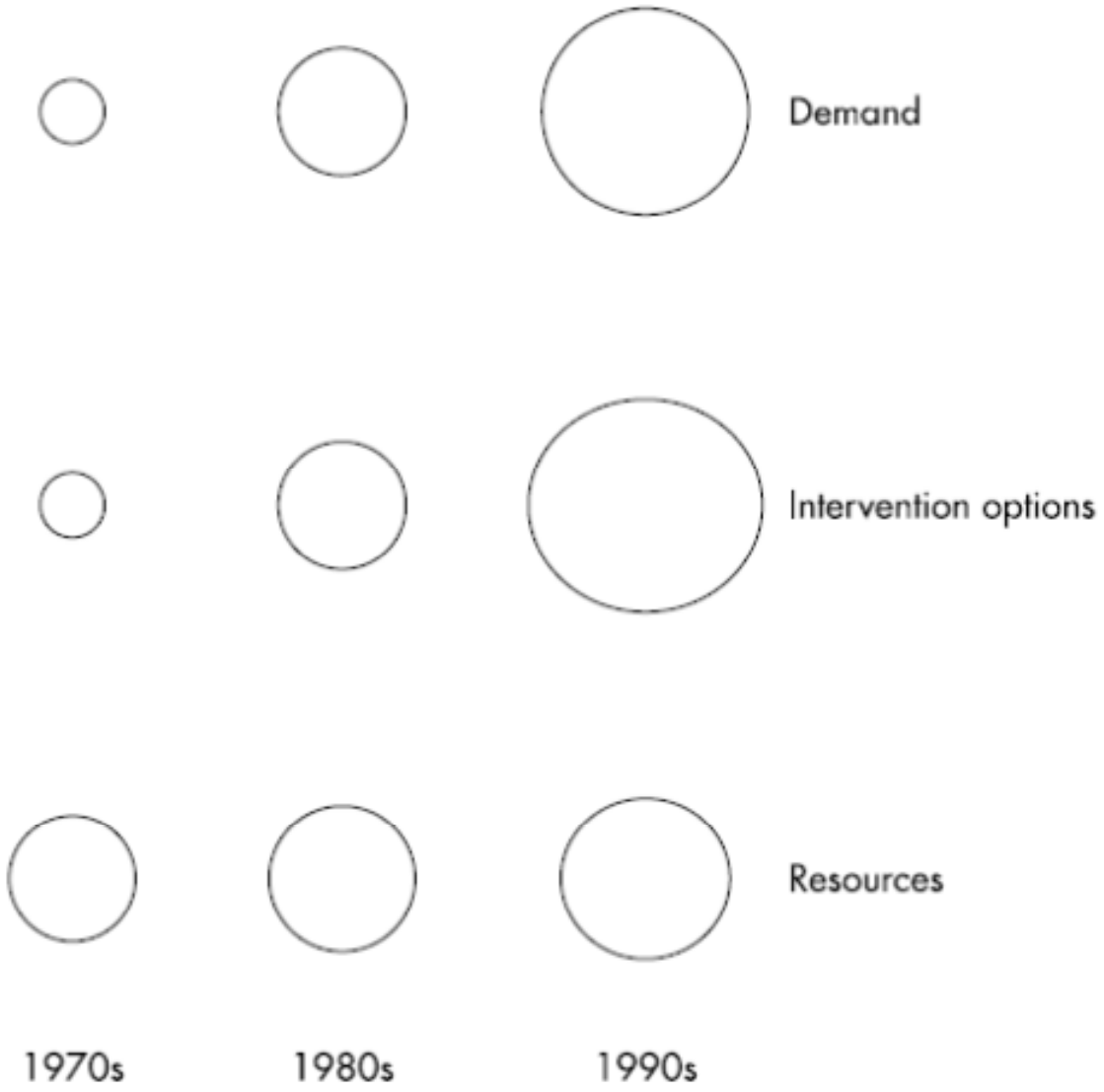
If HTA is the solution, what is the problem?

Reinhard Busse, Prof. Dr. med. MPH FFPH
Department of Health Care Management
Berlin University of Technology/
(WHO Collaborating Centre for Health Systems Research and Management)
European Observatory on Health Systems and Policies

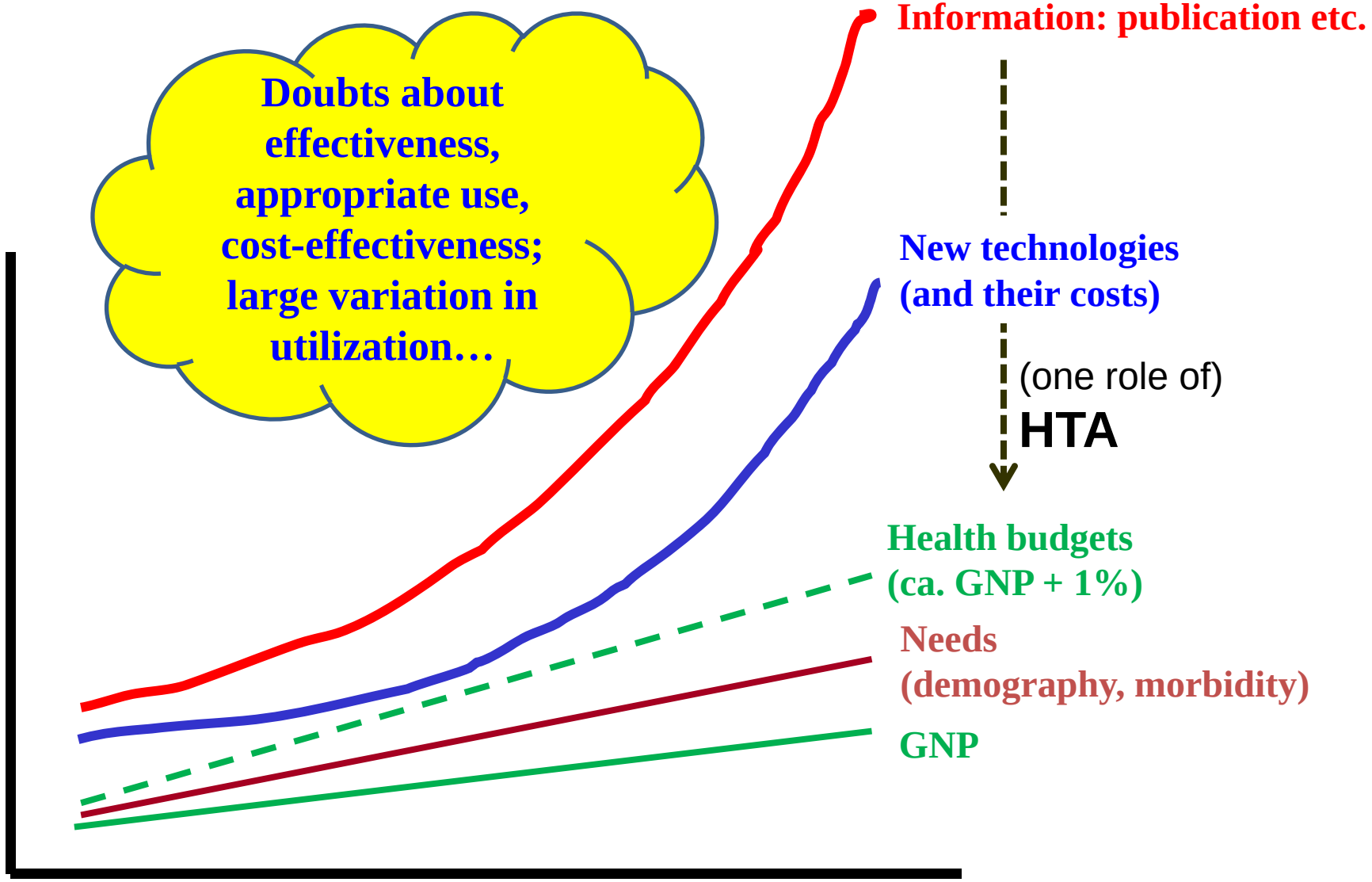
MiG 2002-2012 Health Care Management

European Observatory on Health Systems and Policies



Source: Kernick. Introduction to health economics for medical practitioners. Postgrad Med J 2003, 79: 147-150

