

# Ontario Cervical Cancer Screening Clinical Practice Guidelines

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## Abstract

**Objective:** To develop clinical practice guidelines for cervical screening and the primary management of abnormal cytology in Ontario, using an established methodological process.

**Data Sources:** Primary data sources were relevant articles listed in the Medline (1998 to July 2004), Embase (1998 to July 2004), and Cochrane Library (2004, Issue 2) databases.

**Study Selection:** Studies addressing quality or the optimization of cervical screening were considered eligible in the systematic review of the evidence. Specifically, clinical practice guidelines, technology assessments, systematic reviews, and randomized controlled trials were of primary interest. Given the variability of the data, other information sources were considered eligible if there was a demonstrated gap in the published literature.

**Data Extraction:** Data were identified and extracted by a methodologist and reviewed by four authors. Results were reviewed and discussed by members of an expert working group consisting of a diverse group of health professionals with expertise in cervical cancer. Data audits were conducted by independent reviewers.

**Data Synthesis:** Recommendations with evidence ratings were developed through a review of the evidence with expert consensus and were approved by more than 80% of 40 external practitioners who reviewed the document and responded to a standardized survey.

**Conclusion:** The development of comprehensive recommendations on cervical screening in Ontario was feasible using a rigorous methodological process. Recommendations for practice are provided.

**Key Words:** Cervical, cervical screening, cancer screening, practice guidelines

Competing Interests: See Acknowledgements.

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## Résumé

**Objectif :** Élaborer des directives cliniques en ce qui concerne le dépistage cervical et la prise en charge principale de la cytologie anormale en Ontario, au moyen d'un processus méthodologique établi.

**Sources de données :** Les articles pertinents répertoriés dans les bases de données Medline (de 1998 à juillet 2004), Embase (de 1998 à juillet 2004) et Cochrane Library (2004, numéro 2) constituaient les principales sources de données.

**Sélection d'études :** Les études traitant de la qualité ou de l'optimisation du dépistage cervical ont été considérées admissibles dans le cadre de l'analyse systématique des résultats. Nous nous sommes plus particulièrement intéressés aux directives cliniques, aux évaluations de la technologie, aux analyses systématiques et aux essais comparatifs randomisés. Compte tenu de la variabilité des données, d'autres sources de renseignements ont été considérées admissibles en présence d'une lacune démontrée dans la littérature publiée.

**Extraction des données :** Les données ont été identifiées et extraites par un spécialiste de la méthodologie, ainsi qu'analysées par quatre auteurs. Les membres d'un groupe de travail spécialisé (soit un groupe diversifié de professionnels de la santé disposant d'une expertise en cancer du col utérin) ont procédé à l'analyse des résultats et en ont discuté. Les données ont été soumises à des vérifications menées par des arbitres scientifiques indépendants.

**Synthèse des données :** Des recommandations (accompagnées de cotes quant à la qualité des résultats) ont été élaborées au moyen d'une analyse des résultats ayant mené à un consensus parmi les spécialistes et ont été approuvées par plus de 80 % des 40 praticiens externes qui ont analysé le document et ont répondu à un sondage standardisé.

**Conclusion :** L'élaboration de recommandations exhaustives quant au dépistage cervical en Ontario s'est déroulée en fonction d'un processus méthodologique rigoureux. Des recommandations visant la pratique sont fournies.

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## INTRODUCTION

Although the incidence of cervical cancer has declined dramatically since the 1950s, women continue to die from this preventable disease.<sup>1</sup> Cervical cytology (Pap smear) screening is well recognized as the major factor contributing to the decline in the incidence of cervical cancer. In the past, cervical cancer screening in Ontario was delivered largely in an opportunistic model. The establishment of the Ontario Cervical Cancer Screening Program prompted reorganization of cervical screening delivery in Ontario to improve the clinical effectiveness of cervical screening efforts.

At the same time, increased understanding of the biology of cervical cancer, especially its relationship to the human papillomavirus (HPV), has led to research focused on cervical cancer prevention. Technological advances have provided new techniques for collecting cervical cells that improve the detection of cervical precursor lesions and that facilitate HPV testing. Because these technologies are evolving rapidly and available systems are expensive, a review of their clinical utility and cost is needed.

