Costs and cost-effectiveness of Complementary and Alternative Medicine

"Complementary and Alternative Medicine – Innovation and Added Value for European Healthcare" 9 October 2012 European Parliament, Brussels

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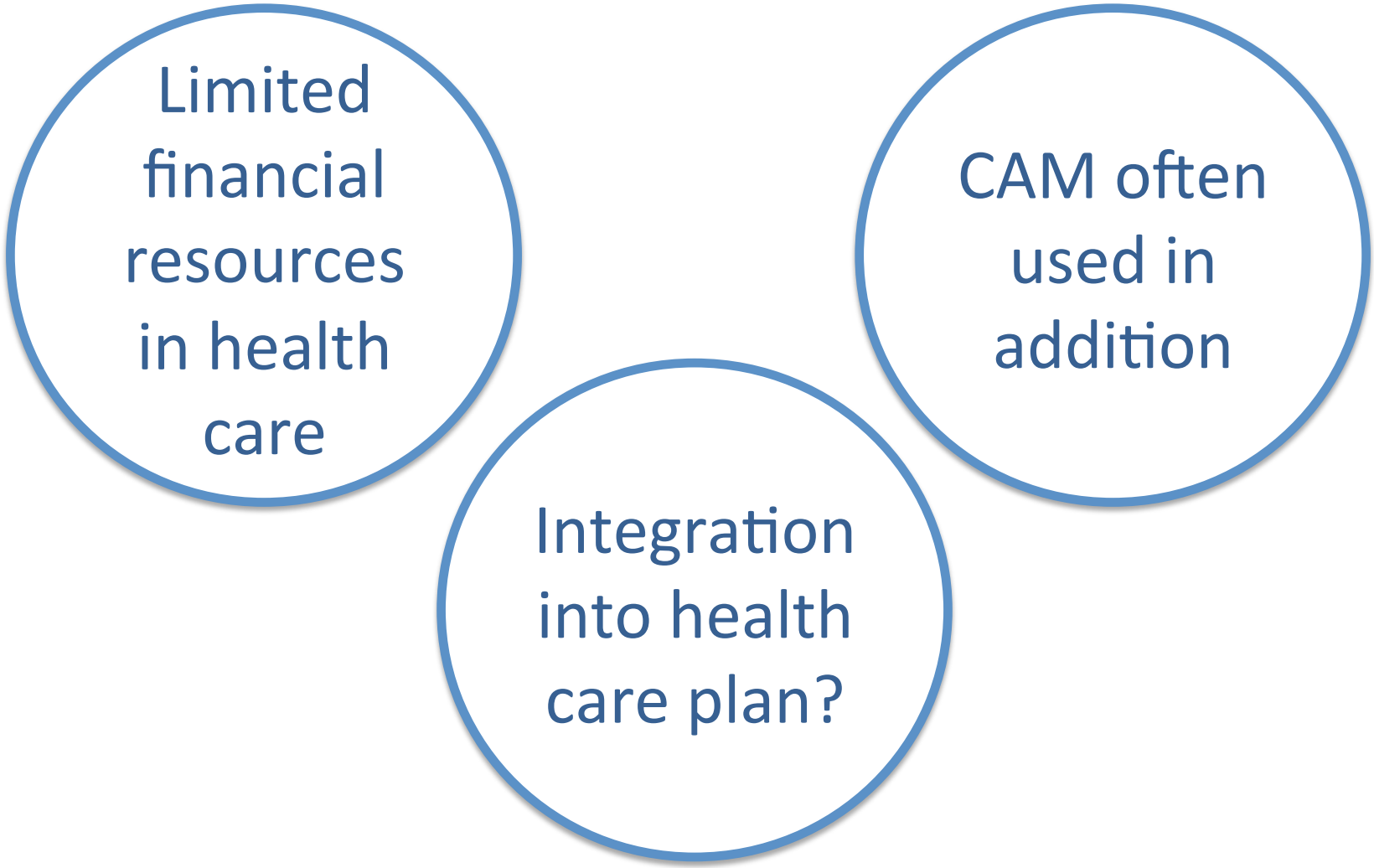
Why Economic Evaluations on CAM?