WHY need for HTA?
Technology drive & information overload



Inappropriateness

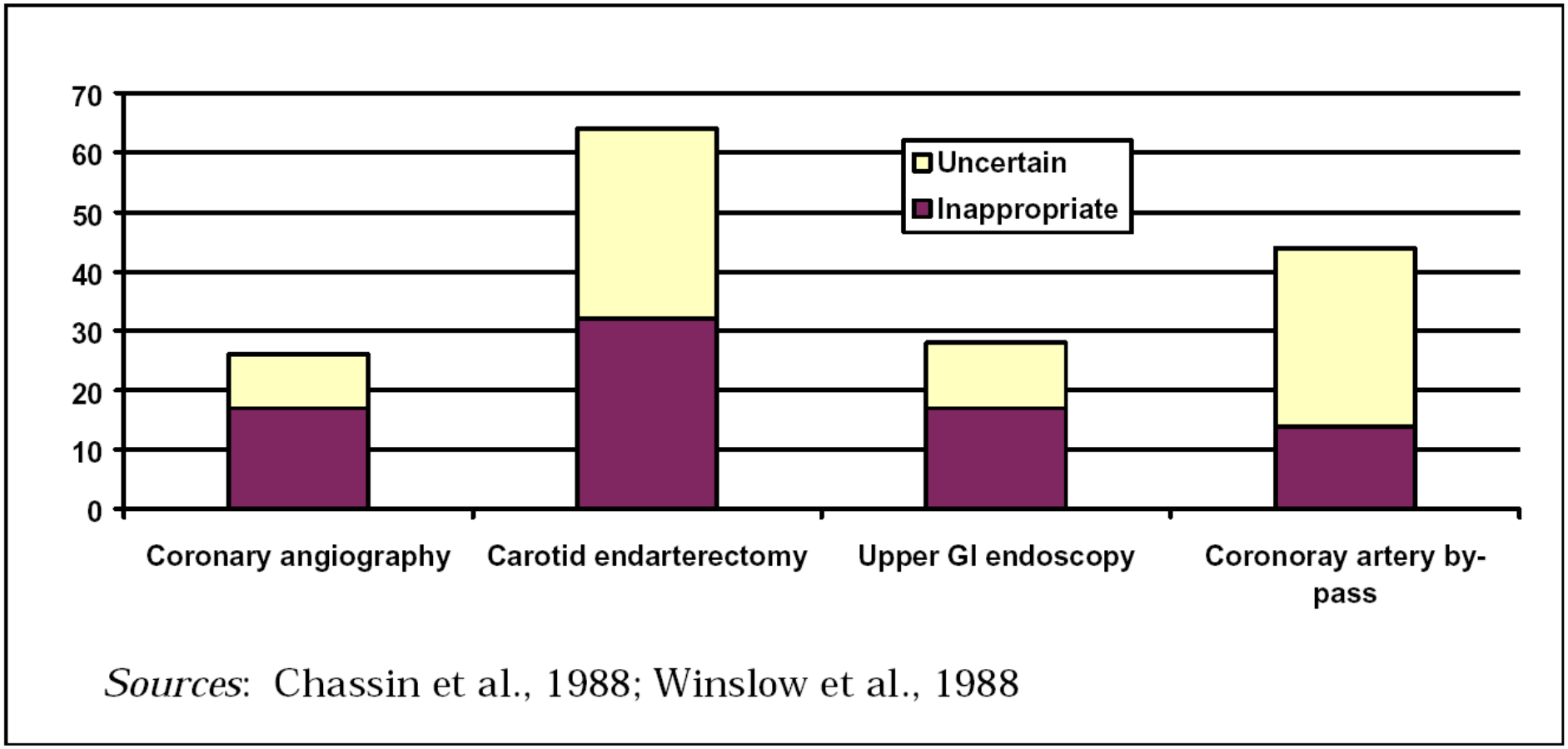


Figure 21. Examples of Proportion of Procedures Studied that are Inappropriate or Uncertain

Small-area variation

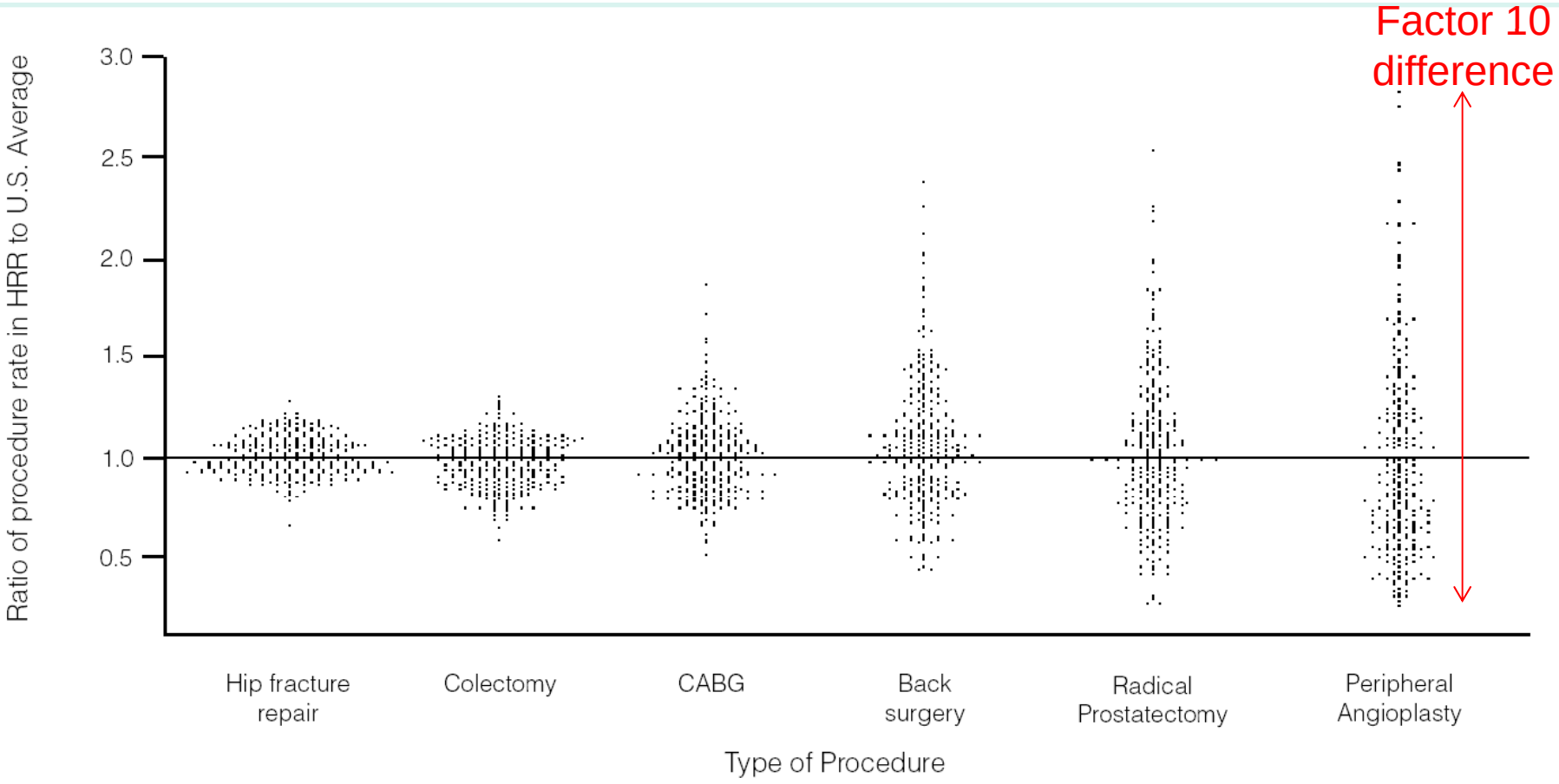


FIGURE 1. Variation profiles of six common procedures. Data for peripheral angioplasty from Axelrod and colleagues.[3] Other figures derived from 1995–6 national Medicare data from the *Dartmouth Atlas of Health Care*.[5] CABG = coronary artery bypass grafting; HRR = hospital referral region.

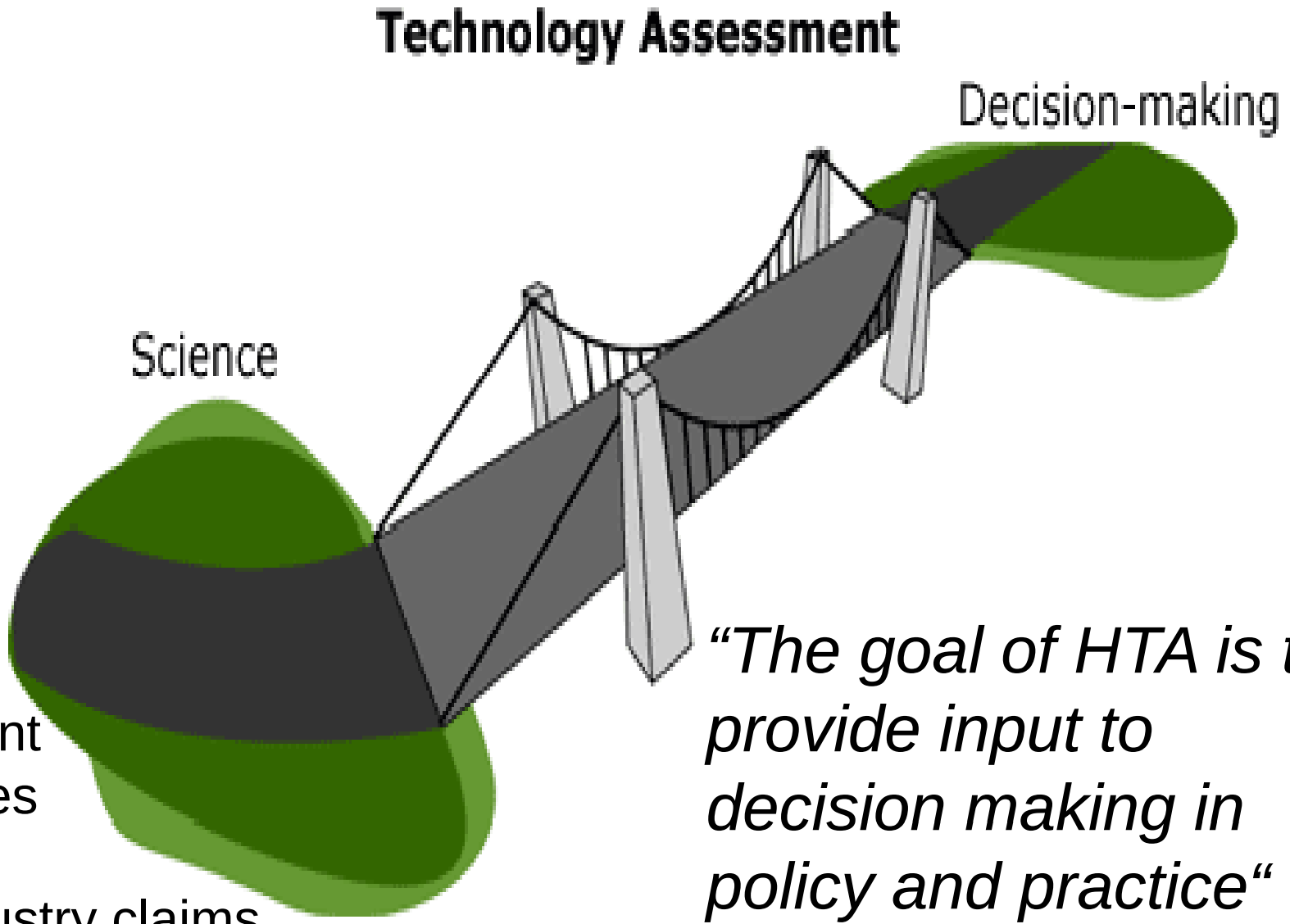
What is “Technology”?