The volume of published data on cervical screening is extensive. However, within that body of evidence there is a lack of large well-designed studies from which to draw reliable conclusions, and expert consensus opinion is often used to inform the basis of current practice. A process developed by the Program in Evidence-Based Care<sup>2</sup> provides a method for determining the best way to conduct cervical screening, using systematic literature review, validated guideline evaluation instruments, expert consensus, standardized evidence rating systems, internal review and data audit, external validation through a peer-review survey, and final approval by a practice guidelines coordinating committee.

The methodological rigour used in developing the systematic review and subsequent guidelines is necessary to the production of high-quality products in the face of variable and voluminous evidence. Also important is the involvement of key stakeholders, which adds to the credibility and transparency of the process and provides opportunity for feedback. The resulting documents have greater credibility, and the practice guidelines, which by nature are prescriptive, are more readily accepted. The participation of key stakeholders also allows peer-to-peer knowledge transfer, which happened throughout Ontario with the cervical cancer screening guidelines.

The process of developing clinical practice guidelines for Ontario practitioners on cervical screening and the primary management of abnormal cytology using an established methodological process is described.

## METHODS

A systematic review of the literature and subsequent development of a clinical practice guideline on cervical screening was initiated by the Ontario Cervical Screening Program in conjunction with the Program in Evidence-Based Care's Gynecology Cancer Disease Site Group, both programs of Cancer Care Ontario. The project brought together a group of stakeholders, including gynaecologists, family physicians, pathologists, oncologists, and methodologists.

A working group from this committee was struck to lead the process of document development. Administrative support was provided by the Ontario Medical Association Quality Management Program—Laboratory Services. The objectives of the project were to develop evidence-based guidelines, appropriate for use in the Ontario health care setting, on cervical screening and the preliminary management of abnormal cytology.

### Literature Search Strategy

The Medline (1998 to July 2004), Embase (1998 to July 2004), and Cochrane Library (2004, Issue 2) databases were searched for relevant practice guidelines, technology assessments, systematic reviews, and randomized controlled trials. Reference lists of relevant papers and review articles were scanned for additional citations. The Canadian Medical Association Infobase, the National Guidelines Clearinghouse, and other websites were also searched for evidence-based practice guidelines.

From articles identified by the text words and medical subject headings "cervix," "cervical," "cancer," "carcinoma," "screening," and "mass screening," we further identified those with the following study designs: practice guidelines, technology assessments, systematic reviews with or without meta-analyses, and randomized controlled trials.

### Study Selection Criteria

The project was framed in terms of six questions (Table 1). The first five questions dealt with the provision of cervical screening, including screening tools, program delivery, initiation and cessation of screening, and screening interval. The last question dealt with the primary management of abnormal cervical cytology, not including colposcopic management. Studies addressing quality or the optimization of cervical screening and the management of abnormal cervical cytology were considered eligible in the systematic review of the evidence. The inclusion criteria and outcome variables for each question addressed in the systematic review of the evidence are shown in Table 1. Abstracts, letters, and editorials were excluded, as were papers published in a language other than English. Published clinical practice guidelines, technology assessments, systematic reviews, and

**Table 1. Details of inclusion criteria**

Question	Inclusion Criteria	Outcomes
1. What is the optimal cervical screening tool?	<ul style="list-style-type: none"> <li>compare conventional cytology to liquid-based cytology or to HPV DNA testing.</li> <li>compare various LBC methodologies</li> </ul>	<ul style="list-style-type: none"> <li>Sensitivity, specificity of the intervention</li> <li>Rates of unsatisfactory specimens</li> <li>Safety/adverse effects of the intervention</li> </ul>
2. Do organized cervical screening programs with recall mechanisms reduce the incidence of and mortality due to cervical cancer?	<ul style="list-style-type: none"> <li>compare organized cervical screening programs to spontaneous cervical screening.</li> </ul>	<ul style="list-style-type: none"> <li>Rates of detection of abnormal cytology</li> <li>Mortality due to cervical cancer</li> </ul>
3. What is the most appropriate time for initiation and cessation of cervical screening?	<ul style="list-style-type: none"> <li>describe the optimum time for initiation of cervical screening.</li> <li>describe the optimum time cervical screening cessation. Results of cervical abnormalities were to be reported separately for women who had a negative screening history.</li> </ul>	<ul style="list-style-type: none"> <li>Rates of detection of abnormal cytology</li> </ul>
4. At what time interval should women be screened?	<ul style="list-style-type: none"> <li>describe optimum time intervals for cervical screening.</li> </ul>	<ul style="list-style-type: none"> <li>Rates of detection of abnormal cytology</li> </ul>
5. Should women in special circumstances be screened?	<ul style="list-style-type: none"> <li>describe optimal cervical screening procedures for women in one of the following special circumstances: pregnant women, women post-hysterectomy, HIV positive women.</li> </ul>	<ul style="list-style-type: none"> <li>Rates of detection of abnormal cytology</li> <li>Appropriateness of screening tool—reports sensitivity and specificity</li> </ul>
6. What is the optimal management for women with abnormal cytology?	<ul style="list-style-type: none"> <li>describe optimum management for women with abnormal cytology.</li> <li>describe optimum management for women at least up to but not necessarily including colposcopy/HPV management</li> </ul>	<ul style="list-style-type: none"> <li>Rates of detection of cervical cancer</li> </ul>

