

# 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**

**Claudia M. Witt, MD, MBA** 

Professor of Medicine  
Acting Director

Institute for Social Medicine, Epidemiology  
and Health Economics

Charité University Medical Center Berlin

[www.charite.de/cam](http://www.charite.de/cam)

Senior Fellow



Visiting Professor



UNIVERSITY of MARYLAND  
SCHOOL OF MEDICINE  
CENTER FOR INTEGRATIVE MEDICINE

# Why Economic Evaluations on CAM?

A diagram consisting of three blue-outlined circles arranged in a triangular pattern. The top-left circle contains the text 'Limited financial resources in health care'. The top-right circle contains the text 'CAM often used in addition'. The bottom-center circle contains the text 'Integration into health care plan?'.

Limited  
financial  
resources  
in health  
care

CAM often  
used in  
addition

Integration  
into health  
care plan?

# 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 integrative care): 30% less GP visits, 50% reduced drug bill<sup>2</sup>
- Netherlands: patients whose GP has additional CAM training have up to 30% lower healthcare costs<sup>3</sup>

<sup>1</sup>WHO Workshop report on Traditional Medicine in primary health care 2007

<sup>2</sup>Smallwood Report UK

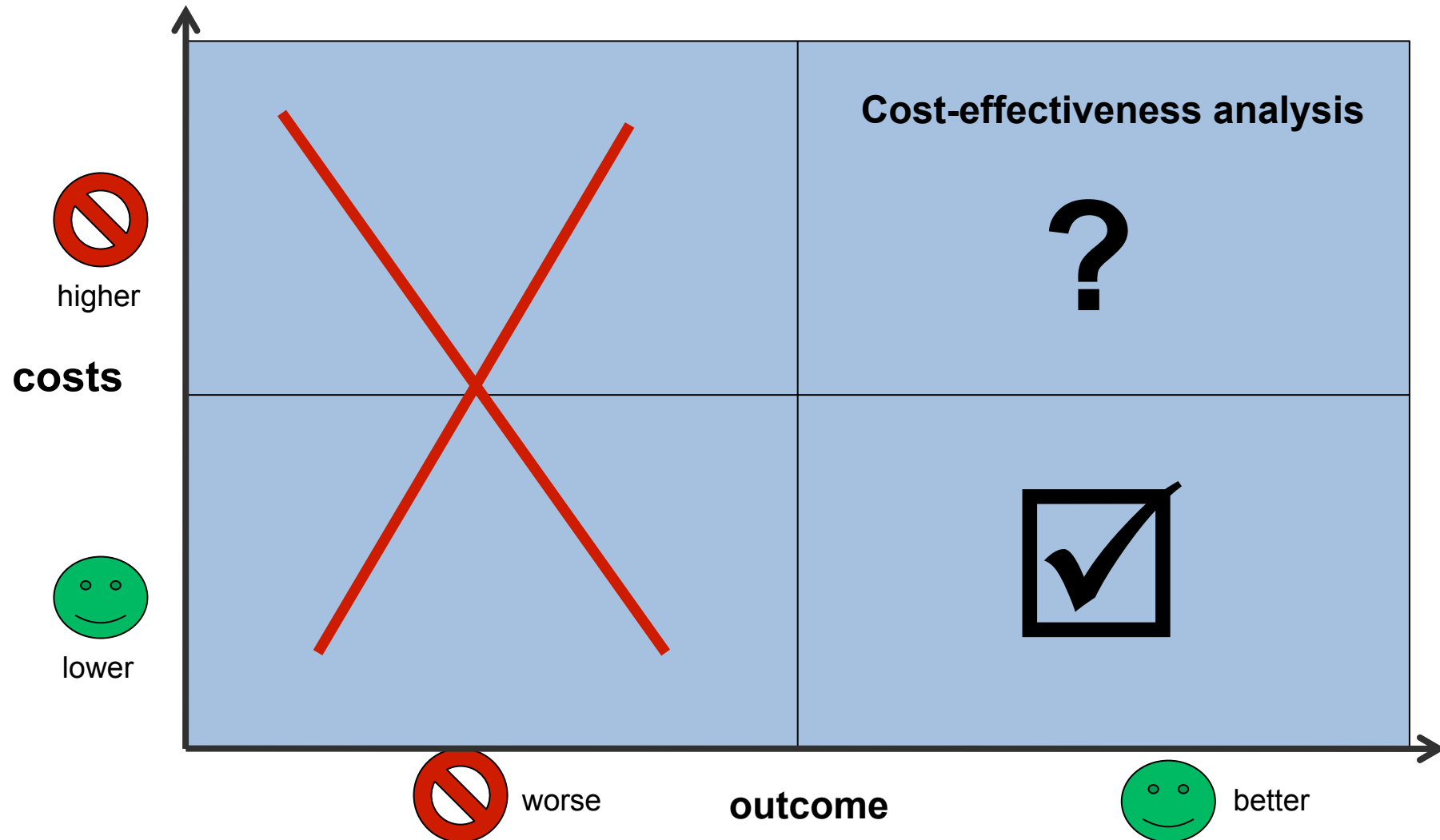
<sup>3</sup>Kooreman Eur J Health Econ 2011