- Greek: technologia
- Techni - "art/craft/skill"
- Logia - "saying/be about something"

- Narrower: material objects, hardware, devices
- Wider: systems, organization methods, techniques

What is Health technology assessment?

- MTA (Medical technology assessment)
  → HCTA (Healthcare technology assessment) → HTA
- INAHTA (International Network of Agencies for HTA):
  - **Healthcare technology** is defined as prevention and rehabilitation, vaccines, pharmaceuticals and devices, medical and surgical procedures, and the systems within which health is protected and maintained.
  - **Technology assessment in health care** is a multidisciplinary field of policy analysis. It studies the medical, social, ethical, and economic implications of development, diffusion, and use of health technology.
- EUnetHTA (European network for HTA):
  - **Health technology** is the application of scientific knowledge in health care and prevention.
  - **Health technology assessment** is a multidisciplinary process that summarises information about the medical, social, economic and ethical issues related to the use of a health technology in a systematic, transparent, unbiased, robust manner. Its aim is to inform the formulation of safe, effective, health policies that are patient focused and seek to achieve best value.
    Despite its policy goals, HTA must always be firmly rooted in research and the scientific method.



"The goal of HTA is to provide input to decision making in policy and practice"

(Henshall et al. 1997)

[...] a form of policy research that systematically examines short- and long-term consequences –in terms of health and ressource use– of the application of a health technology [...]

The goal of HTA is to provide input to decision making in policy and practice.

(Henshall et al. 1997)

Broad understanding of ”health technology” in HTA

The **interventions** (drugs, procedures, complex multidisciplinary activities) which can be provided / reimbursed within the system when **delivering health services**

The **interventions** applied to the system to **organize service** delivery, access, financing, payment of providers, etc.

Practical Purpose

„improving survival after myocardial infarction“

Technologies

Aspirin

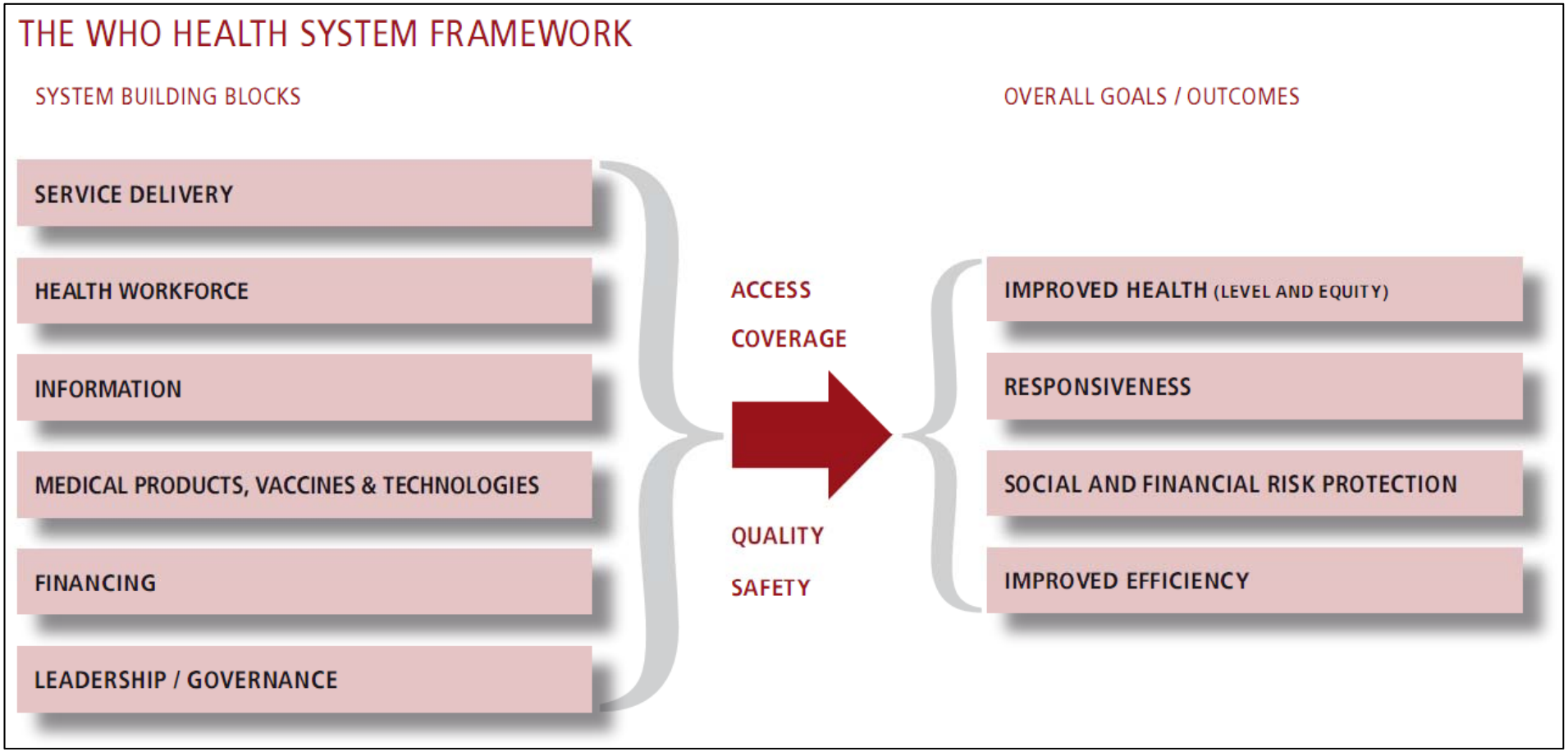
Stent

Early rehabilitation

Disease Management Programme

Payment for Performance

HTA in the health systems' framework 1

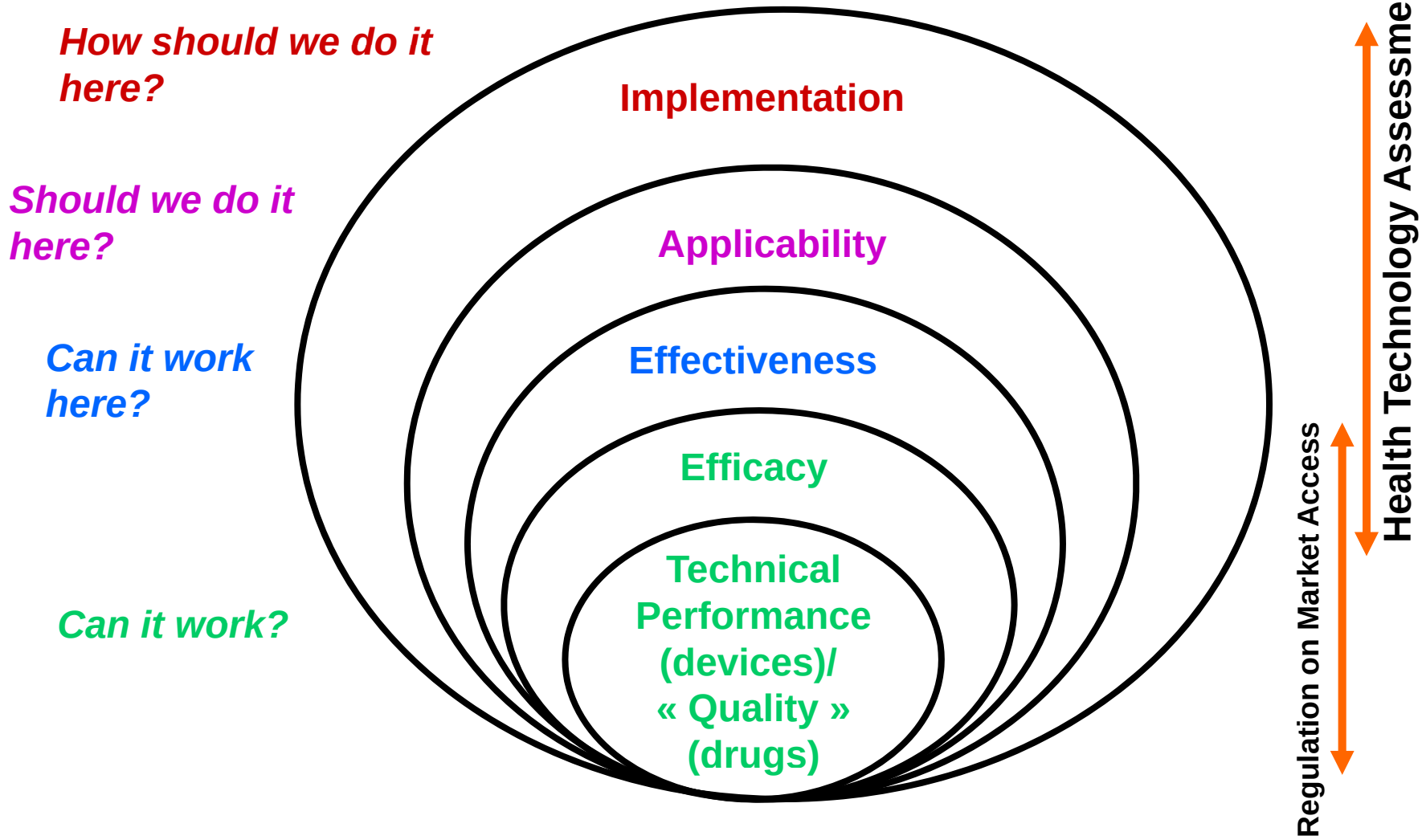


WHO 2008, *Everybody's Business: Strengthening Health Systems to Improve Health Outcomes: WHO's Framework for Action* WHO, Geneva

