effects on patients and their caregivers are perspective on outcomes | | **Payer perspective on costs and patients’ for outcomes** | |
| *‘’Cost-effectiveness (CEA) and cost–utility analysis (CUA) are the preferred form of economic evaluations. If the data is available, CUA should be performed instead of CEA (i.e. the outcome should be expressed in terms of Quality-adjusted life years or QALYs’’*  *‘’For the reference case, CEA should be applied and all direct health effects should be expressed in terms of natural units’’* | CEA and CUA are ideal methods, with preference in CUA  QALYs and natural units as outcomes | | **Preferred methods of analysis and outcomes** | |
| *‘’The EQ-5D is the preferred measure of health-related quality of life in adults’’* | Measuring Quality of life in adults via EQ-5 | | **Preference on EQ-5D instrument** | |
| *‘’The time horizon for estimating clinical and cost-effectiveness should be sufficiently long to reflect all important differences in costs or outcomes between the technologies being compared’’* | A sufficiently long enough time horizon | | **Determining long time horizon** | |
| *‘’Synthesis of evidence on outcomes should be based on a Systematic review with or without Meta-Analysis of RCTs’’*  *‘’If available, data from head-to-head RCTs should be presented in the reference-case analysis ‘’Head-to-Head RCTs are preferred, but indirect comparisons and observational studies may be accepted as well’’*  *‘’When head-to-head RCTs exist, evidence from mixed treatment comparison analyses may be presented’’* | Performing systematic review and meta-analysis  Preference on Head-to-Head Randomised Clinical Trials (RCTs)  Indirect comparisons and observational studies are also acceptable | | **RCTs are ideal clinical evidence sources** | |
| *‘’For the reference case, an annual discount rate of 5% should be used for both costs and benefits, based on calculated mean of base rate for four quarters within respective year, over the last three year’’*  *‘’When results are potentially sensitive to the discount rate used, consideration should be given to sensitivity analyses that use differential rates for costs and outcomes and/or that vary the rate between 3% and 10%’’* | Discount rate at 5% for both costs and benefits, in base analysis  Discount rate variation between 3% and 10% in case of sensitivity analysis | | **Appropriate discount rate in both single and sensitivity analysis** | |
| *‘’The models used to synthesize available evidence to generate estimates of clinical and cost-effectiveness for the Agency’s needs should follow accepted guidelines’’*  *‘’When there are alternative plausible assumptions and inputs, sensitivity analyses of their effects on model outputs should be undertaken’’* | Estimation of clinical and cost-effectiveness via modeling  Sensitivity analysis should be taken in case of errors | | **Acceptable modeling and sensitivity analysis** | |
| *‘’The models used to synthesize available evidence to generate estimates of clinical and cost-effectiveness for the Agency’s needs should follow accepted guidelines’’* | Probabilistic sensitivity analysis is the preferred method | | **Dealing uncertainty with probabilistic sensitivity analysis** | |
| *‘’For many technologies, the capacity to benefit from treatment will differ for patients with differing characteristics. This should be explored as part of the reference-case analysis by the provision of estimates of clinical and cost effectiveness separately for each relevant subgroup of patients’’* | Separate analysis of patient sub-groups | | **Subgroups analysis is acceptable** | |
| *‘’Due the fact that Croatia still has not threshold value for the incremental cost-effectiveness ratio (ICER), defining it as the maximum societal willingness to pay for a quality-adjusted life year (QALY) or for life-year gained (LYG), as well as different recommendation from World Bank and WHO, the Agency will encourage discussion on this topic at national level with all stakeholders’’* | Incremental cost-effectiveness ratio (ICER)  Setting threshold value | | **Presenting results via ICER with threshold** | |

Finland [4]

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| **Meaning units** | **Codes** | **Categories** |
| *‘’The health economic evaluation is a part of the application regarding reimbursement status and price’’* | Reimbursement and pricing purposes | **Reimbursement is the objective of guidelines** |
| *‘’Therapeutically, the most appropriate treatment comparator can be for instance the treatment that is used most frequently, the minimum therapy, or monitoring without therapy. If there are no Finnish guidelines for the treatment of the disease concerned or there is no established practice for its treatment, the treatment comparator should be based on a Finnish expert opinion’’* | Most frequent treatment should be comparator  Finnish expert opinion as a last option | **Most used comparative treatment recommendation** |
| *The time period should be long enough to enable taking into account all essential costs and health effects* | Long enough time horizon for estimating health effects and costs | **Time horizon should be long enough** |
| *‘’In most cases a cost-utility analysis, in which health effects are given as quality-adjusted life years (QALYs), gives the best support to decision-making’’*  *‘’In situations where the therapies compared have equal health effects it is advisable to use the cost-minimisation analysis’’* | Cost-utility analysis (CUA) is preferred  Cost-minimization analysis (CMA) is acceptable in some cases | **Recommendation of CUA** |
| *‘’Modelling should be used for the analysis, if there is no other way to take into account all essential health benefits and adverse effects as well as costs. The evaluation must include a detailed account of the structure of the model as well as the data and the calculation formulas used in the model’’* | Modeling should be included | **Compulsory process of modelling** |
| *‘’The calculation of costs must include, irrespective of the payer, all direct health care and comparable social welfare costs related to the therapies that are being compared. If productivity losses are included in the cost calculation, the results must also be presented so that those are excluded’’* | Inclusion of direct and exclusion of indirect costs | **Inclusion of direct costs, only** |
| *‘’As the most reliable study design is in general considered controlled and blinded clinical trials in which the alternative therapies are directly compared with each other’’*  *‘’Systematic reviews and meta-analyses are often the best way of combining the results of different studies’’*  *‘’Effectiveness must be measured primarily in quality-adjusted life years (QALYs), which have been measured using a validated generic quality of life measure. Effectiveness can also be measured for instance by final endpoints, surrogate endpoints or disease-specific quality of life measures’’* | RCTs’ are main clinical evidence sources  Systematic reviews and meta-analysis as best option  QALYs and final, surrogate endpoints are acceptable | **Sources for estimating health outcomes and ways of measuring effectiveness** |
| *‘’A discount rate of 3 per cent is recommended for both health effects and costs’’* | Discount rate 3% for costs and health effects | **Recommendation for discounting on 3%** |
| *‘’The evaluation must include a sensitivity analysis if the evaluation is based on assumptions or otherwise uncertain premises’’*  *‘’It is possible to use both deterministic and probabilistic sensitivity analyses in the evaluation, as well as scenario analyses evaluating any uncertainly associated with the assumptions and choices made’’* | Mandatory inclusion of sensitivity analysis  Using both deterministic and probabilistic sensitivity analysis | **Choice of both deterministic and probabilistic analysis** |
| Appendix 2, *‘’Average total costs and QALYs of the basic analysis, discounted and undiscounted’’* | Calculating and using ICER | **Presenting results with ICER** |

The Netherlands [5]

