

**New Brunswick Cervical Cancer  
Prevention and Screening  
Clinical Practice Guidelines**

**New Brunswick Cancer Network**

## Message from the New Brunswick Cancer Network (NBCN) Co-CEOs

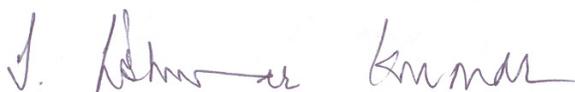
The New Brunswick Cancer Network recognizes the importance of prevention and screening in reducing the burden of cancer for New Brunswickers. Historically, cervical cancer screening in the province has been done in an opportunistic fashion, driven primarily by the relationship between women and their primary care providers. Subsequent to the announcement in 2008 to establish a provincial Cervical Cancer Prevention and Screening Program (CCPSP) for New Brunswick, NBCN has been working with a multi stakeholder Implementation Committee to plan and develop the program.

Through the work of the Implementation Committee, we are pleased to provide the *New Brunswick Cervical Cancer Prevention and Screening Clinical Practice Guidelines*, our first step to implementing a Provincial Screening Program. These Guidelines are intended to assist health care providers and women in optimizing cervical screening in New Brunswick prior to the full implementation of the Cervical Cancer Screening Program anticipated in 2013- 2014. This Clinical Practice Guideline (CPG) document has been developed using evidence-based recommendations and should be used as an adjunct to sound clinical decision making.

We extend our thanks to the Implementation Committee's Program Policies and Clinical Practice Guidelines Working Group, chaired by Dr. Ed Reardon, for their work in reviewing the literature and adopting these guidelines. We would welcome any comments or recommendations you may have for improvement of this document. An evaluation form is available on the NBCN website for feedback.

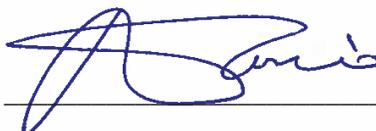
We look forward to these new guidelines becoming the mainstay of practice in New Brunswick.

Sincerely,



Dr. S. Eshwar Kumar

Co-CEO, New Brunswick Cancer Network



Dr. Réjean Savoie

Co-CEO, New Brunswick Cancer Network

# Table of Contents

<b>Cervical Cancer</b> .....	2
Introduction .....	2
Natural History of the Disease and Risk Factors .....	3
<b>Prevention and Screening</b> .....	4
HPV Immunization Program .....	4
Organized Screening Program .....	4
The CCPS Repository .....	6
<b>New Brunswick Cervical Cancer Prevention and Screening Clinical Practice Guidelines</b> .....	7
Introduction .....	7
Structure of the CCPSP .....	7
Mandate of the Working Group: Program Policies & Clinical Practice Guidelines .....	7
Goal of the Guidelines .....	7
Membership of Working Group .....	8,9
<b>Guideline Recommendations</b> .....	10
Initiation of Screening .....	10
Screening Intervals .....	10
Cessation of Screening .....	10
Optimal Screening Tools .....	10
Optimal Screening Circumstances .....	11
Cervical Screening for Women With Special Circumstances .....	11
Optimal Management .....	11
ASCUS .....	11, 12
LSIL .....	12, 13
AGC .....	13
ASC-H .....	13
HSIL .....	13
Squamous Carcinoma, Adenocarcinoma or other Malignancy .....	13
Unsatisfactory .....	13
Qualifying Statements .....	14
Limitations of Screening .....	14
Optimal Specimen Collection .....	14
<b>References</b> .....	15
<b>Appendix 1</b> .....	16

# Cervical Cancer

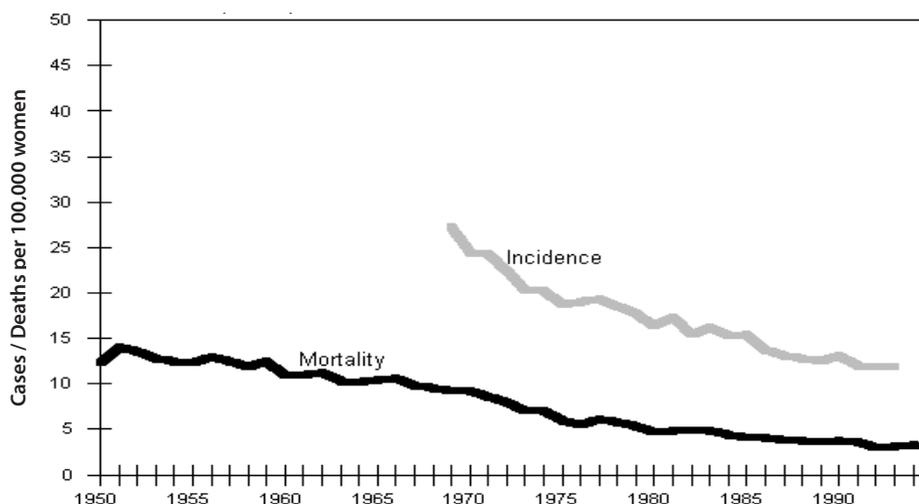
## Introduction

Cervical cancer is the 12<sup>th</sup> most frequently diagnosed cancer among women in Canada. In 2011, it is estimated that 1,300 women will develop cervical cancer, and 350 women are expected to die from it.<sup>5</sup> In the absence of screening, it is estimated that the lifetime probability of developing cervical cancer in Canada is 1 in 28 compared to the actual probability of 1 in 150 at present<sup>2</sup>.

