



Title	Liquid-Based Cytology and Human Papillomavirus Testing in Cervical Cancer Screening
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Aim

- To compare the diagnostic accuracy of liquid-based cytology (LBC) and human papillomavirus (HPV) testing with that of Papanicolaou (Pap) smears in detecting precancerous or malignant cervical lesions.
- To evaluate the comparative cost and cost effectiveness of LBC and HPV testing.

Conclusions and results

Diagnostic Accuracy: 17 reports on 13 unique trials undertaken in 9 countries met the selection criteria for comparing LBC and Pap smears; 23 unique trials met the criteria for comparing HPV testing and Pap smears. Evidence (based primarily on results from split-sample trials) suggests that compared with Pap smears, the use of LBC reduces the proportion of unsatisfactory specimens and generates fewer false negatives for ordinary populations, but not for high-risk populations. HPV testing, alone or with cytology, is more sensitive but less specific than Pap smears.

Economic Review: 7 studies on LBC and 6 on HPV met the selection criteria. Results suggest that LBC screening every 3 years or longer may be cost effective relative to Pap smear screening. Economic modelling based on the use of LBC in a Canadian context is needed before the cost effectiveness of HPV testing can be determined.

Methods

Diagnostic Accuracy: To update a previous CCOHTA review, databases were searched for literature published between January 1997 and July 2003. Comparative trials that examined the diagnostic accuracy of LBC and HPV testing and Pap smears were included. Estimates of test sensitivity and specificity were the primary outcomes. Two reviewers independently extracted data from studies that met the inclusion criteria. Report quality was assessed in terms of recruitment method, verification bias, reference standard, blinding of outcome assessment, and level of industry funding for research.

Economic Review: Economic evaluations or cost studies pertaining to LBC and HPV testing were identified through a literature search. Information on study characteristics, average costs per patient, life days saved, and incremental cost per life year saved relative to Pap smears was summarized.

Further research/reviews required

- High-quality trials that control for verification bias are needed to form a valid and reliable judgment about the diagnostic accuracy of LBC and HPV.
- Economic modelling based on the use of LBC in a Canadian context is needed to assess the cost effectiveness of HPV.