HPV: Human papilloma virus; LBC: liquid based cytology; RCT: randomized controlled trial.

randomized controlled trials were of primary interest; however, given the variability of the data, other study designs or information sources were considered eligible if there was a demonstrated gap in information in the identified publications.

## RESULTS

### Literature Search Results

Seven practice guidelines,<sup>3-9</sup> one practice guideline in press,<sup>10</sup> six technology assessments,<sup>11-16</sup> one meta-analysis,<sup>17</sup> one systematic review,<sup>18</sup> three randomized controlled trials,<sup>19-21</sup> eight cross-sectional studies,<sup>22-29</sup> one prospective cohort study,<sup>30</sup> four case-control studies,<sup>31-34</sup> seven retrospective studies,<sup>35-41</sup> and one conference report<sup>42</sup> provide the evidence for this practice guideline. The literature results according to six questions of interest are shown in Table 2.

### Data Extraction

Data identified in the literature were extracted by a methodologist, and results were organized under the six areas of interest and reviewed by expert subcommittees.

The expert working group applied the Appraisal of Guidelines Research and Evaluation instrument (AGREE), a

rating system for guidelines,<sup>43</sup> to the seven published guidelines identified in the search of the literature (Table 3). The guidelines included publications from the United States, Canada, Great Britain, and New Zealand. The average score was calculated for each question. The seven guidelines scored consistently well on several AGREE criteria, including guideline development by a variety of professional stakeholders and making specific and unambiguous recommendations. There were some differences in the development and presentation of the guidelines. Five guidelines<sup>3-5,7,9</sup> clearly outlined the systematic methodology for collecting data, and two guidelines<sup>6,8</sup> did not.

### Synthesis of the Evidence and the Development of Recommendations

Results of the systematic review of the literature and the methodology of the Program in Evidence-Based Care are available in full elsewhere.<sup>44</sup> On the basis of the systematic review of the evidence, a quality assessment of identified guidelines, and expert interpretation of the evidence, the Cervical Screening Guidelines Development Committee synthesized the evidence according to six questions of interest and developed recommendations on cervical screening. During this review, opportunities for feedback on the draft guidelines included both face-to-face meetings and electronic correspondence. In some areas, there was

**Table 2. Literature research results**

Question	Studies
1. What is the optimal cervical screening tool?	
Sensitivity and specificity	
a) conventional cytology versus LBC	6 technology assessments <sup>11-16</sup>
b) conventional cytology versus HPV DNA	2 technology assessments <sup>11,16</sup>
Rates of unsatisfactory specimens	3 technology assessments <sup>11-13</sup>
Safety/adverse effects of the intervention	2 technology assessments <sup>12,14</sup>
Comparison of LBC methodologies	1 technology assessment <sup>11</sup> 1 systematic review <sup>18</sup> 2 retrospective studies <sup>35,36</sup>
Practice guideline recommendations	3 practice guidelines <sup>3,4,6</sup> 1 in-press guideline <sup>11</sup>
2. Do organized cervical screening programs with recall mechanisms reduce the incidence of and mortality due to cervical cancer compared to spontaneous cervical screening?	6 cross-sectional studies <sup>22-27</sup> 1 case-control study <sup>31</sup>
3. What is the most appropriate time for initiation and cessation of cervical screening?	5 published guidelines <sup>3-6,8</sup> 1 in press guideline <sup>11</sup> 1 cross-sectional study <sup>28</sup>
4. At what time interval should women be screened?	5 published guidelines <sup>3-6,8</sup> 1 in press guideline <sup>11</sup> 1 retrospective cohort study <sup>37</sup> 2 case-control studies <sup>32,33</sup>
5. Should women in special circumstances be screened?	4 published guidelines <sup>3-6</sup> 1 in press guideline <sup>11</sup> 1 cross-sectional study <sup>29</sup> 1 prospective cohort study <sup>30</sup> 1 case-control study <sup>39</sup>
6. What is the optimal management for women with abnormal cytology?	2 published guidelines <sup>7,9</sup> 3 RCTs <sup>19-21</sup> 1 meta-analysis <sup>17</sup> 4 retrospective studies <sup>38-41</sup> 1 conference report <sup>42</sup>