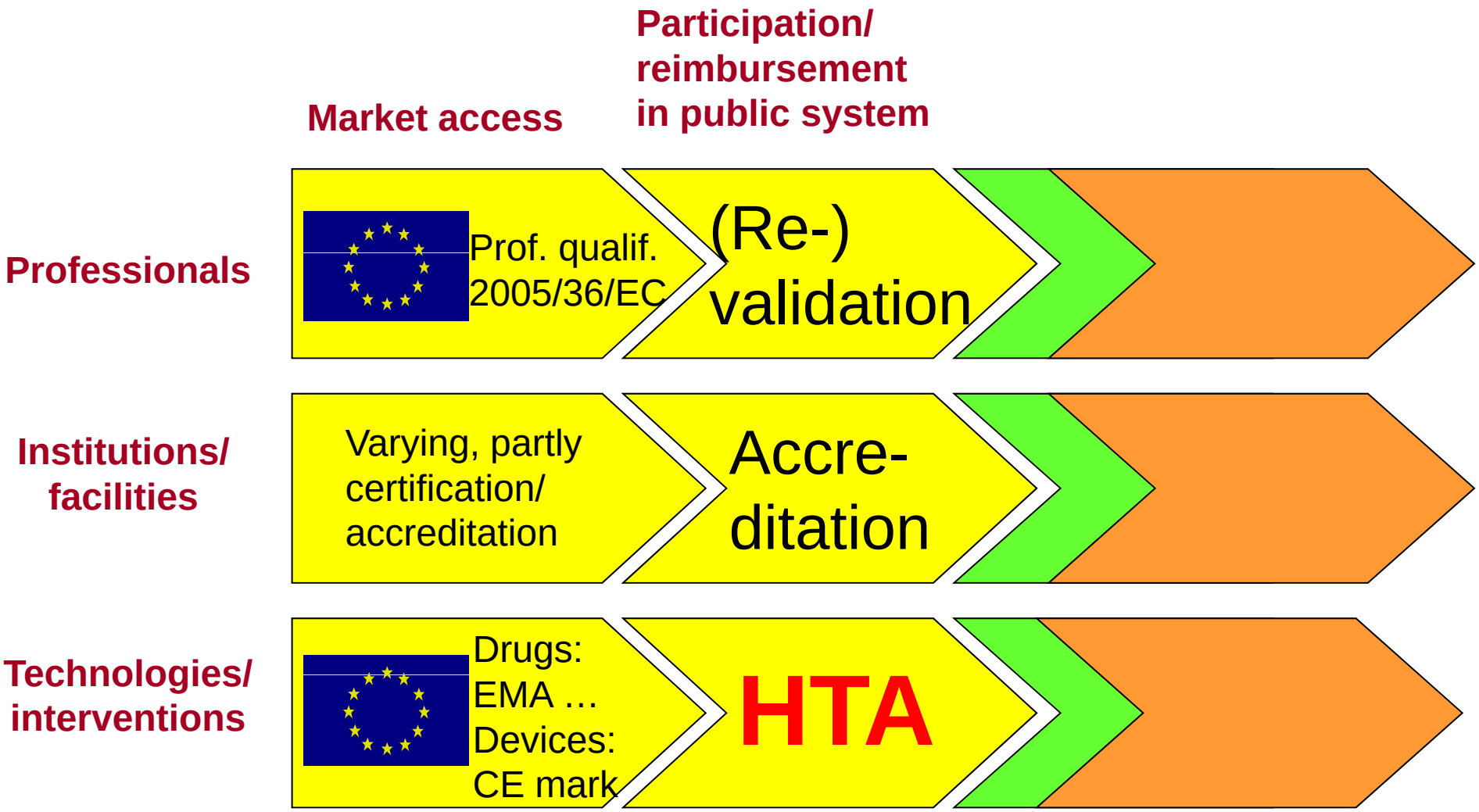
HTA in the health systems' framework 2

- **Service delivery**: including effective, safe, and quality personal and non-personal health interventions that are provided to those in need, when and where needed (including infrastructure), with a minimum waste of resources
- **Health workforce**: available in sufficient numbers and being responsive, fair and efficient given available resources and circumstances
- **Health information**: a sub-system that ensures production, analysis, dissemination and use of reliable and timely information on health determinants, health systems performance and health status
- **Medical technologies**: including medical products, vaccines and other technologies of assured quality, safety, efficacy and cost-effectiveness, and their scientifically sound and cost-effective use
- **Health financing**: a sub-system that raises adequate funds for health, in ways that ensure people can use needed services, and are protected from financial catastrophe or impoverishment associated with having to pay for them
- **Leadership and governance**: ensuring strategic policy frameworks combined with effective oversight, coalition building, accountability, regulations, incentives and attention to system-design

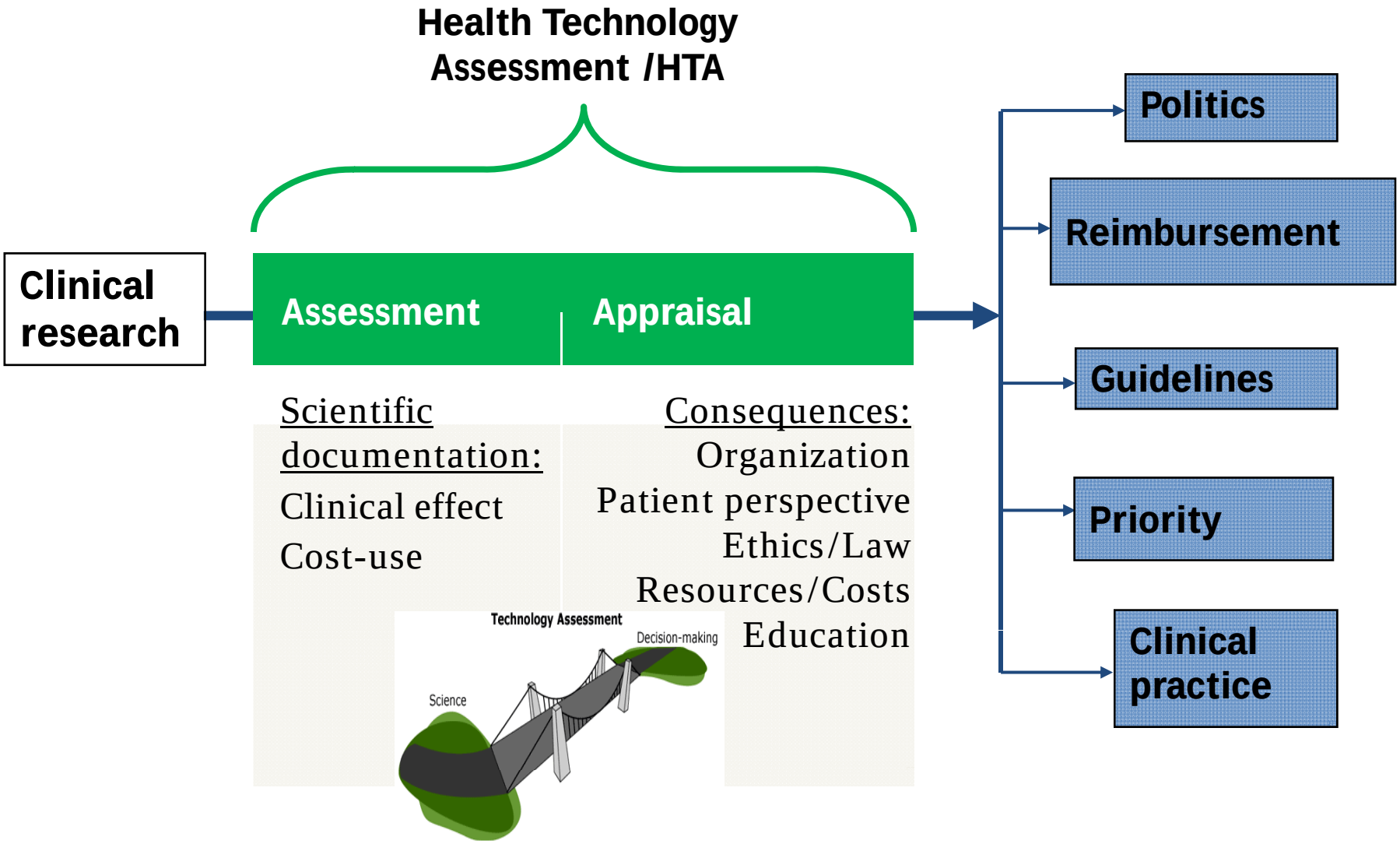
Layers of questions when deciding upon health technologies



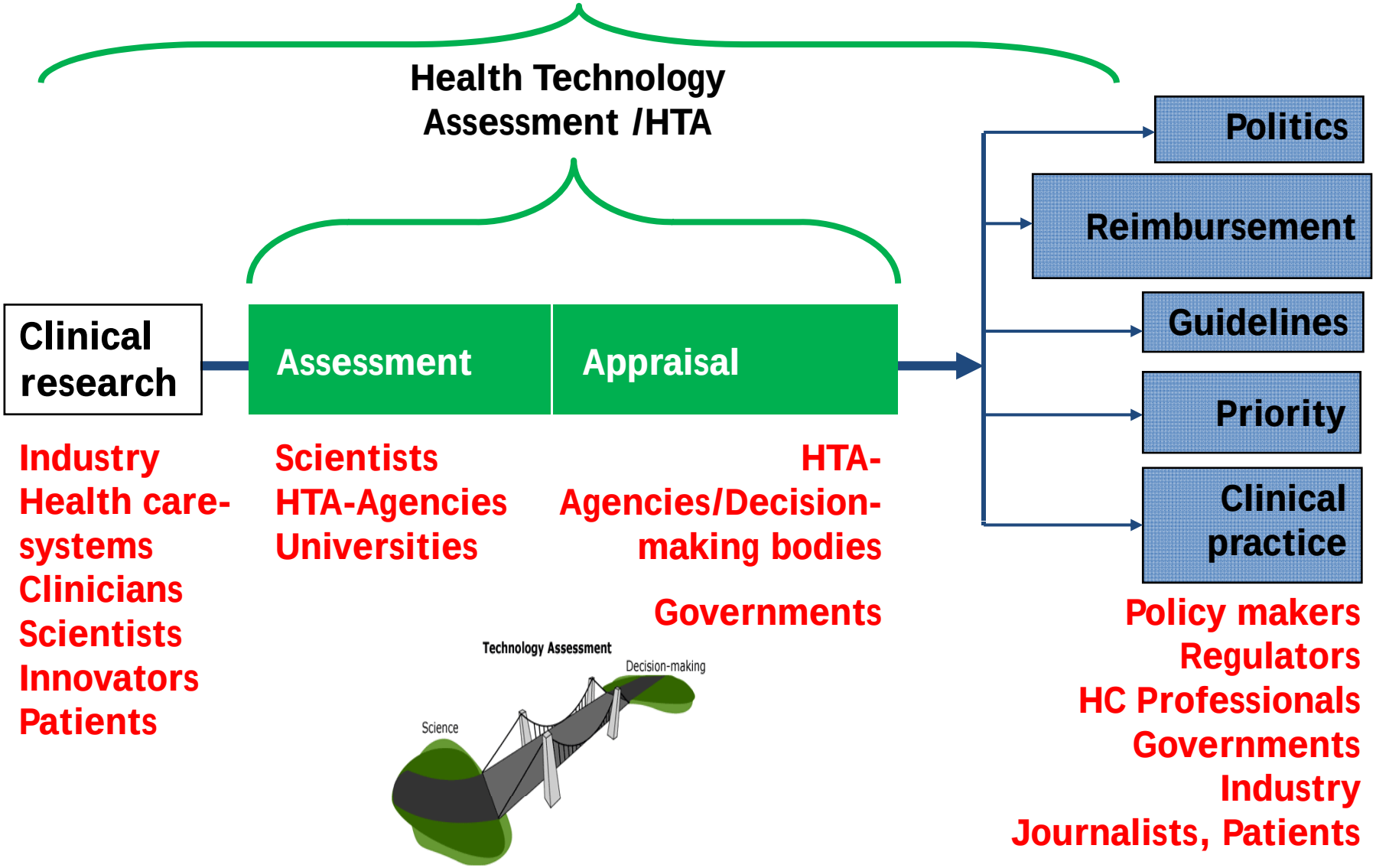
HTA in a chain of decisions on technologies



