Guidelines

- Place of the new treatment in the actual treatment algoritm
- What is the appropriate comparator?

1. Hungarian therapeutic guidelines - College of Medical Professionals
   - Do not exist at all
   - Expiry of validity period is over (although the guideline is „actual")
   - Not updated
   - New therapy comes before the guideline update
   - Therapeutic guidelines vs. reimbursement protocols

2. European/international guidelines
   - Up-to-date, actual
   - Not necessarily relevant for Hungarian practice

Critical questions about the main studies 1.

- Is the study population representative for the Hungarian patients?
  - 90% of the study population was Asian origin
  - lung cancer treatment - mean age: 43 years

- Was the indication of the therapy same as the reimbursement indication?
  - study indication 1st line therapy vs. reimbursement indication 2nd line therapy

Critical questions about the main studies 2.

- Are the results relevant for the Hungarian practice?
  - Does the QoL data have the same impact in Hungary (than in the USA)?

- If the results are statistically significant – are they clinically relevant as well?
  - Bevacizumab or aflibercept + chemotherapy in metastatic colorectal cancer, improvement in median OS 1,5 months
  - ASCO: 3-5 months OS improvement is clinically meaningful

Relative effectiveness
Direct comparison – head-to-head study

- Is there a direct comparative study?

- Is the economic evaluation based on its results?

- Exclude: Indirect comparison was carried out because it was more favorable than the existing direct comparison!

Relative effectiveness
Indirect comparison 1.

- Are the selected studies similar/comparable in terms of:
  - comparator,
  - study design (primary and secondary endpoints),
  - measured units of effectiveness,
  - patient populations (demographics, disease stage, geographic location),
  - time horizon,
  - risk of the comparator groups?

Relative effectiveness
Indirect comparison 2.

- Did they select even the less favourable studies?

- Were all aspects of health benefit taken into consideration including
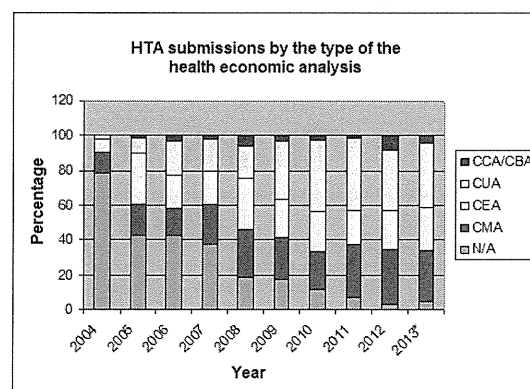 - **efficacy?**
  - **safety ?**

Thank you for your attention!

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Cost-effectiveness and modelling in practice – the experiences of GYEMSZI TEI

Bertalan Németh
25.11.2013

Cost-effectiveness

- What methodology did they use?
- CMA, CEA, CUA, CBA/CCA or Other

HTA submissions by the type of the health economic analysis

Legend: CCA/CBA, CUA, CEA, CMA, N/A

Percentage (y-axis), Year (x-axis: 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013*)

CMA

- Was the methodology of the cost minimisation analysis justified?
- Is there reliable evidence to support the equality of health benefit for the compared technologies?
- Example: Equal amounts of substance does not mean that two drugs will have the same effectiveness
- Safety is also important!

CEA

- Did they choose an adequate end point to measure the health benefits of the product?
- Example: Statistical significance does not always equal clinical relevance
- Can the ICER be used to support the decision of the National Health Insurance Fund?
- Example: „*the incremental costs of a 1 percent increase in the number of patients who reach a certain level on a certain scale which measures the physical abilities*"

CEA

- Was the methodology of the cost-effectiveness analysis justified? Is it true that there were no available data to conduct a cost-utility analysis?
- Example: The company submitted a CEA to GYEMSZI TEI while in England the same company developed a cost-utility analysis for the same product in the same indication.

CUA

- Does the analysis describe the methodology which was used to gather the QoL data?
- Were the sources of the QoL data presented?
- Is it certain that the company used the best available data to support its submission regarding the Hungarian patients?

CUA

- Example: Combining the results of three different quality of life scales

- Example: During one survey patients were asked to describe health states compared to their actual state – not to the perfect health state. Despite this the company used this data as if it was regular QoL data

CBA/CCA and other methdos

- The current health economic guideline does not support the use of CBA methodology. Did the company include an adequate explanation of why this methodology was used?

- In case of other methodology the company has to explain his calculations in great detail

- In some cases there are no analysis or the analysis can't be accepted (e.g. ultra orphan drugs)

Modelling

- Which modellling method was used for the analysis?
- Decision tree, Markov or Simulation Models

Which modelling method was used in the submissions in the year 2012?

