Pap smears, cytology and CCHC lab work and follow up
What is a Pap Smear?

- A Pap smear (also known as the Pap test) is a medical procedure in which a sample of cells from a woman's cervix (the end of the uterus that extends into the vagina) is collected, processed and stained. The cells are examined under a microscope to look for not only cervical cancer, but infections and other signs that may indicate future cancer.

- A Pap smear is a simple, quick, and relatively painless screening test.

- In the vast majority of cases, a Pap test does identify minor cellular abnormalities before they have had a chance to become malignant and at a point when the condition is most easily treatable. The Pap smear is not intended to detect other forms of cancer such as those of the ovary, vagina, or uterus.
What causes Cervical Cancer?

HPV is a sexually transmitted virus that may be spread from one person to another even when the genital sores are not visible. Many sexually active people are carriers of HPV, very often without even knowing they are carriers. It is estimated that up to 80% of sexually active women harbor this virus on their cervix or in their vaginal area. It is not unusual for a woman to be unaware that she has HPV - only to find out that her Pap smear shows evidence of HPV.
What causes Cervical Cancer?

HPV is not curable, although the cellular damage it causes is generally treatable and a vaccine against the four most commonly found HPV types is available. A woman with HPV needs careful and regular long-term medical follow-up to watch for any resulting HPV-associated pre-cancerous cellular changes.
What causes Cervical Cancer?

There are over 70 different strains of HPV virus. Based on the observation that certain strains of HPV (for example, types 16 and 18) are more likely to be associated with cervical cancer, some people have advocated testing HPV infected women in order to identify their specific strain of HPV. Following an abnormal Pap smear, this information would then be used to help select the specific treatment strategy. In other words, a physician would more aggressively treat a woman with an abnormal Pap smear if she tests positive for an HPV type that is more likely to be associated with the development of cervical cancer.
How is a Pap Smear Analyzed?

• Pap smear analysis and reports are all based on a medical terminology system called The Bethesda System.

• Your doctor will perform an internal exam and at that point, take a pap smear which goes into a vial filled with a special preservative and the specimen is sent to the lab where it is processed and stained in the Cytology department.

• A Cytotechnologist, who has a college degree and one year of specialized training looking at cells, will examine your slide under a microscope.
How is a Pap Smear Analyzed?

• There are at least 50,000 cells on your pap smear, and there may only be a few suspicious cells so Cytotechnologist also have expert screening skills.

• Any suspicious cells are dotted with a marker, and shown to a pathologist. A pathologist is a medical doctor who has had special training in diagnosing disease.

• The report of all findings are then communicated to your physician.
What will we find?

The major categories for abnormal Pap smears reported in the Bethesda Systems are as follows in order of severity:

- **Normal**
- **ASC-US**: This abbreviation stands for Atypical Squamous cells of Undetermined significance.
- **LSIL**: This abbreviation stands for low-grade squamous intraepithelial lesion. Under the old system of classification, this category was called CIN grade I.
- **HSIL**: This abbreviation stands for high-grade squamous intraepithelial lesion.
- **Suspicious for Malignancy**—suspicious for cancer.
- **Malignant**—Cancer
How these cells look under the microscope

Pap Smear Results

- No dysplasia
- ASC-US (atypical squamous cells of undetermined significance)
  - +/- High Risk HPV
- ASC — H (favor high grade)
- LSIL (low grade squamous intraepithelial lesion)
- HSIL (high grade Sil)
- AGC (atypical glandular cells)
  - NOS
  - Favor Neoplasia
What if you get an abnormal result?

- Once the final diagnosis has been made, the follow-up recommendation informs you what the appropriate next step(s) might be. For example, if the final diagnosis states that the smear was "within normal limits," the appropriate follow-up might be "recommend routine follow-up."

