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The Heidelberg Health Economic Summer Schools 2006 – 2023

History, International Evaluation & Outlook

INNOVAL HC
Institute for Innovation & Valuation in Health Care

Ramon Schäfer
Michael Schlander

with Alice Dos Reis Heller

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THE HEIDELBERG HEALTH ECONOMICS SUMMER [& WINTER] SCHOOLS 2006-2023

HISTORY, INTERNATIONAL EVALUATION (2023) & OUTLOOK

[FEBRUARY 06 - 10, 2023]

Ramon Schäfer and Michael Schlander
in cooperation with Alice Dos Reis Dias Heller

Wiesbaden and Heidelberg, June / September 2023
INNOVAL[HC]

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Introduction

The primary purpose of the present Technical Report is to offer information on the formal evaluation of the most recent *Health Economics [Winter] School*, which took place in Heidelberg from February 6 to February 10, 2023. The reason for offering a *Winter School* in 2023 was the interruption of the *Summer School* series after 2019 due to the Covid-19 pandemic, and the lead time required to set up an ambitious program involving many high-level faculty members from several continents. It is intended to return again to the established scheme of *Summer Schools* as of 2024 (see *Outlook*, below, pp. 30ff.).

Context

The relevance of Health Technology Assessments (HTAs) for decisions on the coverage of health technologies by collectively financed national health schemes has increased continuously over the last decades. Market access, pricing and reimbursement of health technologies, and therefore successful translation of research into clinical practice, hinges on their positive evaluation by official HTA agencies.

Internationally, HTAs predominantly rest on two pillars: an evaluation of clinical effectiveness drawing on well-established principles of evidence-based medicine (EBM), and an attempt to determine the "value for money" offered by interventions using (some sort of) economic assessment, most often cost effectiveness analysis (CEA).

There is broad agreement that the assessment and appraisal of "value for money" should reflect all relevant consequences – short term and long term, benefits as well as adverse outcomes and costs – associated with the use of a new technology. However, for a number of reasons, at the time of market entry of a new product or service, there will be gaps in the evidence base required for a full HTA, adding to the dimensions of risk and uncertainty in the evaluation process.

Against this background, the *Heidelberg Health Economics Summer School* was established by the *Institute for Innovation & Valuation in Health Care* (InnoVal[HC]; see Appendix 5) in 2006 to contribute to closing the gaps between the theory and the practice of HTA and CEAs, including latest developments in both areas, addressing the strengths, weaknesses, limitations, and – on this basis – the appropriate use of economic evaluation methods, ranging from cost benefit analyses (CBAs) and cost utility / effectiveness analyses (CUAs / CEAs) to more recently proposed methods like cost value and social cost value analysis (CVA / SCVA). Plenary presentations, group work, exercises, case studies and small-group as well as round-table discussions are used to explore and to illustrate both the normative foundations, ethical implications, and real-world consequences of the application of these techniques, revealing their merits as well as their loopholes.

Topical country-specific HTA case studies are used to discuss policy implications, addressing pertinent examples such as the cases of orphan medicinal products (OMPs), cancer and end-of-life treatments, the specific challenges posed by mental health disorders and by interventions for children and adolescents, as well as more recent developments such as the increasing importance of companion diagnostics and "precision medicine", and the rising evidence standards for medical devices.

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Background

The need to initiate a *Health Economics Summer School* was recognized by the leadership team of InnoVal[HC] in 2005 as a result of observations about the way how conventional cost effectiveness analyses were taught. All-too-often, they were presented as "*the* international standard", and open debate about their merits as well as their limitations was suppressed. Unsurprisingly given this background, their routine use in applied health economics has been endorsed despite the implications of the reductionist nature of the approach. Some of its fundamental assumptions and broadly accepted conventions are problematic not only from the perspective of economic theory but have been shown to be "descriptively flawed" (Dolan et al., 2005), if not "empirically falsified" (Schlander, 2005).

This is more than a theoretical concern. Uncritical acceptance of its promises and premises may contribute to problematic CEA and HTA outcomes, i.e., technology appraisals that contradict the reasonable and informed expectations of citizens. In certain cases, the consequences may even be considered as "positively unethical" (for example, Holm, 2007; Schlander et al., 2014).

Foundations: Health Economic Theory

While descriptive economic analyses are not entirely exempt from the issue, deliberation about value (and values), as well as appropriate valuation methods, is particularly relevant in the context of prescriptive (i.e., comparative) economic evaluations. Hence, the use of economic evaluation as a major component of HTA-informed decision-making on health care service provision needs to embedded in an understanding of its links to theories

of justice (for example, by John Rawls, Norman Daniels, and Amartya Sen, to name a few only), economic welfare theory (cf. Jules Dupuit, Kenneth Arrow, and Peter Zweifel, to mention a few prominent scholars), as well as principles of operations research and decision analysis (exemplified by scientists like Milton Weinstein, George Torrance, Howard Raiffa, and others), the idea of extrawelfarism underpinning the conventional logic of cost effectiveness (for example, Alan Williams, Tony Culyer, Alan Garber, and many more).

It is not only important to appreciate the contributions of these concepts to the practice of cost effectiveness evaluation in the context of HTAs. The underlying ideas need to be understood and assessed against the empirical evidence on relevant social norms and preferences (see work, for example, by Erik Nord, Peter Ubel, Jeff Richardson, and others) as well as relevant ethical theories, both on substantive principles of fair resource allocation decisions (cf. John Broome, John Harris, John Harsanyi, and others) and on principles of procedural fairness – in the United States also referred to as "due process" (cf., in addition to some of the names already mentioned above, the contributions of Gerald Leventhal, Ronald Dworkin, or Jürgen Habermas).

Whether knowingly or unknowingly, all of the above comes into play in the wide-spread adoption of institutional HTAs and their specific design. Anyone wishing to contribute to the further development of HTA principles, i.e., to be a constructive part of the shaping of the future regulation of market access (including pricing and reimbursement policies) should be familiar with these concepts. Thus, all *Heidelberg Health Economics Summer [/Winter] Schools* to date addressed, even though in varying depth, the theoretical foundations of applied health economics.

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Applied Health Economics

Needless to say, the application of health economic concepts in the context of HTAs has consistently been a major theme of the *Heidelberg Health Economic Summer [/Winter] Schools* since their inauguration in 2006.

This implied plenary teaching sessions, group work, exercises, and case studies covering clinical development strategies and study designs (including novel approaches such as basket, umbrella, and platform trials), evidence-based medicine, the use and limitations of real-world data, health-related quality of life (HRQoL) and its measurement, multi-attribute and expected utility theory, the construction of the quality-adjusted life year (QALY), the role of broader valuation and resource allocation principles, principles of decision analysis and good modeling practice (with practical exercises applying decision tree analysis and Markov models supplemented by lectures on discrete event simulation techniques), the concepts of risk and uncertainty and sensitivity analyses, incremental cost effectiveness ratios (ICERs) and cost effectiveness acceptability curves (CEACs), the role of benchmarks for cost effectiveness, costing in theory and practice, budget impact analyses, as well as international guidelines for cost effectiveness evaluation.