Simulation models 3%

Markov models 47%

Decision tree models 50%
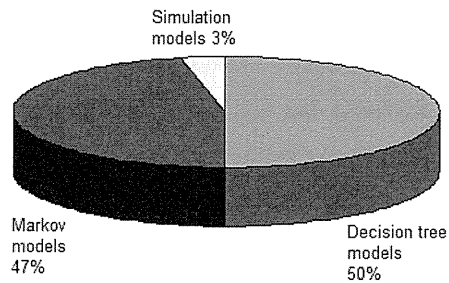
Modelling

- More and more companies choose to include the model in the submission
- Both the company and GYEMSZI TEI can benefit from this (e.g. saving time)
- Alternatives: presentation of the model or a detailed description

Submission percentage of economic models used for CEA

70.37
64.71
29.03
16.92

Submission percentage

Percentage (%)

2004 2005 2006 2007 2008 2009 2010 2011

Years
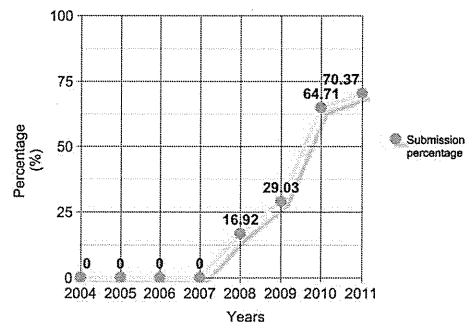
Decision tree models

FIGURE 1. Decision-tree model for rotavirus immunization program in Brazil, 2004

- Was the model presented graphically?
- Not always necessary
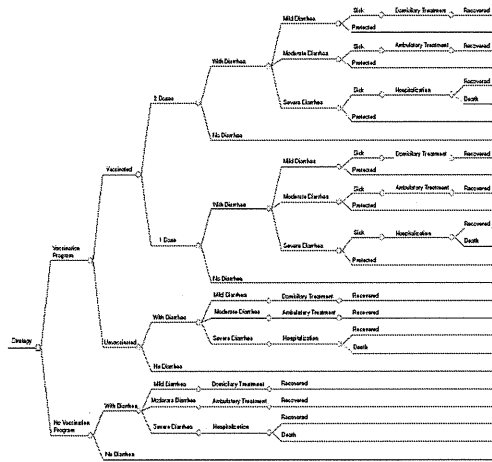
Decision tree models

- Were the relevant demographic and epidemiological data of the initial population presented? (e.g. age, gender, morbidity rates)
- Were the probabilities of each node presented including their references?
- Were the cost and health outcomes data at each endpoint presented transparently?
- Each and every one of these is important!

Markov models

- Was each Markov state clearly determined and presented?
- Were the relevant demographic and epidemiological data of the initial population presented?
- Were the transition probabilities for the model transparently presented including their references?
- Were the costs and the health outcomes data provided for each state of the Markov model?

Markov models

- Was the structure of the model presented graphically, including transition routes between all health states?
- Example: In some submissions there were differences between the graphical and the written description of the model
- Was the length of Markov cycles appropriate for the disease progression and the technology?
- If necessary, was half-cycle correction used?

Simulation models

- Is the application of simulation modelling justifiable?
- Was the influence diagram graphically presented?
- Is the structure of the model transparent and traceable?
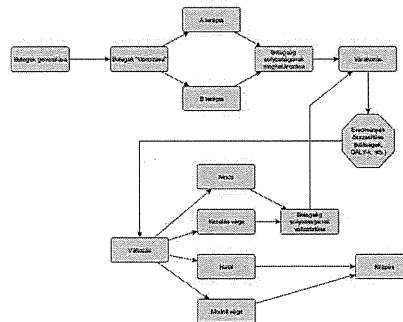
Simulation models

- Were the relevant demographic and epidemiological data of the initial population and their references presented?
- Were the values and the distribution of modelling variables provided including their references?
- Were all the relevant and significant treatment options, outcomes, and adverse events considered in developing the structure of the model?

Simulation models

- Was the number of patients / simulation runs sufficient to produce consistent estimates?

- Example: In one submission only the result of **one** simulation was presented. GYEMSZI TEI ran a few other simulations the results were significantly different from the first one.

Thank you for your attention!

Budget Impact Analysis

Áron Vincziczki
25.11.2013

Budget Impact

- 5th gate to achieve the reimbursement status

- Goal: estimates the financial consequences of the reimbursement

- Method: compares the expenses before and after the decision.

- Does not measure the value of the therapy.

What is the difference between the cost-effectiveness and the budget impact analysis?

Cost-effectiveness analysis	Budget impact analysis
Evaluation of the value of the technology (Worth it?)	Examination of the cost of the technology (How much does it cost?)
Calculating the cost-effectiveness in only one indicator (ICER: ?cost/?QALY, ?cost/?PFS, ?cost/?LYG)	The budget impact of the technology in a single indicator can not be determined (annual variation)
Comparing the new technology with a particular treatment	The new technology has to compare with all treatment options, not only with a specific treatment
Payer or social point of view (the former is accepted)	Point of view: payer/investigator

The main points of budget impact analysis

Characteristics of the target population
- patient number uncertainty
- changes in the effectiveness of treatment
- off-label use

Estimates of market share
- The relationship between the new and the reimbursed technology: complementary, alternative, add-on, etc?
- Analysis of market penetration

Estimated cost of the new technology
- WHO DDD ↔ SmPC
- Off-label usage (e.g.: higher dosage)
- DRG cost (hospital market) ↔ real cost (retail market)
- Out-of-pocket payments (patients' contribution)

Determining the number of patients – sources 1.

