HPV Related Gynecologic Cancer: Prevention and Treatment

2022 HPV Summit

William Greenfield, MD, MBA, FACOG
Medical Director, Family Health Branch
Arkansas Department of Health
Professor, Obstetrics & Gynecology
University of Arkansas for Medical Sciences

Objectives

At the end of this presentation the learner will be able to:

1. Discuss the relationship between HPV in Gyn Cancer
2. Describe strategies to prevent HPV related Gyn Cancer
3. Describe treatment options for HPV related Gyn Cancer

What Is Gynecologic Cancer?

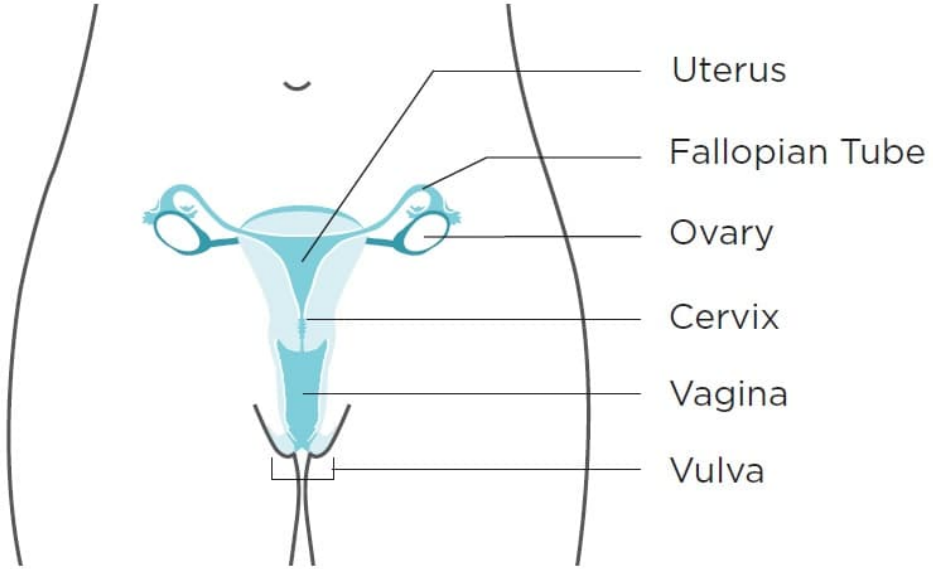
Cervical cancer begins in the cervix, which is the lower, narrow end of the uterus

Ovarian cancer begins in the ovaries, which are located on each side of the uterus

Uterine cancer begins in the uterus, the pear-shaped organ in a woman's pelvis

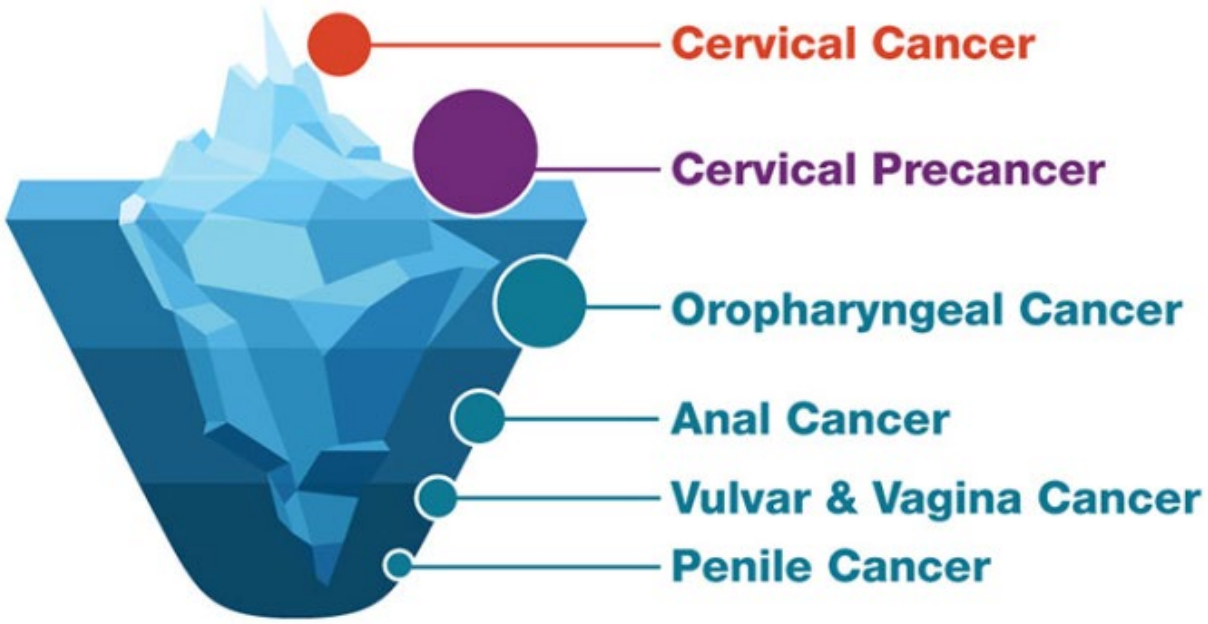
Vaginal cancer begins in the vagina, tube-like channel between the bottom of the uterus and the outside of the body

Vulvar cancer begins in the vulva, the outer part of the female genital organs.



