Activity-based Health Technology Assessment (HTA)
HTA-centrum Region Västra Götaland

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Region Västra Götaland is a Western Swedish region with population 1.6 Million
What is Health Technology Assessment – HTA?

Systematic evaluation of health care technologies (using published studies)
Firmly rooted in scientific methods
Evaluates interventions, diagnostics etc.
Addresses consequences of health technologies
To inform policymaking in health care
Why do we need HTA?

• Rapidly increasing number of new health technologies
• Mainly industry driven
• Health care spendings increase but resources do not
• HTA evaluates the evidence for technologies aiming at best patient benefit for the money spent
Introduction of health care technologies

Many stakeholders
How should new technologies be introduced?

New technology
- Tested in a number of hospitals
- Enthusiasts
- Marketing

Clinical studies
- Systematic + HTA
- Prioritisation

Bypass of assessment procedure

Example: Da Vinci surgical robot

introduced into routine practice
- Clinicians & patients are pushing politicians
- Media become involved

Health care professionals involved in marketing

Lennart Jivegård
Possible problems with bypass of assessment

• Patient safety
• Inadequate health care planning and increasing expenditure
• Unequal care
Why *Activity-based* HTA in Region Västra Götaland?  
(Health care in Sweden is regional)

- Commission by Region Västra Götaland & Sahlgrenska University Hospital in 2005: Do we need a regional unit for technology assessment?
- Stakeholders interviewed, 15 HTA national/international units visited
- Problem analysis
  - new effective technologies still often adopted very slowly while other technologies are introduced too early
  - poor knowledge of HTA among clinicians/key opinion leaders, often sceptical to HTA
  - hospital managers rarely use HTA
  - non-availability of relevant HTAs when needed
Suggested solutions and actions taken

• Start regional HTA performed by clinicians (=Activity-based HTA)
  - high quality HTAs
  - HTAs to be used as decision support tool
  - HTA mandatory before introducing a technology
  - those wanting to introduce technology be responsible for HTA, invite key opinion leaders

• HTA support organisation needed to enable clinicians to do HTA

• Introduce Activity-based HTA by pilote projects inviting the hospitals and the university to nominate topics for HTA and people to do HTA

• After 8 pilote projects during 15 months: decision to start a HTA-centrum 10/2007
Activity-based HTA

Question

Prioritisation

Main process

Support process

Quality control process

Activity-based HTA by clinicians

HTA-centrum supports

- Focused question and PICO formulation
- Literature search and selection of articles
- Critical appraisal of articles (study quality?)
- Formulating conclusions & defining certainty of evidence (GRADE)
- Ethics and economy analyses
- Continuous support and feedback
- **Writes**: executive summary

External reviewers

Quality Assurance Board

Quality controlled HTA report
7 HTA experts
1 HTA librarian
1 administrative support
1 health economist

* All HTA experts work part time with HTA.
* They are also clinicians.

* Staff corresponds to 4.2 full time employees.
* Budget 500,000 EUR.
Patient-centred evaluations of health technologies
Written in English
Certainty of evidence
Efficacy/benefit
Risk/harm
Ethical aspects
Economical (budget impact) & organisational aspects
Knowledge gaps
The Activity-based HTA process in Region Västra Götaland

- A specific question is issued
- A project group is formed with members from the involved clinics/departments
- Support group from the HTA-centrum
- Quality control
- Activity-based HTA summarizes results and certainty of evidence but does not recommend
Introduction of new health technologies Region Västra Götaland

The Healthcare Director coordinates suggestions from the PPR with Head of Hospitals & Primary Care.

The regional Program and Prioritisation Committee (PPR) analyzes and evaluates the outcomes of the HTA report.

New technologies to be introduced are nominated by Departments, Hospitals, Primary Care Centres. If research publications are available a HTA may be initiated supported by HTA-centrum.

Healthcare Committee decides
## Typical time schedule for an Activity-based HTA project

<table>
<thead>
<tr>
<th>Date</th>
<th>Task</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct 3, 2016</td>
<td><strong>Project start</strong>– introduction and PICO, detailed time plan</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td>Literature search</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inclusion of articles</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td>Quality check &amp; start data extraction</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td>GRADE – certainty of evidence</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td>Drafting the HTA report</td>
<td></td>
</tr>
<tr>
<td>March 31, 2017</td>
<td>Quality assurance and publication</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Feedback meeting with work group</strong></td>
<td>M</td>
</tr>
</tbody>
</table>

*M = Meetings between project group and HTA-centrum*
How enable busy clinicians to rapidly produce an HTA?