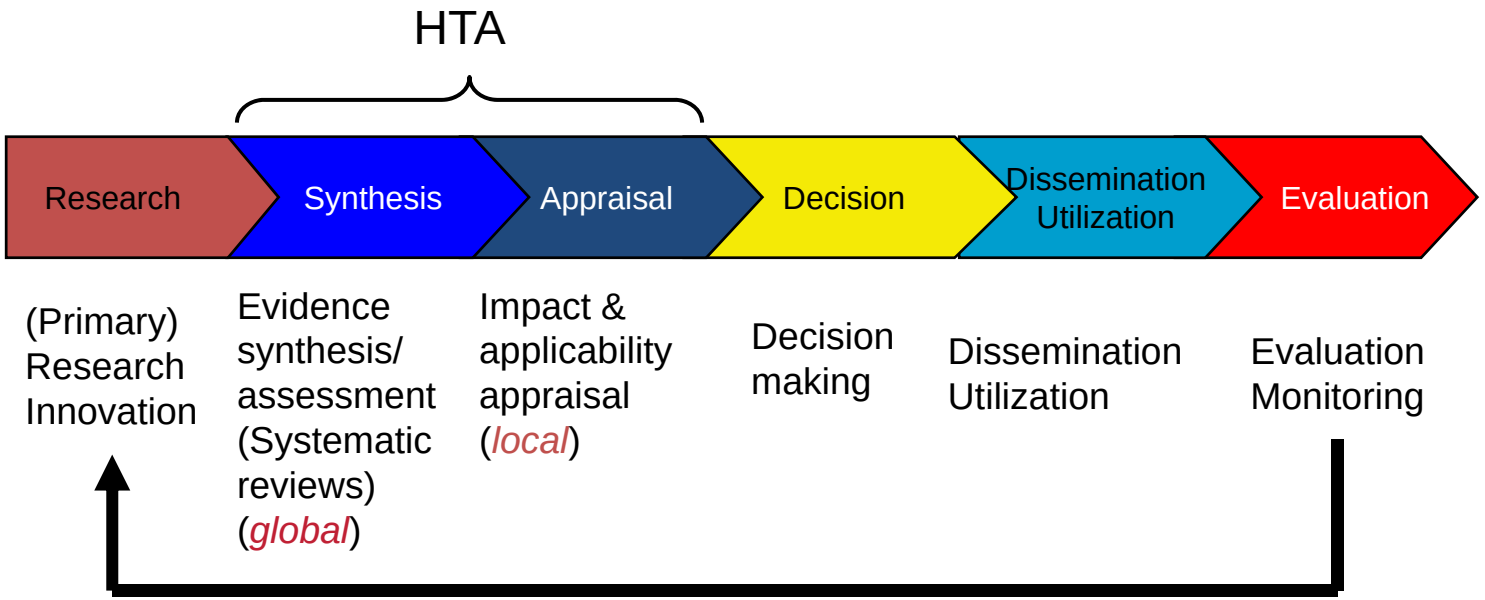
Use of HTA


Health Technology Assessment /HTA
Clinical research
Assessment
Appraisal
Scientific documentation:
Clinical effect
Cost-use
Consequences:
Organization
Patient perspective
Ethics/Law
Resources/Costs
Education
Technology Assessment
Science
Decision-making
Politics
Reimbursement
Guidelines
Priority
Clinical practice