During the past 30 years, there has been a steady decline of cervical cancer incidence and mortality rates with the introduction of the Papanicolaou (Pap) test in Canada in 1949 as seen in Figure 1.

**Figure 1:**

**Cervical cancer incidence and mortality, Canada, 1950 - 1995**



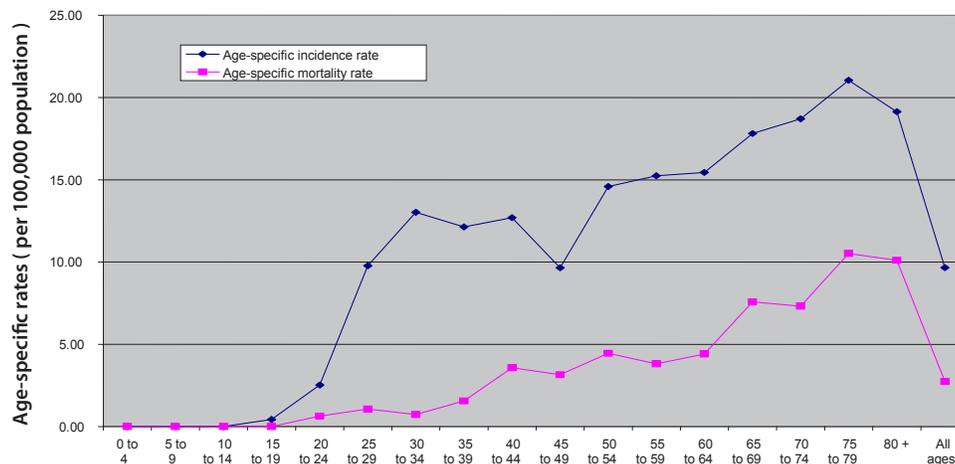
Data Source: Statistics Canada<sup>6</sup>

More than 1,000 lives are saved each year because of cervical screening in Canada, and many thousands of cases of invasive cancer are prevented<sup>6</sup>.

The incidence and mortality rates for all ages in New Brunswick<sup>7</sup> follow the national trend as illustrated in Figure 2.

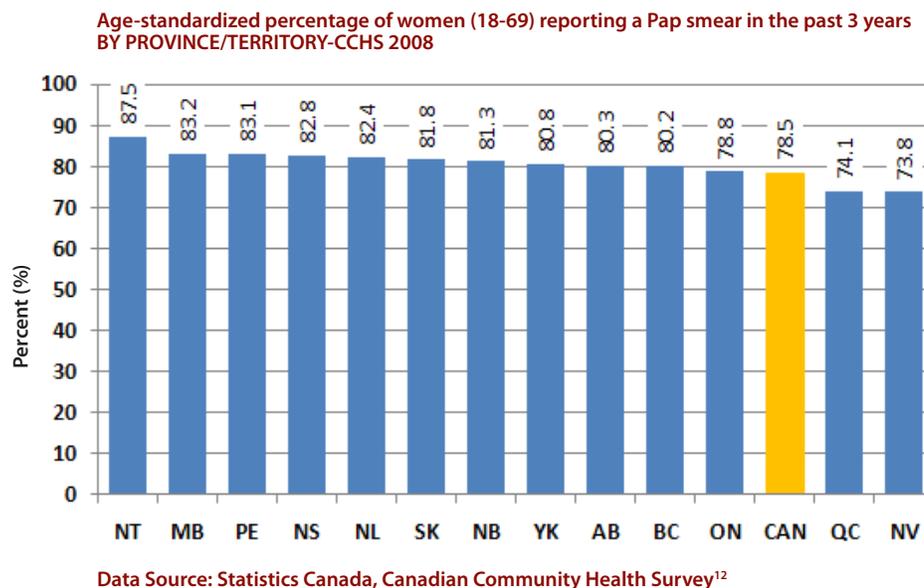
**Figure 2:**

**Incidence & Mortality of Cervical Cancer, New Brunswick, 1989-2006<sup>7</sup>**



Despite a relatively high self-reported participation rate in New Brunswick seen in Figure 3, there has not been a change in incidence and mortality rates during the past 10 years.

**Figure 3:**



At present, New Brunswick does not have the screening history of the women diagnosed with invasive cervical cancers. However, other jurisdictions such as British Columbia, Manitoba and Alberta, report that most women diagnosed with invasive cervical cancer have not been screened in the past 5 years.

### Natural History of the Disease and Risk Factors

The high-risk carcinogenic type Human Papillomavirus (HPV) infection is the main causative factor in the development of cervical cancer<sup>9</sup>. Although HPV infections are very common (the lifetime cumulative prevalence of high-risk infection approaching 80%<sup>2</sup>) most will clear without signs and symptoms. For those with a persistent infection, the average length of time for a high-risk HPV to develop into a pre-cancerous lesion is 24 months and into cervical cancer over 8 - 12 years.<sup>9</sup>

Pre-cancerous lesions are classified as low-grade or high-grade squamous intraepithelial lesions (LSIL and HSIL). The majority of LSIL appears to clear spontaneously and infrequently progresses to invasive carcinoma. In contrast, approximately 13% of untreated HSIL will progress to invasive carcinoma<sup>2</sup>. Squamous cell carcinoma accounts for 80 - 90% of cervical malignancies and the remainder are mainly adenocarcinoma.<sup>2</sup>

The key determinants of HPV infection among women are the number of sexual partners, the age at which sexual intercourse was initiated and the likelihood that her partner(s) were infected with HPV as measured by their sexual behaviour.<sup>2</sup>