These subject areas were complemented by an overview of international health care systems and their organization, with a focus on issues surrounding access to health services, service provision, and expenditure trends over time.

Summer [/Winter] School Design

Each of the programs to date was comprised of two modules, which built on each other but could be booked separately.

Usually, an introductory module dealt with the practice of economic evaluation and its relevance, addressing subjects listed above under the heading of "*Applied Health Economics*." This was followed by a second module that reviewed the actual practice in a broader theoretical context and illuminated strengths and limitations of the conventional approach (referred to here as "the logic of cost effectiveness"). Recent developments, both in the academic sector as well as in the use of health economics in HTAs in the real world, were discussed.

Both modules were highly interactive, based on presentations from an experienced international faculty, allowing debate between participants and invited experts, as well offering networking opportunities between attendants and faculty.

The *Schools* varied in length from four and a half days to two weeks. The number of participants was limited to a maximum of 30, whereas presenting faculty members invariably exceeded 10 experts from various countries and disciplinary backgrounds, including leading health economists, policy & decision makers, experts in medical ethics, philosophers, and market access specialists from industry.

Organization

In the context of the *Heidelberg Health Economics Summer [/Winter] Schools*, there is a need to differentiate between (a) scientific and (b) administrative responsibilities. While the former (a) has consistently rested with its founding institution, the *Institute for Innovation & Valuation in Health Care*, and its

leadership team, the latter (b) was usually delegated to the management unit of InnoVal[HC], with the notable exceptions of the *Summer School* in 2019 and the most recent *Winter School* of 2023, which were organized by the *Division of Health Economics* at the *German Cancer Research Center* (see below).

Scientific Program

Scientific responsibility for the *Heidelberg Health Economics Summer [Winter] Schools* rested with its founder, Michael Schlander, who was supported by the faculty members of the respective programs, all of whom were also presenting. The contributions of faculty members were supplemented by lectures delivered by experienced scientists with an academic background in decision science and health economics. In 2019 and/or 2023, these included Dr. Diego Hernandez-Carreno, Dr. Karla Hernandez-Villafuerte, Anett Molnar, Trust Muchadeyi, Ramon Schaefer, and Jasper Ubels, all from the local Heidelberg team, who participated in teaching during Module A. At the same time, attendents from the University of Heidelberg and the *German Cancer Research Center* were offered a special discount rate, in addition to the discount available to members of public and not-for-profit institutions (cf. *Management*, below).

Since 2007, the scientific program of the *Summer [& Winter] Schools* took place under the auspices of the University of Heidelberg, Mannheim Medical Faculty, and the *Alfred Weber Institute (AWI) for Economics*, Faculty of Economics and Social Sciences.

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Management

From 2006 until 2016, organizational responsibility for the Summer Schools rested with the management unit of the *Institute for Innovation & Valuation in Health Care (InnoVal[HC])*. After its founder joined the *German Cancer Research Center* (DKFZ) to establish and lead its *Division of Health Economics* (effective as of January 2017), also the organization of the *Schools* was temporarily transferred to this institution. In exchange, participants from the DKFZ were entitled to a special discount rate, and members of the *Division* were invited to attend for free. Like previous *Summer Schools*, the *Schools* of 2019 and 2023 were not profitable, but reached financial break-even.

Venue

From 2007 onward until 2023, the *Heidelberg Health Economics Summer [/Winter] Schools* took place in Heidelberg at Studio Villa Bosch, Schloss-Wolfsbrunnen-Weg.

Target Audience & Objectives

The target audience comprised scholars with an interest in health policy, e.g., academics, payers, industry, policy makers, and physicians. As indicated earlier, attendants from public and government institutions as well as participants from the local universities and research centers in Heidelberg were offered

attendance at discount rates. Apart from faculty and local staff, attendance was limited to 30 participants, in order to facilitate an environment supporting personal exchange and networking among participants and faculty.

For the *Heidelberg Health Economics Winter School 2023*, the following objectives were defined:

Objectives, Module A

The first two days provided an introduction to the discipline of health economics. This part of the Winter School provided participants with an overview of the economics of health and health care. It should enable them to apply established analytical economic skills to problems of resource allocation in the health system.

After having attended the first two days, participants should

- understand the key objectives and methods of Health Technology Assessments (HTAs);
- be able to explain the fundamental principles and methods of economic analysis in health care;
- be familiar with the major concepts related to the identification and measurement of both health outcomes and costs;
- understand the use of willingness-to-pay, utility and capabilities in the valuation of health technologies;
- recognize the health economics techniques used to inform resource allocation and priority setting in the health system;
- be able to appreciate the role of economic evaluation in health care.

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Objectives, Module B

The program of Module B was based on a mix of "state of the art" lectures and interactive discussion sessions with the faculty.

Days 3 – 5 were dedicated to highlight current issues in the use of health economics to inform market access and reimbursement decisions, with a primary focus on

- the strengths and limitations of conventional CEAs, and potential alternatives such as extended cost per QALY calculations, multi-criteria decision analysis and social cost value analysis;
- the relevance and assessment of the perspective of patients, including the broader socioeconomic impact of diseases and the provision of medical care;
- sources of value and the importance of social norms and preferences, including their impact on the valuation of end-of-life treatments and orphan medicinal products;
- challenges posed by "precision medicine", including innovative clinical trial designs, biomarkers and companion diagnostics, advanced therapy medicinal products, and the "value of a cure";
- recent trends in medical research and development (R&D), including its economic dimension, implications for research prioritization, early value assessments and strategic R&D decision-making.

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Program Winter School 2023

Module A

A.1	Monday	Health Technology Assessment (HTA) & Economic Evaluation: Introduction to HTA and cost effectiveness analysis
A.2	Tuesday	Applied health economics: the logic of cost effectiveness – a closer look

Module B

B.3	Wednesday	Social objectives of health care, allocation and distribution in economics; Social Cost Value Analysis
B.4	Thursday	New challenges in HTA and economic evaluation: "precision medicine" and novel clinical trials designs
B.5	Friday	The patient perspective and Socioeconomic Impact Analysis

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Heidelberg Health Economics Winter School 2023

Studio Villa Bosch, February 06 – 10, 2023

International Faculty

- Prof. *Amanda Adler* (London & Oxford)
- Dr. *Richard Baird* (Cambridge)
- Dr. *Cinzia Brunelli* (Milan)
- Dr. *Andrew Bruce* (Sydney, NSW)
- Prof. *Heiner Bucher* (Basel)
- Prof. *Soren Holm* (Manchester & Oslo)
- Dr. *Mohit Jain* (London)
- Dr. *Gergő Merész* (Budapest)
- Prof. *Jorge Mestre-Ferrandiz* (Madrid)
- Prof. *Dan Ollendorf* (Boston, MA)
- Prof. *Ulf Persson* (Lund)
- Prof. *Maarten Postma* (Groningen)
- Prof. *Gérard de Pouvourville* (Paris)
- Prof. *Jeff Richardson* (Melbourne, Vic)
- Prof. *Michael Schlander* (Heidelberg)
- Prof. *Nils Wilking* (Stockholm)