- An abnormal Pap smear is one in which the laboratory interprets the cellular changes to be different from those normally seen on a healthy cervix. There are a number of possible follow-up scenarios for an abnormal Pap smear.
Follow up scenarios

- **Unreliable Pap smear due to inflammation:** If severe inflammation is present, its cause(s) must be investigated. The physician's goals are to identify the cause of inflammation and to treat and resolve the condition, if possible.

- **Atypical squamous cells of undetermined significance (ASCUS):** Sometimes, atypical squamous cells of undetermined significance (also called "ASCUS"), is the determination written on the Pap report. This is the mildest form of cellular abnormality on the spectrum of cells ranging from normal to cancerous. ASCUS means that the cells appear abnormal but are not malignant. A repeat test will be recommended within a year.

- **Low-grade squamous intraepithelial lesion (LSIL):** A more serious cellular abnormality is low-grade squamous intraepithelial lesion (LSIL). A reading of LSIL is a reason for immediate further investigation because it is more abnormal than ASCUS. Fifteen to 30% of women who have this abnormality on Pap testing will have a more serious abnormality on biopsy of the cervix but most doctors feel this can be closely watched before any treatment.
Follow up (cont.)

• **High-grade squamous intraepithelial lesion (HSIL):** The most severe cellular abnormality that is not actually cancer is high-grade squamous intraepithelial lesion (HSIL). A finding of HSIL unquestionably requires prompt treatment. Women with HSIL have a 70%-75% chance of having a more serious abnormality on biopsy of the cervix, and a 1%-2% chance of having actual cervical cancer. A biopsy will be performed to confirm.

• **Carcinoma in situ (suspicious for malignancy):** This diagnosis is also a form of high-grade squamous intraepithelial lesion (HSIL). A reading of "carcinoma in situ" on a Pap smear report means there is cervical cancer present. However, the cancer is "in situ," which means that it appears to be limited to the cervix and not to have invaded other tissues. A biopsy will be performed to confirm.

• **Carcinoma**-This means the lesion is not limited to the cervix. Again, biopsy to confirm.
Other findings found on Pap smears

• Vaginal yeast infection

• Most vaginal yeast infections are caused by the organism *Candida albicans*, a fungus.

• Yeast infections are very common and affect up to 75% of women at some point in their lifetime.

• The main symptom of a vaginal yeast infection is itching, but burning, discharge, and pain with urination or intercourse can also occur.
Other findings found on Pap smears

- Treatment involves topical or oral antifungal medications.

- It is possible for a woman to transmit a yeast infection to a male sex partner, even though yeast infection is not considered to be a true sexually-transmitted disease (STD) because it can occur in women who are not sexually active.

- Treatment of yeast infection in men, like in women, involves antifungal medications.

- Keeping the vaginal area dry and avoiding irritating chemicals can help prevent yeast infections in women. Consuming foods with probiotics also may help.
Other findings on Pap smears, con’t

Endometrial cells

If a woman is menopausal (no longer menstruating) she would not be expected to be shedding cells from the uterine lining. Therefore, endometrial cells on a Pap report might be indicative of an abnormal thickening of the endometrium, the lining of the uterus. The Pap smear is not specifically designed to detect such an abnormality. Nonetheless, if these cells are noted in a non-menstruating woman, her physician should attempt to determine the cause of the shedding of the endometrial cells.
Other findings (con’t).

• Sexually transmitted diseases
  • Herpes
  • Trichomonias
  • Bacterial Vaginosis

• Hormone Evaluations

• Other Cancers
  • Uterine, Ovarian or a cancer that has spread from another part of the body-not common but can be seen.
Why do women still get cancer if they get pap smears?

• Between 60% and 80% of American women who are newly diagnosed with invasive cervical cancer have not had a Pap smear in the past five years and may never have had one. Women who have not had Pap smear screening tend to be concentrated in certain population groups including:
  • Older women;
  • The uninsured;
  • Ethnic minorities, especially Latino, African American, and Asian American women;
  • Poor women; and
  • Women in rural areas.