An Economic Evaluation of Elective Endovascular Repair (EVAR) Compared with Open Surgical Repair (OSR) of Abdominal Aortic Aneurysms

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Rationale
- Abdominal aortic aneurysms (AAA) are a significant health problem in Ontario.
- Prevalence of AAA varies by gender: 4.1% for men, 4.4% for women.
- Mortality rates are high.
- 15th leading cause of death in Canada.
- Treatment options include open repair (OSR) and endovascular repair (EVAR).
- EVAR is effective in Canada, but cost-effectiveness is uncertain.
- Cost-effectiveness of EVAR in Canada is uncertain.

Objectives
1. Conduct a systematic literature review of effectiveness of EVAR vs. OSR.
2. Construct field evaluation study at London Health Sciences Centre (LHSC) to collect Ontario specific information regarding the efficacy, costs and impact on QoL of EVAR in Ontario.
3. Conduct an interim analysis on a subset of patients with 1-year follow-up recruited into the field evaluation.
4. Construct a decision analytic model to evaluate the cost-effectiveness of EVAR vs. OSR.
5. Estimate the budget impact for Ontario.

Methods
- Literature Search
  - Databases searched: MEDLINE, EMBASE, Cumulative Index to Nursing & Allied Health Literature (CINAHL), Cochrane Database of Systematic Reviews (CDSR), ACP Journal Club, Database of Abstracts of Reviews of Effects (DARE) and Cochrane Central Register of Controlled Trials (CENTRAL).
- Clinical studies comparing elective repair of AAA.
- Non-randomized.
- English language studies only since 1990.

Results
- EVAR dominates OSR (less $; increases QoL).
- Potential budgetary impact: $14,576.

Discussion
- Probabilistic model needed to properly address uncertainty (this has been implemented and will be incorporated into final results).
- Small sample of patients in interim field evaluation.
- Analysis of data from all patients recruited into the study will provide a more precise estimate of complication rates associated with OSR & EVAR.
- Literature and field evaluation estimates may be different due to:
  - Mixed patient population in literature (high & low risk patients).
  - Lower surgical risk in OSR.
  - LHSC is an experienced centre – lower complication rate, potential for referral bias (getting more difficult cases).

Support: This study was funded by a grant from the Ontario Ministry of Health & Long-term Care. Report presented on May 13, 2005 to the Ontario Health Technology Advisory Committee (OHTAC). Interim report available at http://www.path-HTA.ca/report.htm