Management Algorithms for Abnormal Cervical Cytology and Colposcopy
# Table of Contents

Standard Colposcopic Definitions ........................................................................................................................................................................... 1

Guidelines for the Assessment of Abnormal Cervical Cytology ......................................................................................................................... 2
  Ia: Persistent LSIL/ASCUS ................................................................................................................................................................................... 2
  Ib: ASC-H ................................................................................................................................................................................................. 3
  Ic: HSIL (Mod), HSIL (Marked) ................................................................................................................................................................. 4
  Id: Atypical Glandular Cells* ......................................................................................................................................................................... 6
  Ie: AGC-NOS ............................................................................................................................................................................................. 7
  If: Pregnant Women....................................................................................................................................................................................... 8

Guidelines for the Assessment of Women with Positive High Risk HPV ........................................................................................................ 9
  IIa: HPV Positive: Cytology Normal or LSIL........................................................................................................................................ 9
  IIb: HPV Positive: Cytology ASC-H or HSIL-Mod ....................................................................................................................... 10
  IIc: HPV Positive: Cytology HSIL-Sev .................................................................................................................................................. 11
  IId: HPV Positive: Cytology Atypical Glandular Cells ................................................................................................................... 12

Guidelines for the Management of Abnormal Colposcopic Evaluations .................................................................................................... 13
  IIIa: Satisfactory Colposcopy Evaluation CIN 1 .............................................................................................................................. 13
  IIIb: Unsatisfactory Colposcopy Evaluation CIN 1 ........................................................................................................................... 14
  IIIc: Evaluation CIN 2, 3 ............................................................................................................................................................................. 15
  IIIId: <25 Years Old Evaluation CIN 2, 3 ............................................................................................................................................. 16
  IIIe: Evaluation Adenocarcinoma in Situ ............................................................................................................................ 17
  IIIf: Management of Microinvasive Cervical Cancer .................................................................................................................... 18

Guidelines for Follow up of Previously Treated Cervical Disease .............................................................................................................. 19
  IVa: Post-Treatment CIN 2, 3 ............................................................................................................................................................... 19
  IVa: Post-Treatment Adenocarcinoma in Situ .......................................................................................................................... 20
Standard Colposcopic Definitions

Used in the Provincial Quality Assurance Program Colposcopy Encounter Form

Referral Cytology: The specific cytological abnormality that led to the colposcopic examination, this is usually the most recent Pap smear prior to the actual colposcopic examination.

Colposcopic Impression: the colposcopist’s opinion as to the nature of any lesion seen, based on the classic colposcopic features of surface contour, color tone, borders, intercapillary distance, vascular patterns, etc. Colposcopic impression is the specific diagnosis that the colposcopist would expect to be returned on any accompanying biopsy material based on his or her visual interpretation.

Colposcopic Biopsy/Pathology: the histopathological diagnosis of any directed biopsy that was obtained at the time of the colposcopic examination. If more than one biopsy is obtained, the most advanced lesion is recorded.

Colposcopic Evaluation: the clinical working diagnosis based on combining the information from both the colposcopic impression and the biopsy/pathology diagnosis. This diagnosis can never be less than the colposcopic biopsy, but may be greater than the colposcopic biopsy if the colposcopist believes the biopsy is not reflecting the most advanced pathology suspected based on their assessment. The presenting cytology is NOT part of the colposcopic evaluation.

E.g. For a patient who presents with a marked squamous dyskariosis Pap smear - if the colposcopic exam is satisfactory and negative (no lesion seen), and all biopsies are negative, they would have a NEGATIVE colposcopic evaluation.

PRACTICE POINTS:

- **Satisfactory** colposcopy with lesion identified – endocervical sampling “acceptable”.
- **Satisfactory** colposcopy with no lesion identified – endocervical sampling “preferred”.
- **Unsatisfactory** colposcopy – endocervical sampling “required” to rule out high grade disease.
Guidelines for the Assessment of Abnormal Cervical Cytology

Ia: Persistent LSIL/ASCUS

Persisted LSIL/ASCUS (Over 12 Months)

- Satisfactory Colposcopy
  - No CIN 2, 3: Discharge Pap in 12 months
  - CIN 2, 3: Manage per guideline

- Unsatisfactory Colposcopy
  - No CIN 2, 3: Discharge Pap in 6 months
  - CIN 2, 3: Manage per guideline

PPV of ASCUS/LSIL for CIN2+ is 15-25%
ASC-H
In addition to biopsies, colposcopists option to do HPV swab at first assessment.