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| **Meaning units** | **Codes** | **Categories** |
| *‘’The first step in an economic evaluation is to clearly state what decision-making problem the evaluation will solve….’’* | Defining the problem is first priority | **Initiating health economic evaluation** |
| *‘’Economic evaluations should be conducted from the societal perspective’’*  *‘’In addition to the societal perspective the results can be presented from other perspectives (such as the healthcare perspective)’’* | Societal perspective as the appropriate perspective  Other perspectives are considered additionally | **Societal as the most preferred perspective** |
| *‘’In the event that the cost-effectiveness with respect to effects and/or costs differs between subgroups, separate subgroup analyses are an option’’* | Subgroup analyses are acceptable | **Performing subgroup analysis** |
| *‘’As described in the reference case the intervention should be compared with the standard of care and/or usual care. The standard treatment is the intervention which in daily practice or in accordance with clinical guidelines is considered the treatment of first choice’’* | Daily practice or usual treatment is the appropriate comparator | **Comparator should current clinical practice** |
| *‘’As indicated in the reference case, the QALY is the standard outcome measure in healthcare economic evaluations’’*  *‘’A prerequisite for intermediate or surrogate outcome measures is a proven sensitivity to change in the clinical outcome’’* | QALY is the appropriate outcome measure  Intermediate or surrogate outcome measures are acceptable | **Recommendation on QALY as outcome** |
| *‘’The time horizon required for an economic evaluation should preferably cover the expected lifetime’’* | Time horizon should be long enough | **Long time horizon** |
| *‘’The most frequently used techniques are the cost-utility analysis (CUA) and the cost-effectiveness analysis (CEA). A budget impact analysis (BIA) might be added to the economic evaluation’’*  *‘’A CEA makes use of (clinical) effect sizes (for example millimeters mercury to express blood pressure, event free survival, or life years gained). In a CUA the effects are expressed in a generic measure of the quantity of life years corrected for quality of life, or Quality Adjusted Life Years (QALYs*)’’ | Preference on CUA and CEA with inclusion of BIA  Natural units (LYG) and QALYs’ are ideal outcome measures | **Suggesting cost-effectiveness analysis with relevant outcomes** |
| *‘’These QALYs are determined with the aid of generic measurement instruments such as the EQ-5D’’* | Using EQ-5D generic instrument | **EQ-5D for evaluating quality of life** |
| *‘’The costs and effects of interventions can be calculated using a decision model. In the case that no single comparative study is available that fulfills the PICOT, see chapter 1, the only alternative is a decision model. An economic evaluation may be performed in the context of an empirical study (piggy-back study alongside an RCT or observational study) or a model-based study’’* | Modeling and empirical research are recommended | **Modeling is acceptable** |
| *‘’In the Netherlands, the costs are discounted at a different rate than are the effects: the costs at a constant discount rate of 4%; the future effects at a constant discount rate of 1.5%’’* | Discount rate for costs is 4% and for health effects is 1,5% | **Recommendation on 1,5% and 4% discount rate** |
| *‘’The influence of parameter uncertainty should be examined using probabilistic sensitivity analyses (PSA) in which all uncertain parameters are analyzed’’*  *‘’Furthermore, univariate and multivariate sensitivity analyses should be performed to provide insight in the relative influences of input parameters on the ICER and in the consequences of fixed values in the model such as discount rates and prices’’* | Using probabilistic sensitivity analyses for parameter uncertainty  Performing univariate and multivariate sensitivity analyses | **Dealing with uncertainty with probabilistic, univariate and multivariate analysis** |
| *‘’If data for a longer time horizon are missing, analyses can only be performed using extrapolation techniques, thus allowing for the determination of the total survival gain’’* | Extrapolation of data is acceptable | **Consideration on extrapolating data process** |
| *‘’An economic evaluation may be performed in the context of an empirical study (piggy-back study alongside an RCT or observational study) or a model-based study.* *It is strongly recommended to base the systematic review on randomized studies of sufficient quality.17 A well designed and well performed (double-blind) randomized controlled clinical trial (RCT) has……’’. In addition, an RCT also has it downsides and limitations. Certain situations may arise, therefore, in which non-randomized or non-comparative studies will suffice or even may be preferred, for example when there is a clear dose-response relation, the natural course of a condition is known or in the case of rare diseases’’*  *‘’A systematic search of relevant publications should adhere to a pre-defined protocol. In a model-based economic evaluation the clinical effectiveness data need to be underpinned by a systematic review of the literature, provided this is of sufficient quality’’* | Advising RCTs’ primarily, while non-RCTs’ are acceptable in case of insufficient data  Performing systematic review | **Most preferred source of data are RCTs** |
| *‘’The ICER should be calculated by dividing the mean costs by the mean effects across all PSA iterations’’* | ICER is acceptable for reporting | **Reporting results with ICER** |

Poland [6]

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| **Meaning units** | **Codes** | **Categories** |
| *‘’The economic analysis should be consistent with the decision problem analysis and the clinical analysis’’* | Decision problem should be defined | **Determination of decision problem** |
| *‘’The analysis should be performed from the perspective of the authority obliged to finance medical services from public funds73 (public payer’s perspective), and from the joint perspective of the authority obliged to finance medical services from public funds and of the beneficiaries…’’*  *‘’The above perspectives do not exclude the conduct, in justified cases, of additional analyses from other perspectives…’’* | Public payer’s perspective and joint perspective of the public payer  Other perspectives could be included | **Payer’s perspective inclusion** |
| *‘’Time horizon of the economic analysis should be sufficiently long….’’.In case of health technologies for which the outcomes and differing costs occur during the whole life of a patient, the lifetime horizon should be used’’* | Long enough time horizon while also lifetime can be used | **Mandatory long time horizon** |
| *‘’It is recommended to perform the cost-utility analysis and cost-effectiveness analysis at the same time. Cost-benefit analysis is not recommended. If cost-utility, cost-effectiveness and cost-minimisation analyses are not possible, it is allowed to perform only the cost-consequences analysis’’* | CUA, CEA are preferred while CBA is not recommended | **Cost-effectiveness analysis is suggested** |
| *‘’The preferred natural unit in cost-effectiveness analysis are life years (LY). A special case of cost-effectiveness analysis is the cost-utility analysis, in which the health outcomes are presented as quality-adjusted life years (QALY)’’*  *‘’The preferred instrument for measuring the quality of life in adults is EQ-5D questionnaire (EQ-5D-3L or EQ-5D-5L version)’’* | LYG and QALY should be chosen  EQ-5D questionnaire is preferred | **Natural measures and quality of life are ideal outcomes** |
| *‘’Modeling is performed when the available data are insufficient to determine cost-effectiveness. Modeling may not be necessary if no statistical significance of differences….’’* | Modeling is not mandatory | **Modeling is recommended, but not mandatory** |
| *‘’When using data from clinical trials to describe the natural course of the disease, provide arguments for their validity’’*  *‘’A systematic review of literature should be carried out to obtain the key input data for the model’’* | Using data for clinical trials data  Systematic review as process for inputs | **Source of data from clinical trials** |
| *‘’direct medical costs resulting from the use of resources needed to provide medical care and supporting the process of its provision, directly related to medical care…..’’. direct non-medical costs resulting from the use of resources needed to provide medical care and supporting the process of its provision, not related to medical care……’’*  *‘’indirect costs, defined as costs of resources lost due to the disease and its consequences; in health technology assessment reports these are the costs of lost productivity of patients and their informal caregivers; the category of indirect costs should include the costs associated with paid work only’’* | Direct medical costs and non-medical costs inclusion  Indirect costs inclusion | **Recommended of direct and indirect costs** |
| *‘’in the basic analysis – 5% for costs and 3.5% for health outcomes’’*  *‘’in the sensitivity analyses – 0% for costs and 0% for health outcomes’’* | Discount rate at 5% for costs, 3,5% for health outcomes in basic analysis  Discount rate at 0% for both costs and health outcomes in sensitivity analysis | **Recommendation of discount rate in base and sensitivity analysis** |
| *’In the economic analysis it is necessary to conduct at least a one-way sensitivity analysisand a probabilistic sensitivity analysis’’* | Performing one-way sensitivity analysis and probabilistic sensitivity analysis | **Indispensable one-way and probabilistic analysis** |
| *‘The results of the economic analysis should be presented in the following form: -total health outcomes considered in the economic analysis and, separately, total costs of the compared technologies, various categories of costs…. -incremental (ICER/ICUR) and absolute (CER/CUR) ratios of costs to health outcomes, if their presentation is justified.* | Incremental (ICER/ICUR) should be mentioned | **Presenting results via ICER** |

Portugal [7]