Scientific Program

- **Module A**
  - *Monday:* Health Technology Assessment & Economic Evaluation
  - *Tuesday:* Applied Health Economics: The Logic of Cost Effectiveness
- **Module B**
  - *Wednesday:* Objectives of Health Care & Social Cost Value Analysis
  - *Thursday:* Precision Medicine, Innovative R&D Strategies, & Evaluation
  - *Friday:* The Perspective of Patients & Socioeconomic Impact Analysis

Faculty

The international faculty of the Summer [& Winter] Schools since 2006 was comprised of scholars representing international thought leadership in their respective fields. Names of faculty members who participated in the most recent Winter School in February 2023 are underlined; names of faculty members who participated in two or more Schools are further marked with an asterix*.

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- Professor **Silvio Garattini***
  (Mario Negri Institute, Milan / Italy)
- Dr. **Ansgar Hebborn**
  (Roche, Basle / Switzerland)
- Professor **Søren Holm***
  (University of Manchester / England;
  University of Oslo / Norway)
- Professor **Maarten Ijzerman**
  (Erasmus University, Rotterdam / The Netherlands)
- Dr. **Laurent-Didier Jacobs**
  (Sanofi-Aventis, Montréal, QC / Canada)
- Dr. **Mohit Jain*** (/Dr. **Thomas Butt**)
  (BioMarin, San Rafael, CA / USA)
- **Wolfgang Kaesbach***
  (German Federal Association of Company Sickfunds,
  BKK, Essen / Germany)
- Professor **Panos Kanavos***
  (London School of Economics, LSE, London / England)
- Professor **Paul Kind**
  (University of Leeds / England)
- Professor **Norbert Klusen**
  (Techniker Krankenkasse, Hamburg / Germany)
- Professor **Peter Kolominsky-Rabas***
  (University of Erlangen-Nuremberg / Germany)
- **Christine Lavery**
  (Society for Mucopolysaccharide and Related Diseases,
  Amersham, Buckinghanshire / England)
- Professor **Andreas Laupacis**
  (University of Toronto, Ontario / Canada)
- **Felicity McNeill**, P.S.M.
  (Government Department of Health, Pharmaceutical
  Benefits Division, PBS, Canberra, ACT / Australia)

- Professor **Oliver Schwarz**
  (InnoVal[HC], Wiesbaden and Aschaffenburg;
  University of Heilbronn / Germany)
- Dr. **Oriol de Solà-Morales***
  (IISPV, Barcelona / Spain)
- Dr. **Harry Telser***
  (Polynomics, Olten / Switzerland)
- **Koen Torfs**
  (Janssen Pharmaceutica, N.V., Beerse / Belgium)
- **Keith Tolley***
  (Tolley Health Economics, Buxton / England)
- Professor **Mondher Toumi***
  (University of Aix-Marseilles
  & CreativeCeutical, Paris / France)
- Professor **Adrian Towse**
  (Office of Health Economics, OHE, London / England)
- Professor **Nils Wilking**
  (Karolinska Institute, Stockholm / Sweden)
- Professor **Rosalie Viney**
  (University of Technology, Sydney, NSW / Australia).

Evaluation of Winter School 2023

An online survey was circulated among all participants during the first half of March 2023.

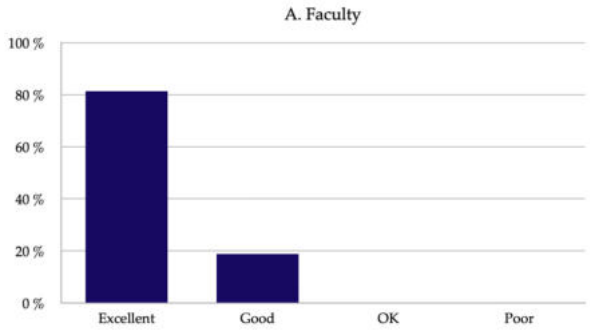
About two-thirds of the survey questionnaires were returned by mid of April 2023. Half of the respondents were from local institutions (DKFZ, NCT Heidelberg, University of Heidelberg, Heidelberg University Hospital), 37.5% from the academic

sector (organizations located outside of Heidelberg) including public and non-governmental institutions, and 12.5% from the private sector (consultancy, industry).

The ***first section of the survey*** instructed participants to rate the quality of particular elements of the *Winter School* (faculty, program, documentation, venue, organization, time schedule and value for money).

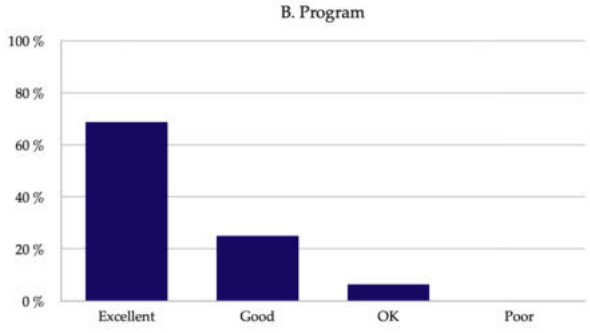
1.a Quality of Faculty

[Response options from "excellent" to "poor"].



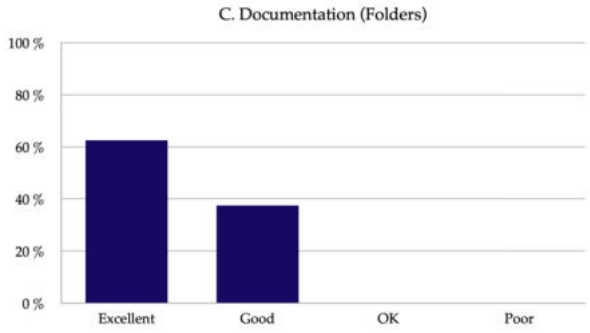
1.b Quality of Program

[Response options from "excellent" to "poor"].



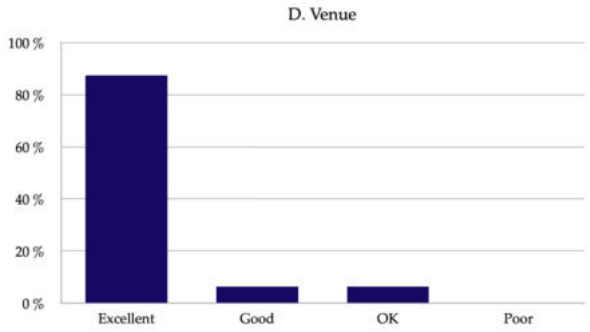
1.c Quality of Documentation

[Response options from "excellent" to "poor"].