CIN2/3
 Manage per guideline

≤CIN1
 HPV negative
 HPV positive

SCJ visibility

Discharge to primary care for cytology in 12 months

Completely or partially visible

Not visible

Repeat colpo in 2-4 months with repeat HPV

Can consider diagnostic excisional procedure

HPV negative

HPV positive

DC to primary care cytology in 12 months

≤CIN1

Can consider diagnostic excisional procedure

CIN2/3

Manage per guideline

IE: need three negative colpo assessments prior to DC

PPV of CIN2+ for ASC-H/HPV positive (all genotypes) is 50%
NPV of CIN2+ for ASC-H/HPV negative is 95-100%

Colposcopist option to ask for cytopathologic review
Ic: HSIL (Mod), HSIL (Marked)

**HSIL**

- **Satisfactory Colposcopy**
  - Negative or > 1 grade discrepancy: 
    - OPTION to review material
    - Change to benign/low grade -> Discharge, Pap in 6 months
    - Repeat Colposcopy in 2-4 months
  - No Change
    - Diagnostic excisional procedure

- **Unsatisfactory Colposcopy**
  - Negative or CIN 1
    - OPTION to review material
    - Change to benign/low grade -> Discharge, Pap in 6 months
    - Diagnostic excisional procedure
  - CIN 2, 3
    - Manage per guideline

**PPV of ASC-H for CIN2+ is 50-60%**
**PPV of HSIL+ (including AGC-FN) for CIN2+ is 70-80%**
PRACTICE POINTS:

- **Discrepancy between Colposcopic Evaluation and Presenting Cytology:**
  When there is a discrepancy between the colposcopic evaluation and the abnormal cytology of >1 (two or more classes), it is the responsibility of the Colposcopist to resolve this discrepancy. **Returning to screening is unacceptable.** Either promptly repeating the colposcopic assessment in a timely manner (i.e. within 2-4 months) and/or a review of the cytology and histology should be performed. If review of cytology is not available and a negative repeat colposcopy would not change management, then diagnostic LEEP may be performed.

- **Special Circumstances:**
  Management options may vary if the patient is pregnant, postmenopausal or an adolescent.
  For example, for a patient >25yo who has completed child bearing referred with a marked Pap smear, repeat colposcopy MAY not change management even if negative, so it may be appropriate to proceed with a diagnostic excisional procedure if review of material is not an option. Similar considerations exist for a patient who is referred with a moderate Pap smear who has completed child bearing.
  In contrast, for any patient <25yo, or for a patient who is 25 or older referred with an ASC-H Pap smear, repeat colposcopy is likely the most appropriate option.

- **Repeat Pap smears in Colposcopy Clinics:**
  If the abnormal Pap smear is >12 months prior to current assessment, and colposcopic evaluation is negative for HSIL, consider repeating cytology prior to proceeding with diagnostic LEEP.
Id: Atypical Glandular Cells*

**Atypical Glandular Cells**

- **AGC-Favor Neoplasia**
  - ECC required. If age >35 or abnormal bleeding, do endometrial biopsy
  - Cancer – refer to BC Cancer
  - Negative or CIN/AIS – LEEP (for treatment or diagnosis)

- **Atypical Endometrial Cells**
  - Endometrial biopsy +ECC
  - PPV of AGC-NOS for CIN2+ is 20-30% and for AGC-FN is 70-80%

**PRACTICE POINTS:**

- Colposcopy with endocervical sampling is required for assessment of atypical glandular cells.
- An endometrial biopsy is preferred for assessment of all women over the age of 35, women with abnormal vaginal bleeding, and women with other risk factors for endometrial cancer.
- Atypical endometrial cells – if there are other risk factors for endometrial pathology, further investigations may be needed if colposcopic evaluation is negative.
AGC-NOS

ECC always required. If age >35 or abnormal bleeding, do endometrial biopsy

Colposcopist option to do HPV swab

CIN2+, AIS or endometrial pathology

Manage per guidelines

≤CIN1

HPV negative

DC to cytology 12 months

≤CIN1 DC to Pap in 12 months

HPV positive

Repeat colpo in 4-6 months

CIN2+, AIS or endometrial pathology

Manage per guideline
If: Pregnant Women

Abnormal Pap in Pregnancy

Persistent LSIL

Impression negative or CIN 1

Repeat Colposcopy 2-3 months postpartum (Bx & ECC); (If impression CIN 2, 3 then as per HSIL)