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| **Meaning units** | **Codes** | **Categories** |
| *‘’This is why we recommend that society’s perspective should be used when conducting an economic assessment study’’* | Recommendation of society’s perspective | **Societal perspective recommendation** |
| *‘ ‘’To justify repayment or co-payment of the price of a drug by public bodies’’* | For payment and reimbursement purposes | **Reimbursement is primary aim** |
| *‘’A controlled, random clinical trial is the most reliable method of determining a relationship of causality and, therefore, of assessing the efficacy or effectiveness of a treatment’’*  *‘’Preference should therefore be given to information from clinical trials or meta-analyses of clinical trials with these characteristics’’. ‘’Effectiveness data obtained from observational epidemiological studies are also acceptable’’* | Most appropriate source data is randomized control trial  Preference on results of clinical trials or meta-analysis and observational as alternative | **RCTs’ are preferred clinical sources** |
| *‘’The alternative of reference should be current practice, i.e. the most common treatment. An appropriate comparator is that which is, in fact, used in current clinical practice’’* | Current practice or most common treatment as appropriate comparator | **Most appropriate comparator on current clinical practice** |
| *‘’To avoid these disadvantages, the analysis of subgroups should only be considered if defined in advance and if the number of subgroups post hoc can be managed as a generator of hypotheses. This aspect should be explained if we do this’’* | Cases which analysis of subgroups might be performed | **Considering subgroup analysis** |
| *‘’Any studies carried out at this stage will inevitably have to extrapolate the effectiveness of the treatment on the basis of its estimated efficacy in the clinical trials. Modelling is normally used to do this’’* | Using modeling for extrapolating effectiveness data | **Modeling is an ideal way of assessing effectiveness** |
| *‘’The length of the study should coincide with the duration of the treatment and its consequences’’* | Time horizon should follow the whole duration of treatment | **Obligatory long time horizon** |
| *‘’It is advisable, however, whenever possible, to make a cost-utility analysis (CUA) or cost-benefit analysis (CBA). A cost-utility analysis is preferable in this case’’* | Preference primarily on CUA or additionally on CBA | **CUA should be primarily considered** |
| *‘’When the analysis adopts the perspective of society, the costs included will be the direct costs of providing health care, the costs of social services and other sectors related to health care and the costs borne by patients and their families. The only indirect costs included should be those of an employee’s lost productivity’’* | Inclusion of direct costs as well as lost productivity | **Taking account direct and loss productivity costs** |
| *‘’In cost-effectiveness studies, the consequences can be measured using several indicators, such as the years of life gained by using each alternative. If we adopt the cost-utility approach, we should present the quality of life weightings for each level of limitation of activity and the years of life gained. In a cost-utility study, years of life are weighted by the quality of life, which can be measured with several instruments. Some of them are based on value, i.e. they enable us to measure the different degrees of limitation of activity on a cardinal scale between 0 and 1 (like the “standard gamble”, the “time trade-off” and the EQ-5D, for example), in which 0 represents death and 1 perfect health. Others, on the other hand, are merely descriptive of these degrees of limitation (e.g. the SF-36)’’*  *‘’The end points we consider should, as far as possible, be those related to the impact of treatments on the duration of life’’* | LYG and QALY should be presented  EQ-5D and SF-36 are acceptable techniques for assessing quality of life    Considering endpoints | **Life-years gained and quality of life must be chosen** |
| *‘’All costs and consequences should be discounted at a rate of 5 percent. Five percent has been adopted as the discount rate for costs and consequences. Recent studies, like the Washington Panel, point to a rate of 3 percent, however, so this figure can be used in a sensitivity analysis’’* | Discount rate for both costs and effects at 5% while an option for sensitivity analysis is at 3% | **Using discount rate at 5%** |
| *‘’We should make a sensitivity analysis of the key parameters with values that are subject to uncertainty. If these values have been obtained by sampling, the analysis should be conducted considering the confidence intervals for each estimate. In other cases, the choice of variation intervals or alternative values for the parameters should be justified in detail on the basis of empirical evidence or of logic’’* | Performing sensitivity analysis for uncertainty with consideration of confidence intervals or empirical evidence | **Assessing uncertainty primarily via CIs** |
| *‘’Overall, incremental cost effectiveness ratio, cost-benefit ratio or cost-utility ratio of the alternatives, depending on the analysis technique chosen…’’* | ICER/ICUR should be analysed | **Presenting results via ICER** |

Scotland [8]

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| **Meaning units** | **Codes** | **Categories** |
| *‘’Estimating clinical and cost effectiveness should begin with a clear statement of the decision problem’’* | Presenting the decision problem | **Initiating with problem** |
| *‘’Relevant comparators are those that are considered to be in routine use or represent best practice in NHS Scotland..’’* | Routine use or current practice as the appropriate comparator | **Suitable comparator is current practice** |
| *‘’The perspective on outcomes should be all direct health effects whether for patients or, where relevant, other individuals (principally carers)’’*  *‘’The perspective adopted on costs should be that of the NHS in Scotland and social work (referred to as Personal Social Services (PSS) in England). ’Costs should relate to resources that are under the control of the NHS in Scotland and social work (equivalent to Personal Social Services in England)....* | Direct health effects for outcomes  NHS in Scotland and social work should be taken into account for costs | **Healthcare perspective is required** |
| *‘’In general, cost-utility analysis is the appropriate form of economic evaluation, with health effects expressed in terms of quality adjusted life years (QALYs)’’*  *‘’Currently, the most appropriate choice in the UK appears to be the EQ-5D’’*  *‘’Given the SMC’s focus on maximising health gain from limited resources, it is important to consider how clinical and cost effectiveness may differ because of differing characteristics of patient populations’’* | Preference on CUA and QALYs as outcomes  EQ-5D is the most appropriate instrument  Subgroups analysis is considered | **Cost-utility analysis and EQ-5D should be chosen** |
| *‘’The time horizon for estimating clinical and cost effectiveness should be sufficiently long’’* | Sufficiently long time horizon | **Consideration of a sufficient long time horizon** |
| *‘’If no head to head evidence is available an appropriately conducted indirect comparison is required’’*  *‘ ‘’Where data from studies are insufficient to provide values for relevant variables, and such values can be obtained from expert opinion, then SMC will consider this as a valid source of evidence’’* | Direct comparison with Head–to-head evidence is preferred  RCTs should be taken into account primarily | **RCTs’ are the most appropriate clinical evidence sources** |
| *‘’This involves the systematic location, appraisal and synthesis of evidence in order to obtain a reliable overview. Synthesis of outcome data through meta-analysis is appropriate provided there is sufficient, relevant and valid data that uses comparable measures of outcome’’* | Systematic literature review and meta-analysis are recommended | **Systematic literature and meta-analysis are acceptable** |
| *‘’Presently this advises an annual discount rate of 3.5% should be used for both costs and benefits for analyses with a time horizon of less than 30 years’’*  *‘’When results are potentially sensitive to the discount rate used, sensitivity analysis should vary the rate between 0% and 6%’’* | Discount rate should be at 3,5% for both costs and benefits in basic analysis  Discount rate in sensitivity analysis should be between 0% and 6% | **Appropriate discount rate for base analysis at 3,5%** |
| *‘’Situations where modelling is likely to be required include those where:….’’*  *‘’In general, all structural assumptions and data inputs should be clearly documented and justified. This is particularly important in the case of modelling to extrapolate costs and health benefits over an extended time horizon’’*  *’Consideration should be given to one and two-way sensitivity analyses, supported by graphical representation including threshold values’’*  *‘’Probabilistic sensitivity analyses may be submitted in support of the application, but are not considered mandatory’’*  *‘’NICE require probabilistic sensitivity analysis to address parameter uncertainty.... Hence the SMC do not require probability sensitivity analysis but require robust one-way and two-way sensitivity analyses...’’* | Cases where modelling is required  Extrapolation of costs and benefits over an extended time horizon  Preference of one-way and two-way sensitivity analyses  Probabilistic sensitivity analyses is desirable  Differences between NICE and SMC in case of sensitivity analysis | **Modelling is required in some cases**  **Compulsory use of one and two-way sensitivity analysis** |
| *’The SMC does not have a fixed upper limit on willingness-to-pay for a QALY’’*  *‘’NICE emphasises the use of tables but the SMC also finds well-designed graphs to be especially helpful and would urge manufacturers to give more thought to this aspect of presentation’’*  *‘’An estimate of the budget impact of the medicine over a five-year time horizon must be submitted with all applications’’* | ICER is acceptable without threshold  Differences between NICE and SMC  Budget impact assessment is required | **ICER without threshold for presentation** |
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United Kingdom [9, 10]