Women whose partners use condoms consistently are at lower risk of acquiring HPV infection. However, compared with sexually transmitted infections (STIs) transmitted through genital secretions, condoms provide reduced protection against infections such as HPV that are transmitted through contact with infected skin or mucosal surfaces. These areas are not always covered or protected by a condom.<sup>2</sup>

Women who are immunosuppressed have a higher risk of HPV infection, and HPV is more likely to persist. For instance, women who are HIV positive are up to 10 times more likely to be infected with HPV than HIV negative controls.<sup>2</sup>

Women with other conditions associated with immunosuppression such as systemic lupus erythematosus, inflammatory bowel disease, cancer or who have received transplants are also at increased risk of high-grade pre-cancerous lesions.<sup>2</sup> Women with cancer treated with chemotherapy may be temporarily immunosuppressed during the treatments. Studies have shown that the extent of immune recovery following cancer treatment can vary depending on the type of cancer adjuvant therapy used; but overall, will resume to baseline.<sup>16</sup>

Diethylstilbestrol (DES) was given to some pregnant women between 1940 and 1971 to prevent miscarriage. Women whose mothers took DES when pregnant with them have a 1 in 1,000 risk of developing clear-cell adenocarcinoma of the vagina or cervix.<sup>2</sup>

Among women with persistent HPV infection, the most important risk factor for cervical cancer is inadequate cervical screening. Smoking as well as high parity independently increase the risk of cervical cancer by at least two-fold.<sup>2</sup>

## Prevention and Screening

### HPV Immunization Program

The HPV vaccine was approved by Health Canada in 2007 to be given to females between 9 and 26 years of age, before the onset of sexual intercourse which prevents HPV infections responsible for 70% of cervical cancer cases. Even when vaccinated, all women who are sexually active should have a regular Pap test since the vaccine does not prevent all HPV infections from causing cervical cancer.

In New Brunswick, the uptake of the vaccine in the school-based program (grade 7 girls) was 71% for 2009-10<sup>13</sup>. There are no available means at the moment for capturing the information on the population vaccinated outside the school-based program.

The Cervical Cancer Prevention and Screening Program (CCPSP) Implementation Committee is exploring possibilities of having linkages built between the CCPSP Repository and various other administrative databases – such as Medicare database and Drug Information System database – to enable more comprehensive collection of information on the HPV vaccinated population.

### Organized Screening Program

The cervical cancer screening in New Brunswick has been done in an opportunistic fashion prior to the implementation of the CCPSP. In New Brunswick, there are about 254,400 females between the ages of 20 and 69.<sup>15</sup> Approximately 150,000 Pap tests and 10,000 colposcopies are done annually as per information provided by New Brunswick laboratories in 2008. Ninety per cent of Pap tests are normal or negative for pre-cancerous lesions. The Canadian Community Health Survey 2008 found that approximately 20% of New Brunswick women had not been screened in the preceding 3 years.<sup>13</sup>

- Women who have never been screened or are screened irregularly are most at risk for cervical cancer.<sup>2</sup>
- Improving cervical screening coverage will reduce mortality, regardless of the technology used.<sup>2</sup>
- Continuity in the relationship between a woman and her healthcare provider has been shown to increase the uptake of cervical cancer screening.<sup>2</sup>
- A prompt by a woman's physician or other healthcare provider advising her to engage in cervical cancer screening is one of the most effective recruitment strategies. Contacting patients when they are due for screening and flagging charts of women who are overdue are approaches supported by evidence showing they are most successful when used in combination.<sup>2</sup>
- Invitation and recall letters generated and sent by an organized screening program are also effective recruitment strategies.<sup>2</sup> CCPSP hopes to provide this service in the 2013-14 fiscal year.

Implementation of the organized cervical cancer screening program will ensure that screening, follow-up and treatment are accessible and delivered in a standardized manner. The elements of an organized screening program include<sup>9</sup>:

- Defined target population;
- Strategies to ensure high coverage;
- Adequate clinical and laboratory facilities;
- Laboratory quality control programs;
- Facilities for diagnosis, treatment and follow-up of abnormalities;
- Established referral system; and
- Evaluation and monitoring of the program based on performance indicators.

The implementation of the population based organized CCPSP in New Brunswick will be done over a 3 year period and will be led by a multidisciplinary Implementation Committee. The stakeholders are represented by:

- Gynecology Oncologist;
- Radiation Oncologist;
- Pathologist;
- Gynecologist;
- Family Physician;
- Nurse Practitioner;
- Nurse Manager in Community Health Centers;
- Laboratory Administrative Directors;
- Chief Cytotechnologists;
- Information Technology Specialists;
- Department of Health - Laboratory Consultant;
- Information Technology Project Manager;
- Epidemiologist;
- Coordinator for Quality Management and Accountability;
- Coordinator for Cancer Screening; and
- Public Health Nurse.

The Goals of the CCPSP are to:

- Establish protocols and guidelines;
- Increase access for non screened and under screened women;
- Decrease the number of annual screenings for women with normal Pap test results;
- Standardize follow-up for women with abnormal Pap tests;
- Ensure triage of the women requiring colposcopy follow-up; and
- Decrease the rates of invasive cervical cancers and mortality due to this preventable disease.