# 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 Analyses 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

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

# Economic Analyses (2001-2010)

CAM type	All	Full economic evaluations
Manipulative/ 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

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

## 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<sup>1</sup>
  - Naturopathic care for low back pain<sup>2</sup>
  - Acupuncture for breech presentations<sup>3</sup>
  - Manual therapy for neck pain<sup>4</sup>
  - Tai Chi to prevent hip fractures in elderly<sup>5</sup>

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

<sup>1</sup>Ratcliffe BMJ 2006, <sup>2</sup>Herrman Altern Ther Health Med 2008, <sup>3</sup>van den Berg CTIM 2010,

<sup>4</sup>Korthals-de Bos BMJ 2003, <sup>5</sup>Wilson J Clin Outcomes Manag 2001



# Cost Savings - Better Outcome and Lower Costs II

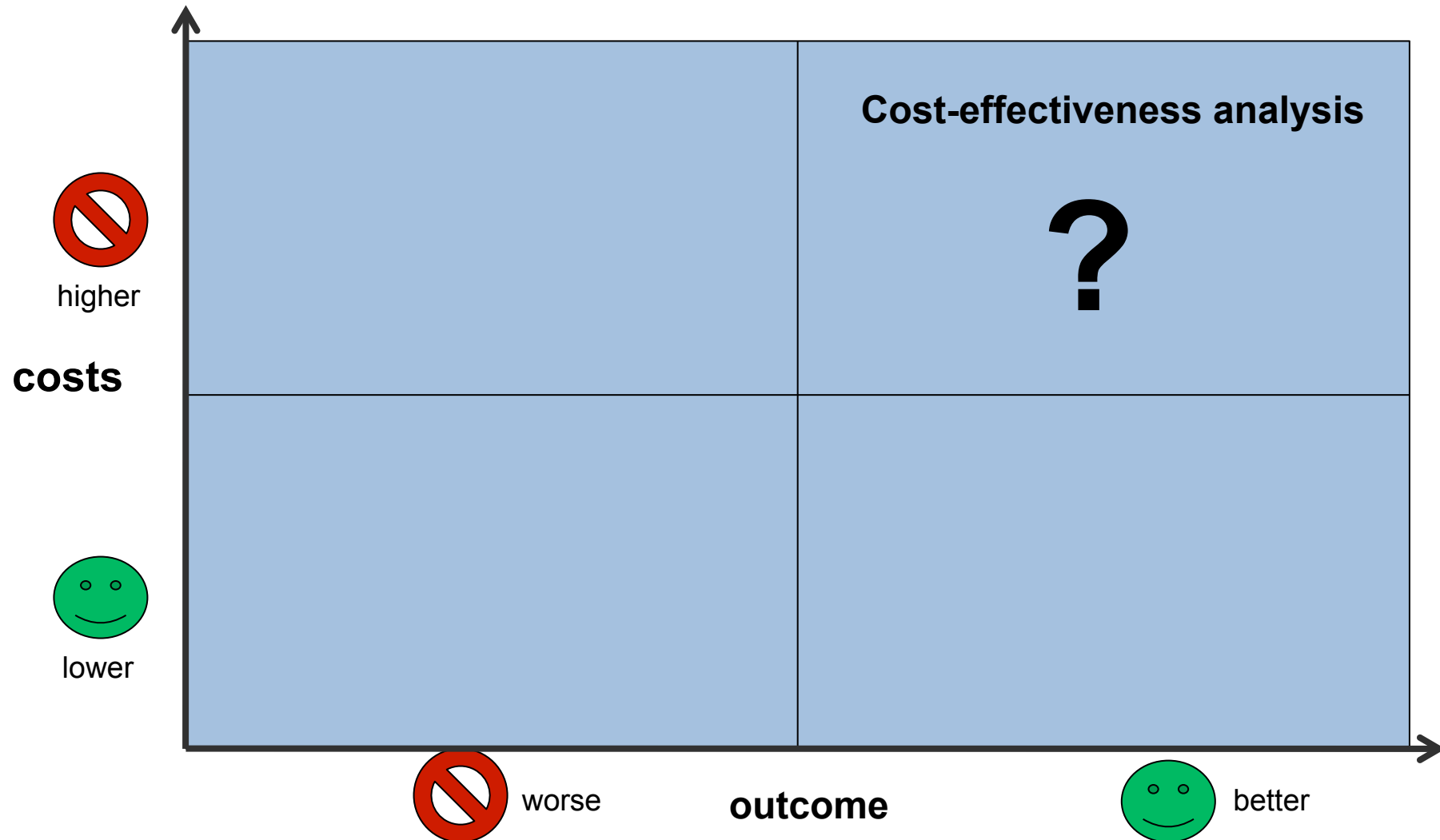
- Supplements
  - Perioperative oral Arginine and Omega-3 fatty acids in colorectal cancer<sup>6</sup>
  - Vitamin K1 in post menopausal women with osteoporosis<sup>7</sup>
  - Vitamin C, E and beta-carotene for cataract prevention<sup>8</sup>

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