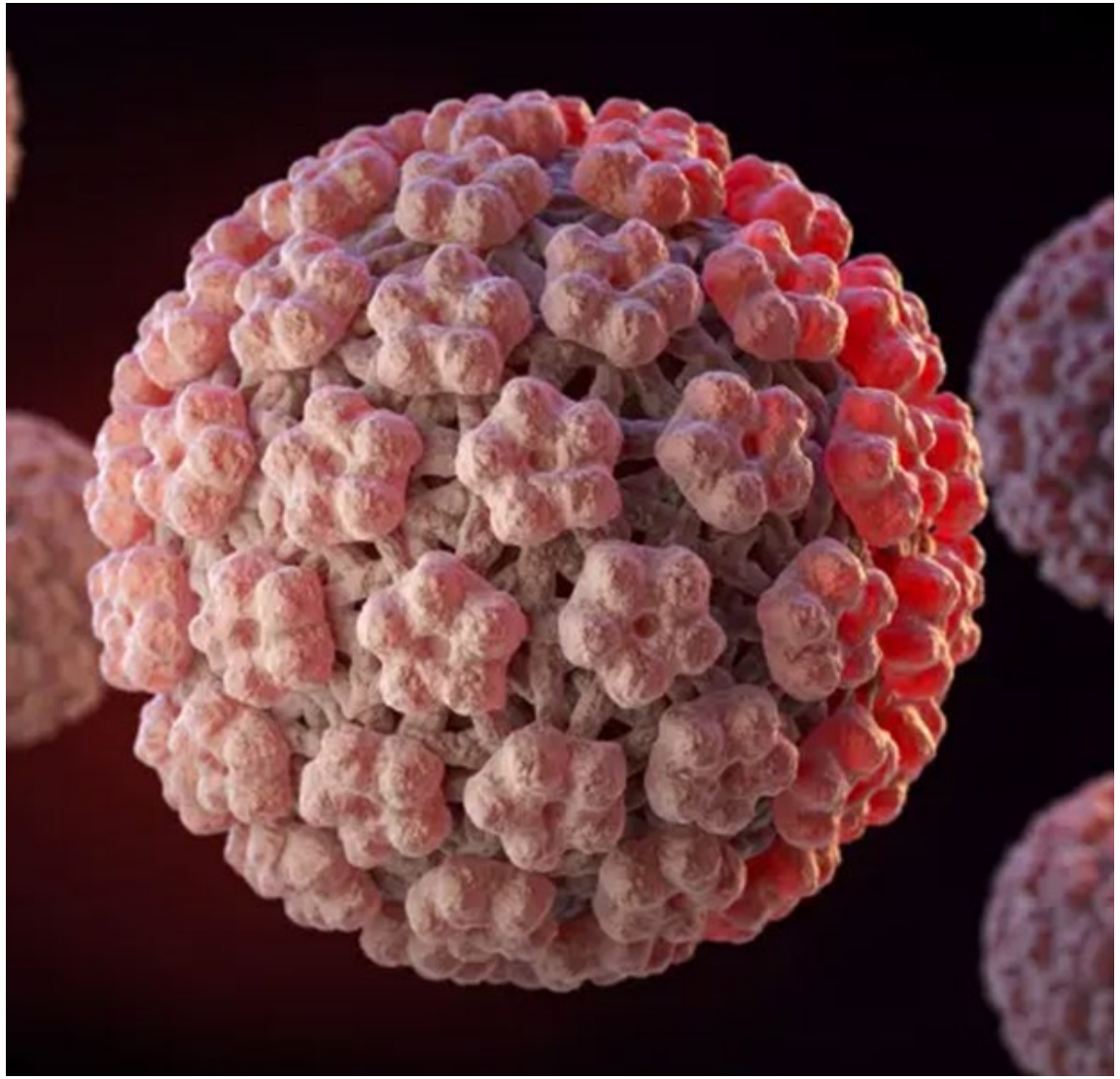
Background

- Estimated 43 million HPV infections in U.S
- Most infections are transient
- Persistent infection can lead to cancer
- Progression from infection to invasive cervical cancer: 10-20 years



What is HPV
(Human Papillomavirus)

- double-stranded DNA viruses
- Over 200 HPV subtypes
- Over 40 can infect genital areas
- 13 subtypes considered high risk
- Cancers of mucosal epithelium
- Most common STI in U.S.
  - Nearly all sexually active people infected
  - Within months to a few years of first activity
  - Approximately half are with high-risk HPV