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| **Meaning units** | **Codes** | **Categories** |
| *‘’Estimating clinical and cost effectiveness should begin with a clear statement of the decision problem that defines the technologies being compared and the relevant patient group(s)’’* | Describing decision problem | **Outlining decision problem** |
| *‘’For the reference case, the perspective on outcomes should be all direct health effects, whether for patients or other people’’*  *‘’The perspective adopted on costs should be that of the NHS and personal and social services. Productivity costs are not included in either the reference-case or non-reference-case analyses’’* | Direct health effects for perspective on outcomes  NHS perspective on costs with exclusion of productivity costs | **Healthcare system should be taken into account** |
| *‘’When selecting the most appropriate comparator(s) the Committee will consider: established NHS practice in England, the natural history of the condition without suitable treatment, existing NICE guidance, cost effectiveness, the licensing status of the comparator. The Committee will normally be guided by established practice in the NHS when identifying the appropriate comparator(s)* | Established practice in NHS is the ideal one | **Appropriate comparator type** |
| *‘’For the reference case, cost-effectiveness (specifically cost–utility) analysis is the preferred form of economic evaluation’’*  *‘’Health effects should be expressed in terms of QALYs. Currently, the QALY is considered to be the most appropriate generic measure of health benefit that reflects both mortality and health-related quality of life effects’’* | Preference in cost-utility analysis (CUA)  QALY is the most appropriate outcome | **Cost-utility analysis (CUA) is needed** |
| *‘’The time horizon for estimating clinical and cost effectiveness should be sufficiently long to reflect all important differences in costs or outcomes between the technologies being compared’’*  *‘’A lifetime time horizon is required when alternative technologies lead to differences in survival or benefits that persist for the remainder of a person's life’’* | A sufficiently long time horizon  Cases of performing lifetime horizon | **Long time horizon must be chosen** |
| *‘’The Institute has a preference for RCTs directly comparing the intervention with 1 or more relevant comparators and these should be presented in the reference-case analysis if available’’*  *‘’In the reference case, evidence on outcomes should be obtained from a systematic review, defined as systematically locating, including, appraising and synthesizing the evidence to obtain a reliable and valid overview of the data related to a clearly formulated question. Synthesis of outcome data through meta-analysis is appropriate provided there are sufficient relevant and valid data using measures of outcome that are comparable’* | Randomized clinical trials (RCTs) are most suitable  Using systematic review for evidence on outcomes and meta-analysis | **Randomized clinical trials (RCTs) are preferred with consideration of systematic view and meta-analysis** |
| *‘’The EQ-5D is the preferred measure of health-related quality of life in adults’’* | Preference on EQ-5D utility instrument | **EQ-5D for measuring quality of life** |
| *‘’The Institute considers that it is usually appropriate to discount costs and health effects at the same annual rate of 3.5%, based on the recommendations of the UK Treasury for the discounting of costs’’’*  ‘’Sensitivity analyses using rates of 1.5% for both costs and health effects may be presented alongside the reference-case analysis’’ | Discount rate of 3,5% for both costs and outcomes in basic analysis  Discount rate of 1,5% for both costs and outcomes in sensitivity analysis | **Recommendation of 3,5% discount rate** |
| *‘’Models are required for most technology appraisals’’*  *‘’When the use of 'final' clinical end points is not possible and 'surrogate' data on other outcomes are used to infer the effect of treatment on mortality and health-related quality of life….’’*  *‘’ is usually required to extrapolate costs and health benefits over an extended time horizon’’* | Modelling is a requirement technique  Preference on clinical rather than surrogate end points  Extrapolation of costs and health benefits over an extended time horizon is required | **Modelling is required with consideration of clinical end points** |
| *‘’Probabilistic sensitivity analysis is preferred. This enables the uncertainty associated with parameters to be simultaneously reflected in the results of the model’’* | Preference in probabilistic sensitivity analysis | **Assessing uncertainty via probabilistic analysis** |
| *‘’For many technologies, the capacity to benefit from treatment will differ for patients with differing characteristics. This should be explored as part of the reference-case analysis by providing estimates of clinical and cost effectiveness separately for each relevant subgroup of patients’’* | Conducting separate analysis for each subgroup of patients | **Subgroups analysis is ideal in many cases** |
| *‘’The expected value of each component of cost and expected total costs should be presented; expected QALYs for each option compared in the analysis should also be detailed in terms of their main contributing components. ICERs should be calculated as appropriate’’*  *‘’In addition to details of the expected mean results (costs, outcomes and ICERs), the probability that the treatment is cost effective at maximum acceptable ICERs of £20,000–£30,000 per QALY gained and the error probability (that the treatment is not cost effective) should also be presented, particularly when there are more than 2 alternatives’’* | Presentation of values, QALYs and calculation of ICERs  Maximum acceptable ICERs (cost-effective) | **Presentation of all data with focus on threshold ICER** |
| *‘’Information on the net impact of the implementation of the health technology on the NHS (and personal and social services, when appropriate) is required. In addition, an estimate of the resulting health impact (for example, QALYs or life-years gained) in a given population should ideally be attempted.* | Mandatory presentation of providing information about the net impact of technology on the NHS | **Budget impact analysis is mandatory** |

Sweden [11]

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| **Meaning units** | **Codes** | **Categories** |
| *‘’These guidelines are aimed at companies intending to apply for the inclusion of a drug in the pharmaceutical reimbursement scheme and who, in connection with their application, enclose a health economic evaluation’’* | Reimbursement of medicines is the primary aim of guidelines | **Reimbursement scope** |
| *‘’The health economic analysis should be done from a social economic perspective’’* | Economic evaluation must be conducted by societal perspective | **Suggestion of costs on society** |
| *‘’The costs and health effects of using the drug in question should be compared with the most appropriate alternative treatment in Sweden (e.g. the most used)’’* | Most used treatment as comparator | **Appropriate comparative treatment is most used** |
| *‘’If existing randomised clinical trials do not offer a relevant treatment alternative for Swedish conditions, the analysis should be supplemented by a model calculation’’* | RCTs are appropriate sources | **Clinical evidence by RCTs’** |
| *‘’Separate calculations should be made for different patient groups where the treatment is expected to have different cost-effectiveness (e.g. separately for men and women in different ages and with differing degrees of severity for the illness/symptom or with different risk levels)’’* | Sub-groups analysis for different costs and effects | **Recommendation of subgroups analysis** |
| *‘’Cost-effectiveness analysis is recommended, with quality-adjusted life years (QALY’s) as the measure of effect’’*  *‘’If it is difficult to use QALY’s (e.g. with heavy pain over a short time in connection with treatment), then a cost-benefit analysis with the willingness to pay may be used as a measure of effect. If there is supporting evidence that the drug to which the application refers has the same health effect as the best comparable treatment, a cost comparison may suffice’’* | Recommendation on CEA (CUA) and QALYs  CBA is alternative method with willingness to pay while CMA is acceptable in some cases | **Primary preference on CUA** |
| *‘’All relevant costs associated with treatment and illness should be identified, quantified and evaluated. The production loss for treatment and sickness should also be included (estimated using the human capital method)’’*  *‘’It should be clear what year prices represent. Apoteket’s Sales Price (AUP) for medicine must be used’’* | Inclusion of direct costs and indirect costs  Apoteket’s Sales Price for medicine must be used (for year prices) | **Considering types of costs for inclusion in economic analysis** |
| *‘’QALY-weightings can be based either on direct measurements with the above-mentioned methods or indirect measurements (where a health classification system such as EQ-5D is linked to QALY­ weightings)*’’  *‘’QALY-weightings should be based on methods such as the Standard Gamble (SG) or Time-Trade-Off (TTO) methods’’* | Methods for calculating QALY weightings  Standard gamble or time trade off methods are recommended | **Utility instruments and techniques** |
| *‘’The timeframe for the study shall cover the period when the main health effects and costs arise’’*  ‘*’This means that extrapolation must be carried out for the period outside the accessed data from clinical trials’’*  *‘ ‘’For treatments affecting survival a lifelong perspective must be used in order to adequately calculate life years gained’’* | Enough time horizon  Extrapolation of data is requirement  Lifelong perspective for survival affects | **Considering long timeframe** |
| *‘’Both costs and health effects should be discounted by 3 per cent’’*  *‘’In the sensitivity analysis (see Point 10), the calculation should also be carried out using 0 and 5 per cent, as well as a calculation where costs are discounted by 3 per cent and health effects by 0 per cent’’* | 3% rate for both costs and effects for single analysis  3% for costs and 0% for health effects in sensitivity analysis | **Discounting on base and sensitivity analysis** |
| *‘’The sensitivity analysis of central assumptions and parameters is an important stage in health economic analysis’’* | Performing sensitivity analysis | **Assessing uncertainty** |
| ‘’Modelling is sometimes useful for achieving better external validity in clinical trials (adjusting for differences between clinical trials and clinical practice), or for ……’’ | Consideration of modelling | **Acceptable, but not mandatory, modelling** |
| *‘’Methods, assumptions made and detailed data shall be shown so clearly that the different steps in the analysis are easily followed. Cost-effectiveness ratios should be calculated based on the differences in costs and effects (QALY’s) that exist between treatment alternatives (incremental analysis)’’* | Presentation of all data and cost-effectiveness via ICER | **Reporting results via ICER** |

Latvia, Lithuania and Estonia [12]