HPV: human papilloma virus; LBC: liquid based cytology; RCT: randomized controlled trial.

insufficient or conflicting evidence on which to base the recommendations. In these situations, expert consensus opinion was used to guide the decision-making process.

### Internal Review Process

All documents produced in collaboration with the Program in Evidence-Based Care undergo a rigorous internal review process. The cervical screening report drafted by the expert working group and approved by the Cervical Screening Guidelines Development Committee was data-audited, and copy edited by program staff working independently of the Screening Committee. In addition, the draft document was critiqued by the Program's Guidelines Coordinator and Director before external review.

### External Review Process

Following internal review, the draft systematic review and recommendations for practice were circulated to external clinicians for review and feedback. Practitioner feedback was obtained through a survey mailed, on September 15, 2004, to 180 physicians across Ontario (129 family practitioners and pathologists, 30 medical oncologists, 1 radiation oncologist, 11 surgeons, and 9 gynaecologists). Reminder postcards were sent to the non-responders two weeks later, and a second reminder (full package) was sent out four weeks later. A third mailing (full package) was sent eight weeks after the initial mailing.

Of the 180 questionnaires sent to family practitioners and pathologists, 55 (31%) were returned. Of these 55

**Table 3. AGREE rating for cervical screening guidelines**

Guideline	USPSTF, 2002 <sup>3</sup>	ACS 2002 <sup>4</sup>	ACOG 2003 <sup>5</sup>	NZGG 1998 <sup>6</sup>	ASCCP 2001 <sup>7</sup>	CTFPHE, 1994 <sup>8</sup>	NHMRC, 2004 <sup>9</sup>
Overall objectives are described	SA	A	D	A	SA	D	A
Clinical questions are described	D	D	D	D	D	D	A
Patient population is described	A	A	A	A	SA	A	A
Guideline group represents individuals from professional groups	SA	A	A	A	SA	A	SA
Patients views and preferences have been sought	D	D	D	D	D	D	D
Target users of the guideline are identified	A	A	SA	A	A	D	A
Guideline piloted among targeted users	D	D	D	D	D	D	SA
Systematic methods used to search for evidence	SA	SA	SA	D	SA	D	SA
Criteria for selecting the evidence are clearly described	SA	A	D	D	SA	D	SA
Methods for formulating recommendations clearly described	A	A	D	D	A	D	A
Health benefits and risks have been considered in recommendations	A	A	A	A	A	A	A
Recommendations and supporting evidence are linked	SA	SA	SA	A	A	A	A
Guideline externally reviewed by experts prior to publication	A	D	D	D	SA	D	SA
A procedure for updating guideline is provided	D	D	D	A	D	D	A
Recommendations are specific and unambiguous	SA	SA	SA	SA	A	A	A
Different options for management clearly presented	A	A	A	A	A	D	A
Key recommendations easily identifiable	SA	A	A	A	A	A	A
Guideline is supported with tools for application	D	D	D	D	D	D	D
Potential barriers in applying recommendations have been discussed	D	D	D	D	D	D	D
Potential cost implications of the recommendations have been considered	A	D	D	D	D	D	D
Guideline presents key review criteria for monitoring	A	A	A	A	A	D	A
Guideline is editorially independent from funding body	A	A	A	A	A	A	A
Conflicts of interest of guideline development members recorded	D	D	D	D	SA	D	D

A: Agree; ACOG: American College of Obstetricians and Gynecologists; ACS: American Cancer Society; ASCCP: American Society of Colposcopy and Cervical Pathology; CTFPHE: Canadian Task Force on the Periodic Health Examination; D: Disagree; NHMRC: National Health and Medical Research Council; NZGG: New Zealand Guidelines Group; SA: Strongly agree; SD: Strongly disagree; USPSTF: United States Preventive Services Task Force.

respondents, 40 (73%) indicated that the draft practice guideline report was relevant to their clinical practice and completed the survey. Key results of the practitioner feedback survey are summarized in Table 4.