HSIL

Impression negative or CIN 1, 2, 3

Colposcopy Q3-4 months; last Colposcopy at <32-34 weeks; then 2-3 months postpartum (Bx & ECC)

Suspicious for invasion, refer to VGH Colposcopy

Atypical Glandular Cells - NOS

Atypical Glandular Cells – Favor Neoplasia

Suspicious for malignancy – biopsy required

Bx: Non-diagnostic or non-malignant -> Repeat Colposcopy < 2 weeks or refer to VGH

Bx: Malignant -> Refer to BC Cancer

Colposcopy Q3-4 months; last Colposcopy at <32-34 weeks; then 2-3 months postpartum (Bx & ECC)

PRACTICE POINTS:

- Endocervical sampling is contraindicated during pregnancy.
- Cervical biopsy is safe in pregnancy and is required for diagnosis if suspicious for microinvasion/invasion.
- No treatment in pregnancy unless invasion is suspected.
Guidelines for the Assessment of Women with Positive High Risk HPV

IIa: HPV Positive: Cytology Normal or LSIL

Positive HPV 16/18

Referral to colposcopy
Cytology obtained at colpo

Cytology LSIL/ASCUS or HPV 16/18 nml cytology

Type 1/2 TZ
Type 3 TZ (ECC required)

Normal
CIN 1
CIN 2/3

Discharge from colpo
Repeat HPV test in 12 months

Repeat colpo in 6 months

nml/CIN1
CIN 2/3

Excisional treatment
IIb: HPV Positive: Cytology ASC-H or HSIL-Mod

- Positive HPV 16/18
  - Referral to colposcopy
  - Cytology obtained at colpo
- Positive HPV other
  - ASC-H/HSIL-mod

Type 1/2 TZ

- Normal/CIN 1
  - Cytopath review
  - Repeat colpo, HPV, and cytology in 6 months
- CIN 2/3
  - Excisional treatment
  - HPV neg and biopsy normal/CIN1
  - HPV pos and cytology nml/LSIL/ASCUS and CIN1
  - Discharge from colpo
    - Repeat HPV test in 12 months
  - HPV pos and/or cytology ASC-H/HSIL

Type 3 TZ (ECC required)

- Normal/CIN 1
  - Excisional treatment
  - HPV pos and/or cytology ASC-H/HSIL
  - Discharge from colpo
  - Repeat HPV test in 12 months
- CIN 2/3
  - Repeat colpo, HPV, and cytology in 6 months
  - HPV pos and cytology nml/LSIL/ASCUS and CIN1
  - HPV pos and/or cytology ASC-H/HSIL
Iic: HPV Positive: Cytology HSIL-Sev

Positive HPV 16/18
Referral to colposcopy
Cytology obtained at colpo

Positive HPV other

HSIL-Severe

Type 1/2 TZ

Normal/CIN 1

Cytopath review to confirm HSIL-Severe

Review < HSIL-Severe
Repeat colpo, HPV, and cytology in 6 months

HPV neg and biopsy normal/ CIN1

HPV pos and cytology LSIL/ ASCUS

HPV pos and cytology ASC-H/HSIL or CIN2/3

Type 3 TZ (ECC required)

Assess vagina to exclude VAIN

CIN 2/3

Excisional treatment

Confirms HSIL-Severe
Assess vagina to exclude VAIN

Excisional treatment

Assess vagina to exclude VAIN
IId: HPV Positive: Cytology Atypical Glandular Cells

Positive HPV 16/18
- Referral to colposcopy
  - Cytology obtained at colpo

Positive HPV other
- Atypical glandular cells
  - AGC-NOS
  - Abnormal endometrial cells
    - Endometrial biopsy
    - AIS or AGC-FN
      - Neg or AIS or CIN
      - Cancer
        - Excisional treatment
        - Refer to BCCA
    - ECC for all endometrial biopsy if >35 yrs or risk factors for Endo CA

Type 1/2 TZ
- Normal/CIN1

Type 3 TZ
- Repeat colpo, HPV and cytology in 12 months
  - Repeat colpo, HPV and cytology in 6 months
  - CIN2+ / AIS
    - Excisional treatment
  - HPV pos or any abnormal cytology
    - Repeat colpo, HPV, and cytology in 6 months
    - Excisional treatment
  - HPV neg and biopsy normal/CIN1
    - Discharge from colpo, HPV test in 12 months
  - Normal/CIN1
    - Normal/CIN1
  - CIN2+ / AIS
    - Excisional treatment
Guidelines for the Management of Abnormal Colposcopic Evaluations