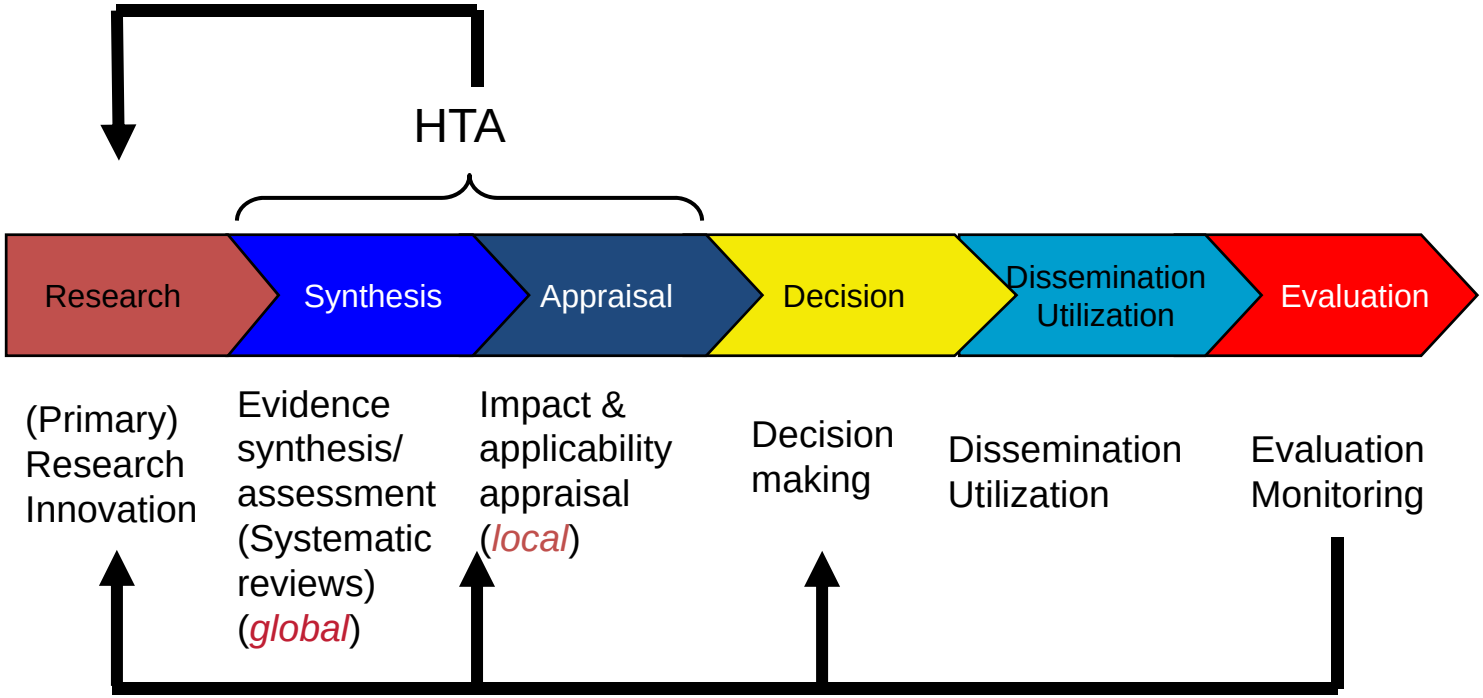
Those involved in HTA



HTA in a chain of knowledge creation 1



HTA in a chain of knowledge creation 2

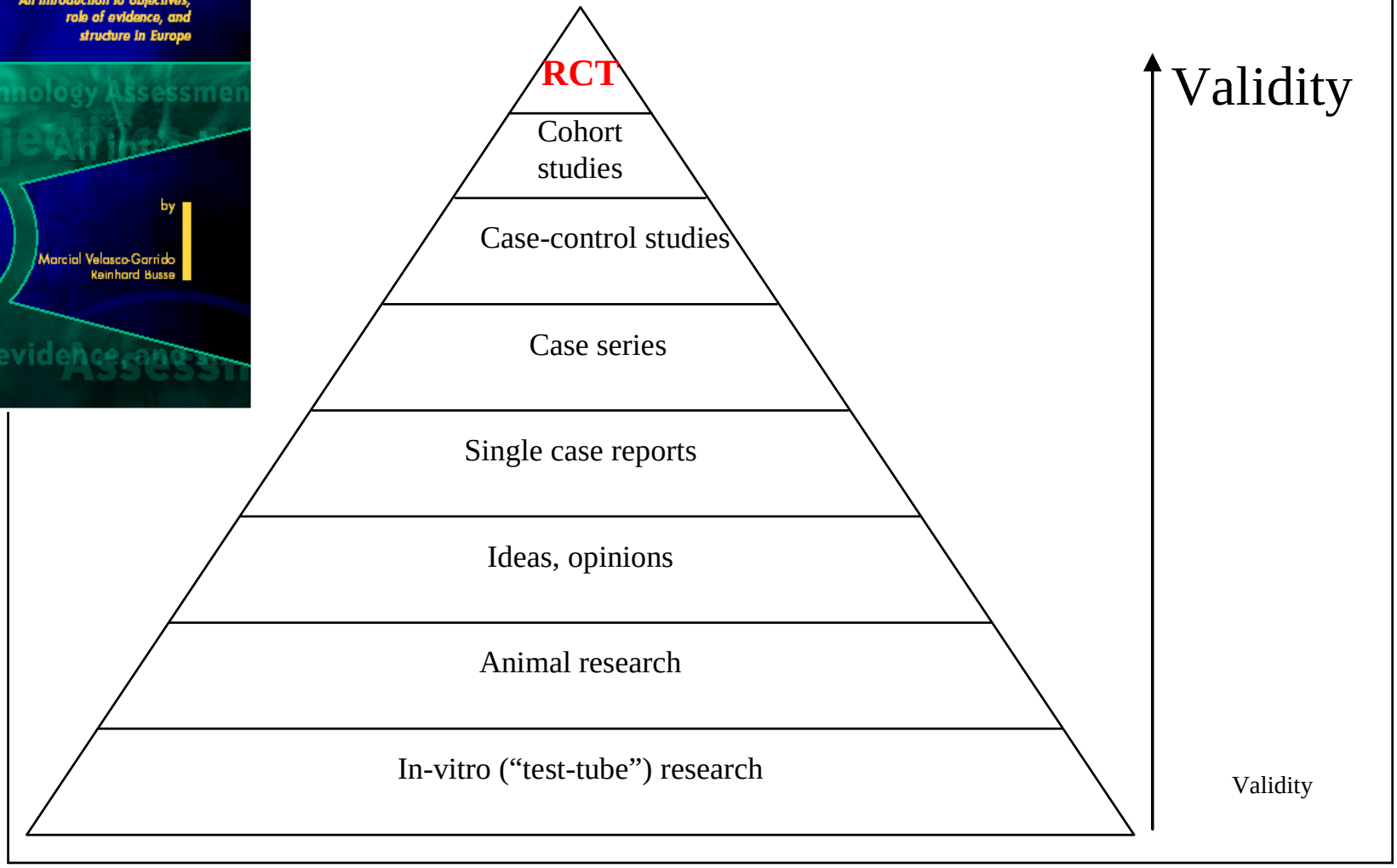


What is the "evidence" in an assessment?

"Evidence" is understood as the product of systematic observation or experiment and it is inseparable from the notion of data.

The idea to base decisions on the "best available evidence" implies a "hierarchy" of the evidence.

Hierarchy of research designs for evidence-based medicine



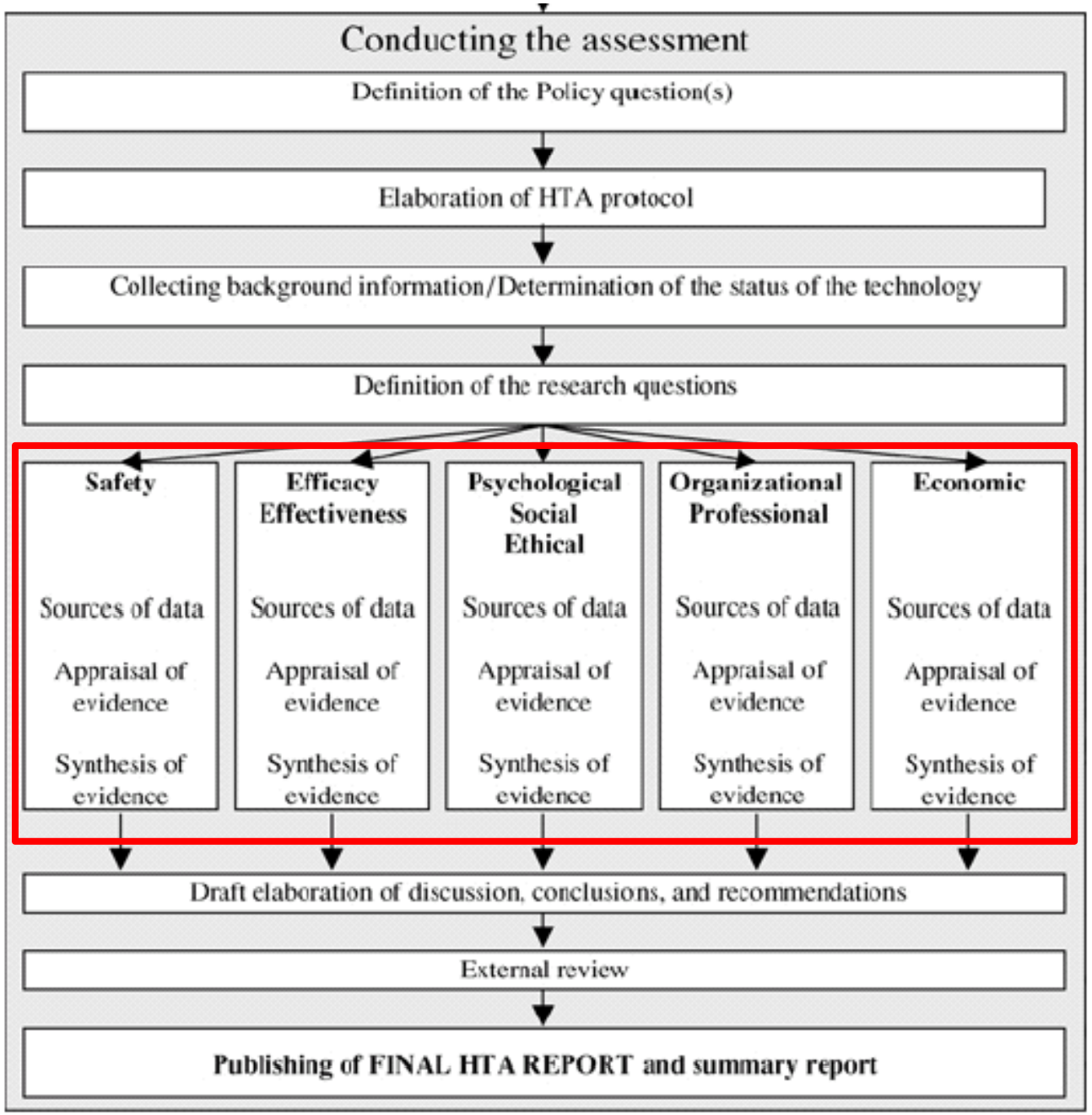
International Journal of Technology Assessment in Health Care, 18:2 (2002), 361–422.
Copyright © 2002 Cambridge University Press. Printed in the U.S.A.

BEST PRACTICE IN UNDERTAKING AND REPORTING HEALTH TECHNOLOGY ASSESSMENTS

Working Group 4 Report

Reinhard Busse, Chair
European Observatory on Health Care Systems, Spain & Technische Universität Berlin, Germany
Jacques Orvain, Co-Chair
National Agency for Accreditation and Evaluation in Health (ANAES), France
Marcial Velasco
Technische Universität Berlin, Germany
Matthias Perleth
AOK-Bundesverband, Germany
Michael Drummond
University of York, Center for Health Economics, United Kingdom
Felix Gürtner
Medical Technology Unit, Federal Social Insurance Office, Switzerland (MTU-FSIOS)
Torben Jørgensen
Danish Centre for Evaluation and Health Technology Assessment (DACEHTA), Denmark
Albert Jovell
Fundació – Biblioteca Josep Laporte Casa de Convalescencia, Spain
Jim Malone
St. James's Hospital, Ireland
Alric Rüther
German Agency for Health Technology Assessment (DAHTA@DIMDI), Germany
Claudia Wild
HTA-Unit of the Institute of Technology Assessment (ITA), Austrian Academy of Science, Austria

Prepared for and in close collaboration with the working group by Reinhard Busse, Marcial Velasco, Matthias Perleth, and Jacques Orvain. The authors are indebted to Wendy Wilbourn (European Observatory on Health Care Systems) for providing English-language editing.



International Journal of Technology Assessment in Health Care, 18:2 (2002), 361–422.
Copyright © 2002 Cambridge University Press. Printed in the U.S.A.

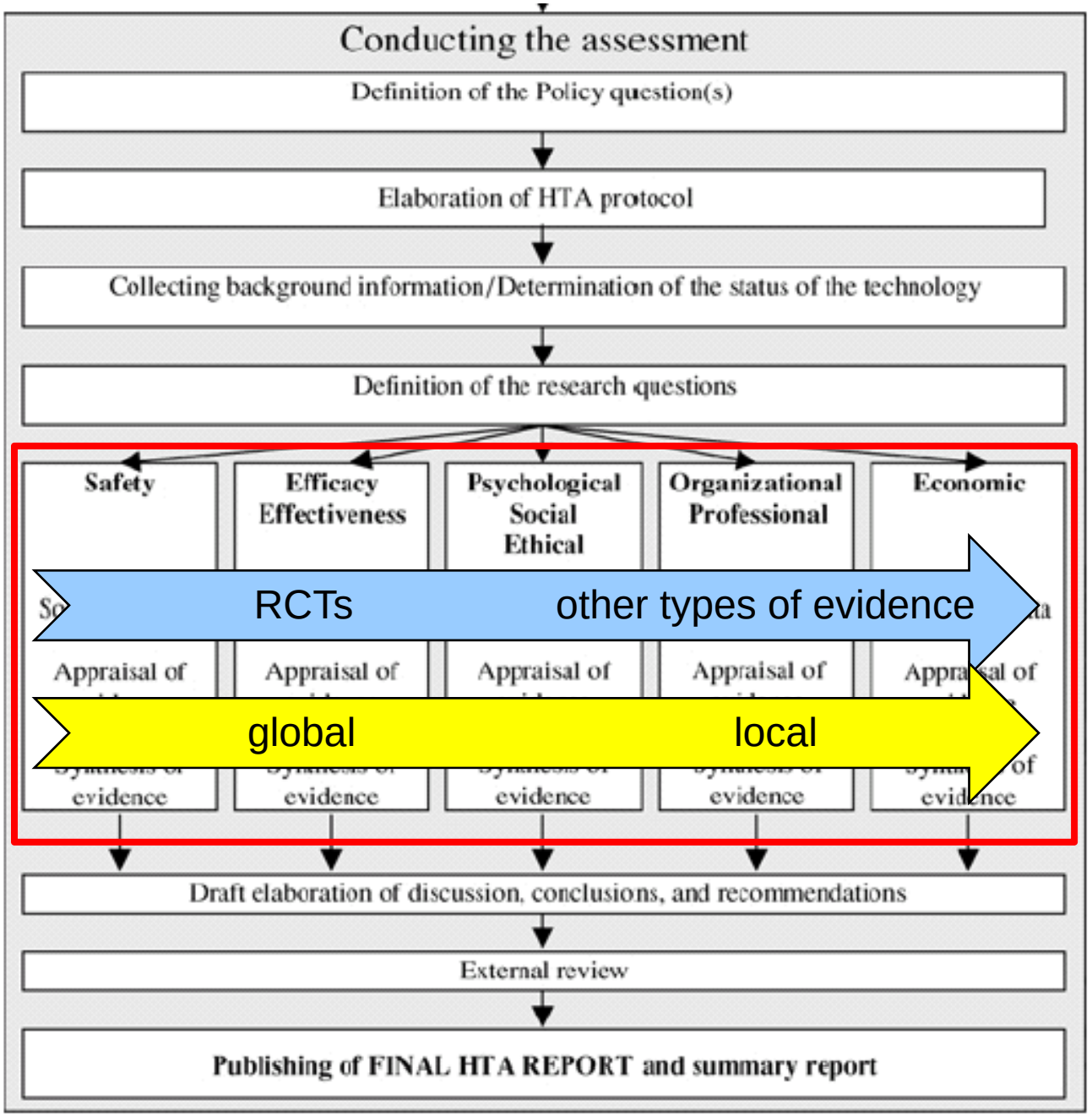
International Journal of Technology Assessment in Health Care, 18:2 (2002), 361–422.