In addition to the survey responses, 20 practitioners also provided written comments. The expert panel convened to discuss the comments and made modifications, when appropriate, to the draft.

### Practice Guidelines Coordinating Committee Approval Process

As a final quality control measure before publication and distribution, reports from the Program in Evidence-Based Care are circulated to a provincial committee, the Practice Guidelines Coordinating Committee. This is a multi-disciplinary group with expertise in cancer care and health methodology. The systematic review and practice guideline report on cervical screening was circulated to 13 members of the coordinating committee for review and approval. Five members approved the report as written. Three

members approved the report as written, but also requested that minor modifications be made. One member approved the report conditional on specific changes being made and requested a response from the Cervical Screening Guidelines Development Committee. The remaining four members did not provide feedback on the report.

The expert panel reviewed and addressed the comments of the coordinating committee, making modifications to the text where necessary. The revised document was resubmitted to the coordinating committee and was approved for formal public distribution.

Recommendations, listed in Appendix 1, were assigned evidence ratings (in brackets) based upon an established grading system<sup>45</sup> (Appendix 2).

### DISCUSSION

Effecting change in the face of variable clinical practice and modest evidence from the health-care literature is a difficult and ongoing process. It is not realistic to expect that

**Table 4. Practitioner responses to items on the practitioner feedback survey**

Item	n (%)			
	Strongly agree or agree	Neither agree nor disagree	Strongly disagree or disagree	No answer
The rationale for developing a clinical practice guideline, as stated in the "Choice of Topic" section of the report, is clear.	39 (98%)	1 (3%)	0	0
There is a need for a clinical practice guideline on this topic.	39 (98%)	1 (3%)	0	0
The literature search is relevant and complete	30 (75%)	8 (20%)	2 (5%)	0
The results of the trials described in the report are interpreted according to my understanding of the data.	36 (90%)	2 (5%)	1 (3%)	1(3%)
The draft recommendations in this report are clear.	40 (100%)	0	0	0
I agree with the draft recommendations as stated.	36 (90%)	1 (3%)	3 (8%)	0
The draft recommendations reflect a more effective approach for improving patient outcomes than is current usual practice*	20 (50%)	7 (18%)	4 (10%)	1 (3%)
When applied, the draft recommendations will result in better use of resources than current usual practice†	24 (60%)	5 (13%)	4 (10%)	1 (3%)
This evidence report should be approved as a practice guideline.	36 (94%)	0	3 (8%)	1 (3%)
If this evidence report were to become a practice guideline, how likely would you be to make use of it in your own practice?	Likely or very likely	Unsure	Not at all likely or unlikely	
	34 (85%)	2 (5%)	4 (10%)	0

Some items do not total 100% because of rounding.

\*8 respondents (20%) indicated "the draft recommendations are the same as current practice."

†6 respondents (15%) indicated "the draft recommendations will result in the same outcomes as current practice."

clinicians will instantly change practice when with new guideline recommendations. It is not realistic to expect clinicians to change their practice immediately when new clinical practice guidelines are disseminated. Effecting change in the face of variable clinical practice and modest evidence from the health care literature is a difficult and ongoing process. There are many barriers to effecting change among clinicians with respect to the use of clinical practice guidelines: practitioners may not accept the credibility and expertise of the guideline developers, that the full body of evidence was detected and analyzed correctly, or that recommendations were based on the available evidence. In addition, even the best-written guidelines cannot be effective if they do not reach their target audience, and they must acknowledge the clinician's understanding of the clinical issue in the context of the existing health care system.