IIla: Satisfactory Colposcopy Evaluation CIN 1

Satisfactory Colposcopy Evaluation CIN 1

- Discharge Pap in 12 months if referral Pap was LSIL
  Preferred Approach

- Colposcopy in 6 months if referral Pap was ASC-H or moderate

- Moderate or marked referral PAP see Guideline Ib. If >25yo
  Guideline IIb if < 25yo

- Treatment: Decision to treat is based on patient and provider preferences

- Negative or CIN 1 -> Discharge, Pap in 12 months

- Dysplasia Manage per guideline

PRACTICE POINTS:

- The primary purpose of colposcopy is to rule out HSIL / CIN 2,3 – biopsies and ECC are recommended.
- It is reasonable to treat persistent/recurrent low grade lesions (>12 months) in women >35 years old or upon patient request (although generally most low grade lesions do not need to be followed and should be discharged).
IIIb: Unsatisfactory Colposcopy Evaluation CIN 1

PRACTICE POINTS:

- An exam that is not satisfactory (entire transformation zone visible AND entire lesion seen) has not necessarily ruled out high grade dysplasia.
- ECC is necessary to help rule out high grade dysplasia.
- Treatment is not recommended for young women <25 years of age.
PRACTICE POINTS:

- Cryotherapy is NOT an acceptable treatment for CIN 2,3
- Acceptable treatment approaches for CIN 2, 3 are limited to ablative treatment with laser and or excisional treatment with cold knife cone and or LEEP. LEEP is preferred.
- Recommended depth of specimen 8-10mm.
IIId: <25 Years Old Evaluation CIN 2, 3

For women <25yo see guideline IIId

<25 years old Evaluation CIN 2, 3

Given low regression rates with CIN 3 (~20%), patients should have a discussion/consult regarding options of observation versus treatment

Colposcopy Q6 months for up to 2 years or until 25yo
Biopsy +/- ECC

Regresses: CIN1 or negative

-> Discharge Pap in 6 months

Persistent > 24 months or patients attains 25 years, whichever comes first

Excisional and/or ablative treatment (if colposcopy satisfactory)

PRACTICE POINTS:

- Given a compliant patient and a reliable follow up system, it is reasonable to follow young women for up to 24 months or up to the age of 25 years (whichever comes first). Treatment recommendations are solely the responsibility of the treating physician. Follow up colposcopy exams should include biopsy +/- ECC.
- If compliance is a concern, then treatment is recommended
Ille: Evaluation Adenocarcinoma in Situ

PRACTICE POINTS:

- Diagnostic excisional procedure is NECESSARY to confirm AIS and rule out invasive adenocarcinoma BEFORE proceeding to a hysterectomy. See Guideline IIIb.
- Ablative methods are NOT acceptable treatment for AIS
- Depth of LEEP should be > 10mm. Consider Post-LEEP ECC.
**Microinvasive Cervical Cancer (1a1)**

Invasive cervix carcinoma: measured depth of invasion ≤3 mm in depth. Management of patients with stage 1a1 disease should be individualized depending on the age, the desire for fertility preservation, and the presence or absence of LVI.

Colposcopists are encouraged to call Gynecologic Oncology, or refer for a consult, if there are any concerns or questions regarding the management plan.

**Surveillance Recommendations:**
- After Simple Hysterectomy: Follow up colposcopy of the vagina every 6 months for 5 years. Patients should have vaginal vault smear annually until at least 3 negative paps in last 5 years then return to normal screening.
- Fertility Sparing: Follow up colposcopy every 6 months for 5 years. History, Physical, ECC at each visit. HPV test and cytology annually.