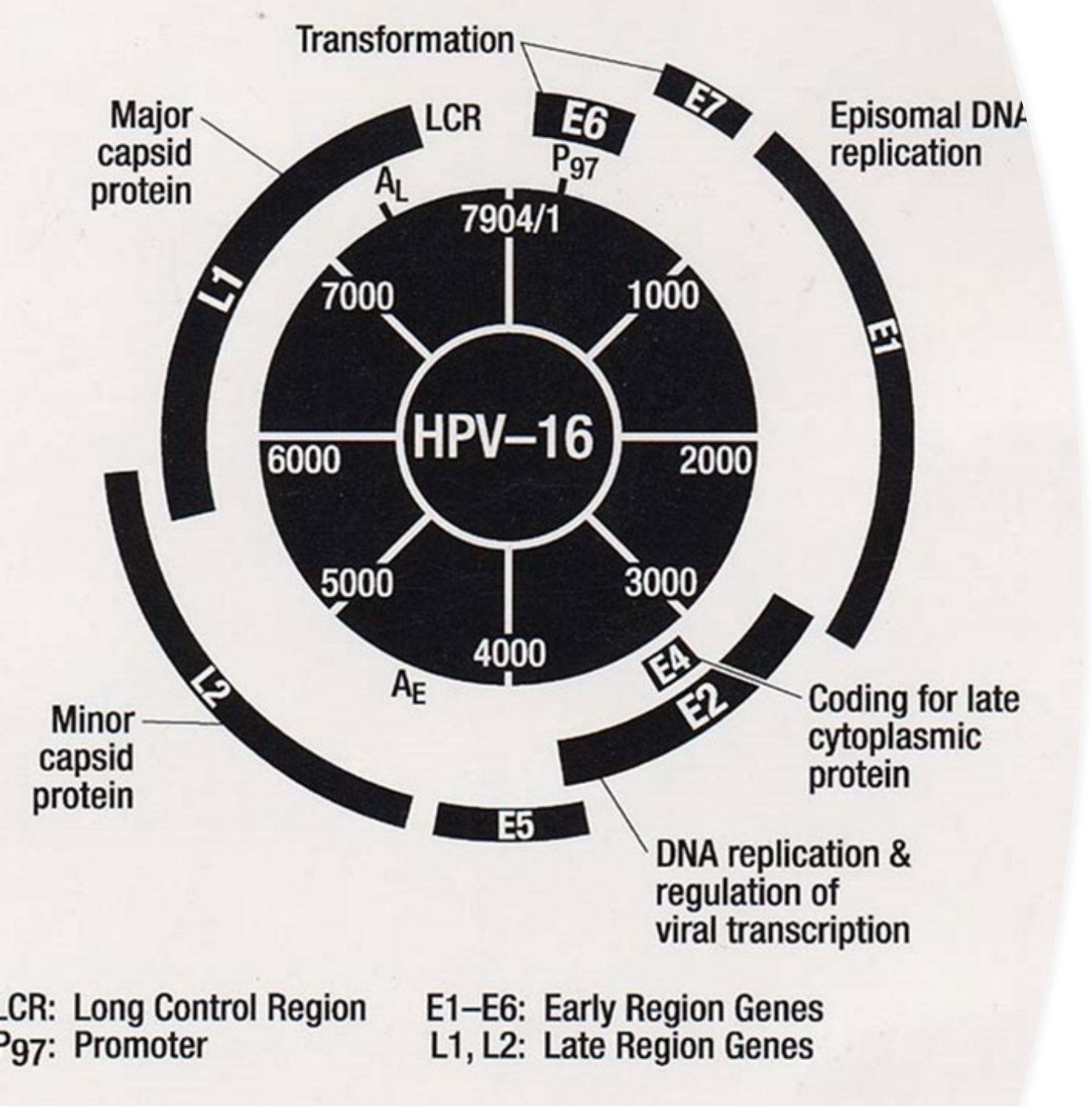


How is HPV Transmitted?

- Passes easily between sexual partners
- Transmitted through any intimate skin-to-skin contact, including vaginal–penile sex, penile–anal sex, penile–oral sex, vaginal–oral sex, and use of sex toys or other objects
- Condoms and dental dams can lower transmission but does not prevent it completely

Does HPV Infection Cause Symptoms?

- Does not usually cause symptoms
- Precancerous cell changes at the cervix rarely cause symptoms
- Precancerous lesions at other sites in the body may cause symptoms like itching or bleeding
- Cancer may cause symptoms like bleeding, pain, or swollen lymph nodes or glands



HPV Genome and Oncoproteins

E6 Protein

- Binds and degrades p53
- Inhibits apoptosis

E7 Protein

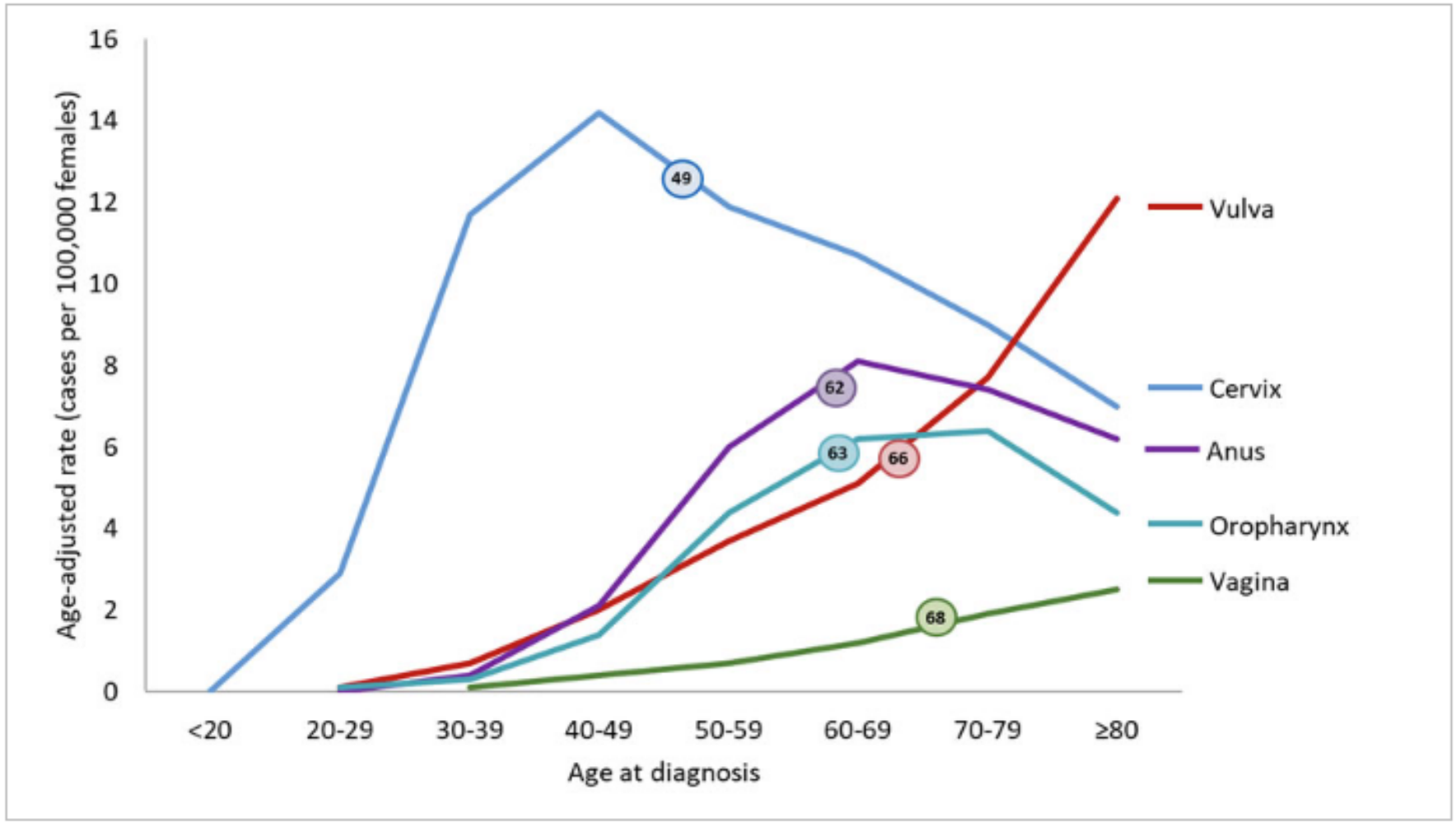
- Binds and degrades retinoblastoma tumor suppressor gene product
- Stimulates cell proliferation

Number of HPV-Associated and Estimated Number of HPV-Attributable Cancer Cases per Year

- Approximately 46,143 new cases of cancer in areas where HPV is often found
- HPV causes about 36,500 of these cancers