The Ontario Cervical Screening Program concluded that a rigorous methodological process, with input from key stakeholders, would be needed not only to inform best practices on cervical screening, but also to serve as an effective tool to facilitate knowledge transfer. As part of the development, a panel of Ontario-based experts was recruited to produce a guideline on cervical screening. The panel was responsible for the systematic collection of data and its subsequent interpretation. Interpretation was aided

through the use of the AGREE tool and through the systematic review process developed by the Program in Evidence-Based Care. The internal review acted as a quality control measure, and the external review process served to refine the document, add credibility and transparency to the process, and inform practitioners about the latest evidence and recommendations on cervical cancer screening in Ontario.

## **CONCLUSION**

Because of the variable evidence used to inform practice on cervical screening, a rigorous methodological approach was taken to develop comprehensive recommendations, using systematic literature review, expert consensus, guideline evaluation instruments, evidence-rating systems, internal and external validation measures, and final approval by a practice guidelines coordinating committee. A dissemination and knowledge transfer strategy was employed through community involvement with opportunities for document review and feedback.

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3) comprising members of the *Ontario Cervical Screening Guidelines Development Committee*, and members of the *Ontario Provincial Gynecology Cancer Disease Site Group* for their valuable input in the development of the cervical screening guidelines.

The members of the Gynecology Cancer DSG disclosed potential conflicts of interest relating to the topic of this practice guideline. One collaborator is employed by MDS Diagnostic Services and has investments with MDS (Dr F. Thompson). Another collaborator is a consultant for MDS Diagnostic Services and receives honoraria from MDS for his contributions (Dr T. Colgan). Four collaborators are currently involved in a trial examining the results of the implementation of SurePath (a liquid-based Pap test) in Ontario (Dr M. McLachlin, Dr T. Colgan, Ms R. Howlett, Dr V. Mai) and four collaborators are involved in a trial investigating the feasibility of implementing HPV testing in a family practice setting (Dr M. McLachlin, Dr J. Murphy, Ms R. Howlett, Dr F. Thompson). Two collaborators are members of the Cytobase Data Review Committee (Dr T. Colgan, Dr F. Thompson) and another collaborator is the Chair of the Cytology Committee of the Quality Management Program-Laboratory Services (Dr S. Boerner). No other potential conflicts of interest were declared.

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## Appendix 1. Recommendations of the Ontario Cervical Screening Guidelines Development Committee

### Target Population

This practice guideline applies to all women who are, or have ever been, sexually active.

### Recommendations

Please note that evidence ratings are in brackets. Please see the scale in Appendix 2.

### Optimal Cervical Screening Tool

- Liquid-based cytology (LBC) is the preferred tool for cervical cytology screening. (B-II) Conventional smear cytology remains an acceptable alternative. (C-III)

### Optimal Screening Circumstances

- Given the lower incidence and mortality associated with organized screening programs (with recall systems) elsewhere, a province-wide cervical screening program with an adequate recall mechanism is recommended. (A-II)

### Screening Initiation

- Cervical cytology screening should be initiated within three years of first vaginal sexual activity (i.e., vaginal intercourse, vaginal/oral and (or) vaginal/digital sexual activity). (C-III)

### Screening Interval

These recommendations do not apply to women who have had previous abnormal Pap tests. Please see the *Management of Women with Abnormal Cytology* section for further information.

- Screening should be done annually until there are three consecutive negative Pap tests. (C-III)
- Screening should continue every two to three years after three annual negative Pap tests. (B-II)
- Screening at a three-year interval is recommended, supported by an adequate recall mechanism. (B-II)
- Women who have not been screened in more than five years should be screened annually until there are three consecutive negative Pap tests. (C-III)

### Screening Cessation

- Screening may be discontinued after the age of 70 if there is an adequate negative screening history in the previous 10 years (i.e., 3-4 negative tests). (B-II)

### Screening Women with Special Circumstances

- Immunocompromised or HIV-positive women should receive annual screening. (C-III)
- Examples of situations where women may be immunocompromised include women who have received transplants and women who have undergone chemotherapy.
- Screening can be discontinued in women who have undergone total hysterectomy for benign causes with no history of cervical dysplasia or human papillomavirus. (C-III)
- Women who have undergone subtotal hysterectomy (with an intact cervix) should continue screening according to the guidelines.