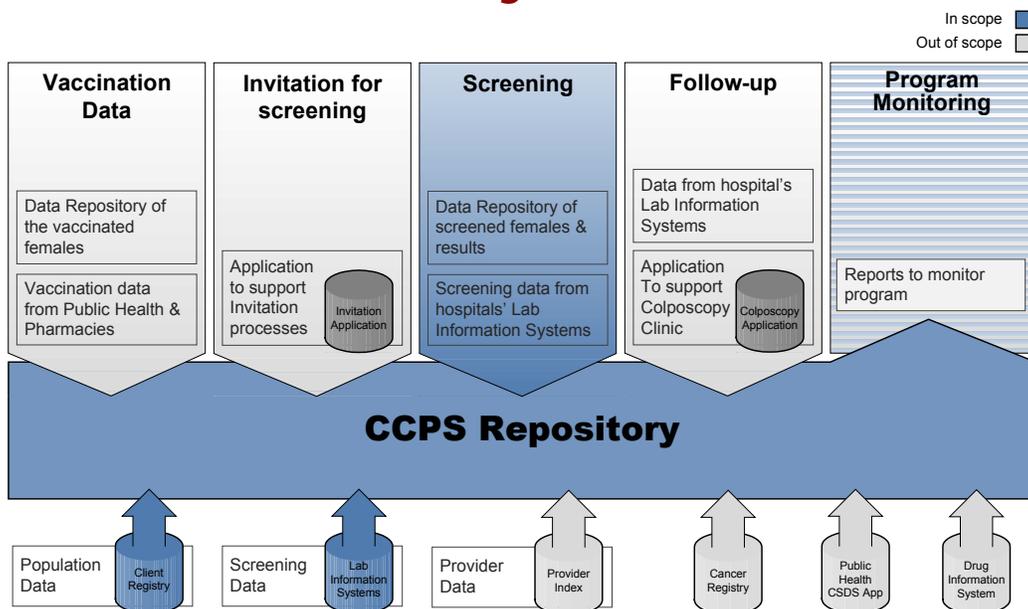
## The CCPS Repository

The New Brunswick CCPSP will be supported by the CCPS Repository. The Repository will assist with the program planning as well as on-going evaluation and performance monitoring. The first release of this Repository contains Pap test information and various reports.

Future releases will support follow-up, invitation, HPV vaccination data and additional information for program monitoring in these areas. Figure 4 shows the technology components with the darker shaded sections representing the release 1 phase. This first release will support regular monitoring through a set of established performance indicators.

- Short-term program established quality indicators will monitor:
  - coverage;
  - target population;
  - specimen collection tools; and
  - adherence to guidelines.
- Long-term program established quality indicators will monitor:
  - incidence rates;
  - mortality rates; and
  - vaccinated population screening information.

**Figure 4:**



# New Brunswick Cervical Cancer Prevention and Screening Clinical Practice Guidelines

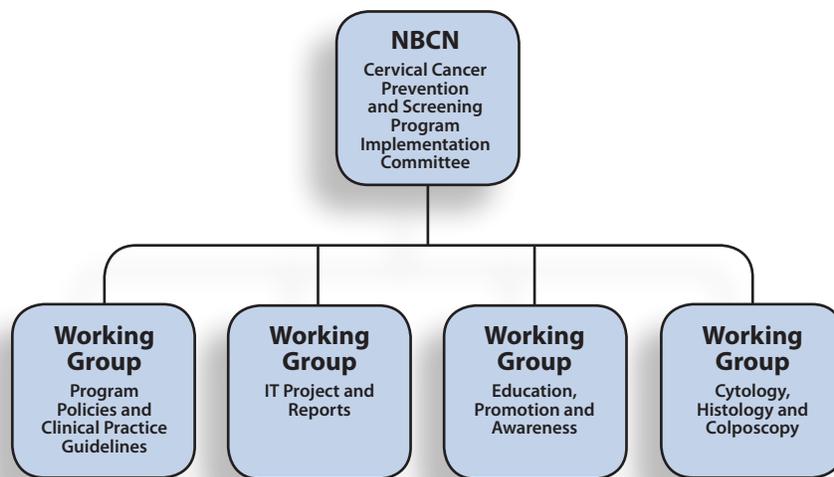
## Introduction

In January 2008, the Minister of Health announced a Cervical Cancer Vaccination and Screening Strategy in an effort to reduce the incidence and mortality rates related to this disease in New Brunswick. Each year in the province, about 30 new cases of invasive cervical cancer are diagnosed and an estimated 10 women who die of this preventable disease.<sup>5</sup>

The CCPSP is a responsibility of the New Brunswick Cancer Network (NBCN), a division of the Department of Health. Within the next 3 years, a multi-stakeholder Implementation Committee will implement the program throughout the province.

## Structure of the CCPSP

The structure of the program is illustrated below:



## Mandate of the Program Policies and Clinical Practice Guidelines Working Group:

- To establish evidence-based policies and recommend guided adaptation and implementation of existing Clinical Practice Guidelines for women with normal and abnormal Pap tests.

## Goal of the Guidelines:

- To assist health care providers and women in optimizing cervical screening in New Brunswick to decrease invasive cancer and deaths from this preventable disease while minimizing screening risks. The Clinical Practice Guidelines should be used as an adjunct to sound clinical decision-making.