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| **Meaning units** | **Codes** | **Categories** |
| *‘’The present guideline provides basis for the pharmacoeconomic application submitted as a part of application to include new drug in the positive list for reimbursement or other state funding’’* | Drug reimbursement and funding decisions | **Aim of pharmacoeconomic analysis** |
| *‘’Analyses from a societal perspective (including all costs and benefits outside the healthcare system) may only be presented in addition, if considered relevant by the applicant’’*  *‘’All analyses are to be conducted principally from a health care perspective (including only direct health care costs and benefits for healthcare)’’* | Societal perspective should be analyzed, additionally  Health care perspective (incl. direct health care costs and benefits for healthcare) | **Consideration of payers’ perspective, primarily** |
| *‘’In the study the costs and outcomes of a standard treatment or the usual treatment in daily practice in the respective states should be compared with the costs and outcomes of the new drug* | Treatment most used in daily practice | **Most used as appropriate comparative treatment** |
| *‘’The following economic evaluations can be conducted: Cost minimization analysis, Cost effectiveness analysis, Cost-utility analysis (only additionally to the cost-effectiveness analysis)’’*  *Cost utility analysis (CUA) is a more comprehensive (specific) form of CEA. Recommended outcome measure is quality adjusted life year (QALY), used to calculate the cost per unit outcome achieved incorporating patient preferences (utilities)’’*  *‘’Cost effectiveness analysis (CEA) compares different costs and different outcomes of two or more alternative treatments each with a common objective. Outcomes are measured in physical units’’*  *‘’Origin of the utilities used in the analysis should be explained and the instrument, whether generic or disorder-specific, used for measurement of quality of life has to be validated. It is recommended to use the EuroQol and the Health Utility Index methods’’* | All methods are acceptable, except CQA  CUA is a more comprehensive method, with QALY as outcome  CEA with natural units as outcome  EuroQol, Health Utility Index as instruments for measuring quality of life | **Economic evaluation methods and utility instrument** |
| *‘’If the economic analysis is performed from the health care perspective, all direct costs inside the health care system should be considered. If any direct or indirect costs outside the health care system are included, these should be indicated separately and calculations conducted separately*  *‘’If additional economic analysis is performed from the societal perspective, other non-medical costs can be included’’* | Considering costs and benefits inside and outside of the healthcare system  Inclusion of non-direct medical costs in case of societal perspective | **Inclusion of direct costs in case healthcare perspective** |
| *‘’The basis for measurement of outcomes in economic analysis is randomised double blind controlled clinical trials, or open trials where these are appropriate’’*  *‘’The economic analysis can be based on a single clinical trial or meta-analysis’’* | RCTs or open trials are ideal  Single clinical trial or meta-analysis is appropriate | **Measuring clinical outcomes via RCTs’** |
| *‘’If the analysis cannot be performed otherwise, modelling techniques can be applied’’* | Modeling process is appropriate | **Modeling is an alternative method** |
| *‘’Costs and benefits distributed over time are discounted at an annual rate of 5 per cent’’* | Recommendation on 5% for both costs and benefits | **Appropriate discount rate art 5%** |
| *‘’A sensitivity analysis is a test used to measure the extent the results and outcomes of a study depend upon any assumptions’’*  ‘’*The sensitivity analysis has to be carried out and details should be given of the statistical tests performed and the confidence intervals around the main variables’’* | Conducting sensitivity analysis  Consideration of statistical tests and confidence intervals when performing sensitivity analysis | **Statistical tests and confidence intervals in sensitivity analysis** |
| *‘’Incremental analysis should be reported, comparing the relevant alternatives’’*  *‘’The analysis must also provide the estimate of the total annual cost of the treatments to the health care system and total benefit’’* | ICER is ideal for presenting results  Presentation of estimation of budget-impact analysis (BIA) | **Outlining results via ICER and BIA** |

Hungary [13]

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| **Meaning units** | **Codes** | **Categories** |
| *‘’It is required to present the course, outcome and epidemiology of the disease in both domestic and international contexts, as well as a summary on the healthcare technology to be analysed and the routinely applied interventions at present in the indication relevant to the scope of the given analysis’’* | Presentation of the decision problem and submitted technology | **Outlining decision problem as first step** |
| *‘’For the base-case comparison, the technology/technologies routinely used and reimbursed in the indication must be chosen which may be supplanted by the healthcare technology examined in the analysis. If more technologies are available which are demonstratedly of the same efficacy and used frequently, then the most frequently used technology beside the one with the lowest cost must also be selected for the purposes of the calculation’’* | Routine used and most used technology as comparative treatments | **Most or routine used as comparative technology** |
| *‘’As a primary choice, the payer perspective is recommended.*  *‘’In analyses using the societal perspective, all benefits and costs (direct and indirect costs within and outside of the healthcare system) emerging in the whole of society, in connection with the therapy must be taken into consideration’’*  *‘’Apart from the two perspectives recommended above, it is possible to carry out the analysis based on another (e.g. service provider) perspective, but this is a possibility that may be provided in a supplementary analysis, separately from the base case analysis’’* | Preference on payer’s perspective  Inclusion of direct and indirect costs in case of societal perspective  Consideration of other perspectives in separate analysis | **Payers’ perspective should be chosen primarily** |
| *‘’In general cases, in order to present the results of the analysis, the preferred methodology to be selected is the cost-utility analysis, complemented with the cost-effectiveness/ cost-efficacy analysis’’*  *‘’In case a cost-utility analysis is used, it is recommended that health benefits be measured in QALY measurement units’’*  *‘’It is recommended to determine utility values with the use of utility-based, health-related quality of life questionnaires’’*  *‘’The three domains of clinical endpoints are mortality, morbidity and the quality of life associated with health. Clinical endpoints must be relevant, sensitive, valid and reproducible’’* | Preference in CUA complemented with CEA  QALYs should be outcomes of CUA  HRQL questionnaires in CUA  Clinical endpoints should be presented | **Appropriate types of methods, outcomes and instruments** |
| *‘’Subgroup analyses may be justifiable if the achievable health benefit or the cost-effectiveness is considerably different in the particular patient subgroup (e.g. high-risk patients)’’* | Recommendation of performing analysis between sub-groups | **Sub-groups analysis is recommended** |
| *‘’Decision makers are interested primarily in the effects of the given healthcare service under real-world circumstances, therefore analysts must seek to base the analysis on (long-term) clinical results achievable in the real world (effectiveness) and not on efficacy determined in the course of controlled clinical studies’’*  *‘’In health economic evaluations, the clinical results on achievable health benefits must be sought out, evaluated and presented according to the internationally accepted methodological recommendations of evidence-based medicine and systematic literature reviews. The most reliable results concerning health benefits are from large-scale, direct comparative (head-to-head), randomized clinical trials done under circumstances according to routine practice and from the meta-analyses and systematic literature reviews of such trials’’*  *‘’In case a randomised clinical trial is not available, this must be indicated clearly. In this case, it is recommended that non-randomised trials (possibly observational studies) should be presented…’’* | Using real-world data is appropriate  Systematic literature review and meta-analysis are preferred  Direct head-to-head RCTs are preferred for health benefits  Observational studies could be an alternative option | **RCTs’ are ideal sources for health benefits** |
| *‘’It is recommended to take direct healthcare costs and direct non-healthcare costs into account in cost calculations’’*  *‘’Indirect healthcare costs are the non-healthcare costs emerging with the application of the therapy (travel costs). These must be presented separately’’* | Inclusion of direct and direct-non healthcare costs  Indirect costs are included separately | **Involvement of direct costs** |
| *‘’In the case of the deterministic analysis, which can be either univariate and/or multivariate, the modified parameters, as well as the extent of the modification must be presented in detail. Results must be presented with textual explanations and displayed in tornado diagrams’’* | Both deterministic sensitivity analysis and probabilistic sensitivity analysis are ideal | **Dealing with uncertainty with both deterministic and probabilistic analysis** |
| *‘’When determining the time horizon of the analysis, the time frame should be sufficiently long in order….’’* | Sufficiently long enough time horizon | **Choice of long time horizon** |
| *‘’In order to do so, the clinical trial results may need to be extrapolated to a time period possibly exceeding the timeframe of the clinical trials by a considerable extent. In such cases, the use of modelling is preferred’’* | Preference in using modeling for extrapolating | **Modeling is accepted** |
| *‘’In the base case, both costs and health benefits must be discounted by 3.7%’’*  *‘’In the case of the discount rate, it is recommended to prepare sensitivity analyses using 2-5% intervals for costs and 0-5% intervals for health benefits or, in justified cases, moving discount rates may be used’’* | Discount rate at 3,7% in base analysis  Discount rate at sensitivity analysis is at 2-5% for costs and 0-5% for health benefits | **Discounting in both base and sensitivity analysis** |
| *‘’The presentation of incremental cost-effectiveness ratios is required also in the case of dominant strategies’’*  *‘’In addition, the explicit cost-effectiveness ceiling ratio (3 X GDP per capita) currently in effect must also be indicated on the scatterplot diagram’’* | ICER should be outlined  Taking into account existing threshold | **Reporting results via ICER with threshold** |
| *‘’It is necessary to present the effects of the reimbursement inclusion of the technology examined in the analysis on public expenditures (gross and net budget impact) for the 3 years following the completion of the analysis. The budget impact analysis needs to be completed without discounting’’* | Conducting budget-impact analysis is a mandatory process | **Inclusion of budget impact assessment** |