Cancer site	Average number of cancers per year in sites where HPV is often found (HPV-associated cancers)	Percentage probably caused by any HPV type[a]	Estimated number probably caused by any HPV type[a]
Cervix	12,200	91%	11,100
Vagina	863	75%	600
Vulva	4,191	69%	2,900
Penis	1,365	63%	900
Anus[b]	7,288	91%	6,600
Female	4,909	93%	4,500
Male	2,379	89%	2,100
Oropharynx	20,236	70%	14,400
Female	3,556	63%	2,300
Male	16,680	72%	12,100
TOTAL	**46,143**	**79%**	**36,500**
Female	**25,719**	**83%**	**21,400**
Male	**20,424**	**74%**	**15,100**

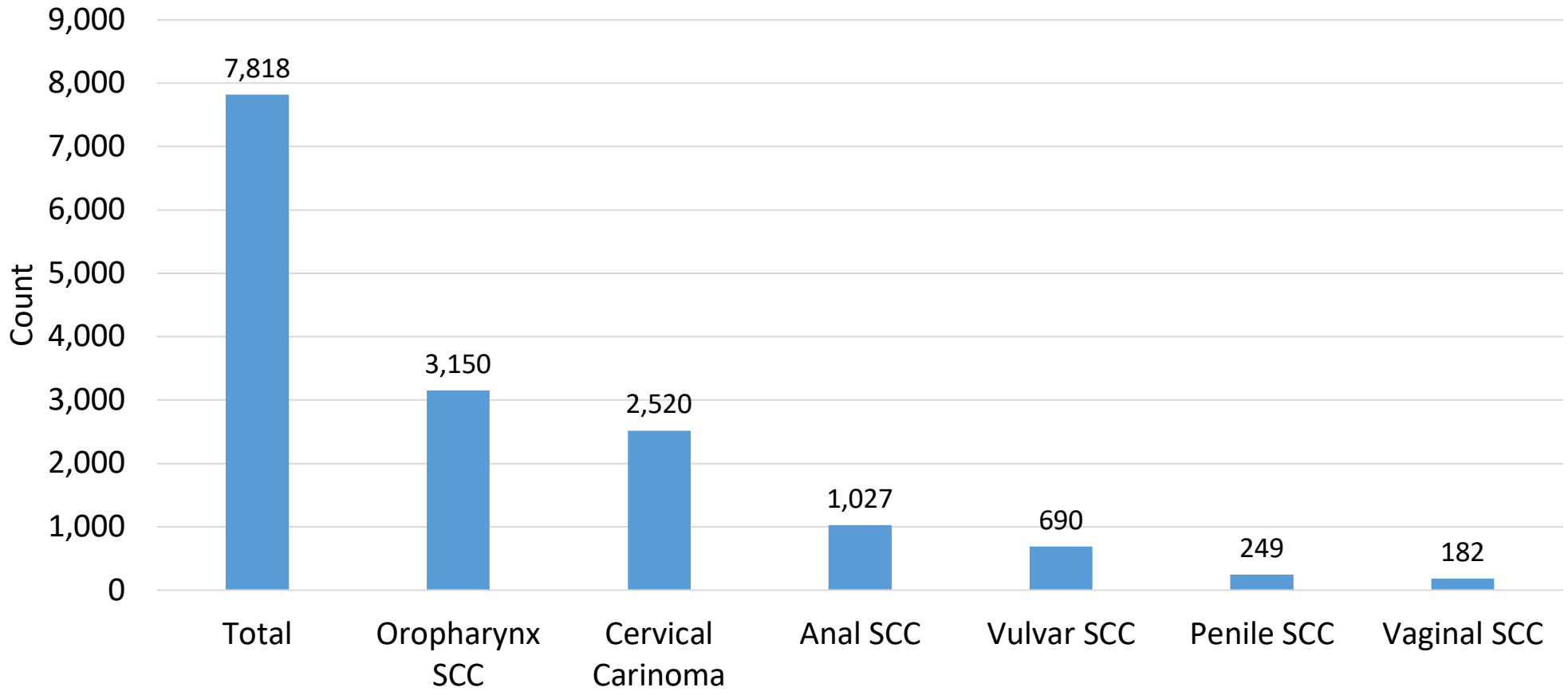
Rates of HPV-Associated Cancers and Age at Diagnosis Among Women in the United States per Year, 2014–2018



The chart above shows rates by age group for HPV-associated cancers in the United States during 2014–2018. The rates shown are the number of women in each age group who were diagnosed with HPV-associated cancer for every 100,000 women. Rates were not shown for some cancer sites and age groups because there were fewer than 16 cases.

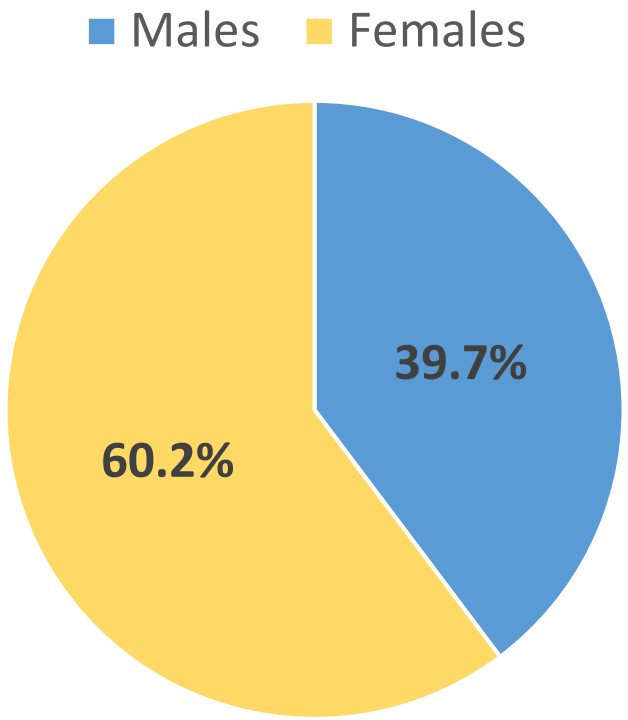
https://www.cdc.gov/cancer/hpv/statistics/age.htm

Number of HPV-Associated Cancers Diagnosed in Arkansas by Cancer Type, 2001-2018 Combined



Abbreviations: SCC = squamous cell carcinoma
Dataset: ACCR, Nov 2020 submission (2001-2018).
Created on 3/31/21