---

**Management of Microinvasive Cervical Cancer**

Stage 1a1 squamous cell carcinoma, adenocarcinoma, or adenosquamous carcinoma on LEEP

Send to BC Cancer for expert pathology review

- **DOI >3mm and/or LVI:**
  - Referral to Gynecologic Oncology for management

- **Positive margins for dysplasia or carcinoma, no LVI:**
  - Repeat LEEP to clear margin and further evaluate DOI

- **Negative margins for dysplasia or carcinoma, no LVI:**
  - Fertility Sparing: surveillance
  - Non Fertility Sparing: simple hysterectomy

- **Confirmed DOI ≤3mm fertility sparing:**
  - Fertility sparing: surveillance

- **Confirmed DOI≤3mm, non fertility sparing:**
  - Simple hysterectomy
Guidelines for Follow up of Previously Treated Cervical Disease

IVA: Post-Treatment CIN 2, 3

>25 years old
Evaluation CIN 2, 3

FU time sooner if suspicious for invasion or recurrent/complicated disease (e.g. positive margin)

At 6 months:
Colposcopy, ECC, HPV test*

Evaluation negative, HPV non-reactive –
Discharge, Pap in 12 months

At 12 months HPV non-reactive, biopsy negative/CIN1**
->Discharge, Pap in 12 months

Evaluation negative, HPV reactive
->Repeat Colposcopy, ECC, HPV in 6 months

Evaluation CIN 2+
Manage per guideline

At 12 months HPV reactive, biopsy negative for HSIL
->Repeat colposcopy, ECC, HPV every 12 months until negative

*Starting in June 2018 HPV testing will be done with Roche Cobas4800 HPV test. This test provides specific results regarding typing for HPV 16, HPV 18 and HPV other (non-16/18). Patients will be managed the same regardless of HPV type for the time being. After 1-2 years, data will be analyzed to see whether type details may help further risk stratify these women to inform future guideline changes.

**With a negative HPV test, the risk of CIN2+ is <2%, which is average risk, so the patient may go back to screening with their next Pap in 12 months. Therefore, women with biopsy results of negative CIN1 may be discharged if HPV negative.
### IVa: Post-Treatment Adenocarcinoma in Situ

<table>
<thead>
<tr>
<th>LEAP/CONE MARGINS NEGATIVE FOR AIS</th>
<th>LEAP/CONE MARGINS POSITIVE FOR AIS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FOLLOW UP</strong></td>
<td><strong>FURTHER TREATMENT</strong></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Starting at @6 MONTHS post LEEP</em></td>
<td>1. RECOMMEND HYSTERECTOMY (PREFERRED) OR</td>
</tr>
<tr>
<td></td>
<td>2. LEEP margin positive:</td>
</tr>
<tr>
<td><em>If the patient wishes to retain fertility AND has had a</em></td>
<td>Option Repeat LEEP if desire for future fertility.</td>
</tr>
<tr>
<td><em>consultation reviewing risks and benefits of hysterectomy vs.</em></td>
<td></td>
</tr>
<tr>
<td><em>conservative management:</em></td>
<td></td>
</tr>
<tr>
<td><em>At each visit</em> Colposcopy &amp; ECC required, and Bx (as indicated)*</td>
<td></td>
</tr>
<tr>
<td><em>At every other visit</em> (once per year starting 12 months post LEEP) add HPV test alternating with Pap smear.*</td>
<td>3. LEEP margin indeterminate: Consider pathology review or repeat LEEP or FU in 2-4 months.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>@ 5 YEAR visit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colposcopy, ECC, HPV and Pap smear</td>
</tr>
<tr>
<td>CONSIDER REVISIT DISCUSSION REGARDING HYSTERECTOMY</td>
</tr>
<tr>
<td>(CHANCE OF LATE RECURRENCE/DEVELOPMENT OF CANCER)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Discharge If:</th>
<th>Follow Up If:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Colposcopy/ ECC are negative AND</td>
<td>Reactive for HPV high risk subtypes</td>
</tr>
<tr>
<td>2. HPV non-reactive</td>
<td>Annual colposcopy, Pap and HPV test.</td>
</tr>
<tr>
<td>Repeat pap smear in 12 months.</td>
<td></td>
</tr>
</tbody>
</table>
PRACTICE POINTS:

- Margin status enters into this guideline.
- Patients should be advised that a hysterectomy is recommended, but for patients who wish to retain fertility, conservative management is reasonable. Patients must be counseled regarding the risks versus benefits of follow-up versus hysterectomy so they can make an informed decision.
- Each time histology is positive, the clock restarts for 5 years of follow-up (if fertility preservation is still desired when hysterectomy again discussed at the time of recurrence) – e.g. if patient has a recurrence at 3 years, should would need another 5 years added to the 3 years for a total of 8 years of follow-up.
- Follow-up at 6 months is for uncomplicated cases. The colposcopist may wish to see the patient sooner, e.g. 2-4 months, if the circumstances warrant it.