- Epidemiology data
  - Prevalence & incidence data
- National Cancer Registry www.honcology.hu
- Statistics
  - Hungarian Central Statistical Office, Eurostat tables
- Medical professional publications
  - National and international publications (expert opinion)

Difficulties of determining the number of patients

We can only estimate the whole target population on the basis of the epidemiology data
  - How many individuals with rheumatoid arthritis?

The therapeutic indications or the requested population are generally narrower
  - How many patients have lung cancer in Hungary?
  - *How many patients receive first-line target therapy?*
  - How many patients suffer from epilepsy in Hungary?
  - *How many patients with epilepsy treated by combination therapy?*

Determining the number of patients – sources 2.

- Turnover data of reimbursed drugs (www.oep.hu)
- Other data from National Health Insurance Fund
  1. Prescription data
     - Age of a patient
     - Written diagnosis by doctor (ICD-International Classification of Diseases)
     - Drug numerical control
     - Subsidy categories: normative or indication-based reimbursing
  2. Outpatient data
  3. Inpatient data
     - DRGs
     - ICD
- Combining data and sources

Different target population in the assessment

Who calculates the number of patients?

- Manufacturer
- Medical Professional's College — often different opinions
- National Health Insurance Fund
- HTA Office

In some cases the manufacturer determined different number of patients in one dossier: in the Introduction of the disease versus in the Budget Impact Analysis.

Market share

Checklist: Is the expected turnover of the drug acceptable?

The confinement of the number of patients must be technically justified.

Examples:

- The manufacturer would like to treate 350 patients each year, but the Medical Professional's College determine 450 patients, and analysis of epidemiological data also support the higher number. In this case we have to calculate with the higher number in the budget impact analysis.

- The manufacturer presented that 4% of the patients treated with the new drug in the first year, 7% in the second one, and 9% in the third year. On the other hand, this medicine is a niche drug. Why is the level of the market share so low?

Checklist: Does the calculation of the length of treatment correspond to the expected therapeutic practice in the target indication and patient groups?

In the current practice how much is the average duration of treatment?

- Example: How can we estimate the budget impact in case of continuous therapy? Was intolerance/non-compliance taken into consideration?

# How does the payer controll the budget impact?

New acts in the controlling of the BIA:
* Simple payback
* Risk-sharings:
    - Financial risk-sharing (volume cap),
    - Therapeutic risk-sharing (criteria for effectiveness/adherence)
* Long-term agreements (mainly disadvantage of transparency):
    - portfolio deals

These agreements are frequently unknown, therefore the economic evaluation does not include these modified data.
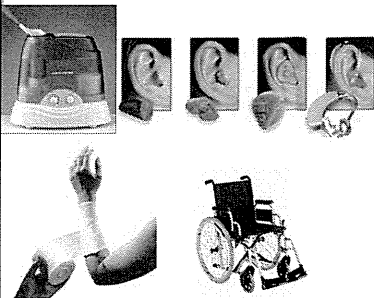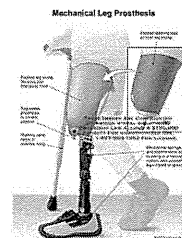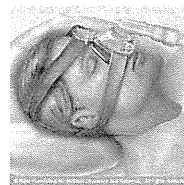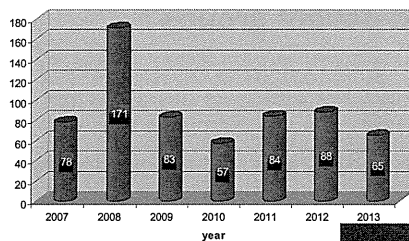
Interesting question: How can we assess the cost-effectiveness of the new therapy if the price of the comparator is unknown (due to confidental agreements)?
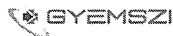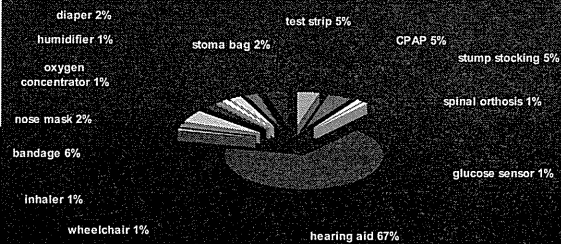
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Medical devices intended for patient use

130

Medical devices

- Multiple indications or potential applications
- 2 steps to effective evaluations: cost-effectiveness analysis and then economic evaluation of investment
- Access problems
- Ethical aspects
- Focusing the time horizon in the evaluations
- More economical effects, e.g.: training costs, amortisation costs, institutional costs, overhead expenses

MCDA: Opportunity or burden?

MCDA: Multiple criteria decision analysis

- Scoring system
- Used in the reimbursement decisions of medical devices and new medical procedures

The professional criteria method consists of 100 points, and 6 main domains:
   - Health care priority
   - Severity of disease;
   - Equity;
   - Cost-effectiveness and quality of life;
   - Budget impact;
   - Level and type of international and hungarian professional evidence