Possible Cost Savings on Provider Level

- China: TCM hospital outpatient and inpatient costs around 30% lower than in conventional hospital
- UK: (3 case studies of intergrative care): 30% less GP visits, 50% reduced drug bill[2]
- Netherlands: patients whose GP has additional CAM training have up to 30% lower healthcare costs[3]

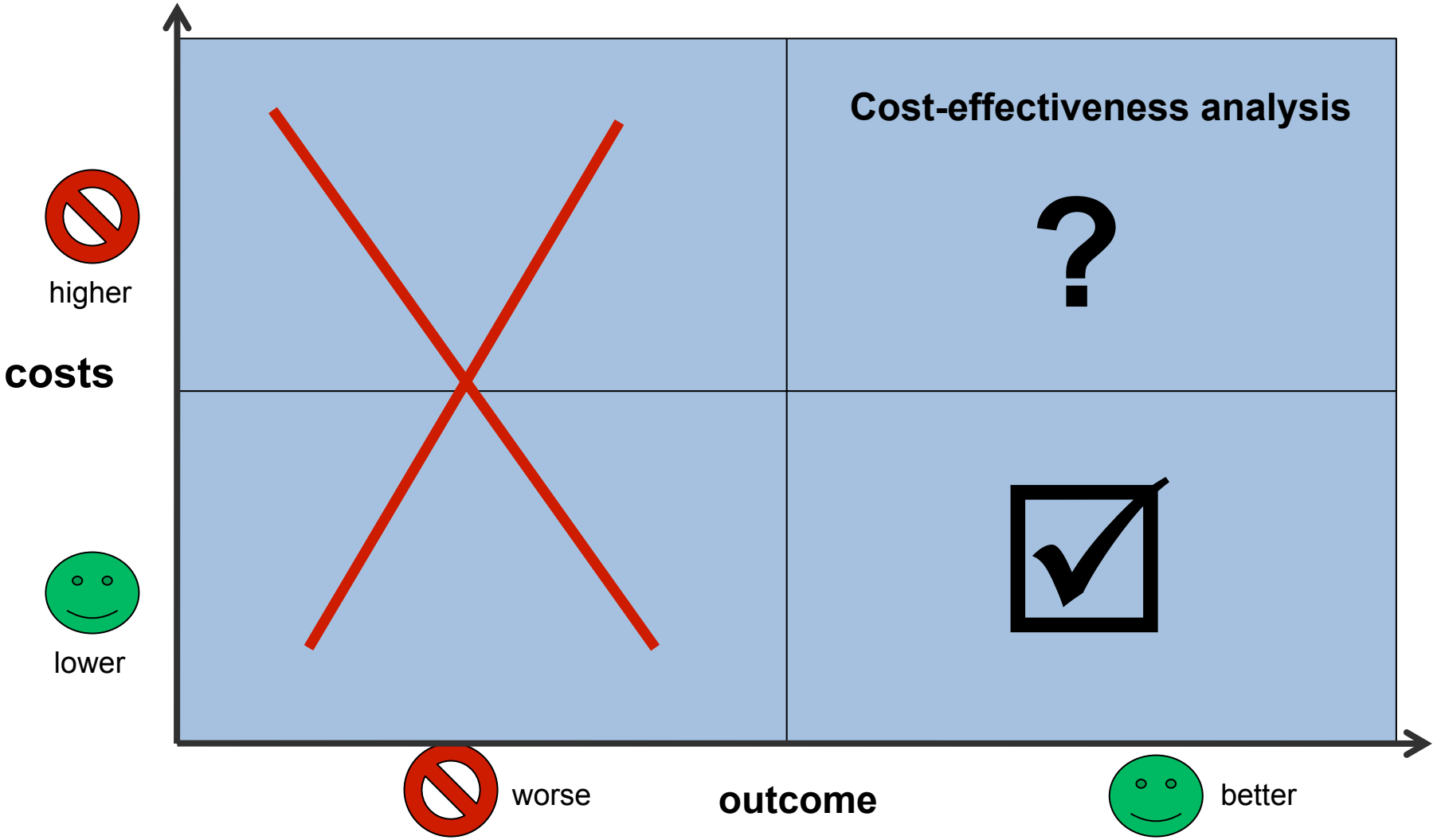
[1]WHO Workshop report on Traditional Medicine in primary health care 2007
[2]Smallwood Report UK
[3] Kooreman Eur J Health Econ 2011