• **Local** environment facilitates meetings
• **Support** continuously from HTA experts and librarians
• **Motivation**: they want to use the technology
• **Tools** (website checklists, detailed instructions) facilitates work in own environment
How is an Activity-based HTA performed? Process in a systematic review

1. Focusing the question and formulating a PICO
2. Search strategies (articles/studies to be included based on PICO)
3. Critical appraisal (looking at the quality of included studies)
4. Evidence evaluation (make conclusions, certainty of evidence for the conclusions)
Focused question: formulate PICO

• **P: Population** Example from Case study: Patients with symptomatic varicose veins and duplex verified truncal reflux

• I: Intervention

• C: Comparison

• O: Outcome
**P I C O**

**I:** Intervention (often the new technology)
Example: Endothermal ablation (for symptomatic varicose veins)

**C:** Comparison (often currently used technology)
Example: Surgery (for symptomatic varicose veins)
PICO = Outcomes

Hierarchy of outcomes

Critical for decision making

Important but not critical for decision making

Not important for decision making

Patient benefit

e.g.
Symptomatic recurrence
QoL
Symptom scale
Hospital days
Time to return to work
Postoperative pain

Surrogate variables
(e.g. laboratory values)
Literature search

Systematic reviews  (Cochrane, PubMed)
*Original articles  (PubMed, EMBASE etc)
Other HTA-reports  (specific HTA databases)

*Search is for all controlled studies based on the PICO search strategy: Randomised (RCTs) and Non-randomized controlled studies. Large case series (i.e. without controls) included to study complications

Limitations
Critical appraisal of included articles using score sheets

- example of small part of a score sheet for RCTs

### Risk of bias – Study limitations

<table>
<thead>
<tr>
<th>2. Treatment allocation</th>
<th>Yes</th>
<th>No</th>
<th>Unclear</th>
<th>Not applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Randomization technique minimizing the risk for manipulation?</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Was randomization executed so treatment allocation was unpredictable?</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c) Did all randomized patients start the allocated treatment? ²</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

### 3. Comparability of groups

| a) Were the treatment groups similar at baseline regarding factors that could influence the outcome? (e.g. age, gender, severity of the disease) | X   |    |         |               |
Summarize findings & possible conclusions across studies

• Make **outcome tables**

• Based on the reported outcomes: what can be concluded?
  - formulate conclusions
### Appendix 4.1.2 Example of Outcome table


<table>
<thead>
<tr>
<th>Study</th>
<th>Type of study</th>
<th>No of pts</th>
<th>Dropout</th>
<th>Intervention (Endo)</th>
<th>Controls (surgery)</th>
<th>Comments</th>
<th>Study quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biemans 2013 Netherlands &amp; Belgium</td>
<td>RCT: EVLA CS</td>
<td>n=80 n=80</td>
<td>n=2 n=12</td>
<td>9/78 (11.5%) NS between study groups</td>
<td>8/68 (11.8%)</td>
<td>Follow-up 12 months</td>
<td>? ? +</td>
</tr>
<tr>
<td>Flessenkamper 2013 Germany</td>
<td>RCT: EVLA CS</td>
<td>n=142 n=159</td>
<td>n=15 n=31</td>
<td>8.7% NS between study groups</td>
<td>3.1%</td>
<td>Follow-up 6 months Sapheno-femoral junction + treated vein</td>
<td>- + +</td>
</tr>
<tr>
<td>Rasmussen 2013a (J Vasc Surg) Denmark</td>
<td>RCT: EVLA CS</td>
<td>n=62/69 n=59/68</td>
<td>n=20/21 n=19/24</td>
<td>9 (17.9%) NS between study groups</td>
<td>4 (10.1%)*</td>
<td>Follow-up 5 years * Kaplan Meier estimate Patients only scanned if they had a clinical recurrence</td>
<td>? - ?</td>
</tr>
<tr>
<td>Rasmussen 2013b J Vasc Surg: Venous and Lymph Dis) Denmark</td>
<td>RCT: RFA EVLA CS</td>
<td>n=125/144 n=125/148 n=124/143</td>
<td>n=39/52 n=37/53 n=38/50</td>
<td>RFA 15% * EVLA 20% *</td>
<td>20% *</td>
<td>Follow-up 3 years * Kaplan Meier estimate More than 50% of patients without previous recurrence did undergo the final examination. Only legs with clinical recurrence were scanned. Recurrence regarded cumulated clinical recurrence</td>
<td>+ - ?</td>
</tr>
</tbody>
</table>
Defining the certainty of evidence (GRADE)