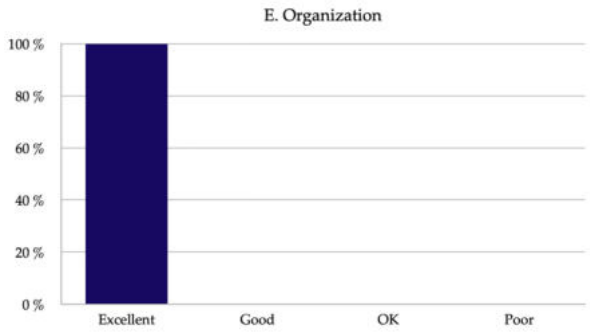
1.d Quality of Venue

[Response options from "excellent" to "poor"].



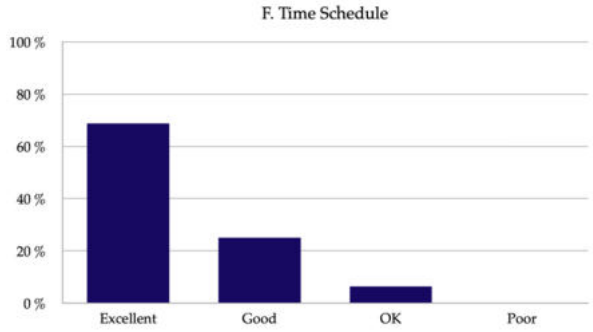
1.e Quality of Organization

[Response options from "excellent" to "poor"].



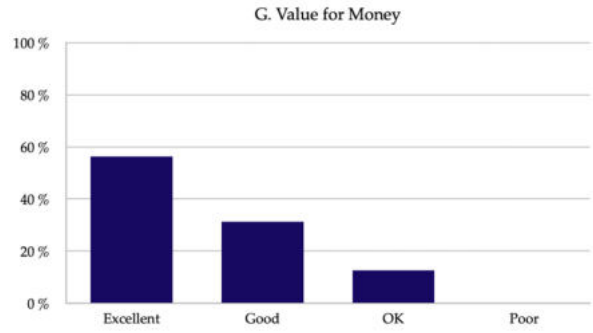
1.f Rating of Time Schedule

[Response options from "excellent" to "poor"].



1.g Rating of Value for Money

[Response options from "excellent" to "poor"].



Evaluation results compiled by Alice Dos Reis Dias Heller and Ramon Schäfer.

In particular, organization, structure of the program, and the scientific background of the international faculty were rated very positively by the audience. In addition to closed questions (for documentation of the *Questionnaire*, see Appendix 2), the participants were invited to communicate their perceptions,

which resulted in comments including the following (for a complete documentation of comments received, see Appendix 3).

- *"Excellent staff and well-organized teaching schedule."*
- *"Great organization of the entire event! […] The first two days were a good introduction and gave a good overview."*
- *"[…] I found it very well organized and informative. Great speakers providing a range of different perspectives on a good range, but cohesive, set of topics. Honestly, I would not know where to improve!"*
- *"I learned so much from this intensive winter school, especially from the health perspective."*

For future Summer / Winter Schools, participants also suggested to allow for more time for applying theoretical concepts in practice.

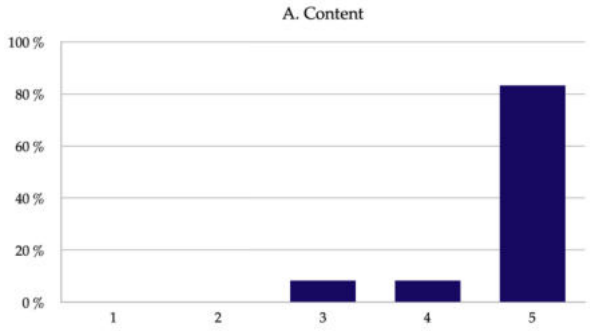
In the ***second section of the survey***, participants were asked to rate each day of Module A (i.e., Day 1 and Day 2) with regard to content, relevance, and presentations using a 5-point Likert-type scale, where response options ranged from "poor" (1) to "excellent" (5).

Overall, Module A was evaluated very positively. The relevance of the topics and their presentation were highlighted by the participants.

For future Summer / Winter School programs, participants suggested that health economic evaluation methods might be discussed in even more detail.

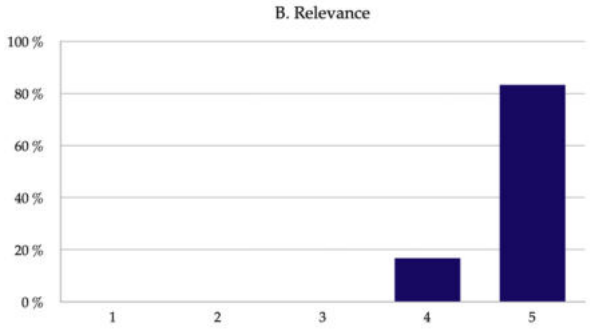
2.a *Day 1 / Module A – Rating of Content*

[Response options from 1, "poor", to 5, "excellent"].



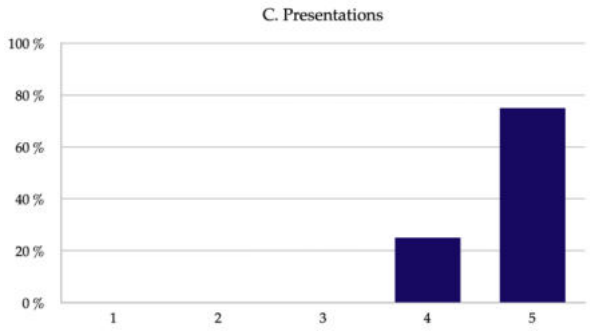
2.b *Day 1 / Module A – Rating of Relevance*

[Response options from 1, "poor", to 5, "excellent"].



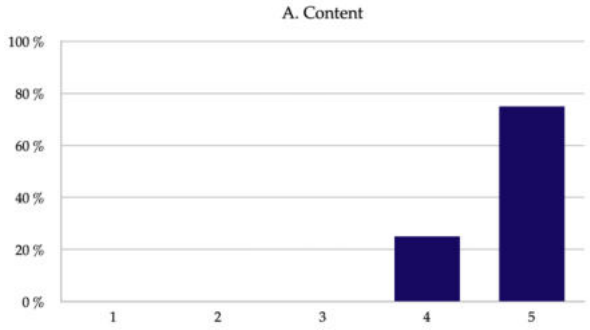
2.c *Day 1 / Module A – Rating of Presentations*

[Response options from 1, "poor", to 5, "excellent"].