## Membership of the Working Group:

The membership was appointed by the Implementation Committee and consists of:

- Chair – New Brunswick Medical Society Representative of Gynecology: E. Reardon, MD, Saint John
- Representative of Gynecology-Oncology: R. Savoie, MD, and C. Williams, MD, Moncton
- New Brunswick Medical Society Representative of Family Medicine: V. MacMillan, MD, Dalhousie
- New Brunswick Medical Society Representative of Pathology: M. Godlewski, MD, Saint John
- Chief-Cytotechnologist: M. Collette, RT, Moncton
- NBCN Quality Management and Accountability Coordinator: G. Bolesnikov, MD, Fredericton
- NBCN Cancer Screening Consultant: L. Varner, RN, Moncton
- NBCN Cancer Screening Coordinator: S. Koch, RN, Fredericton

Members of the Working Group were aware of a number of credible cervical cancer guidelines currently used by practitioners across Canada and supported by relevant Canadian Professional Associations. The Working Group decided to go with the process of adapting and adopting existing guidelines while remaining aware of issues specific to New Brunswick:

- Failure to be screened and being under screened continue to be major risk factors for cervical cancer in NB;
- Over screening is resulting in excessive investigations, inefficient use of resources and potential harm to women; and
- Newer technologies such as Liquid-Based Cytology (LBC), HPV-DNA testing and the HPV vaccines are evolving in New Brunswick.

The Working Group decided to follow the CAN-ADAPTE process as a resource for systematic adaptation of existing guidelines. During this process, an attempt was made to retrieve as many guidelines as possible. The major source used was the SAGE Inventory of Cancer Guidelines and Standards<sup>10</sup>, which is a current and comprehensive database of English-language cancer control guidelines and standards that have been rated using the AGREE II quality appraisal reporting system. The Inventory was developed and is maintained by the Canadian Partnership Against Cancer's Capacity Enhancement Program.

At the time of the review, this database was focused on guidelines in English for the most common cancer disease sites, including cervical cancer, published from 2003 to 2009. Based on the specific needs of the CCPSP and the current New Brunswick health-care setting, the Working Group proceeded with a full assessment of the two guidelines:

- Ontario Cervical Cancer Screening Clinical Practice Guidelines (2005)<sup>1</sup>; and
- Alberta Guideline for Screening for Cervical Cancer (2009)<sup>2</sup>.

The following are the highlights of this process:

**A)** A list of health questions relevant to cervical cancer screening was developed which include:

- Target population - most appropriate time for initiation of screening;
- Target population - most appropriate time for cessation of screening;
- Optimal screening interval;
- Optimal screening tool;
- Optimal screening circumstances;

- Screening women with special circumstances:
  - Immunosuppressed women;
  - Women with sub-total hysterectomy;
  - Women with total hysterectomy;
  - Pregnant women;
  - Women having sex with other women.
- Optimal management for women with abnormal cytology found during screening:
  - ASCUS (Atypical Squamous Cells of Undetermined Significance);
  - LSIL (Low-grade Squamous Intraepithelial Lesion);
  - AGC (Atypical Glandular Cells);
  - ASC-H (Atypical Squamous Cells: cannot exclude High-grade Squamous Intraepithelial lesion);
  - HSIL (High-grade Squamous Intraepithelial lesion);
  - Squamous carcinoma, adenocarcinoma, or other malignancy; and
  - Unsatisfactory.

## **B) Review of the Guidelines:**

The members of the Working Group were asked to review two guidelines: the Ontario Cervical Cancer Screening Clinical Practice Guidelines (2005)<sup>1</sup> and the Alberta Guideline for Screening for Cervical Cancer (2009)<sup>2</sup>. The members of the working group were asked to state whether they agreed, disagreed or somewhat agreed with statements regarding questions stated above. They met several times face-to-face to get a consensus on acceptability and applicability of the relevant guidelines. Based on the available data on incidence, mortality, colposcopy utilization and status of introducing new technologies (Liquid-Based Cytology, HPV-DNA testing and the HPV vaccines) within New Brunswick, the Working Group agreed on draft Guidelines (inclusive of adopted elements from both Ontario and Alberta's guidelines) that were circulated for external review and feedback. The external reviewers included:

- the Atlantic Society of Obstetricians and Gynecologists;
- the New Brunswick Association of Laboratory Physicians;
- the General Practitioners of the New Brunswick Medical Society;
- the Office of the Chief Medical Officer of Health;
- Medical Laboratory Technologists and Cytotechnologists;
- Nurse Practitioners;
- Gynecologists/Colposcopists;
- Pathologists; and
- Department of Health Laboratory Consultant.

The source guideline document experts from the Cervical Screening Guidelines Development Committees of the Ontario Cervical Screening Program and from the Alberta Health Services – Toward Optimizing Practice (TOP) Program were also asked to review and provide feedback on the draft Guidelines document. The final version of the New Brunswick Cervical Cancer Screening Clinical Practice Guidelines received approval by the CCPS Implementation Committee in March 2011.

## Guidelines Recommendations

The CCPSP Implementation Committee adopted the following Guidelines:

Recommended Management	
<b>Initiation of Screening</b>	
1. Target population-most appropriate time for initiation of cervical cancer screening	<p>Cervical cancer screening should begin at age 21 or three years after first intimate sexual activity, whichever occurs <b>later</b>. Intimate sexual activity includes intercourse as well as digital or oral sexual activity involving the genital area with a partner of either gender.</p> <p>For women younger than 21, interactions with healthcare providers may still be necessary for STIs (sexually transmitted infections) screening and HPV vaccination.</p>
<b>Screening Interval</b>	
2. Cervical Screening Interval	<p>Cervical Cancer Screening Interval for women with no previous abnormal Pap tests:</p> <p>Screening should be done annually until there are three consecutive negative Pap test results. Screening should continue every two to three years after three annual negative Pap test results. Screening at a three year interval is recommended, supported by an adequate recall system.</p> <p>Women who have not been screened in more than five years:</p> <p>Screenings should be done annually until there are three consecutive negative Pap test results. Screening should continue every two to three years after three annual negative Pap test results.</p>
<b>Cessation of Screening</b>	
3. Target population-most appropriate time for cessation of cervical screening	<p>Cervical cancer screening should end after the age of 69 if there is an adequate negative screening history in the previous 10 years.</p> <p>For women older than 69 who have never been screened, screen with 3 consecutive annual Pap tests. If the results are negative and satisfactory, discontinue screening.</p>
<b>Optimal Screening Tools</b>	
4. Cervical Screening Tool	<p>Liquid-based cytology (LBC) is the preferred tool for cervical cytology screening. Conventional smear cytology remains an acceptable alternative.</p> <p>In the target population (ages 21 to 69), the Pap test can detect lesions before they become cancerous or when the disease is at an early stage where treatment is more likely to be effective in preventing the loss of life and reducing the morbidity associated with treating advanced disease.</p> <p>Although there is emerging documentation that HPV testing as a primary screening tool may detect more precancerous cells than conventional cytology, the evidence is still not strong enough to recommend it as the optimal screening tool.<sup>3</sup></p>

Recommended Management	
<b>Optimal Screening Circumstances</b>	
5. Optimal Cervical Screening circumstances	Given the lower incidence and mortality associated with organized screening programs elsewhere, a province wide cervical screening program with an adequate recall mechanism is recommended.
<b>Cervical Screening For Women With Special Circumstances</b>	
6. Cervical Screening for women with special circumstances  - Women with sub-total hysterectomy (cervix intact)  - Women with total hysterectomy  - Pregnant women  - Immunosuppressed women  - Women having sex with other women	<p>Women who have undergone sub-total hysterectomy (with an intact cervix) should continue screening according to the guidelines.</p> <p>Screening can be discontinued in women who have undergone total hysterectomy for benign causes with no history of cervical dysplasia or HPV. Women who have had a biopsy confirmed high-grade squamous intraepithelial lesion (HSIL), adenocarcinoma in situ (AIS), or invasive cervical cancer <b>and</b> a total hysterectomy should have vault smears annually thereafter.</p> <p>Indications for screening frequency for pregnant women should be the same as women who are not pregnant. Manufacturers' recommendations for the use of individual screening tools in pregnancy should be taken into consideration.</p> <p>Immunosuppressed women (transplant recipients, women treated with chemotherapy or HIV-positive women) should receive annual screening.</p> <p>Women who have sex with women should follow the same cervical screening regimen as women who have sex with men.</p>
<b>Optimal Management</b>	
Pap Test Result	Recommended Management
7. Optimal management for women with abnormal cytology	
<b>ASCUS:</b>  (Atypical squamous cells of undetermined significance)	<p><b>Women ≥ 30 years:</b></p> <p>HPV reflex testing is recommended for women 30 or older with ASCUS. The laboratory will perform HPV reflex testing for women ≥ 30 years with ASCUS results.</p> <p><b>If HPV reflex testing is available:</b></p> <ul style="list-style-type: none"> <li>• HPV negative → return to routine screening</li> <li>• HPV positive → refer for Colposcopy</li> </ul>

Pap Test Result	Recommended Management
<p><b>ASCUS continued:</b> (Atypical squamous cells of undetermined significance)</p>	<p><b>If HPV reflex testing is NOT available:</b></p> <ul style="list-style-type: none"> <li>• Repeat Pap test in 6 months is acceptable: <ul style="list-style-type: none"> <li>➤ If the Pap test is negative, a woman should have a repeat cytology in another 6 months</li> <li>➤ Once a woman has had 2 negative Pap test results, she should return to routine screening</li> <li>➤ If the Pap test is abnormal, a woman should be referred for Colposcopy</li> </ul> </li> </ul> <p><b>Women 21 - 29 years:</b> A repeat Pap test in 6 months is recommended:</p> <ul style="list-style-type: none"> <li>➤ If the Pap test is negative, a woman should have repeat cytology in another 6 months</li> <li>➤ Once a woman has had 2 negative Pap test results, she should return to routine screening</li> <li>➤ If the Pap test is abnormal, a woman should be referred for Colposcopy</li> </ul> <p><b>Women &lt; 21 years: (Although routine cervical screening is NOT recommended)</b> Repeat Pap test every 12 months for 2 years (2 tests):</p> <ul style="list-style-type: none"> <li>• At 12 months: <ul style="list-style-type: none"> <li>➤ ONLY women with high-grade lesions should be referred for Colposcopy</li> </ul> </li> <li>• At 24 months: <ul style="list-style-type: none"> <li>➤ Negative → return to routine screening</li> <li>➤ ASCUS or greater → refer for Colposcopy</li> </ul> </li> </ul>
<p><b>LSIL:</b> (Low-grade squamous intraepithelial lesion)</p>	<p><b>Women ≥ 50 years:</b> The laboratory will conduct HPV reflex testing for women ≥ 50 years with LSIL results:</p> <ul style="list-style-type: none"> <li>➤ If HPV is negative → return to routine screening</li> <li>➤ If HPV is positive → refer for Colposcopy</li> </ul> <p>In the absence of HPV reflex testing → refer for Colposcopy</p> <p><b>Women 21 – 49 years:</b> Repeat Pap test every 6 months for 1 year (2 tests):</p> <ul style="list-style-type: none"> <li>• Tests must be at least 6 months apart <ul style="list-style-type: none"> <li>➤ If all negative → return to routine screening</li> <li>➤ If any one result is ASCUS or greater → refer for Colposcopy</li> </ul> </li> </ul> <p>*Currently, there is strong evidence against using HPV testing to triage young women with LSIL (i.e.: ALTS trial) thus, HPV testing is NOT recommended for women 21 to 49 with LSIL.</p>