BEST PRACTICE IN UNDERTAKING AND REPORTING HEALTH TECHNOLOGY ASSESSMENTS

Working Group 4 Report

Reinhard Busse, Chair
European Observatory on Health Care Systems, Spain & Technische Universität Berlin, Germany
Jacques Orvain, Co-Chair
National Agency for Accreditation and Evaluation in Health (ANAES), France
Marcial Velasco
Technische Universität Berlin, Germany
Matthias Perleth
AOK-Bundesverband, Germany
Michael Drummond
University of York, Center for Health Economics, United Kingdom
Felix Gürtner
Medical Technology Unit, Federal Social Insurance Office, Switzerland (MTU-FSIOS)
Torben Jørgensen
Danish Centre for Evaluation and Health Technology Assessment (DACEHTA), Denmark
Albert Jovell
Fundació – Biblioteca Josep Laporte Casa de Convalescencia, Spain
Jim Malone
St. James's Hospital, Ireland
Alric Rüther
German Agency for Health Technology Assessment (DAHTA@DIMDI), Germany
Claudia Wild
HTA-Unit of the Institute of Technology Assessment (ITA), Austrian Academy of Science, Austria

Prepared for and in close collaboration with the working group by Reinhard Busse, Marcial Velasco, Matthias Perleth, and Jacques Orvain. The authors are indebted to Wendy Wilbourn (European Observatory on Health Care Systems) for providing English-language editing.



International Journal of Technology Assessment in Health Care, 18:2 (2002), 361–422.

Project planning (the ”HTA protocol”)

- Scoping, i.e. what will be studied?
  - Extensive technology-oriented HTAs: one technology or few technologies, many or all uses of it/them (e.g. "Hyperbaric oxygen therapy")
  - Limited technology-oriented HTAs: one technology or few technologies in a specific setting (e.g. "Hyperbaric oxygen therapy for diving accidents") PICO: patients, intervention, control, outcomes
  - Health problem oriented HTAs: one or few health problem(s) and all (or most) technologies used for it (e.g. "Decompression sickness")
- How fast are results needed?
  - Full HTAs (1-2 years)
  - Rapid HTAs/ reviews (3-6 months) *-> concentration on one/ a few dimensions*
  - Ultra-rapid reviews (1-12 weeks)
- What will be included in the review?
  - Original studies, or only review of reviews?
  - Data provided by industry? *-> only publicly available? confidentiality?*

HTA dimensions in theory and reality

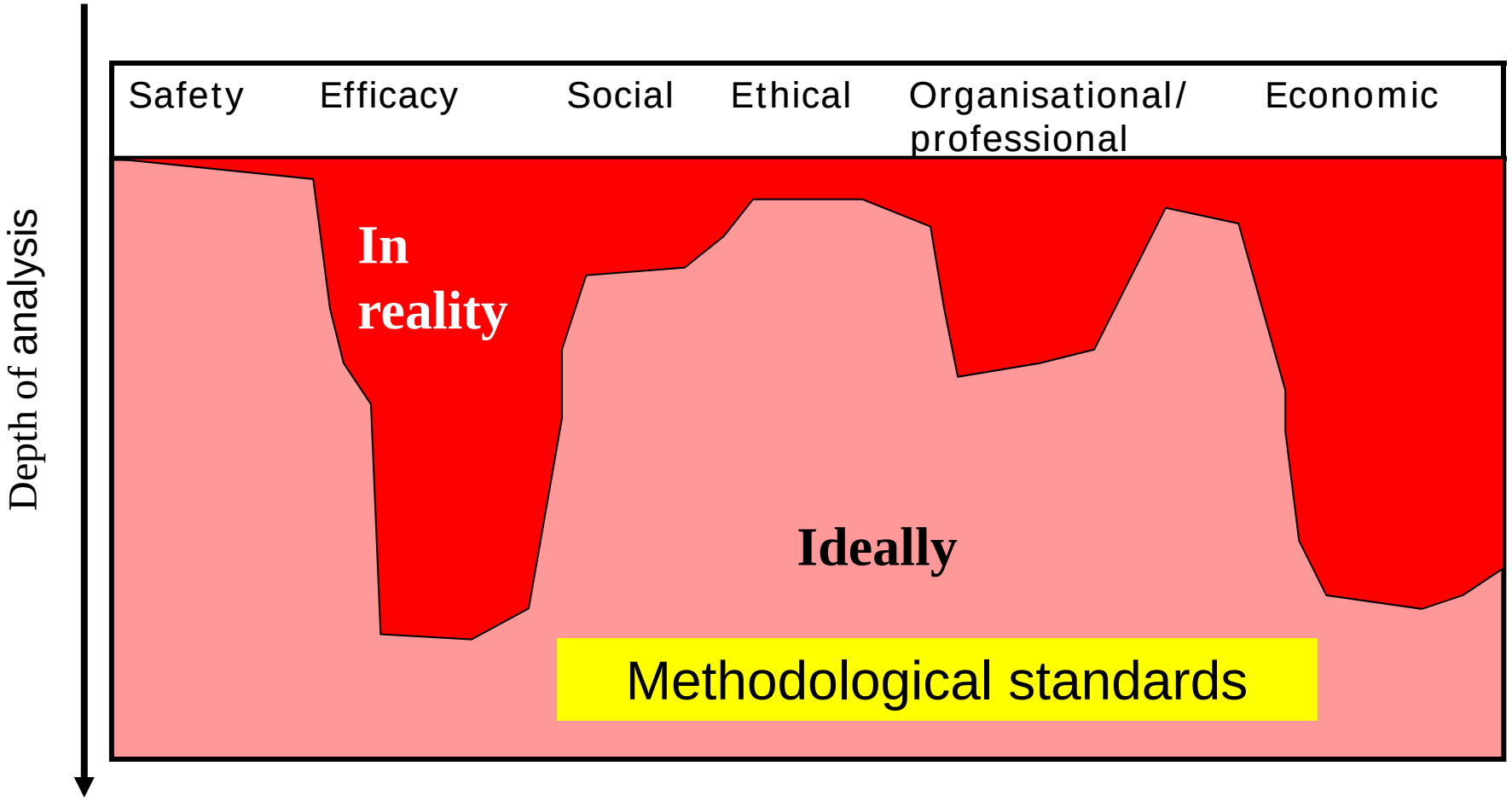


Table 2. Main Aspects and Dimensions Assessed in the Sample (n = 433)

Main aspect	Dimensions assessed	Frequency	% of total sample
Clinical	Efficacy	259	59.8
	Safety	304	70.2
	Effectiveness	325	75.1
	Other outcomes	136	31.4
	Indications	409	94.5
	Population affected	323	74.6
Economic	Efficiency	57	13.2
	Costs	231	53.3
	Cost-effectiveness	158	36.5
	Cost utility	81	18.7
	Cost benefit	19	4.4
Patient-related	Social Impact	86	19.9
	Ethics	52	12.0
	Acceptability	106	24.5
	Psychological reactions	115	26.6
	Other patient parameters	89	20.6
Organizational	Diffusion	77	17.8
	Centralization/decent.	94	21.7
	Utilization	49	11.3
	Accessibility	63	14.5
	Skills—routines	118	27.3
	Education—training	118	27.3
	Other organizations parameters	14	3.2

Draborg et al. International comparison of the definition and the practical application of health technology assessment, IJTAHC 2005: Analysis of 433 HTA reports, published 1989-2002 by 11 agencies in 9 countries (Australia, Canada, Denmark, The Netherlands, New Zealand, Norway, Sweden, UK, USA)