Background

- Careful interpretation of economic analyses
  - Outcome and costs vary widely depending on treatment and context
  - Studies use different:
    - Economics evaluation methods
    - Perspectives
- Types of economic analyses
  - Cost of diseases
  - Full economic analyses
    - Comparison of treatments
    - Costs and benefits

Full Economic Analyses

Difference between two interventions



Economic Anayses on CAM – A Systematic Review

- 338 economic evaluations on CAM published
- Nearly all of them from Western countries
- 204 between 2001 and 2010
- 114 full economic evaluations
- 28 higher quality studies

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Economic Analyses (2001-2010)

CAM type	All	Full economic evaluations
Manipulatitve/ body practices	45	25
Acupuncture	41	29
Natural products	38	28
Mind Body Medicine	27	16
Homeopathy	24	13
Complex CAM	18	1
Other CAM	25	12

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Cost Savings - Better Outcome and Lower Costs

- 16 (29%) of 56 comparisons made in higher quality studies
- Non-pharmacological treatments:
  - Acupuncture for low back pain[1]
  - Naturopathic care for low back pain[2]
  - Acupuncture for breech presentations[3]
  - Manual therapy for neck pain[4]
  - Tai Chi to prevent hip fractures in elderly[5]

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[1]Ratcliffe BMJ 2006, [2]Herrman Altern Ther Health Med 2008, [3]van den Berg CTIM 2010, [4]Korthals-de Bos BMJ 2003, [5]Wilson J Clin Outcomes Manag 2001

Cost Savings - Better Outcome and Lower Costs II

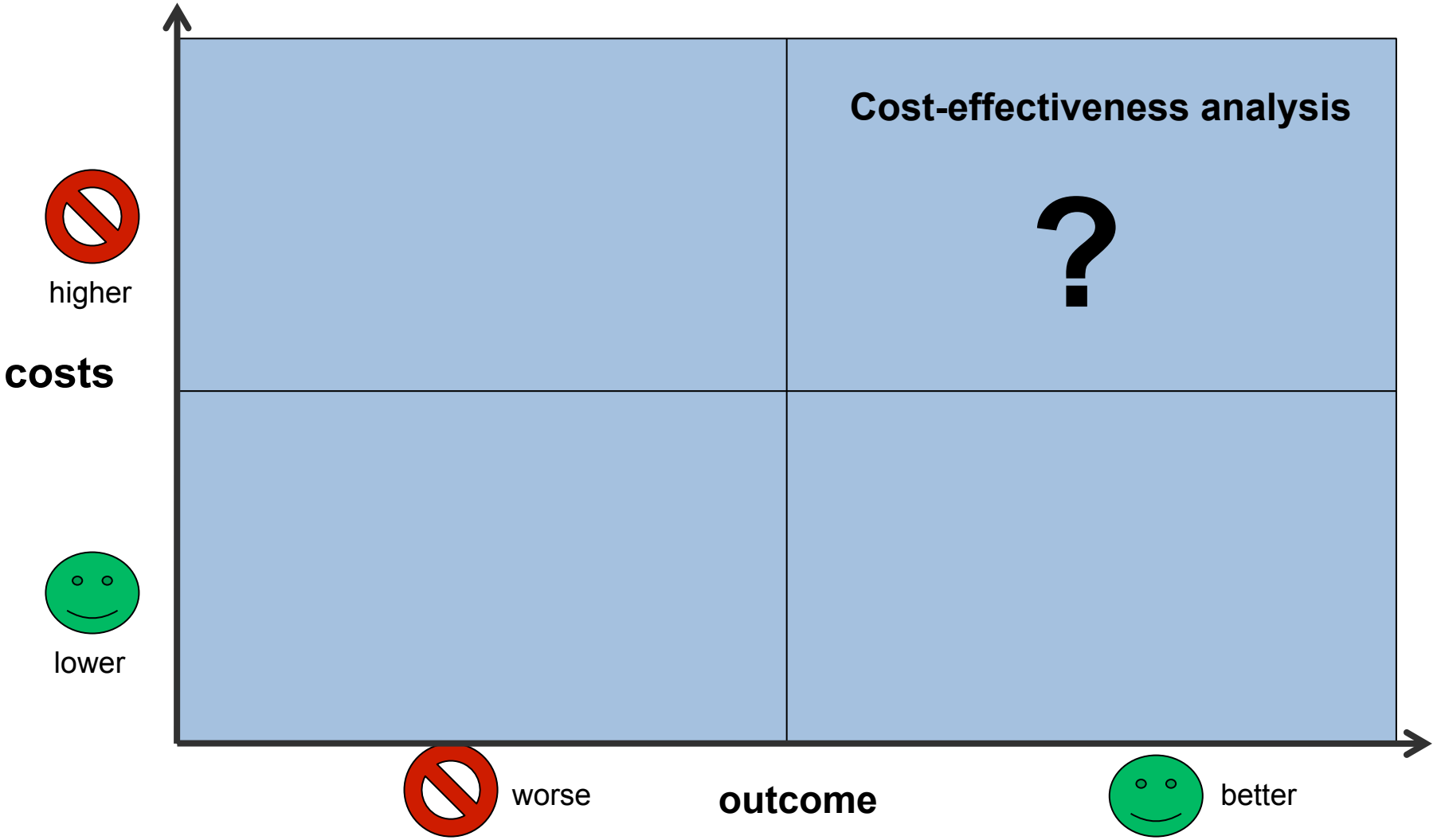
- Supplements
  - Perioperative oral Arginine and Omega-3 fatty acids in colorectal cancer[6]
  - Vitamin K1 in post menopausal women with osteoporosis[7]
  - Vitamin C, E and beta-carotene for cataract prevention[8]