Pap Test Result	Recommended Management
<p><b>LSIL continued:</b> (Low-grade squamous intraepithelial lesion)</p>	<p><b>Women &lt; 21 years: (Although routine cervical screening is NOT recommended)</b></p> <p>Repeat Pap test every 12 months for 2 years (2 tests):</p> <ul style="list-style-type: none"> <li>• At 12 months: <ul style="list-style-type: none"> <li>➢ ONLY women with high-grade lesion should be referred for Colposcopy</li> </ul> </li> <li>• At 24 months: <ul style="list-style-type: none"> <li>➢ Negative → return to routine screening</li> <li>➢ ASCUS or greater → refer for Colposcopy</li> </ul> </li> </ul>
<p><b>AGC:</b> (Atypical glandular cells)</p>	<p>Colposcopy is recommended for women with AGC. Women with AGC should also receive endocervical and endometrial sampling, when clinically indicated.</p>
<p><b>ASC-H:</b> (Atypical squamous cells; cannot exclude high grade squamous intraepithelial lesion)</p>	<p>Colposcopy is recommended for women with ASC-H.</p>
<p><b>HSIL ( High grade squamous intraepithelial lesion)</b></p>	<p>Colposcopy is recommended for women with HSIL.</p>
<p><b>Squamous carcinoma, adenocarcinoma or other malignancy</b></p>	<p>Pap test should not be used as the sole assessment of a visible cervical lesion. These patients require biopsy for accurate diagnosis.</p>
<p><b>Unsatisfactory</b></p>	<p>If clinically indicated, Pap test should be repeated in 3 months from the date of the initial Pap test and not before.</p>

**NOTE:** The current guidelines have identified a role for oncogenic HPV DNA testing within the screening algorithm in New Brunswick. The role of HPV testing will evolve as the cohort of HPV vaccinated females approaches the age-group recommended for screening.

## Qualifying Statements

- Routine cervical screening is **NOT** recommended for women < 21 years.
- According to the American College of Obstetricians and Gynecologists (ACOG) Practice Bulletin published in December 2009, the recommendation to start screening at age 21 years regardless of the age of onset of sexual intercourse is based in part on the very low incidence of cancer in younger women (1-2 cases of cervical cancer per 1,000,000 females 15 to 19 years of age).<sup>4</sup> It is also based on the potential for adverse effects (increased anxiety and increase in premature births) associated with follow-up of young women with abnormal cytology screening results.<sup>4</sup>
- Repeat Pap test should not be performed earlier than three months following the original.
- To meet minimal guideline requirements, endometrial cells in women  $\geq 40$  should be managed or referred as appropriate.
- HPV immunization is effective according to evidence based data for women aged 9 to 26 and is available to women in New Brunswick. Women who receive the HPV vaccine should continue with screening according to the guidelines.
- These are minimum guidelines only. Certain clinical situations may require earlier follow-up/referral for colposcopy.
- The Guidelines will be reviewed yearly and updated as necessary.

## Limitations of Screening

As with all screening tests, Pap tests are not perfectly sensitive, and a single negative Pap test result does not rule out cervical precancerous lesions or cancer. A false negative result occurs when the Pap test fails to detect an abnormality present on the cervix. False negative results arise because either the abnormal cells were not collected due to limitations of cervical sampling and specimen preparation; or, because abnormal cells were not identified by the laboratory. The sensitivity of conventional cytology to detect high-grade lesions varies widely in published studies, between 30% and 87% and LBC does not appear to increase sensitivity substantially although it does reduce the rate of unsatisfactory samples.<sup>2</sup>

Repeat screening at regular intervals with either conventional or LBC Pap tests increases the sensitivity of cervical screening and is necessary to provide adequate lifetime protection from cervical cancer. In fact, when the results of two screening rounds are considered together, Pap tests (LBC) alone were as sensitive as Pap tests (LBC) plus HPV testing. The Pap test has been so successful at reducing cervical cancer incidence because its sensitivity increases in the context of repeated use.<sup>2</sup>

To help overcome one's false sense of security that can arise from a false negative test result, it is important to advise women to report unusual vaginal bleeding or discharge including bleeding after intercourse, after menopause or between menstrual periods.<sup>2</sup>

False positive screening test results are also of concern. Given the transient nature of many cervical changes, screening detects many abnormalities destined to resolve on their own. The current guidelines are intended to minimize the anxiety and harms associated with screening while helping to assure that clinically significant cervical changes are identified.<sup>2</sup>

### Optimal Specimen Collection

To ensure optimal specimen collection, Pap testing should be done **BEFORE** other cervical procedures, including STI testing and Intra-Uterine Contraceptive Device (IUCD) insertion, so that the diagnostic cells needed for the Pap test are not removed. Other considerations include:

- Advise the patient to avoid, where possible, the use of contraceptive creams and jellies, douching, intravaginal medication and sexual intercourse for 24 hours before the test.
- Advise the patient to avoid scheduling her appointment during menses, but do not defer for abnormal bleeding.