- Indications for screening frequency for pregnant women should be the same as women who are not pregnant. (B-III) Manufacturer's recommendations for the use of individual screening tools in pregnancy should be taken into consideration.
- Women who have sex with women should follow the same cervical screening regimen as women who have sex with men. (B-II)

### **Recommended Management for Women with Abnormal Cytology**

#### **ASCUS (Atypical squamous cells of uncertain significance)**

- HPV DNA testing with cytology is recommended for women aged 30 or older with ASCUS. (C-III)
- If the HPV DNA test is positive, women should be referred for colposcopy. If the HPV DNA test is negative, women should have repeat cytology in 12 months. Once a woman has had two negative cytology test results, she should return to routine screening.
- In the absence of HPV DNA testing, a repeat Pap test in six months is acceptable. If the Pap test is abnormal, women should be referred for colposcopy. If the Pap test is negative, women should have repeat cytology in another six months. Once a woman has had two negative Pap tests results, she should return to routine screening.
- In women under the age of 30, a repeat Pap test in six months is recommended. (C-III)
- If the Pap test is abnormal, women should be referred for colposcopy. If the Pap test is negative, women should have repeat cytology in another six months. Once a woman has had two negative Pap tests results, she should return to routine screening.
- Referral to colposcopy, without HPV DNA testing or repeat cytology, is only recommended in situations where there is a high probability of patient loss to follow up, or if there are other symptoms suggesting cervical abnormality (abnormal bleeding, etc.). (A-I)

#### **ASC-H (Atypical squamous cells: cannot exclude high grade squamous)**

- Colposcopy is recommended for women with ASC-H. (A-II)

#### **LSIL (Low-grade squamous intraepithelial lesion)**

- Either colposcopy or repeat cytology in six months is recommended for women with LSIL. (B-II)
- If repeat cytology is used and the Pap test is abnormal, women should be referred for colposcopy. If the Pap test is negative, women should have repeat cytology in another six months. Once a woman has had two negative Pap test results, she should return to routine screening.
- There is limited evidence to support the use of intravaginal estrogen to reverse the cytologic changes in postmenopausal women with LSIL. A course of intravaginal estrogen followed by repeat cytology approximately a week after completing the regimen is acceptable for women with LSIL who have clinical or cytological evidence of atrophy and no contraindications to using intravaginal estrogen. Referral for colposcopy is recommended if a result of ASC-US or greater is obtained. (C-III)

#### **HSIL (High-grade squamous intraepithelial lesion),**

- Colposcopy is recommended for women with HSIL. (A-II)

#### **AGC (Atypical glandular cells)**

- Colposcopy is recommended for women with AGC. (A-II)
- Women with AGC should also receive endocervical and endometrial sampling, where appropriate. (A-II)

#### **Qualifying Statements**

- These are minimum guidelines only. Certain clinical situations may require earlier follow-up/referral for colposcopy.
- Repeat Pap test should not be performed earlier than three months following the original.
- Pap test should not be used as the sole assessment of a visible cervical lesion. These patients require biopsy for accurate diagnosis.

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**Appendix 2. Evidence rating scale**


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Rating	Definition
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Scale for strength of recommendation

A	Good evidence for efficacy and substantial clinical benefit support recommendation for use
B	Moderate evidence for efficacy or only limited clinical benefit support recommendation for use
C	Evidence for efficacy is insufficient to support a recommendation for or against use, but recommendations may be made on other grounds
D	Moderate evidence for lack of efficacy or for adverse outcome supports a recommendation against use
E	Good evidence for lack of efficacy or for adverse outcome supports a recommendation against use

Scale for quality of evidence

I	Evidence from at least 1 randomized controlled trial
II	Evidence from at least 1 clinical trial without randomization, from cohort or case-controlled analytic studies, or from multiple time series studies or dramatic results from uncontrolled experiments
III	Evidence from opinions of respected authorities based on clinical experience, descriptive studies, or reports of expert committees

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**Appendix 3. Collaborators on the Cervical Screening Guidelines Development Committee**


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Members of the Cervical Screening Guidelines Development Committee	Members of the Gynecology Cancer Disease Site Group
Ms Patricia Anderson	Ms Carmen Briere
Dr Monique Bertrand	Dr Peter Bryson
Dr Scott Boerner	Dr Mark Carey
Dr Peter Bryson	Ms Alexandra Chambers
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Dr Christopher Giede	Dr Jason Dodge
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Ms Sue Lebeau	Dr Anthony Fyles
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