• Randomized controlled studies start at high certainty of evidence ⬤⬤⬤⬤

• GRADE: evidence across studies looking at study limitations, consistency, directness, precision, publication bias

• Work sheets

<table>
<thead>
<tr>
<th>Study limitations</th>
<th>Mark with cross-sign</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Randomisation, blinding, follow-up, drop-out/withdrawals, intention-to-treat)</td>
<td></td>
</tr>
<tr>
<td>No serious limitations</td>
<td>0</td>
</tr>
<tr>
<td>Some limitations (but not enough to downgrade)</td>
<td>0?</td>
</tr>
<tr>
<td>Serious limitations (downgrade one step)</td>
<td>-1</td>
</tr>
<tr>
<td>Very serious limitations (downgrade two steps)</td>
<td>-2</td>
</tr>
</tbody>
</table>

Comment limitations or reasons to downgrade:
<table>
<thead>
<tr>
<th>GRADE: define certainty of evidence for each conclusion</th>
</tr>
</thead>
</table>
| ⭐⭐⭐⭐⭐ High (certainty of evidence) | We are very confident that the true effect lies close to that of the estimate of the effect.  
“Treatment A compared with treatment B *improves*...” |
| ⭐⭐⭐⭐ Moderate | We are moderately confident in the effect estimate. But there is a possibility that the effect is substantially different.  
“Treatment A compared with B *probably improves*...” |
| ⭐⭐⭐ Low | Confidence in the effect estimate is limited: effect may be substantially different  
“Treatment A compared with B *may improve*...” |
| ⭐⭐ Very low | We have very little confidence in the effect estimate: likely to be substantially different from the estimate of effect  
“It is uncertain whether treatment A...” |

(GRADE = Grading of Recommendations Assessments, Development and Evaluation)
Our production since 10/2007

• HTA reports (n= 106)
  - 91 Activity-based HTA reports
  - 15 Rapid HTA (produced in-house in HTA-centrum)

• Increased HTA skills
  - 405 clinicians trained in HTA ("learning-by-doing")
Descriptive statistics our Activity-based HTA reports

• Introduction of new technologies most common (Should we introduce this technology?)
• 5% disinvestment questions (Should we stop using this technology?)
• 5% overviews (e.g. Non-surgical treatment of overweight and obesity)
• Topics
  - methods, e.g. surgical methods, and devices dominate
  - but we also do e.g. diagnostic, screening, pharmaceutical
Some examples of Activity-based HTAs during 2015

• 2015:85 Home mechanical ventilator treatment for chronic obstructive pulmonary disease patients with chronic hypercapnia
• 2015:84 Non-surgical treatment of overweight and obesity
• 2015:83 Chlorhexidine wash prior to clean surgical procedures
• 2015:81 Drug eluting balloons and stents for symptomatic peripheral arterial disease
• 2015:78 Hypoglossal nerve stimulation (HGNS) for treatment of obstructive sleep apnoea
• 2015:77 Endovenous interventions on varicose veins of the leg

Large potential for cost savings

Activity-based HTA reports are written in English since 2013
Clinician participants in HTA projects

• Usually 4 – 5 clinician participants per project, 70% are MDs
  - half of them are PhD, Associate or full Clinical professors

• Also other healthcare professionals (nurses, physiotherapists etc)

• Reported work hours for clinicians in a HTA project: median 45 hours
  (during 4 – 7 months)
Statistics for HTA reports during the last two years

Evaluation by **clinician participants** in 10 of 20 projects (response rate 50%)

<table>
<thead>
<tr>
<th>Question</th>
<th>Range</th>
<th>Median</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support from the HTA experts</td>
<td>7 – 10</td>
<td>10</td>
<td>9.5</td>
</tr>
<tr>
<td>Impression of HTA after finishing project</td>
<td>8 – 10</td>
<td>9.5</td>
<td>9.2</td>
</tr>
<tr>
<td>Support from head of clinical department</td>
<td>5 – 9.5</td>
<td>7.0</td>
<td>7.2</td>
</tr>
</tbody>
</table>

Questionnaire responses from clinicians (scale 0 – 10, 10 = best)
Responses from **decision-makers** for first 60 Activity-based HTA projects (response rate 50 %)

- Adequate timeliness and quality of HTA? 96%
- Used the HTA as decision-support tool? 90%
- Decision coherent with the result of the HTA? 97%
What happens after HTA report: Changes in practice?