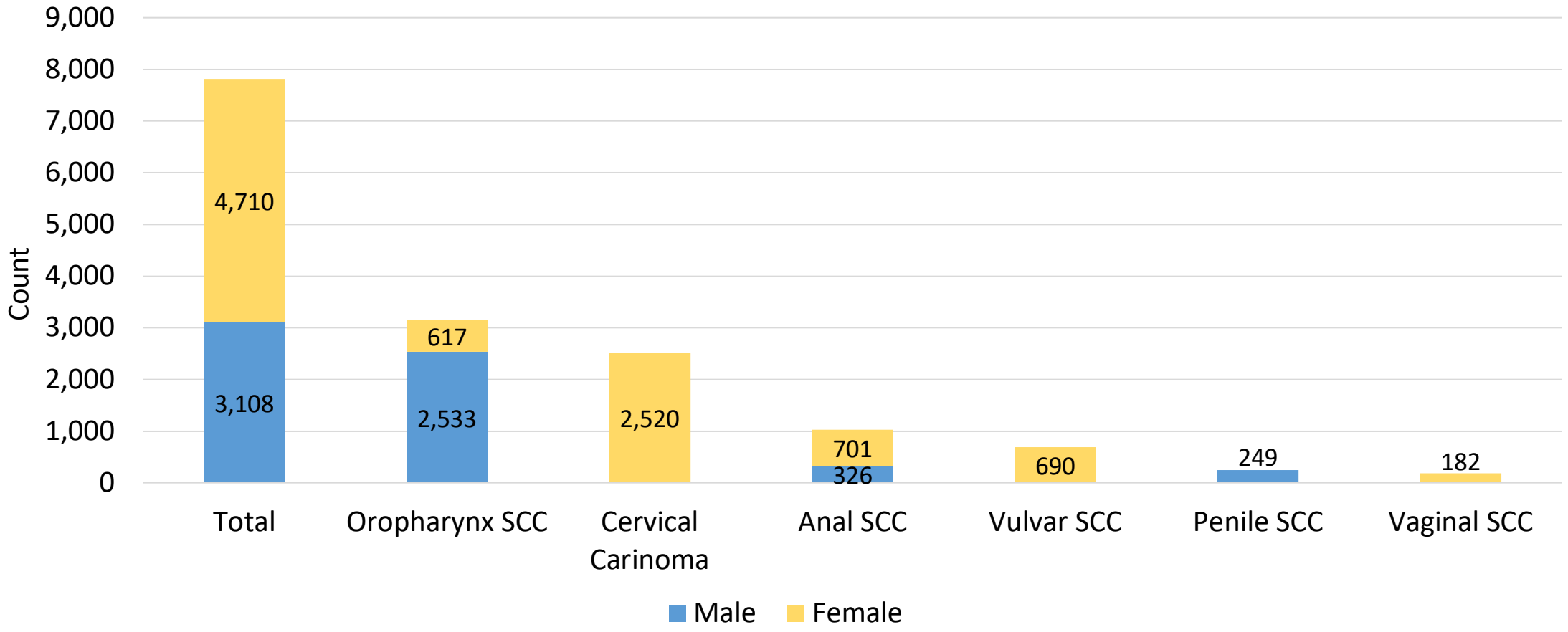
Percentage of HPV-Associated Cancers Diagnosed in Males and Females, Arkansas, 2001-2018 Combined



Approximately 460 HPV-associated cancers are diagnosed annually

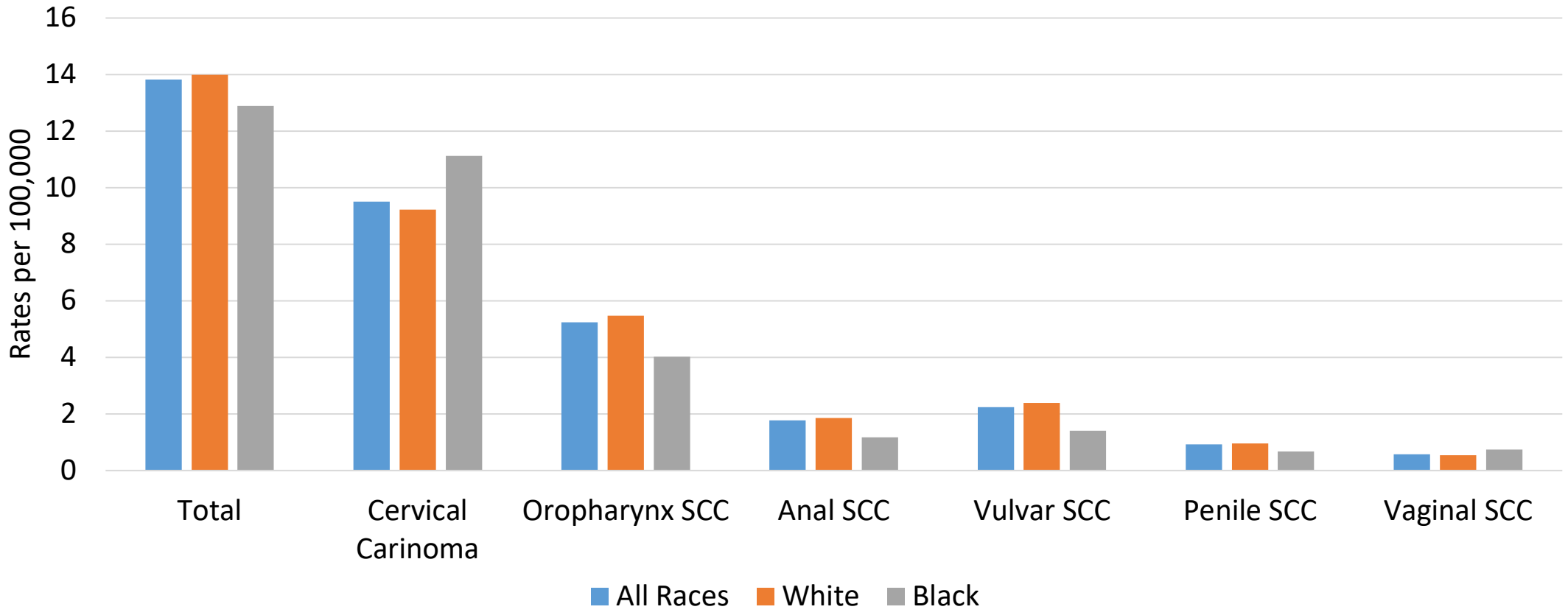
Abbreviations: SCC = squamous cell carcinoma
Dataset: ACCR, Nov 2020 submission (2001-2018).
Created on 3/31/2021.