Ireland [14]

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| **Meaning units** | **Codes** | **Categories** |
| *‘’The study question should be formulated to address the needs of the target audience by clearly establishing the context of the study’’’* | Presentation of study question | **Research question as first step** |
| *‘’A cost-utility analysis is the preferred evaluation type for the reference case. The preferred outcome measure to be used in the reference case is the quality-adjusted life year (QALY)’’*  *‘’A CEA may be presented as a secondary analysis when the use of an important patient outcome (other than the QALY) can be justified. LYG is only a meaningful measure of effect if the treatment is expected to impact on mortality’’*  *‘’The use of generic preference-based methods such as the EQ-5D or SF-6D is recommended to measure utilities’’*  *‘’Alternatively, direct HRQoL methods such as time trade-off or standard gamble may be used provided these have been gathered in a relevant population* | Preference type is CUA with QALYs’ as outcomes  CEA is alternative choice, with LYG as outcome measure methods  EQ-5D or SF-6D are recommended  Time trade-off and standard gamble are alternatively acceptable | **Appropriate economic evaluation techniques and outcomes** |
| *‘’Adopting a societal perspective that captures all relevant costs and consequences of the technologies in question, regardless on who these costs and consequences fall, is considered the most comprehensive approach that can be taken’’*  *‘’These may include direct and indirect costs, including productivity costs, as well as additional costs…’’* | Societal perspective is the most appropriate  Inclusion of direct and indirect costs, particularly productivity costs | **Societal perspective is suitable** |
| *‘’The preferred comparator for the reference case is ‘routine care,’ that is, the technology or technologies most widely used in clinical practice in Ireland in the context of the target population’’* | Routine care or more often used technology in clinical practice | **Most appropriate comparator type is current practice** |
| *‘’Stratified analysis of subgroups (that have ideally been identified a priori) is appropriate when there is biological or clinical support for heterogeneity in the target population’’* | Subgroup analysis is acceptable | **Consideration of subgroup analysis** |
| *‘’The time horizon should be of sufficient duration to capture any meaningful differences in the future costs and outcomes likely to accrue to the competing technologies’’*  *‘’A lifetime horizon is usually considered appropriate for HTAs, as the majority of technologies have costs and outcomes that impact over a patient’s lifetime’’* | Long enough time horizon  Considering of lifetime horizon in some cases | **Long timeframe in analysis** |
| *‘’Where available, evidence from randomised clinical trials (RCTs) should be used to quantify efficacy in the reference case analysis’’*  *‘’Experimental, quasi-experimental and non-experimental or observational data may be submitted to supplement the available RCTs…’’*  *‘’Meta-analysis may be used to synthesise outcome data provided the homogeneity and quality of the studies included justifies this approach’’* | Randomised-controlled trials (RCTs) are ideal  Observational data are supplementary  Meta-analysis is acceptable | **RCTs are primary sources** |
| *’The use of modelling is typically required…It may be necessary to extrapolate short-term outcome data or surrogate measures to long-term outcomes using modelling techniques. The use of extrapolation modeling is typically required when….’’* | Modeling and extrapolation are both compulsory | **Requirement of modeling** |
| *‘’Comprehensive sensitivity analyses (see Section 2.16) of the key model parameters should be included using deterministic (one-way or multi-way) and probabilistic sensitivity analyses and an attempt made to quantify the uncertainty of the results. For the reference case, a one-way sensitivity analysis should be conducted to identify the key model inputs and or assumptions contributing most to uncertainty. Multivariate analysis should be used for key model inputs. Probabilistic sensitivity analysis (PSA), in the form of a Monte Carlo simulation, should be used to assess parameter uncertainty’’* | Performing one-way sensitivity analysis, multivariate and probabilistic sensitivity analysis | **Deterministic and probabilistic analyses should be used** |
| *‘’A standard rate of 5% per annum should be used to discount costs and outcomes in the reference case. For the reference case, a standard rate of 5.0% per annum for costs and outcomes should be used (see Appendix 6 for a sample calculation). This rate is set by the Department of Finance and has been in effect since January 2014’’*  *The discount rate should be varied in the univariate sensitivity analysis (see also Section 2.16). Limits of 0% and 10% are suggested* | Discount rate of 5% is recommended in basic analysis  Discount rate between 0% and 10% is proposed for sensitivity analysis | **Discounting in both single and sensitivity analysis** |
| *‘’Stratified analysis of subgroups is appropriate to account for differences in cost-effectiveness that may arise due to important factors that impact on the target population or its management’’* | Subgroup analysis is acceptable and appropriate | **Performing subgroup analysis** |
| *‘’Where appropriate, the results for cost-utility analysis should be presented as incremental cost-effectiveness ratios (ICERs)’’*  *‘’Historically, the threshold has varied between €20,000 and €45,000 per QALY, although reimbursement below these levels was not guaranteed, and technologies above these thresholds have been adopted. While consideration of the cost- effectiveness of a technology is necessary, it is not the sole basis for decision-making. The principle of what a cost-effectiveness threshold represents and how it should be used in decisions regarding the allocation of healthcare resources has been a source of significant debate in other healthcare settings. These may be briefly summarised into three main themes. 1. Opportunity cost, 2. Willingness-to-pay, 3. Past decisions’’* | Using ICER for presenting results  Existing threshold for reimbursement with consideration of additional factors | **ICER is ideal for analyzing and reporting results** |
| *’A budget impact analysis should be submitted along with the economic evaluation of a technology to best inform the needs of the decision-maker regarding its affordability and cost-effectiveness’* | Budget impact analysis is mandatory | **Compulsory consideration of Budget Impact Analysis** |

Germany [15]

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| **Meaning units** | **Codes** | **Categories** |
| *‘’In addition to the health technology to be assessed, all therapeutic alternatives relevant in a particular therapeutic area should be included in a health economic evaluation’’*  *‘’As a general rule, the information generated is based on the pair-wise comparison of treatment alternatives for which direct evidence is available’’* | Relevant alternatives treatments are appropriate comparators  Pair-wise comparison is recommended | **Ideal comparators are relevant treatments** |
| *‘’ In the present methodology, no specific instrument or procedure to cardinally measure benefit is recommended’’* | All generic instruments are acceptable | **Measuring health effects** |
| *‘’Direct medical costs reflect the monetary value of resources that are consumed through the provision of a specific health service and which are reimbursed by the SHI or partly covered by additional payments from the insurants (“out of pocket expenses”)’’*  *‘’Indirect costs are not primarily considered. If loss of productivity is substantially affected by a new health technology, the corresponding costs may be evaluated separately’’* | Inclusion of direct medical costs  Indirect costs are not considered | **Enganging only direct medical costs** |
| *‘’Identifying the resources that are to be included in the cost estimation requires the perspective, selecting a timeframe for the analysis and determining the relevant health care providers. Expert opinion may be valuable in these tasks’’*  *‘’The patient-relevant benefit of diagnostic and therapeutic interventions is identified in controlled clinical trials. An effect in clinical trials describes a partial aspect of the clinical and/or functional state of a patient following a specific intervention’’*  *’Generally, a mixed treatment comparison” (MTC) meta-analysis [12,13], which is also called “multiple treatment meta-analysis” [14] or “network meta-analysis” [15,16] is considered an appropriate approach’’* | Expert opinion is valuable in some cases  Controlled clinical trials are ideal for benefit identification  Mixed treatment comparison with meta-analysis is appropriate | **Clinical evidence via RCTs’** |
| *‘’Thus, modelling the effects of a health technology is an essential component of health economic evaluations’’* | Modeling is compulsory process in economic evaluation | **Indispensable modeling** |
| *‘’Decision makers can use the efficiency frontier as a guideline by looking at the position of a new intervention in relation to the position of established interventions. The method for comparative health economic evaluations presented here meets the requirements imposed by the German context (see Section 1.1 General conditions) while remaining consistent with the theory underlying the predominant methods used in this field. This is achieved by modifying the established efficiency frontier approach’’* | Recommendation on efficiency frontier for comparative health economic evaluation | **Efficiency frontier as the basis for comparisons** |
| *‘’The primary clinical measures used by IQWiG are mortality, morbidity, health-related quality of life and validated surrogates..’’* | LYG, QALY and surrogates techniques are appropriate outcomes | **Ideal outcome and techniques for measuring** |
| *‘’It is not recommended to replace univariate sensitivity analyses with multivariate probabilistic sensitivity analyses. Instead, the latter should be carried out in addition to univariate analyses….’’*  *‘’In health economics, the efficiency frontier concept is an extension of the standard approach of incremental cost-effectiveness ratios. An efficiency frontier is constructed for each therapeutic area as the basis for health economic evaluation of relevant health technologies’’* | Primary choice of univariate sensitivity analysis  Efficiency frontier is recommended for cost-effectiveness analysis | **Dealing with uncertainty and reporting via EF** |
| *The time horizon should appropriately reflect the natural course of a disease and be sufficiently long….For many chronic diseases, this time horizon corresponds to the patient’s life expectancy’’* | A long time horizon is recommended | **Timeframe must be long enough** |
| *‘’Although various rates are given in health technology assessment guidelines [53-56], a discounting rate amounting to 3 % is stipulated based on the present international long-term equity market costs [57]. These sensitivity analyses should be conducted for discount rates of 0 %, 5 %, 7 % and 10 %’’* | Discount rate at 3% in base analysis while various rates are applicable in sensitivity analysis | **Discounting in both base case and sensitivity analysis** |