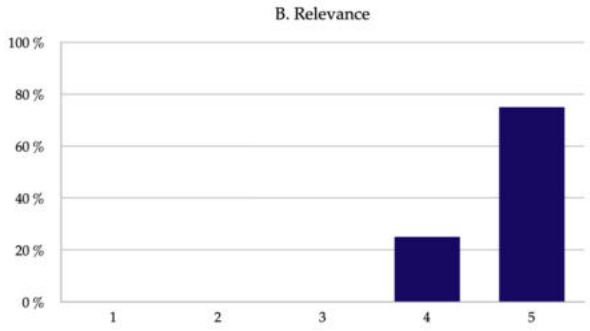
3.a Day 2 / Module A – Rating of Content

[Response options from 1, "poor", to 5, "excellent"].



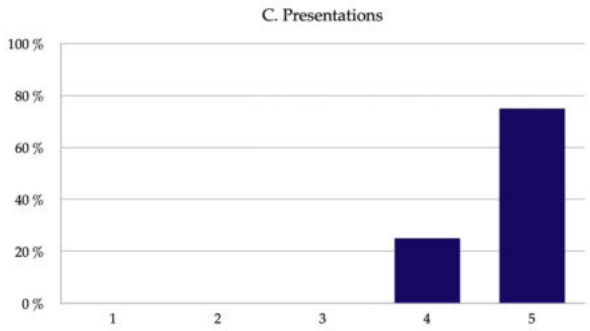
3.b Day 2 / Module A – Rating of Relevance

[Response options from 1, "poor", to 5, "excellent"].



3.c Day 2 / Module A – Rating of Presentations

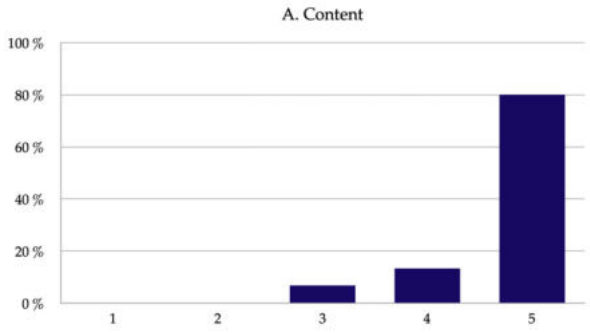
[Response options from 1, "poor", to 5, "excellent"].



In the ***third section of the survey***, participants were asked to rate each day of Module B (i.e., Days 3, 4 and 5) with regard to content, relevance, and presentations using a 5-point Likert-type scale, where response options ranged from "poor" (1) to "excellent" (5), similar to those used before for the evaluation of Module A.

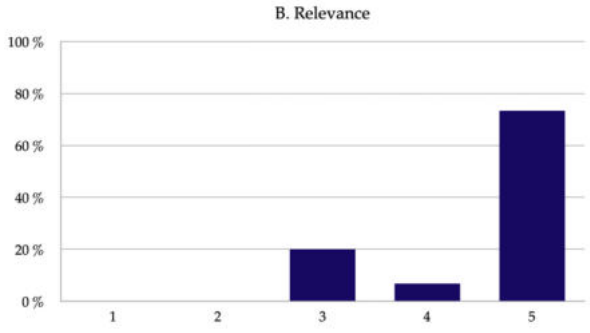
4.a Day 3 / Module B – Rating of Content

[Response options from 1, "poor", to 5, "excellent"].



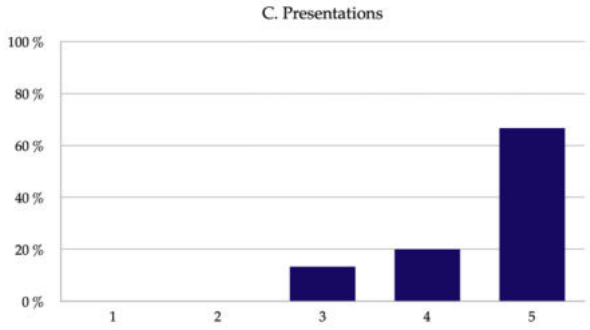
4.b Day 3 / Module B – Rating of Relevance

[Response options from 1, "poor", to 5, "excellent"].



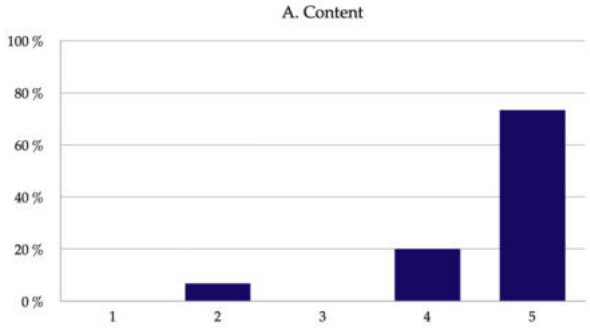
4.c Day 3 / Module B – Rating of Presentations

[Response options from 1, "poor", to 5, "excellent"].



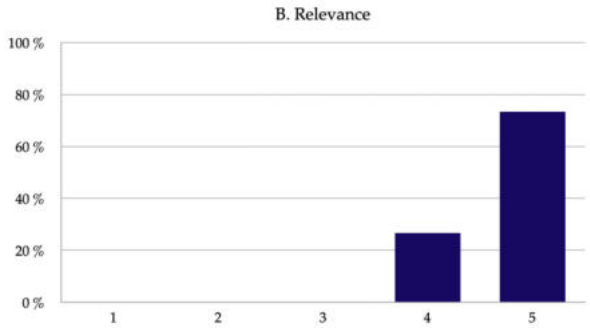
5.a Day 4 / Module B – Rating of Content

[Response options from 1, "poor", to 5, "excellent"].



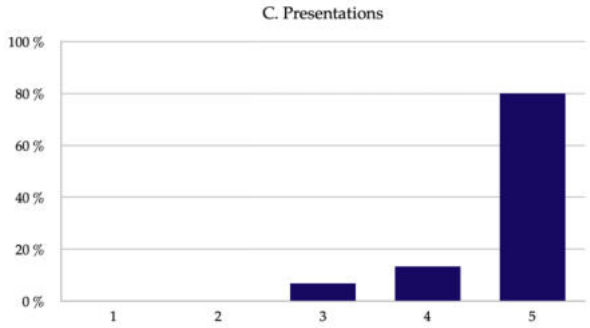
5.b Day 4 / Module B – Rating of Relevance

[Response options from 1, "poor", to 5, "excellent"].



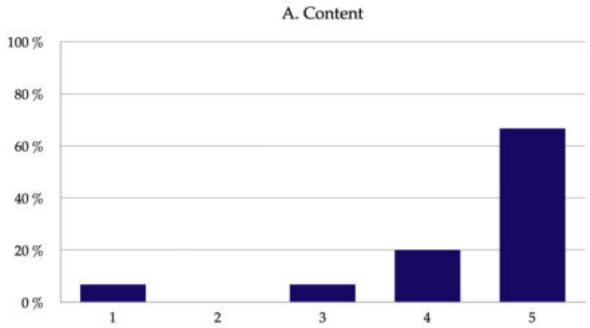
5.c *Day 4 / Module B – Rating of Presentations*

[Response options from 1, "poor", to 5, "excellent"].



