A clinical pathway for laparoscopically assisted vaginal hysterectomy: impact on costs and clinical outcome

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Record Status
This is a critical abstract of an economic evaluation that meets the criteria for inclusion on NHS EED. Each abstract contains a brief summary of the methods, the results and conclusions followed by a detailed critical assessment on the reliability of the study and the conclusions drawn.

Health technology
The introduction of a clinical pathway for the treatment of women undergoing laparoscopically-assisted vaginal hysterectomy (LAVH) was studied. The clinical pathway described the standard treatment, evaluations and interventions, for 4 days in hospital aiming for discharge on the 5th day. The aspects of treatment described were laboratory tests, radiology, pharmacology, operation and anaesthesia, and other. The authors appear to have adopted a hospital perspective in the study.

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
The study population comprised women undergoing LAVH. No exclusion criteria were reported.

Setting
The setting was secondary care. The economic study was carried out in Taiwan.

Dates to which data relate

Source of effectiveness data
The effectiveness data were derived from a single study.

Link between effectiveness and cost data
The same patients who provided the effectiveness data also provided the cost data. However, it was unclear whether the costing was conducted retrospectively for all patients or prospectively for some.

Study sample
No power calculations were reported. The sample was not selected, as all women undergoing LAVH during the time period were included in the study. There were 40 women in the pre-clinical pathway group and 84 in the clinical pathway group.
Study design
This was a single-centre, before-and-after study. There was no follow-up after hospital discharge.

Analysis of effectiveness
All the patients included in the study were considered at analysis. The primary health outcomes used were:

- delay of the operation day,
- blood transfusion,
- the duration of postoperative antibiotic injection more than 2 days after surgery,
- mortality,
- complications,
- patient readmission within 2 weeks,
- the length of hospital stay,
- the duration of the operation, and
- the duration of anaesthesia.

The patient groups were comparable in terms of their age, chronic disease and pelvic adhesions. The pre-clinical pathway had a higher parity than the clinical pathway group, 2.8 versus 2.3, (p<0.01).

Effectiveness results
There was no blood transfusion or mortality in either group.

There was one delay in the operation day and one readmission within 2 weeks of discharge in the pre-clinical pathway group. There were 5 (12.5%) complications in the pre-clinical pathway group and 4 (4.8%) in the clinical pathway group, (p=0.12).

The rate of initiating postoperative antibiotics more than 48 hours after surgery was 6 (15.0%) in the pre-clinical pathway group and 3 (3.6%) in the clinical pathway group, (p=0.02).

Clinical conclusions
The authors concluded that the clinical pathway may have improved health outcomes, although the results were not generally statistically significant. There was no evidence that the health outcomes were worse.

Measure of benefits used in the economic analysis
No summary measure of health benefit was derived. In effect, a cost-consequences analysis was conducted.

Direct costs
Discounting was not carried out since the costs were calculated over less than 2 years. The quantities and the costs were not analysed separately. The costs were calculated from the hospital’s electronic records. They comprised physician costs, laboratory costs, anaesthesia costs, drug costs, operation costs and treatment costs. No price year was given.

Statistical analysis of costs
No statistical analysis of the costs was carried out.

**Indirect Costs**
The indirect costs were not included.

**Currency**
US dollars ($).

**Sensitivity analysis**
No sensitivity analysis was carried out.

**Estimated benefits used in the economic analysis**
See the 'Effectiveness Results' section.

**Cost results**
The mean cost per patient was $1,866 (standard deviation, SD=413) before the clinical pathway and $1,715 (SD=98) with the clinical pathway, \( p=0.03 \).

The duration of the costs was until hospital discharge.

The costs of adverse effects in hospital were included in the costing.

**Synthesis of costs and benefits**
The costs and benefits were not combined.

** Authors' conclusions**
The authors concluded that the clinical pathway introduced into their hospital for laparoscopically-assisted vaginal hysterectomy (LAVH) reduced costs and probably improved clinical outcomes. They concluded that, overall, it produced an improvement.

**CRD COMMENTARY - Selection of comparators**
The choice of the comparator (no clinical pathway) was justified by it having been standard practice in the authors' hospital in the past. You should decide whether it represents current practice in your own setting.

**Validity of estimate of measure of effectiveness**
The effectiveness data were derived from a single study. The study design, a before-and-after study, did not have the advantage of a control group undergoing treatment over the same period as patients being treated under the clinical pathway. The study sample was representative of women undergoing LAVH in Taiwan attending that hospital, as they were all included. It was unclear whether the study sample was representative of all women undergoing LAVH in Taiwan or in other countries. With the exception of parity, which was slightly higher in the pre-clinical pathway group, the patient groups were shown to be comparable at analysis. The analysis of effectiveness was handled credibly. However, given the study design, the internal validity is likely to be poor.

**Validity of estimate of measure of benefit**
No summary measure of benefit was derived. In effect, a cost-consequences analysis was conducted.
Validity of estimate of costs
From the cost perspective adopted (i.e. that of the hospital), all costs were included. However, any decision-makers considering health system costs would want more information on the post-hospital discharge costs. The unit costs were not reported separately from the resource quantities, which makes generalisability to other settings difficult. The resource use quantities were taken from a statistical study, but no statistical or sensitivity analyses of the quantities were undertaken. The prices were taken from the authors’ setting and may not be generalisable to other settings, given that no statistical or sensitivity analyses of the prices were carried out. No price date was reported, which will hinder any future reflation exercise.

Other issues
There was some comparison of the authors’ results with the findings from other studies. However, the issue of generalisability was not discussed. The authors did not present their results selectively and their conclusions reflect the scope of the analysis. The authors did not report any limitations of their study.

Implications of the study
The authors concluded that the clinical pathway reduces costs and probably improves health outcomes for women undergoing LAVH. However, they seemed to be unaware of the limitations of the cost data (no allowance for changing price levels) and the drawbacks of a before-and-after study.

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Bibliographic details

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MeSH
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