## References

1. McLachlin CM, Mai V, Murphy J, Fung-Kee-Fung M, Chambers A, Oliver TK, Ontario Cervical Cancer Screening Clinical Practice Guidelines. *J Obstet Gynaecol Can* 2007; 29(4):344-353.
2. Toward Optimized Practice (TOP) Working Group for Cervical Cancer. Guideline for the screening for cervical cancer. Feb 2000 [Revised Oct 2009]. Edmonton, AB: Toward Optimized Practice. c2009. Available from: [http://topalbertadoctors.org/informed\\_practice/clinical\\_practice\\_guidelines/complete%20set/Cervical%20Cancer/cervical\\_cancer\\_guideline.pdf](http://topalbertadoctors.org/informed_practice/clinical_practice_guidelines/complete%20set/Cervical%20Cancer/cervical_cancer_guideline.pdf)
3. MedscapeCME Clinical Briefs at <http://www.cme.medscape.com/viewarticle/721199> (Accessed May 14, 2010)
4. Cervical Cytology screening. ACOG Practice Bulletin No. 109. American College of Obstetricians and Gynecologists. *Obstet Gynecol*. 2009; 114:1409-20.
5. Canadian Cancer Society's Steering Committee: Canadian Cancer Statistics 2011. Toronto: Canadian Cancer Society, 2011. May 2011, ISSN 0835-2976
6. Health Canada. Cervical Cancer Screening in Canada: 1998 Surveillance Report. Minister of Public Works and Government Services Canada, 2002.
7. New Brunswick Cancer Registry, May 2010.
8. Société canadienne du cancer et Institut national du cancer du Canada: Statistiques canadiennes sur le cancer 2008, Toronto, Canada, 2008, Avril 2008, ISSN 0835-2976
9. Public Health Agency of Canada, 2009 : Performance Monitoring for Cervical Cancer Screening Programs in Canada, Ottawa, Canada, 2009, ISBN 978-0-662-06718-4
10. Inventory of Cancer Guidelines, Cancer Guidelines Advisory Group, Canadian Partnership Against Cancer <http://www.cancerguidelines.ca/Guidelines/index.php>
11. ADAPTE Collaboration. Manual for Guideline Adaptation, Version 1.0
12. Canadian Partnership Against Cancer. 2010 System Performance Report. Available at [http://www.partnershipagainstcancer.ca/wp-content/uploads/system\\_performance\\_2010\\_EN.pdf](http://www.partnershipagainstcancer.ca/wp-content/uploads/system_performance_2010_EN.pdf)
13. Office of the Chief Medical Officer of Health. Client Service Delivery System Database, 2009/10 (Accessed in 2011)
14. Canadian Cancer Society's Steering Committee: Canadian Cancer Statistics 2010. Toronto: Canadian Cancer Society, 2010. April 2010, ISSN 0835-2976
15. Statistics Canada Demography Division, 2008 New Brunswick Population Estimates
16. Kang, D.H., Weaver, M.T., Park, N.J., Smith B., McArdle, T., and Carpenter, J., Significant Impairment in Immune Recovery Following Cancer Treatment, *Nursing Research*. 2009; 58(2):105-114.

## APPENDIX 1

### Collaborators on the Cervical Cancer Screening Clinical Practice Guidelines:

#### Cervical Cancer Prevention and Screening Program (CCPSP) - Program Policies and Clinical Practice Guidelines Working Group

Dr. Ed Reardon (Chair)	Dr. Vona MacMillan	Linda Varner
Dr. Réjean Savoie	Monique Collette	Dr. Marek Godlewski
Dr. Carole Williams	Dr. Grlica Bolesnikov	Shirley Koch

#### CCPSP Implementation Committee:

Dr. Réjean Savoie (Chair)	Monique Collette	Deborah Hale
Dr. Marek Godlewski	Dan Coulombe	Shirley Baisley Moffat
Dr. Edward Reardon	Céline Couturier	Valerie MacDonald Duguay
Dr. Eshwar Kumar	Tania Davies	Nathalie McGraw
Dr. Bin Zhang	Jerome Foster	Melissa Stark
Dr. Grlica Bolesnikov	Mary Goggin	Shirley Koch
Lori Clarke	Robert Goguen	Daryl Steeves
Dr. Vona MacMillan	Suzanne Robichaud	Yamama Tamim

#### CCPSP Education, Promotion and Awareness Working Group:

Melissa Stark (Chair)	Jan Graham	Brenda Roos
Rosemary Boyle	Linda Hopper	Marisa Rojas
Céline Couturier	Laura Noseworthy	Shirley Koch
Michelle Daniels	Nathalie McGraw	
Linda Duffett-Leger	Shirley Baisley Moffat	

#### CCPSP Cytology, Histology and Colposcopy Working Group:

Dr. Marek Godlewski (Chair)	Monique Collette
Dr. Ed Reardon	Deborah Hale

### External Reviewers of the Clinical Practice Guidelines:

#### Alberta Guideline for Screening for Cervical Cancer Representative:

Dr. Laura MacDougall

#### Ontario Cervical Cancer Screening Clinical Practice Guidelines Representative:

Dr. Joan Murphy

Dr. Verna Mai

#### Pan Canadian Cervical Screening Initiative Chair

(Canadian Partnership Against Cancer)

Dr. Meg McLachlin

**Quebec** - Dr. Anne Marie Grenier

**Nova Scotia** - Dr. James Bentley

**New Brunswick Cancer Network** - Roberte Vautier

**NBCN encourages your feedback. Please contact:**

NBCN Coordinator of Cancer Screening  
520 King Street, 2nd Floor  
Fredericton, NB  
E3B 5G8  
506-453-5521

This document, evaluation forms and related cervical cancer screening reference tools are available online at: [www.gnb.ca/health](http://www.gnb.ca/health)

**ISBN 978-1-55471-524-4**