The broad understanding of technologies and the chain of knowledge creation

Fig. 8.2 *Different levels of health-care technologies/interventions*

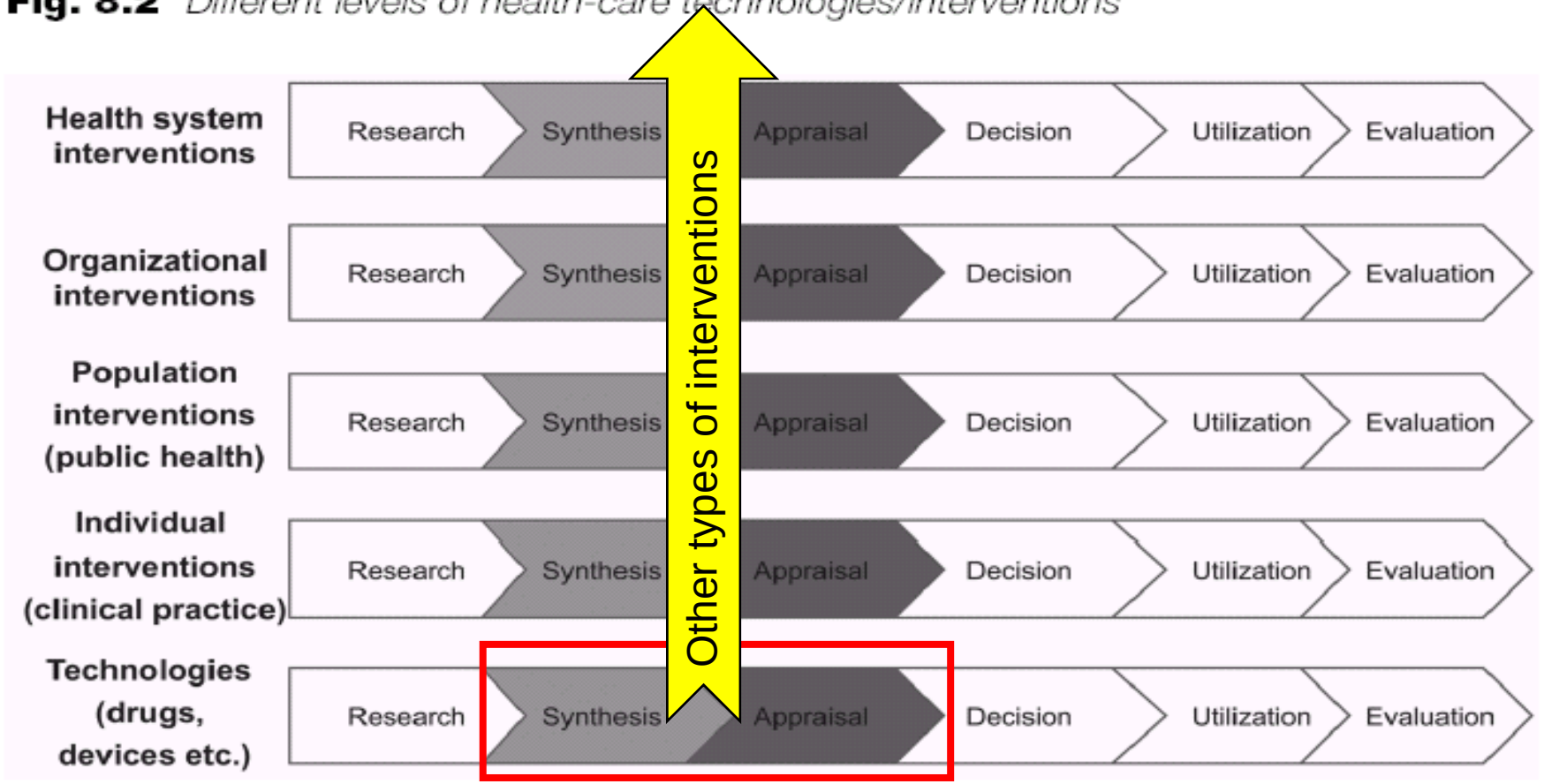
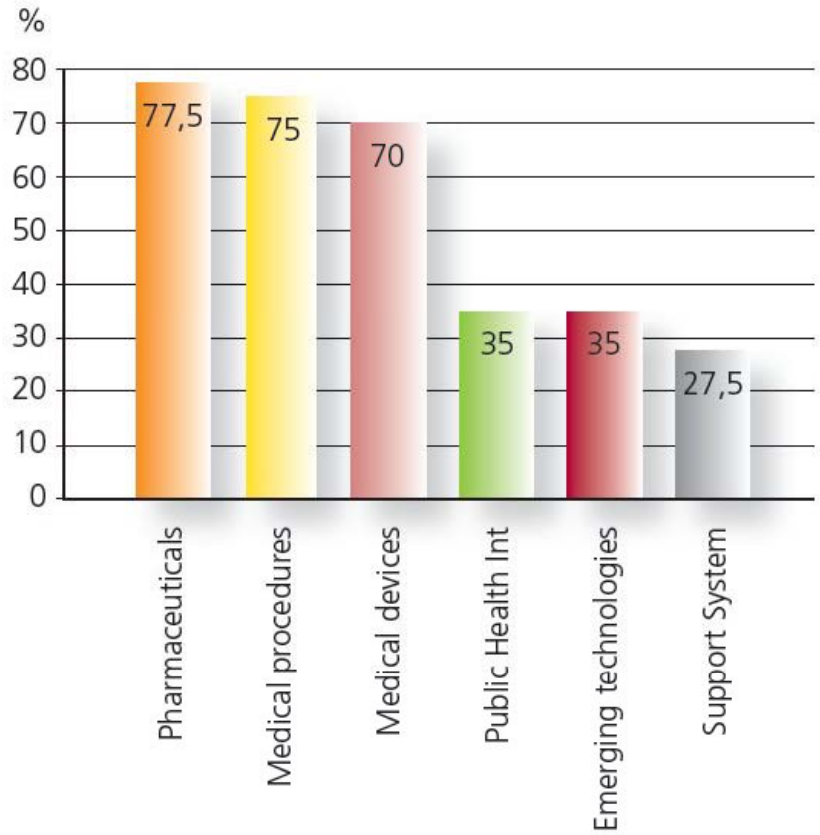


Figure 3. Types of HT assessed in HTA organisations (N=41)*



* Multiple choice question which allows to select more than one correct answer to be selected.

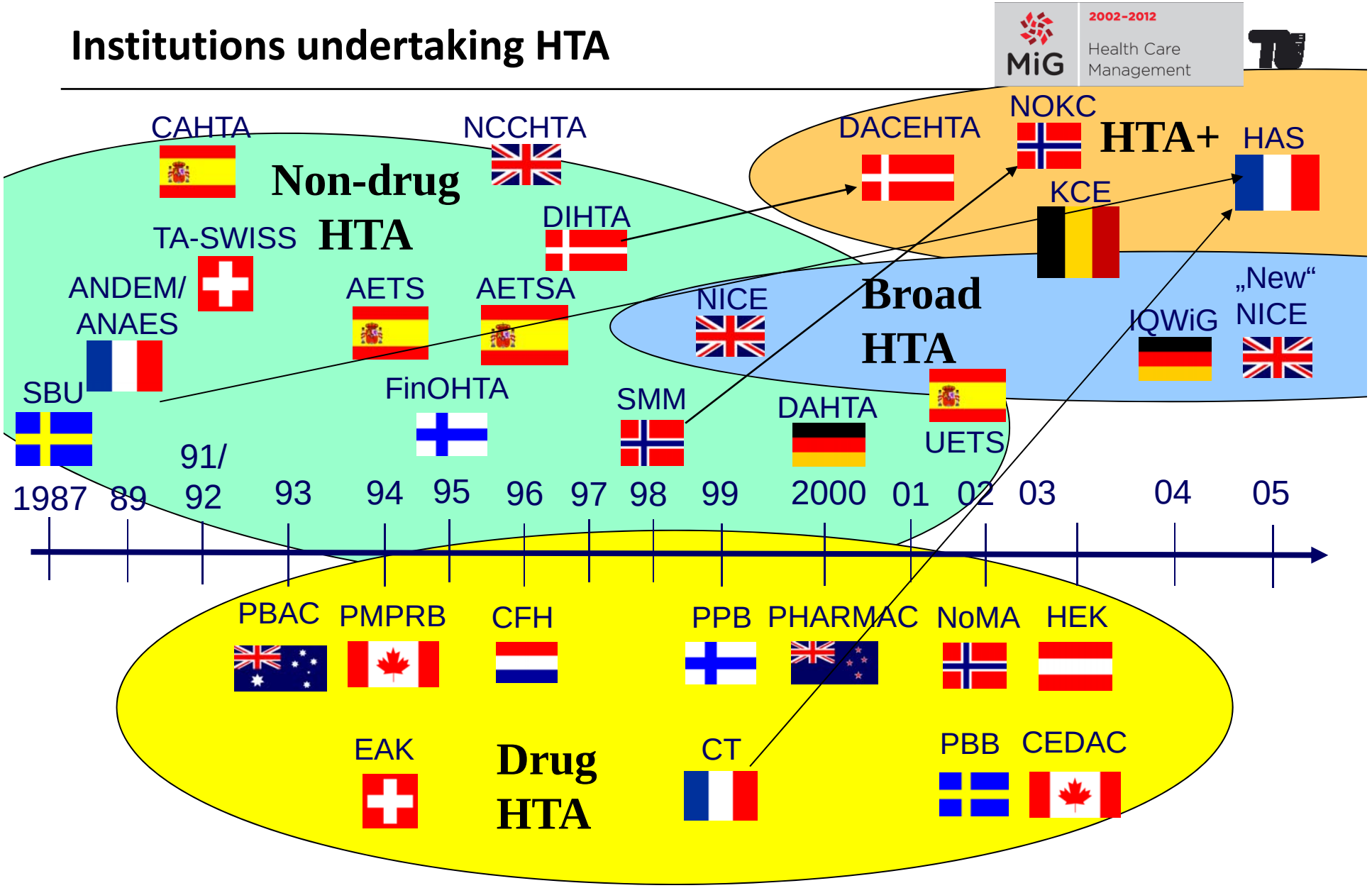
EUnetHTA WP8, 2008

Topics

- **Drugs** **28 %**
- **Devices** **22 %**
- **Diagnostics** **16 %**
- **Surgery** **7 %**
- **Other clinical** **24 %**
- **Public health** **5 %**
- **Delivery** **15%**
- **Financial** **2%**
- **Governance** **3%**

(223 HTAs from Canada, USA, England and Denmark)

Institutions undertaking HTA



- Policy processes and HTA
- Health systems, health policy and HTA
- HTA producers
- Impact of HTA
- Needs and demands of policy-makers
- Future challenges for HTA in Europe