Number of HPV-Associated Cancers Diagnosed in Arkansas by Cancer Type, 2001-2018 Combined



Abbreviations: SCC = squamous cell carcinoma
Dataset: ACCR, Nov 2020 submission (2001-2018).
Created on 3/31/2021.

Age-Adjusted Incidence of HPV Associated Cancers by Site and Race, Arkansas, 2001-2018



Abbreviations: SCC = squamous cell carcinoma
Notes: Trend rates per 100,000 population age-adjusted to the 2000 U.S. Standard Population.
Dataset: ACCR, Nov 2020 submission (2001-2018).
Created on 4/5/2021

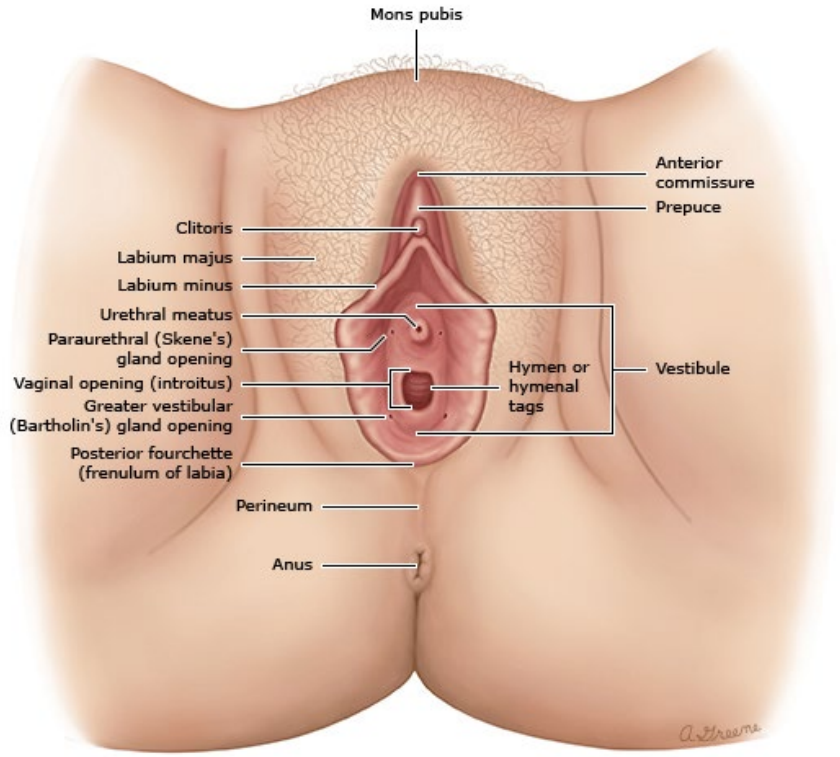
Vulvar Cancer

Vulvar Cancer

- Fourth most common gynecologic cancer in high-resource countries
- Squamous cell carcinoma (SCC) the most common histologic type
- HPV associated with the majority of vulvar SCC
- 6100 new cases each year
- 1500 deaths from vulvar cancer each year
- Average age at diagnosis is 68
- 72% five-year survival after diagnosis in US

RISK FACTORS AND ETIOLOGY

- Vulvar (VIN) or cervical intraepithelial neoplasia (CIN)
- History of cervix cancer
- Cigarette smoking
- Vulva lichen sclerosis
- Immune deficiency
- 2 proposed mechanisms for SCC
  - Chronic inflammatory processes
  - Autoimmune process
  - HPV infection



HPV Infection and Vulvar Cancer

- Review of 2000 specimens
- HPV detected in
  - 86% of vulvar intraepithelial neoplasia (VIN)
  - 28% of invasive vulvar cancers
  - HPV 16 most common subtype ->72%
  - HPV 33 ----------→ 6%
  - HPV 18----------→4.6%

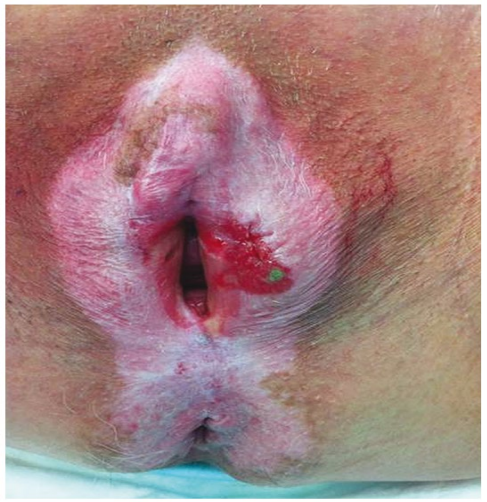
CLINICAL PRESENTATION

- Vulvar lesion
- Vulvar pruritus
- Bleeding
- Pain

Histologic Types

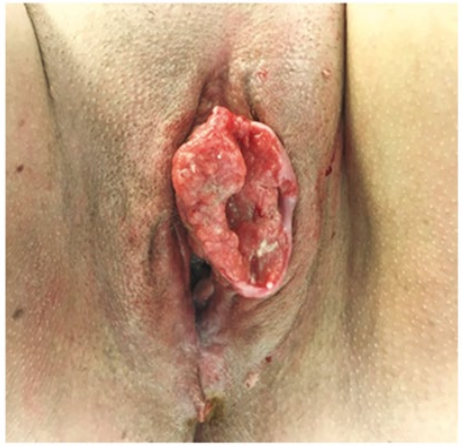
- Squamous cell carcinoma75% of cases
  - 2 subtypes
    - Keratinizing, differentiated or simplex
      - Not HPV related
      - Older patients
      - Associated with vulvar dystrophy
    - **Bowenoid type, classic, warty**
      - **Associated with HPV 16,18, 33**
      - **Younger patients**
      - **Risk factors-first intercourse, multiple partner, cigarette smoking**
- Less common subtypes
  - Basal Cell- Melanoma-Paget disease of vulva-Sarcoma

Vulvar lichen sclerosus and squamous cell carcinoma



Lichen sclerosus with a classic butterfly distribution and early invasive cancer on the left.