• Studying this is a responsibility for managers
• Less well reported so far

• First 30 HTA projects: has the decision been implemented in practice?
  - yes (completely or mainly) 74%
  - awaiting further investigation 20%
  - no 6%

• Now included in annual financial statements from clinical department
Case study
Endovenous interventions on varicose veins of the leg
(An Activity-based HTA report 2015)

• Background: 20 – 50% of adults have varicose veins
• Interventions for varicose veins publicly financed for symptomatic patients (not for cosmetic problems)
• Routine treatment so far: surgery
  - anaesthesia and an OR is necessary
Endovenous interventions for varicose veins

• Recently introduced, now increasingly often used
  -office-based: anaesthesia and an OR not necessary

• Techniques
  -endothermal ablation (the varicose vein is blocked by intraluminal heat delivered by a catheter)
  -sclerosing foam (substance injected that blocks the vein)

• 25% of varicose vein interventions today are endovenous

• Focused question for the HTA: Are endovenous techniques better than surgery for patients with symptomatic varicose veins?
Participants in this Activity-based HTA project

Participating clinicians (n = 4)
Olle Nëlzén, MD, associate professor, The Unit of Vascular Surgery, Skaraborg hospital Skövde,
Anne Cervin, MD, The Unit of Vascular Surgery, Trollhättan
Christer Drott, MD, associate professor, The Unit of Vascular Surgery, South Älvsborg hospital, Borås
Johan Gelin, MD, associate professor, The Department of Vascular Surgery, Sahlgrenska University Hospital, Göteborg

Participants from the HTA-centrum (n = 5)
Lennart Jivegård, MD, Assistant professor, HTA-centrum, Region Västra Götaland
Ola Samuelsson, MD, Associate professor, HTA-centrum, Region Västra Götaland
Therese Svanberg, HTA-librarian, Medical Library, Sahlgrenska University Hospital, Göteborg
Eva-Lotte Daxberg, Medical Library, Sahlgrenska University Hospital, Göteborg
Josefine Persson, Health economist, Gothia Forum, Göteborg

External reviewers
Margareta Hellgren, Professor, senior consultant, Department of Obstetrics and Gynecology, Sahlgrenska University Hospital, Göteborg
Magnus Rizell, Senior consultant surgeon, Transplantation unit, Sahlgrenska University Hospital, Göteborg
<table>
<thead>
<tr>
<th>P</th>
<th>Adult patients with symptomatic varicose veins and duplex verified truncal reflux</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Endothermal ablation</td>
</tr>
<tr>
<td>O</td>
<td>Critical for decision making</td>
</tr>
<tr>
<td></td>
<td>Health related quality of life, measured with validated scale</td>
</tr>
<tr>
<td></td>
<td>Symptomatic recurrence</td>
</tr>
<tr>
<td></td>
<td>Important but not critical for decision making</td>
</tr>
<tr>
<td></td>
<td>Presence of reflux</td>
</tr>
<tr>
<td></td>
<td>Time to return to work</td>
</tr>
<tr>
<td></td>
<td>Postoperative pain</td>
</tr>
<tr>
<td></td>
<td>Symptom scale</td>
</tr>
<tr>
<td></td>
<td>Risk / Complications</td>
</tr>
</tbody>
</table>
### PICO 2

<table>
<thead>
<tr>
<th>P</th>
<th>Same as PICO 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Foam sclerotherapy</td>
</tr>
<tr>
<td>C</td>
<td>Surgery</td>
</tr>
<tr>
<td>O</td>
<td>Same as PICO 1</td>
</tr>
</tbody>
</table>

### PICO 3

<table>
<thead>
<tr>
<th>P</th>
<th>Same as PICO 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Foam sclerotherapy</td>
</tr>
<tr>
<td>C</td>
<td>Endothermal ablation</td>
</tr>
<tr>
<td>O</td>
<td>Same as PICO 1</td>
</tr>
</tbody>
</table>
22 studies included:  
2 systematic reviews (SR)  
7 randomised controlled studies (RCTs) after SR  
13 large case series (for complications only)
How did we do the present HTA?