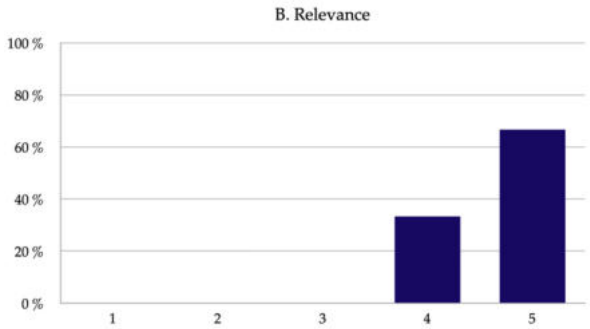
6.a *Day 5 / Module B – Rating of Content*

[Response options from 1, "poor", to 5, "excellent"].



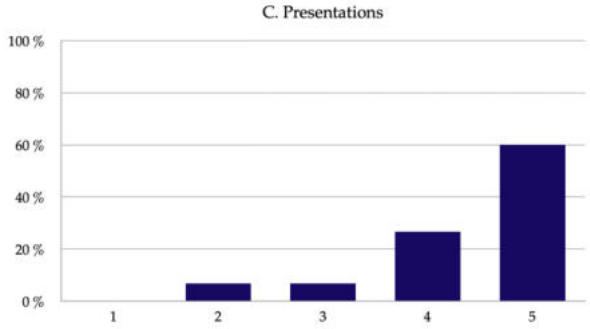
6.b *Day 5 / Module B – Rating of Relevance*

[Response options from 1, "poor", to 5, "excellent"].



6.c *Day 5 / Module B – Rating of Presentations*

[Response options from 1, "poor", to 5, "excellent"].



Evaluation results compiled by Alice Dos Reis Dias Heller and Ramon Schäfer.

Module B was mostly evaluated positively as can be seen in the graphs. The relevance of the topics, for example, was of high interest to the audience and resulted in lively debates between faculkty members and audience, as well as in-between faculty, at the end of many sessions.

For future courses, participants expressed the wish to have more female speakers being part of the international faculty, and to extend the discussion of the links between academic and theoretical developments and their practical application and real-life implementation – primarily in the context of HTAs.

In the ***final section of the online survey***, participants were requested to report, in an open-ended format, their perception of the particular strengths (and potential weaknesses) of the program, the complexity of the course (i.e., whether the course was easy to follow), and to offer ideas and suggestions for further improvements with a view towards future *Heidelberg Health Economics Summer Schools*.

Perceived strengths included the following:

- *"Excellent global experts."*
- *"Great introduction into the topic. Several, international, and renown speakers. Practical exercises."*
- *"Range and quality of speakers."*
- *"Variety of presenters of different backgrounds."*
- *"The discussions."*
- *"HTA Process and updates from different countries [with] very precious knowledge."*

Overall, participants described the course as *"well structured"* and *"easy to follow"*.

Outlook (updated September 2023)

Assuming that the restrictions imposed on meetings during the Covid-19 pandemic from 2020 to 2022 will not return, the plan is to resume the past scheme of *"Heidelberg Health Economics Summer Schools"* taking place annually or biannually during September (or early October), scientifically led by InnoVal[HC] and taking place under the auspices of the University of Heidelberg.

The *Health Economcis Summer School 2024* program is anticipated to comprise again two modules; in response to feedback and considering prior experience, an Introductory Module will be separated from an intermediate-to-advanced-level Core Module, which is planned to last for a full week – in order to enable an

in-depth treatment of all relevant topics, with a view towards the links (and gaps) between theoretical foundations, actual practice, and stakeholder expectations regarding objectives and conduct of Health Technology Assessments.

The ***Introductory Module*** will address health economics from the conventional perspectives of society and payers, and the role of economic evaluation in the regulatory context of formal Health Technology Assessments (HTAs).

The ***Core Module*** is planned to take place during the last week of September 2024 and to focus on the most recent developments and their reflection in the current and future practice of HTA. It will offer ample room for debate between academics, practitioners, and policy makers, introducing the distinct perspectives of citizens and patients and their future roles.

Implications for the evaluation not only of therapeutics, but also of public health services, screening and prevention strategies, the value of diagnostics, "precision medicine", medical devices, and orphan medicinal products (OMPs) will be given special attention.

As ***the venue*** at Studio Villa Bosch in Heidelberg will no longer be available for meetings, as well as in anticipation of the imminent retirement of the founder of the *School* from his current position as Head of the Division of Health Economics at the *German Cancer Research Center*, the "*Heidelberg Health Economics Summer School 2024*" will move to a brand new site in the Dolomites – the NOBIS conference center recently opened by the city of Bruneck (Brunico / Italy), which is located next to the NOI Techpark in South Tyrol. The "Nature of Innovation" (NOI) network is comprised of research institutions rooted in the region and the Free University of Bozen-Bolzano (Italy).

[Future *Health Economics Summer School* venue: campus of the *NOI Techpark* & *NOBIS* conference center in Bruneck, South Tyrol (Brunico / Alto Adige, Italy)]

[The new *Health Economics Summer School* venue 2024 is located in one of the most scenic regions of the Southern Alps; photograph showing the *Spitzkofel* summit (2,717m) in the Lienz Dolomites, nearby in East Tyrol / Austria]

IV

Appendices

Appendix 1: Examples of Prior Scientific Programs

Heidelberg Health Economics Summer School 2007

An interactive one-week program with two modules from September 24 – 28, 2007, addressing the foundations of economic evaluations of health care programs and the implications of their actual use in decision making.

Summer School Part A introduced the methods and current concepts of economic evaluation in health care.

Part B focused on advanced topics and international practices related to the actual use of economic evaluation.

More detailed information can be found *here*.

Heidelberg Health Economics Summer School 2008

In 2008, a high-level program was offered divided into two independent Summer School modules.

Part A, which took place from June 9 – 11, 2008, focused on the economic evaluation of health care programs and introduced CEAs.

Part B, which took place from September 29 – October 02, 2008, focused on current concepts as well as their controversies based on international experience within the use of economic evaluation to inform health care policy makers.

More detailed information can be found *here*.

Health Economics Summer School 2015

A highly-interactive one-week program was established from September 14 – 18, 2015, using exercises and case studies, designed to address the search for "value for money" in the context of Health Technology Assessments (HTAs) in theory and practice.

The Summer School 2015 program was designed to contribute to closing potential gaps in the evidence base required for a full HTA --- addressing the strengths, weaknesses, limitations, and – on this basis – the appropriate use of economic evaluation methods, ranging from CBA and CUA/CEA to more recently advocated social cost value analysis (SCVA). Topical country-specific HTA case studies were used to discuss the policy relevance of these concepts, addressing examples including orphan medicinal products, cancer and end-of-life treatments, as well as "personalized medicine".