France [16]

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| **Meaning units** | **Codes** | **Categories** |
| *‘’The reference case analysis is based on cost-utility analysis and cost-effectiveness analysis as methods of evaluation. The choice of the method to be used depends on the nature of the expected health effects of the interventions studied’’*  *‘’Cost-benefit analysis is not recommended in the reference case analysis, but it can be presented as an additional set of information’’*  *‘’If cost-utility analysis is used, the health outcome criterion to be used is quality-adjusted life years (QALY). If cost-effectiveness analysis is used, the health outcome criterion to be preferred is life years (LY)’’* | Choosing between CUA and CEA  Cost-benefit analysis is not appropriate  Using QALY and LYG as outcomes of both methods | **Considering cost-effectiveness analysis methods with length of life and quality** |
| ‘’It is recommended to use health status classification systems for which validated preference-based scores are available in France. At the time of writing this guide, only EQ-5D and HUI3 were available’’  *‘’The valuation of HRQL reported by patients or carers is based on public preference-based scores, obtained using a choice-based method with a representative sample of the general population. When preference-based scores are used for valuation of changes in HRQL, they are obtained from a representative sample of the general population’’* | EQ-5D and HUI3 are the most suitable generic instruments  Using preference-based scores from general population | **Instruments and techniques for utility measurement** |
| *‘’The reference case analysis adopts a collective perspective that is sufficiently broad to take into account all stakeholders concerned by the treatments studied, in the French health system’’* | Collective perspective should be considered | **Adopting a collective perspective** |
| *‘’Economic evaluation may necessitate considering specific subgroups of the population…’’’* | Subgroups analysis is acceptable | **Subgroups analysis might be necessary** |
| *‘’Current best or consensus/routine practices are the most widely used comparators in health economic evaluations’’* | Comparator type should be routine practice or current best practice | **Routine practice as appropriate comparator** |
| *‘’The reference case analysis uses a time horizon which is long enough…’’*  *‘’A lifetime horizon is applied if at least one of the interventions being compared has an impact over the patient’s life time, either in terms of costs, length of life, health-related quality of life or after-effects (i.e. a chronic or disabling condition)’’* | Long enough time horizon  Cases where lifetime horizon is acceptable | **Determining long time horizon** |
| *‘’The reference case analysis uses the French social discount rate which has been set at 4% since 2005, for time horizons of less than 30 years with a reduction of up to 2% thereafter. The sensitivity analysis can use a discount rate higher than the 4% social discount rate (for example, the maximum rate of 6% considered in the above-mentioned report). It may also be useful to present the calculations using a 3% rate, which is generally used in foreign guidelines’’* | Discount rate of 4% is acceptable while a higher rate is acceptable in sensitivity analysis | **Outlining discount rates** |
| *‘’The evaluation report includes a systematic review of clinical and economic studies’’*  *‘’More specifically, evidence on health effects is obtained from randomised controlled trials, or meta-analysis of randomised controlled trials. Comparative observational studies might be used in the case of added value, in terms of relevance or bias limitation’’*  *‘’Expert opinions are used with caution’’* | Systematic review is ideal process for synthesing  Randomised- controlled trials (RCTs) are primary source and secondary are observational studies  Expert opinions is the last option | **RCTs’ are suitable sources for effectiveness and health effects** |
| *‘’Consequently, only direct costs are taken into account in reference case analysis, and included in the incremental cost-effectiveness ratio’’*  *‘’When indirect costs are documented, they are included in an additional analysis and are not combined into the incremental cost-effectiveness ratio ‘’* | Inclusion of direct costs only  Additional analysis for indirect costs, if needed | **Exclusive inclusion of direct costs** |
| *‘’Modeling is the preferred approach in health economic evaluation. Non-use of modelling is duly justified’’* | Modeling is a compulsory process of evaluation | **Requirement of modeling** |
| *‘ ‘’An univariate, deterministic sensitivity analysis is always made on parameters likely to influence the results of the model. An univariate deterministic sensitivity analysis is routinely used for parameters considered a priori to be able to influence the results of the evaluation’’*  *‘’ ’Consequently, a probabilistic sensitivity analysis is to be preferred as it incorporates uncertainty about all the parameters of the model, taking into account interactions. A probabilistic sensitivity analysis is based on Monte Carlo simulations’’* | Univariate deterministic analysis is always routine  Preference on probabilistic sensitivity analysis with consideration of Monte Carlo | **Recommendation of probabilistic sensitivity analysis** |
| *‘’Health interventions plotted on the efficiency frontier are identified and an incremental cost-effectiveness ratio (ICER) calculated for each one, by detailing the incremental health effects and costs’’*  *‘’In the absence of a cost- effectiveness threshold, interventions are qualified as efficient if they are non-dominated, without prejudging their acceptability in terms of the public decision-maker’s maximum willingness to pay for health gain’’* | Performing ICER  Efficiency frontier is acceptable  Cost-effectiveness threshold is ideal for efficiency | **Presenting results via ICER** |

Denmark [17, 18]