• Started from the latest SR (a NICE guidance)

• In the NICE guidance for PICO 1 Endothermal ablation vs surgery
  -12 RCTs included
  -all conclusions: very low (⊕ΟΟΟΟ) or low (⊕⊕ΟΟ) certainty of evidence, mainly due to serious/very serious study limitations and imprecision

• We accepted the GRADE (certainty of evidence) in the NICE guidance

• Then we critically appraised the RCTs (n= 7) published after the NICE guidance

• We did GRADE for the new RCTs

• Finally we did a combined GRADE (NICE guidance + new RCTs)
### 4. Summary of Findings (SoF-table)

Endothermal ablation (Radiofrequency ablation; RFA, or Endovenous laser ablation; EVLA) versus conventional surgery for varicose veins (PICO 1).

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Study design</th>
<th>Relative affect (95% CI)</th>
<th>Absolute affect</th>
<th>Quality of evidence GRADE</th>
</tr>
</thead>
<tbody>
<tr>
<td>HRQoL (SF-36, EQ-5D, AVVQ, CTVIQ)</td>
<td>1 SR (5 RCTs) + 3 RCTs</td>
<td>No significant intergroup differences at one and three years</td>
<td>No significant intergroup differences at one and three years</td>
<td>$	ext{⊕⊕⊕⊕}$ Low$^2$</td>
</tr>
<tr>
<td>Presence of reflux</td>
<td>1 SR (6 RCTs) + 3 RCTs</td>
<td>RR = 1.16 Non-significant</td>
<td>1.4% to 5.6% Non-significant</td>
<td>$	ext{⊕⊕⊕⊕}$ Low$^3, 4$</td>
</tr>
<tr>
<td>Time to return to work</td>
<td>RFA</td>
<td>1 SR (3 RCTs)</td>
<td>- 9 days (95% CI: -11.8 to -5.6)</td>
<td>$	ext{⊕⊕⊕⊕}$ Low$^2$</td>
</tr>
<tr>
<td>EVLA</td>
<td>1 SR (2 RCTs)</td>
<td>- 0.2 days Non-significant</td>
<td></td>
<td>$	ext{⊕⊕⊕⊕}$ Low$^2$</td>
</tr>
<tr>
<td>Postoperative pain</td>
<td>1 SR (4 RCTs) + 1 RCT</td>
<td>- 0.2 (VAS 0-10) Non-significant</td>
<td></td>
<td>$	ext{⊕⊕⊕⊕}$ Low$^2$</td>
</tr>
<tr>
<td>Venous clinical severity score</td>
<td>1 SR (1 RCT) + 2 RCTs</td>
<td>- 0.3 (95% CI: -1.83 to -0.27)</td>
<td></td>
<td>$	ext{⊕⊕⊕⊕}$ Very low$^6$</td>
</tr>
</tbody>
</table>

**Abbreviations:** RR = risk ratio. CI = confidence interval.

**Footnotes:**

1. The quality of evidence for outcome variables that have been reported in new RCTs published later than the last literature search date of the NICE report is a weighted consensus rating based on both the NICE report and the new RCTs. For outcome variables only reported in the RCTs included in the NICE report the grading in their report was accepted.
2. The quality of evidence was downgraded two steps for serious study limitations, some uncertainty for directness and uncertainty for precision.
3. The quality of evidence was downgraded two steps for serious study limitations, some inconsistency, some uncertainty for directness and uncertainty for precision.
One example of a conclusion

• There may be little or no difference in health related quality of life one year after endothermal ablation compared with surgery in patients with symptomatic varicose veins and duplex verified truncal reflux

-Low certainty of evidence (⊕⊕〇〇)
### Organisational aspects

<table>
<thead>
<tr>
<th>Surgery/endoovenous</th>
<th>Present Strategy (75/25)</th>
<th>Scenario 1 (70/30)</th>
<th>Scenario 2 (60/40)</th>
<th>Scenario 3 (30/70)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANNUAL PATIENTS TO BE TREATED WITH SURGERY</td>
<td>975</td>
<td>910</td>
<td>780</td>
<td>390</td>
</tr>
<tr>
<td>ANNUAL HOURS WITH SURGERY</td>
<td>900</td>
<td>840</td>
<td>720</td>
<td>360</td>
</tr>
<tr>
<td>ANNUAL PATIENTS TO BE TREATED RFA/EVLA</td>
<td>325</td>
<td>390</td>
<td>520</td>
<td>910</td>
</tr>
<tr>
<td>ANNUAL HOURS WITH RFA/EVLA</td>
<td>150</td>
<td>180</td>
<td>240</td>
<td>420</td>
</tr>
<tr>
<td>ANNUAL HOURS RELEASED IN OPERATING THEATRES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANNUAL OPERATING THEATRES RELEASED</td>
<td></td>
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</table>

