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| 2nd year: | **Module 7** |
| Module Title: | **Health Economics** |
| Number of Credits: | **6 EC** |

## Aim of the module
The course aims at introducing economic evaluation of new and existing medical technologies to scientifically oriented health care professionals.

## Overall synopsis
The demand for research into the efficiency of new or existing health care interventions is increasing. This holds for treatment alternatives, diagnostic strategies, and even organizational changes. Medical Technology Assessment (MTA) is the general term for such research; at least it includes the measurement and valuation of health status changes and the use of health care resources and, subsequently, focuses on synthesizing the data on effectiveness and costs of the intervention to provide useful information to health care policy makers. The aim of MTA is to provide decision-makers with more accurate, evidence-based tools for prioritizing healthcare treatments in terms of their utility, efficiency and cost-effectiveness. Medical technology assessment thus supports decisions whether or not to finance new interventions, which patient populations should and should not receive the studied interventions, and the like.

## Learning objectives as a whole
The student can explain concepts and steps in MTA to support health care decisions in our society. The student is able to choose the appropriate type of economic evaluation and can identify, gather and measure relevant health care costs. The student explains main techniques of valuing health benefits and justifies the choice for such a technique. The student understands and describes what a health economic decision analytic model is and describes the main purposes for which modelling are used in international MTA. The student knows how to proceed with incremental cost-effectiveness analysis, different types of uncertainty analysis and subgroup analysis. The student is able to critically appraise published scientific health economic papers. The student prepares and performs a poster presentation.

## Teaching and learning strategies
Lectures, working group exercises dealing with theory (critical appraisal), practice (building a decision tree model) and putting theory into practice (analysis and reporting outcomes of a decision model).

## Assessment strategy
Knowledge of MTA will be tested via an exam with open-ended and some yes/no questions.

## Notes:
Final mark for this module will only be granted if the student has handed in the poster assignment. This poster assignment will be scanned for plagiarism using Ephorus on Blackboard.

**Session 1:**

**Lecture – Medical Technology Assessment (MTA) & Economic Evaluation**
After this lecture the student knows about the role and phasing of MTA to support the health care decisions in our society. The student can differentiate between various types of economic evaluation . In the working group exercise students learn to use a decision tree for MTA purposes.

**Session 2:**

**Lecture - Measuring and valuing the benefits of health care for economic evaluation**
In this lecture key questions for valuing the benefits of health care are addressed: what should be the type of measure, how should health be described and by whom, how should health be valued and how to deal with individual differences? In working group exercises students practice various valuation methods such as Time Trade Off, Standard Gamble, Best-Worst Scaling and VAS. Health states will also be valued using generic preference-based measures (EQ-5D, SF-6D and HUI3).

**Session 3:**

**Lecture – Costs & Introduction Cost-Effectiveness**
This lecture focuses on identifying relevant health care costs and gives an introduction to the cost-effectiveness plane. The student can explain how to identify, measure and value various costs. The students understands the principle of opportunity costs. In the working groups session students perform calculations for MTA using their decision tree model.

**Session 4:**

**Lecture – Cost-Effectiveness & Decision Modelling in MTA**
The student knows how to proceed with incremental cost-effectiveness analysis, different types of uncertainty analysis and subgroup analysis. The student addresses advantages and disadvantages of decision models used in MTA and is able to choose an adequate model. In the working group session students finish final calculation on their decision tree model and report outcomes using a poster format. After this session students hand in their poster assignment.

**Session 5:**

**Lecture – Economic Evaluation in Practice**
In the final lecture a guest presenter will report an MTA study. In the working group students critically appraise both the presented posters and a published health economic paper.