A workshop focused on the economic value, normative and empirical issues, and included HTA case studies presented by stakeholders to further discuss (alternative) ways forward in the context of HTA within health care decision making.

More detailed information can be found *here*.

Health Economics Summer School 2016

Two Summer School program modules were offered in 2016. The basic idea of Workshop A was to address to good modeling practice in the context of Health Technology Assessments (HTAs), including accepted economic modeling techniques for CEA and HTA.

Summer School Part B, which took place from September 26 – 28, 2016, was designed to offer a forum for health care policy makers and payer representatives, health economists and experts from academia, independent research institutes, and industry, to exchange their experience and expectations with regard to the use and limitations, and resulting needs for improvement, of health economic evaluations, in order to increase their policy impact.

More detailed information can be found *here*.

Health Economics Summer School 2019

After Michael Schlander had accepted the task to establish a *Division of Health Economics* at the *German Cancer Research Center* (DKFZ) in Heidelberg in 2017, the program was organized by the new *Division* in close collaboration with the Universities of Heidelberg and Heilbronn. The scientific focus was on the need for concepts better capturing citizens' social norms and preferences compared to the conventional logic of cost effectiveness, and on the status of the search for alternatives.

In the first week of July 2019, potential implications for cost value assessments of orphan medicinal products, gene and CAR-T cell therapies, and "personalized medicine" were addressed by a group of international experts in HTA, evidence-based medicine, health economics, and medical ethics; further, a one-day interactive Markov modelling workshop was part of the program.

For more detailed information, please visit the DKFZ Division of Health Economics website *here*.

Appendix 2: Evaluation Questionnaire 2023

General Questions

[Questions (in grey) had 4 response options: Excellent, Good, Okay, Poor]

- What is your affiliation?
  [DKFZ / NCT / Heidelberg University / Heidelberg University Hospital; Public Institution / Academic Sector; Private Sector]
- Are you registered as a student?
  [Yes; No]
- Evaluation of Faculty
- Evaluation of Program
- Evaluation of Documentation
- Evaluation of Venue
- Evaluation of Organization
- Evaluation of Time Schedule
- Evaluation of Value for Money
- How did you learn about the Winter School?
- Other General Comments and Suggestions

Module A

[Questions were asked for Day 1 and Day 2; participants answered questions (in grey) on a scale from 1 (Poor) to 5 (Excellent)]

- Did you participate in Module A?
  [Yes; No]
- Content
- Relevance
- Presentations
- Your Comments and Suggestions

Module B

[Questions were asked for Day 3, Day 4, and Day 5; participants answered questions (in grey) on a scale from 1 (Poor) to 5 (Excellent)]

- Did you participate in Module B?
  [Yes; No]
- Content
- Relevance
- Presentations
- Your Comments and Suggestions

Final Assessment

- What did you perceive were the strengths of the program?
- How did you find the level of complexity of the Winter School, i.e., was the course easy to follow?
- What should be changed and/or improved in your opinion?

Appendix 3: Free Text Responses – complete documentation

General Questions

How did you learn about the Winter School?

- *Colleague*
- *LinkedIn*
- *Recommendation*
- *Postdoc Network DKFZ*
- *New concepts and learning from experts with field experience*
- *From a colleague*
- *I work at the department*
- *Email*
- *Staff of DKFZ HE*
- *Part of DKFZ*
- *Email promotion*
- *My supervisor's recommendation*

Other General Comments and Suggestions

- *In my opinion, day 1 and the afternoon of day 2 of Module B were interesting. The morning of day 2 was too clinical, and although it might be necessary as an introduction to what followed, this could be shortenen substantially. It's a health economic course after all. The third day on patient perspectives and inclusion in health economic evaluation is a hot topic and therefore interesting. […]*
- *Here we decided to delete two negative comments on specific presenters (Days 4 and 5, one male, one female) for privacy and confidentiality reasons Excellent staff and well-organized teaching schedule*
- *Great organization of the entire event! Thanks a lot. The first two days were are good introduction and gave a good overview. For the following days with the more advanced program I would have wished for more application-related content and guiding principles regarding HTA processes.*
- *For Module A, I believe that the discussions around the measurement of outcomes was a bit too theoretical, and we could have spent a bit more time on how QALYs are used in practice (potentially with a discussion around the EQ-5D).*

- *It was my first year attending the program (module B only) and I found it very well organized and informative. Great speakers providing a range of different perspectives on a good range, but cohesive, set of topics. Honestly, I would not know where to improve! I also think it would be great to have other attendees and panelists contacts to further develop collaborations and network, as someone proposed at the end of the school (maybe include a small QR code on the name tags so that people can ask to scan it and get to the person's email? Just an idea for next year). See you in the dolomites next time then! Thanks to all the organizers for a job well done!*
- *I learned so much from this intensive winter school, especially from the health perspective. If it is possible, I would love to hear more voice from economists in the future.*
- *Looking forward to the next summer school!*

Module A – Day 1 [Monday, February 06, 2023]

Your Comments and Suggestions

- *Evaluation methods should be discussed more.*

Module A – Day 2 [Tuesday, February 07, 2023]

Your Comments and Suggestions

- *It is a long schedule.*

Module B – Day 3 [Wednesday, February 08, 2023]

Your Comments and Suggestions

- *See previous.*
- *More female speakers.*
- *Partially too theoretical and philosophical for me and not so much applicable for the field I am working in.*
- *I honestly think it was great.*
- *Some of the slides could be of better quality.*

Module B – Day 4 [Thursday, February 09, 2023]

Your Comments and Suggestions

- *See previous.*
- *More female speakers.*
- *The discussions could be considered deeper for some with no health economic background.*

Module B – Day 5 [Friday, February 10, 2023]

Your Comments and Suggestions

- *None*

Final Assessment

What did you perceive were the strengths of the program?

- The network and Michael Schlander who's an authority in the field.
- It gave a good overview on the whole topic.
- The discussions.
- HTA process and updates from different countries are very precious knowledge.
- Excellent global experts.
- Great introduction into the topic. Several international, and renown speakers. Practical exercises.
- Range and quality of speakers. Notable mentions: Richardson, Schlander, Holm, Baird.
- Variety of presenters of different backgrounds.
- Diversity of participants and presenters.
- The division in two separate modules, with a through introduction to unable everyone to follow also module B lectures + international speaker with different perspectives.
- Nice arrangements; Worldwide specialists.
- The presenters.

How did you find the level of complexity of the Winter Sschool, i.e., was the course easy to follow?

- Easy.
- The presentations were all good to follow, depending a bit on the topic and the personal background.
- Yes.

- A good combination between simplicity and complexity. It is fairly complex but still simple to follow.
- Yes, it was well designed.
- Certainly a challenging topic if one comes not from the field, but the course was well structured and good to follow.
- It was ok. Not too trivial, not too technical for someone coming from a field other than Health Econ sensu stricto (i.e., Engineering and Decision Sciences).
- The field itself is complex, but the presentations were well done.
- Starting from day three, the presentations became a bit complex particularly for those with no health economic background.
- It was easy to follow and the content was through.
- The level of complexity is moderate.
- It was adequate.