**Present Strategy (75/25):**
- Annual Patients to Be Treated with Surgery: 975
- Annual Hours with Surgery: 900
- Annual Patients to Be Treated RFA/EVLA: 325
- Annual Hours with RFA/EVLA: 150
- Annual Hours Released in Operating Theatres: 98

**Scenario 1 (70/30):**
- Annual Patients to Be Treated with Surgery: 910
- Annual Hours with Surgery: 840
- Annual Patients to Be Treated RFA/EVLA: 390
- Annual Hours with RFA/EVLA: 180
- Annual Hours Released in Operating Theatres: 98

**Scenario 2 (60/40):**
- Annual Patients to Be Treated with Surgery: 780
- Annual Hours with Surgery: 720
- Annual Patients to Be Treated RFA/EVLA: 520
- Annual Hours with RFA/EVLA: 240
- Annual Hours Released in Operating Theatres: 293

**Scenario 3 (30/70):**
- Annual Patients to Be Treated with Surgery: 390
- Annual Hours with Surgery: 360
- Annual Patients to Be Treated RFA/EVLA: 910
- Annual Hours with RFA/EVLA: 420
- Annual Hours Released in Operating Theatres: 878
Economical aspects (budget impact)

Table 1. The total annual cost is based on the cost estimation for patients within Region Västra Götaland (excluding Sahlgrenska University hospital).

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Annual Cost with Surgery</th>
<th>Annual Cost with RFA/EVLA</th>
<th>Total Cost in Region Västra Götaland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present Costs</td>
<td>14 967 400 kr</td>
<td>3 250 000 kr</td>
<td>18 217 400 kr</td>
</tr>
<tr>
<td>Scenario 1</td>
<td>13 901 000 kr</td>
<td>3 900 000 kr</td>
<td>17 801 000 kr</td>
</tr>
<tr>
<td>Scenario 2</td>
<td>11 915 200 kr</td>
<td>5 200 000 kr</td>
<td>17 115 200 kr</td>
</tr>
<tr>
<td>Scenario 3</td>
<td>5 957 600 kr</td>
<td>9 100 000 kr</td>
<td>15 057 600 kr</td>
</tr>
</tbody>
</table>

60% surgery/40% endovenous
Very short executive summary of conclusions

• Endothermal ablation: results during short/medium term follow up (mainly 6 months to 1 year) not different to surgery – Low certainty of evidence (⊕⊕ΟΟ)

• Low certainty means we have limited confidence in the estimate

• Why low certainty of evidence?
  -most patients had low severity of varicose veins (= not really the same population that we treat)
  -no long term data available
  -often poor study quality
  -the most critical outcome (symptomatic recurrence) not reported

• In addition:
  -unclear applicability rate for endothermal ablation
  -cost analysis is poor (long-term costs depends on long-term risk of recurrence)
Concluding remarks in this HTA report

• Endovenous treatment modalities require no OR or general anaesthesia and can free OR resources but are not always applicable.

• Results of endothermal ablation may be similar (⊕⊕⊙⊙) to those of surgery at short- and medium-term but
  - the critical outcome symptomatic recurrence is not studied
  - long-term (> 3 - 5 years) results are lacking
  - the frequency with which endovenous techniques can be used is not defined, but can be estimated to approximately 40%.

• Health economic analyses show uncertain but probably small differences in costs and benefits between the techniques.

• Interpretation?
• NICE guidance recommended endothermal ablation as first choice for patients with varicose veins

• Our interpretation
  - our confidence in the estimates is limited
  - the scientific basis for the NICE guidance recommendation is weak
  - more research is needed
Some take home messages Activity-based HTA

- To increase the use of HTA you need to improve HTA skills – “learning-by-doing”
- Busy clinicians can successfully be engaged in Activity-based HTA
  - leading clinicians & professors are enthusiastic
- Establishment process for Activity-based HTA is crucial
- HTA experts and skilled librarians giving support is necessary
- Time planning, adequate support & quality control are key success factors
- HTA experts ensure impartial conclusions
- Studying the impact of the HTAs is important
How to find us

• Easiest way: google **HTA-centrum**
• Website with all reports, work tools etc

Thank you for your attention!