Hermann P, Poindexter B, Witt CM, Eisenberg D. BMJ Open 2012

[6]Braga Nutrition 2005, [7]Stevenson Med Decis Making 2010, [8]Trevithick J Orthomolecular Med 2006

Cost-Effectiveness

Difference between two interventions



Cost-Utility-Analysis

How much do we have to pay
to gain one extra year of "perfect quality of life" (QALY) due to the intervention ?

Incremental Cost-Effectiveness Ratio (ICER)

$$\text{ICER} = \frac{\text{Diff. costs (intervention – control)}}{\text{Diff. QALYs (intervention – control)}}$$

Cost-Utility Analyses
Results from the Systematic Review

- Study quality of the cost-utility analyses of CAM was slightly better than that across all medicine

- Of the 28 Cost-Utility-Analyses comparisons:
  - 18% (n=5) $0 - $10,000/QALY
  - 54% (n=15) $10,000 - $50,000/QALY

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Cost-Effective – ICER $0-$10.000

- Acupuncture for Dysmenorrhea, Germany[1]
- Acupuncture for low back pain
  - Chronic low back pain, UK[2]
  - Acute low back pain, Korea[3]
- Exercise program plus spinal manipulation for low back pain, UK[4]
- Osteopathy for subacute back pain, UK[5]

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[1]Witt Am J Obstet Gynecol 2008, [2]Ratcliffe BMJ 2006, [3]Kim BMC CAM 2010,
[4]UK Beam Trial Team BMJ 2004, [5]Williams Fam Pract 2004

Cost-Effective – ICER $10.000 - $ 50.000

- Acupuncture, Germany:
  - Headache[1]
  - Osteoarthritis[2]
  - Neck pain[3]
  - Low back pain[4]
  - Allergic rhinitis[5]

- Acupuncture for headache, UK[6]
- Alexander technique or massage for chronic back pain, UK[7]
- Omega-3 fatty acids to avoid death after myocardial infarction[8]

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[1]Witt Cephalalgia 2008, [2]Reinhold Eur J Health Econ 2008, [3]Willich Pain 2006, ,[4]Witt Am J Epi 2006, [5]Witt Am J Epi 2009
[6]Wonderling BMJ 2004, [7]Hollinghurst BMJ 2008, [8]Quilici In J Clin Pract 2006

Complexity of Economic Analyses on CAM

- CAM mainly used as complex interventions
- The theory of many CAM methods predicts life style changes and possible long-term effects

Assumptions and Possible Translations

- Prevention of illness as a result of CAM treatments might result in cost-savings[1]
  - e.g. less time off from work, less direct costs
- For example, lifestyle intervention for diabetes patients in primary care is cost-effective in relation to standard care[2]

[1]Smallwood Report UK
[2]Jacobs-van der Bruggen Diabetes Care 2009

Conclusion

- A number of high quality studies indicate cost-effectiveness or even cost saving for single CAM treatments.
- Long-term economic impact not known, but aspects such as life style change could have positive economic impact.