What should be changed and/or improved in your opinion?

- Level it up + see previous.
- Coming from the industry a bit more practical experience on CEAs had helped, but I understand that there were participants with different backgrounds.
- It will be better as a two-week course.
- Its good and well thought off.
- Less theoretical and more application-oriented.
- Hard to say. It was a very good school already.
- More time for questions and two-way discussions would be interesting.
- Quality of the slides of some presenters in Module B.

Appendix 4: Impressions

The Gardens of Villa Bosch

Presentations and Debate

Presentations and Debate

An Attentive Audience

Summer School Dinner Venue:
Palais Prinz Carl in the Old Town of Heidelberg

Impressions from Heidelberg Health Economics Summer School 2015
[Photographs InnoVal[HC] 2015; © Alexandra Vosding]

Some more impressions from *Summer Schools* 2007, 2008, 2015 and 2016 can be found *here*.

Photographs from *Summer School* 2019 and *Winter School* 2023 are currently available at the *DKFZ Division of Health Economics website*.

IV

Appendix 5: About InnoVal[HC]

The *Institute for Innovation & Valuation in Health Care* (InnoVal[HC]; *www.innoval-hc.com*) is an independent academic research organization and a member of the *Stockholm Network* of European Think Tanks. It was established in 2005 by a group of scientists with medical, health economic, and econometric backgrounds, as well as hands-on management experience.

InnoVal[HC] has been officially recognized as a not-for-profit institution by the responsible local financial authorities in Aschaffenburg / Germany, under registration number 202/109/20337.

The Institute and its *projects* are overseen by its board, at present consisting of three of its founders – Professor Michael Schlander (chairman), Professor Oliver Schwarz (treasurer), and Professor Götz-Erik Trott. The first major project of the Institute was a health economic analysis of clinically proven treatment strategies for attention-deficit /hyperactivity disorder (ADHD) based upon the Multimodal Treatment of ADHD (MTA) Study, initiated by the *National Institute of Mental Health* (NIMH) in Bethesda, Maryland.

Today, the areas of interest extend beyond traditional cost effectiveness and cost benefit analyses, encompassing both the normative foundations and the methods of health economic evaluations, Health Technology Assessments (HTAs) in theory and practice, health care utilization and cost studies (including budget impact analyses), as well as the identification, demonstration, measurement, and communication of the clinical and economic value of health technologies, including the related issues of market access, pricing and reimbursement (e.g., for diagnostics, medical devices, pharmaceutical products, and

likewise institutional arrangements and processes of health care delivery).

Furthermore, research interests also include the systematic development of Patient Reported Outcome (PRO) measurement instruments in rare and ultra-rare diseases, i.e., to develop reliable, valid, and responsive instruments to capture the multidimensional outcomes of specific disorders – and of interventions targeting them – as experienced and reported by patients.

Objectives

The primary ***objective*** of InnoVal[HC] is to contribute to the transfer of good scientific practice into the real world of problem-solving.

InnoVal[HC] and its founders are committed to supporting good decisions by sound analyses. They draw on proven instruments and principles of evidence-based medicine as well as those of value-based medicine. The latter comprise decision analytic and economic modeling and evaluation tools. A guiding principle throughout the work of InnoVal[HC] is that the problem at hand should dictate the approach to finding a solution, not the other way around. Sadly enough, as real-world decision-makers are acutely aware of, academic research – not excluding the field of health economics – does not always meet this requirement.

Projects

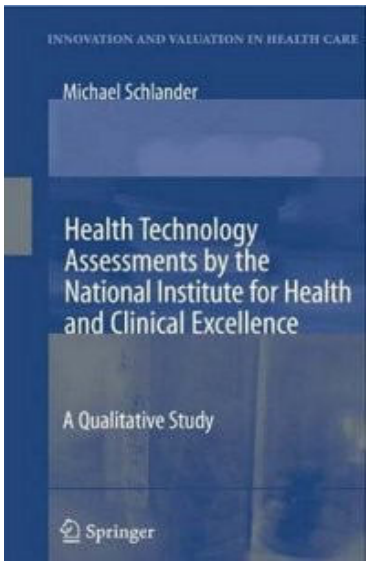
Some of the major projects of InnoVal[HC] have included the following. For more information, please visit the Institute's website, *www.innoval-hc.com*.

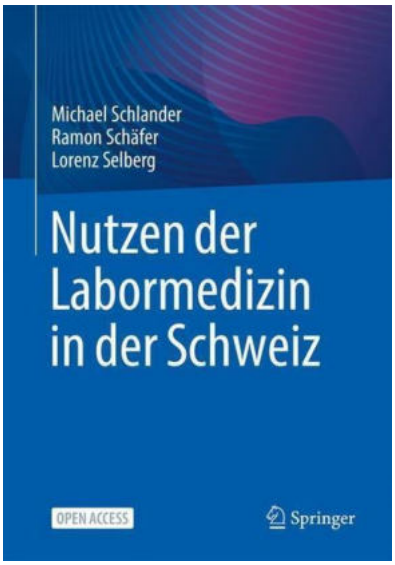
IV

- Cost effectivenss analyses (CEAs) of clinically proven treatment strategies for attention-deficit/hyperactivity disorder (ADHD) based upon the NIMH MTA Study
- The *Nordbaden project* – setting up one of the first German longitudinal administrative databases (covering years 2003 through 2006) and using it to analyze health care utilization, treatment patterns, and health care costs associated with attention-deficit/hyperactivity disorder (ADHD) in Germany
- "*SwissHTA*", a multi-stakeholder consensus on Health Technology Assessment (HTA) in Switzerland, endorsed by ther national association of sick funds (*santésuisse*), the federal association of the Swiss research-based pharmaceutical industry (*Interpharma*), the Swiss Medical Association (FMH), the Swiss Academy of Medical Sciences (SAMW), and as obervers, the Swiss Conference of Cantonal Health Directors (GDK), and the Swiss federal government (*Bundesamt für Gesundheit*, BAG); see *http://www.swisshta.ch*
- The *Multi-Instrument Comparison* (MIC) project: InnoVal[HC] led the German arm of the MIC study, a cross-national comparison of eight generic quality of life instruments. For results from Germany, see *here*
- The *URD consensus*, an international consensus project on the valuation of interventions for ultra-rare disorders (URDs)
- The *European Social Preferences Measurement* (ESPM) project
- The *Value of a Statistical Life Year* (VSLY) project
- The *value of laboratory medicine* in Switzerland, a systematic analysis and expert report

IV

Recent Monographs from InnoVal[HC]





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Cover: Gardens of Villa Bosch, Summer School Venue from 2007 through 2023.
Photograph © A. Vosding / InnoVal^{HC} (2015)

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