Vulvar squamous cell carcinoma: Fleshy, ulcerated lesion



Fleshy, ulcerated squamous cell carcinoma involving the left vulvar vestibule.

DIAGNOSTIC EVALUATION

- History of risk factors/symptoms
- Complete pelvic exam
- Color changes
- Masses
- Ulceration
- Colposcopy of vulva
- Biopsy

Vulvar cancer TNM staging AJCC UICC 8th edition

The definitions of the T categories correspond to the stages accepted by the Fédération Internationale de Gynécologie et d'Obstétrique (FIGO). Both systems are included for comparison.

Primary tumor (T)

T category	FIGO stage	T criteria
TX		Primary tumor cannot be assessed
T0		No evidence of primary tumor
T1	I	Tumor confined to the vulva and/or perineum. Multifocal lesions should be designated as such. The largest lesion or the lesion with the greatest depth of invasion will be the target lesion identified to address the highest pT stage. Depth of invasion is defined as the measurement of the tumor from the epithelial-stromal junction of the adjacent most superficial dermal papilla to the deepest point of invasion.
T1a	IA	Lesions 2 cm or less, confined to the vulva and/or perineum, and with stromal invasion of 1 mm or less
T1b	IB	Lesions more than 2 cm, or any size with stromal invasion of more than 1 mm, confined to the vulva and/or perineum
T2	II	Tumor of any size with extension to adjacent perineal structures (lower/distal third of the urethra, lower/distal third of the vagina, anal involvement)
T3	IVA	Tumor of any size with extension to any of the following—upper/proximal two-thirds of the urethra, upper/proximal two-thirds of the vagina, bladder mucosa, or rectal mucosa—or fixed to the pelvic bone

Regional lymph nodes (N)

N category	FIGO stage	N criteria
NX		Regional lymph nodes cannot be assessed
N0		No regional lymph node metastasis
N0(i+)		Isolated tumor cells in regional lymph node(s) no greater than 0.2 mm
N1	III	Regional lymph node metastasis with one or two lymph node metastases each less than 5 mm, or one lymph node metastasis greater than or equal to 5 mm
N1a*	IIIA	One or two lymph node metastases each less than 5 mm
N1b	IIIA	One lymph node metastasis greater than or equal to 5 mm
N2		Regional lymph node metastasis with three or more lymph node metastases each less than 5 mm, or two or more lymph node metastases greater than or equal to 5 mm, or lymph node(s) with extranodal extension
N2a*	IIIB	Three or more lymph node metastases each less than 5 mm
N2b	IIIB	Two or more lymph node metastases greater than or equal to 5 mm
N2c	IIIC	Lymph node(s) with extranodal extension
N3	IVA	Fixed or ulcerated regional lymph node metastasis

NOTE: The site, size, and laterality of lymph node metastases should be recorded.
* Includes micrometastasis, N1mi and N2mi.

Distant metastasis (M)

M category	FIGO stage	M criteria
M0		No distant metastasis (no pathological M0; use clinical M to complete stage group)
M1	IVB	Distant metastasis (including pelvic lymph node metastasis)

Prognostic stage groups

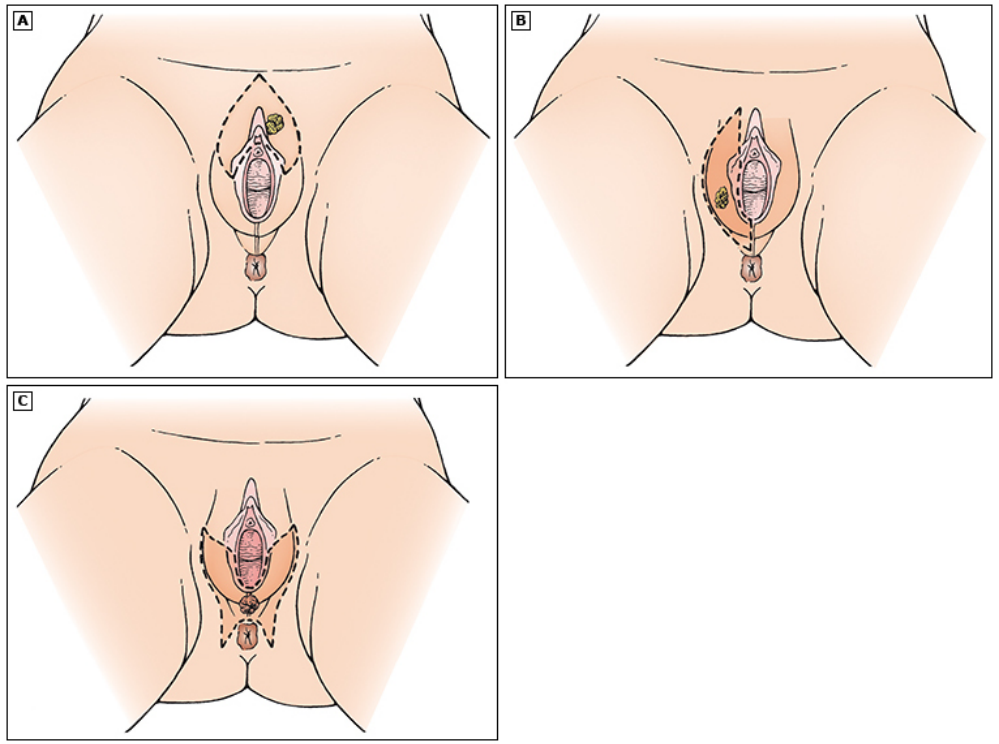
When T is...	And N is...	And M is...	Then the stage group is...
T1	N0	M0	I
T1a	N0	M0	IA
T1b	N0	M0	IB
T2	N0	M0	II
T1-T2	N1-N2c	M0	III
T1-T2	N1	M0	IIIA
T1-T2	N2a, N2b	M0	IIIB
T1-T2	N2c	M0	IIIC
T1-T3	N3	M0-M1	IV
T1-T2	N3	M0	IVA
T3	Any N	M0	IVA
Any T	Any N	M1	IVB

- Vulvar melanoma is not included in this staging system; it is staged with the melanoma staging system.
- Classification of p16 status will be included if obtained but is not required.

TNM: tumor, node, metastasis; AJCC: American Joint Committee on Cancer; UICC: Union for International Cancer Control.