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| **Meaning units** | **Codes** | **Categories** |
| *‘’The present guidelines provide directions for the design of economic evaluations of medicinal products (pharmacoeconomic evaluations) submitted to the Danish Medicines Agency when applying for reimbursement’’* | Reimbursement purpose | **Objective of guidelines is reimbursing** |
| *‘’The analysis should include all relevant costs and benefits from a socioeconomic perspective’’* | Societal perspective is appropriate for both costs and outcomes | **Choosing societal perspective** |
| *‘’Unlike certain clinical study designs, there are no fixed standards for how a health economic analysis should be performed, and what requirements it must meet in terms of methods. Elements of the method are also under discussion or under development’’*  *‘’Beyond initially taking a decision on whether a health technology is optimal in socioeconomic terms, it is often appropriate in an HTA also to identify what “cash box” accrues to the spending burden and possible gains from use of the technology. This can be investigated by drawing up a budget-economic analysis, as an addition to the socioeconomic analysis’’* | All types of health economic methods are acceptable  Budget-impact analysis (BIA) is often mandatory | **There is no specific health economic method** |
| *‘’In some cases, modelling will need to be used in the economic analysis – whether completely or only partially’’*  *‘’Extrapolation of short-term clinical data for the purpose of predicting these data in the longer term, e.g. survival probabilities, or linkage of intermediate endpoints to final endpoints, can lead to modelling in the economic analysis’’* | Modelling is recommended and useful  Extrapolation of data is acceptable | **Recommendation of using modeling** |
| *‘’The time horizon of the analysis should ensure that all relevant costs and benefits are identified. It is therefore important that the time horizon for the decision-making problem is considered before it is decided what costs must be assessed’’* | Time horizon should cover the whole analysis with consideration of primary research question | **Time horizon should be long but depends on research question** |
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| *‘’Economic data originating from primary, preferably randomised, blinded clinical trials should be reported separately’’*  *‘’A source for data on the effectiveness of health technologies is the medical literature, for example in the form of systematic literature reviews or meta-analyses (cf. Section 4.1.3) or clinical databases (cf. Section 5.3)’’* | Randomised-controlled trials (RCTs) are preferred  Performing systematic review and meta-analysis | **Randomised-controlled trials are recommended** |
| *‘’The evaluation must include all relevant costs, regardless whether they are direct, indirect or intangible. Use of resources must be reported separately from the valuation of costs.* | Inclusion of all direct, indirect and intangible costs | **Inclusion of all costs relevant to society** |
| *‘’Unlike certain clinical study designs, there are no fixed standards for how a health economic analysis should be performed, and what requirements it must meet in terms of methods. There are four kinds of health economic analysis which may be relevant to consider in connection with HTAs’’*  *‘’Acceptable outcome measures include gained life years or quality adjusted life years, but also response rate, number of successful treatments, measure of time without symptoms, pains etc. As yet, willingness to pay should only be used as an additional measure’’* | Not clearly stated economic evaluation method  QALYs, LYG, as well as other outcomes are acceptable | **No recommendation on specific economic evaluation method** |
| *‘’When the health outcome measure is Quality Adjusted Life Years (QALY), preference information is gathered by use of the time trade-off or the standard-gamble method’’*  *‘’An assessment in terms of final end-points makes it possible to compare for different types of health technologies so far as the final consequences are comparable’’*  *‘’QALYs are generally measured using one of the following multidimensional utility measuring instruments: EQ-5D or 15D, where the QALY weight is derived from a population consisting of a cross-section of the general Danish population’’* | Time trade-off or standard-gamble methods are used  Final end-points for assessing clinical benefit  EQ-5D or 15D are appropriate utility instruments | **Instruments and techniques for measuring utility** |
| *‘’There are no recommendations in the Danish guidelines concerning health economic evaluations and the use of a specific discount rate, but typical recommendations in other countries have been rates of 3 – 7%. A discount rate of 3% may seem reasonable at the present time, when the discount rate is generally low. It is always recommended that the discount rate should be varied in the sensitivity analysis to investigate the significance of this on the result‘’* | There is no specific discount rate, although a rate at 3% could be considered | **Discounting is appropriate at 3%** |
| *‘’In some cases, modelling will need to be used in the economic analysis – whether completely or only partially. Regardless of whether modelling is necessary, or the economic analysis can be based directly on the clinical study, it may be a good idea, purely in order to gain a comprehensive view, to draw up a decision tree for the possible patient streams as referred to above’’* | Although modelling is recommended, not required | **Modeling is suitable, but not compulsory process** |
| *‘’A sensitivity analysis should be carried out to evaluate the robustness of the conclusions to changes of assumptions, valuation, costs, outcome and discounting. Sensitivity analyses should always follow an economic analysis. A systematic quantification of the uncertainty consists in conducting sensitivity analyses and/or statistical analyses’’* | Using sensitivity analysis is recommended | **Dealing with uncertainty** |
| *‘’The evaluation should contain a summary, a conclusion and a discussion of the results, including limits for extrapolating the results to the future target population’’* | Extrapolation of data is acceptable |  |
| *‘’Here, the incremental cost-effectiveness ratio (ICER) is calculated, which expresses the cost of one extra unit of effect produced with the new technology, e.g. the price of achieving one extra year of life’’* | ICER is calculated | **Reporting results via ICER** |
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Norway [19]

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| **Meaning units** | **Codes** | **Categories** |
| *‘’Describe the intervention in accordance with the template for submission of documentation…. Describe the place the intervention is supposed to fill in the treatment algorithm for the defined population’’* | Description of impact of the intervention to the target population and age groups | **Initiating health economic evaluation** |
| *‘’If the company believes there are sub-groups of patients for whom the intervention may have a different efficacy and safety than for the whole population the STA is considering, reasons must be given….’’* | Sub-groups analysis might be considered | **Subgroups analysis for consideration** |
| *‘’This will often be current established practice (for example, according to national guidelines) or the treatment which is most commonly used (number of patients)’’* | Current established practice or most used treatment as most appropriate comparator | **Ideal comparator is current practice** |
| *‘’These are costs and benefits which either occur as a result of, or can be expected to change as a result of, the pharmaceutical being evaluated. In practice the guidance implies a form of extended health-service perspective’’* | Recommendation on costs and benefits of health system perspective | **Healthcare system perspective** |
| *‘’The documentation of relative efficacy and safety will be based on systematic literature searches’’*  *‘’Efficacy and safety data from randomised controlled trials is preferred over data from studies of other designs’’*  *‘’Documentation of efficacy and safety data can be based on meta-analyses or network meta-analyses if there is relevant data which uses comparable endpoints’’*  *‘’RWD can be used to support evidence of, for example, epidemiology, treatment duration in clinical practice, resource use, survival, or adherence to treatment in the Norwegian clinical practice’’*  *‘’In health economic analyses a form of parametrisation is often used for extrapolation of the clinical time to event data beyond the actual study period’’* | Using systematic literature reviews  Preference on randomized controlled trials (RCTs)  Meta-analysis or network meta-analysis usefulness  Using Real World data for supporting evidence  Extrapolation is acceptable and performed via parameterization | **Sources for efficacy and safety via RCTs’** |
| *‘’Quality of life data can be taken directly from the clinical studies which form the basis for documentation of relative efficacy, or through a literature search’’*  *‘’To make comparison between different STAs possible, EQ-5D must, as a rule, be used. The use of EQ-5D-3L as the standard in STAs is based on recommendations from NICE’’* | Sources of obtaining quality of life data  Mandatory use of EQ-5D with consideration of EQ-5D-3L | **Using EQ-5D as the generic instrument for measuring quality of life** |
| *‘’The health economic model must be designed to show all the most likely scenarios. Models should therefore, as far as possible, be validated. Internal and external validity should be described’’*  *A documented causal relationship between the intermediate endpoints and the hard endpoints should be made available’’* | Modeling process is mandatory step  Endpoints should be reported | **Modeling as a compulsory process** |
| *‘’The recommended analysis method for health economic evaluations is CUA’’*  *‘’Cost-minimisation analysis can be used in cases where, through documentation, it is shown to be likely that the efficacy and safety profiles for the intervention and the comparator approximate’’* | Recommendation of CUA  Cases of performing CMA  Separate analysis for QALY and LYG | **Recommended health economic methods and outcomes** |
| *‘’The following costs must be included (if relevant): - Treatment or prevention costs, paid by the health service or by the patient/relatives - Transport costs linked to travelling to and from treatment, whether paid by the health service, or by the patient/relative - Patient’s and relative’s use of time in connection with treatment’’* | Inclusion of direct and indirect costs | **Types of benefits and costs for inclusion** |
| *‘’The time horizon of the analysis must be long enough for all the important future differences in costs and health effects between alternatives to be captured. If the pharmaceutical has an effect on mortality, then the basis for the time horizon will be lifetime’’* | Long enough time horizon | **A long time horizon is recommended** |
| *‘’We recommend that methodological and structural uncertainty is analysed, as well as uncertainty linked to generalisibility, by using deterministic sensitivity analyses as far as possible’’*  *‘’Deterministic sensitivity analyses alone will not be able to show all the uncertainty, and should be supplemented by probabilistic analyses and discussion’’* | Using deterministic sensitivity analysis  Both deterministic and probabilistic analysis must be performed | **Dealing with uncertainties** |
| *‘’In calculation of present value both benefits and costs are discounted by the applicable rate at any given time (currently 4% per year cf. Priority-setting White Paper’’* | Using discount rate at 4% | **Appropriate discount rate** |
| *‘’In STAs budget impact must be estimated. The analyses must be delivered in a spreadsheet that allows NoMA to do its own calculations with different assumptions. The assumptions for the budget analyses must be documented’* | Estimating budget impact analysis | **Budget impact analysis is mandatory process** |
| *‘’The results of the PSA must be presented as a scatter plot of the simulated ICERs and as cost-effectiveness acceptability curves (CEACs)’’* | ICER and CEAC is appropriate | **Outlining results via ICER** |

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