<sup>6</sup>Braga Nutrition 2005, <sup>7</sup>Stevenson Med Decis Making 2010, <sup>8</sup>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

## Cost-Effective – ICER \$0-\$10.000

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

Hermann, Poindexter, Witt , Eisenberg. BMJ Open 2012

<sup>1</sup>Witt Am J Obstet Gynecol 2008, <sup>2</sup>Ratcliffe BMJ 2006, <sup>3</sup>Kim BMC CAM 2010,

<sup>4</sup>UK Beam Trial Team BMJ 2004, <sup>5</sup>Williams Fam Pract 2004

## Cost-Effective – ICER \$10.000 - \$ 50.000

- Acupuncture, Germany:

- Headache<sup>1</sup>
- Osteoarthritis<sup>2</sup>
- Neck pain<sup>3</sup>
- Low back pain<sup>4</sup>
- Allergic rhinitis<sup>5</sup>



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

Hermann, Poindexter, Witt, Eisenberg. BMJ Open 2012

<sup>1</sup>Witt Cephalalgia 2008, <sup>2</sup>Reinhold Eur J Health Econ 2008, <sup>3</sup>Willich Pain 2006, <sup>4</sup>Witt Am J Epi 2006, <sup>5</sup>Witt Am J Epi 2009

<sup>6</sup>Wonderling BMJ 2004, <sup>7</sup>Hollinghurst BMJ 2008, <sup>8</sup>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<sup>1</sup>
  - 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<sup>2</sup>

<sup>1</sup>Smallwood Report UK

<sup>2</sup>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.