TREATMENT

- Hybrid of clinical and the surgical staging
- Size and depth of invasion are determined on physical exam & biopsy
- Lymph nodes are evaluated by physical examination, imaging, and lymphadenectomy or sentinel lymph node biopsy
- Excision of the primary vulvar lesion is performed by radical local excision
- Large, central, or multicentric lesions may require modified radical vulvectomy
- Evaluation or management of lymph nodes
- Chemotherapy & radiation for vulvar cancer, both as adjuvant treatment & primary treatment for disease **that cannot be** surgically resected



Vulvectomy

In this type of operation, all or part of the vulva is removed.

- A **skinning vulvectomy** removes only the top layer of skin affected by the cancer. This is an option for treating extensive VIN, but this operation is rarely done.
- In a **simple vulvectomy**, the entire vulva is removed (the inner and outer labia; sometimes the clitoris, too) as well as tissue just under the skin.
- A **partial or modified radical vulvectomy** removes part of the vulva, including the deep tissue.
- In a **complete radical vulvectomy**, the entire vulva and deep tissues, including the clitoris, are removed. A complete radical vulvectomy rarely needed.

Vulvar reconstruction

Vaginal Cancer

INTRODUCTION

- Less common than uterine, ovarian, and cervical cancer
- More common than vulvar cancer
- Most are squamous cell carcinomas
- Majority of vaginal malignancies are metastatic
- Often arise from endometrium, cervix, vulva, ovary, rectum

RISK FACTORS AND EPIDEMIOLOGY

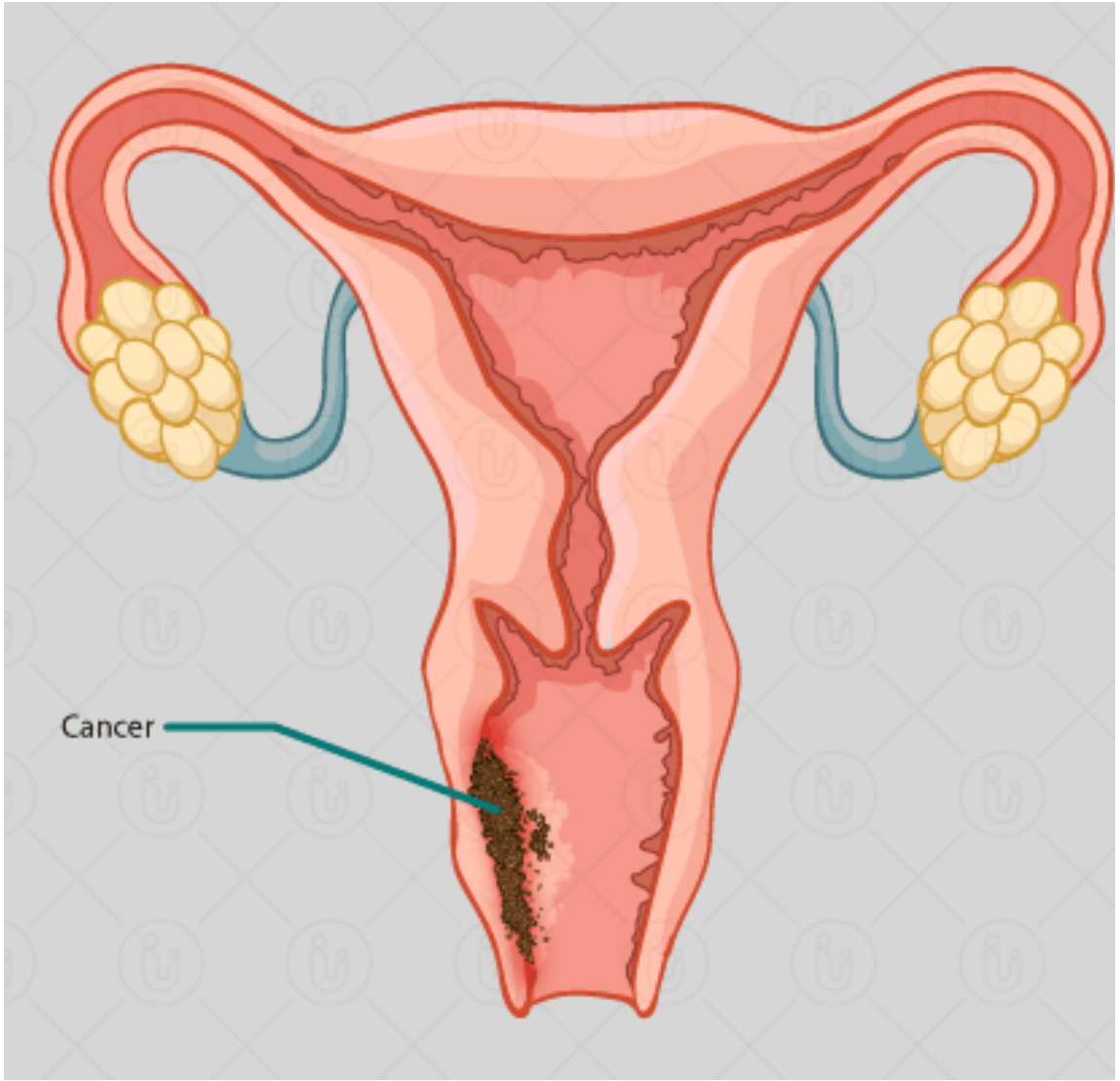
- Approximately 1 in 100,00 diagnosed with in-situ or invasive vaginal cancer
- Mean age at diagnosis of SCC approximately 60yo
- Most cases of are likely mediated by HPV infection
- Same risk factors as cervical neoplasia:
  - multiple lifetime sexual partners
  - early age at first intercourse
  - current smoker

CLINICAL PRESENTATION

- Asymptomatic
- Vaginal bleeding is the most common clinical presentation
  - Postcoital
  - Postmenopausal
  - Blood tinged-watery-malodorous
- Vaginal mass may also be discovered
- Symptoms related to local extension
  - urinary symptoms
  - gastrointestinal complaints
  - pelvic pain from extension of disease

DIAGNOSTIC EVALUATION

- History
- Physical examination
- Vaginal cytology
- Vaginal colposcopy
- Vaginal biopsy
- Imaging studies

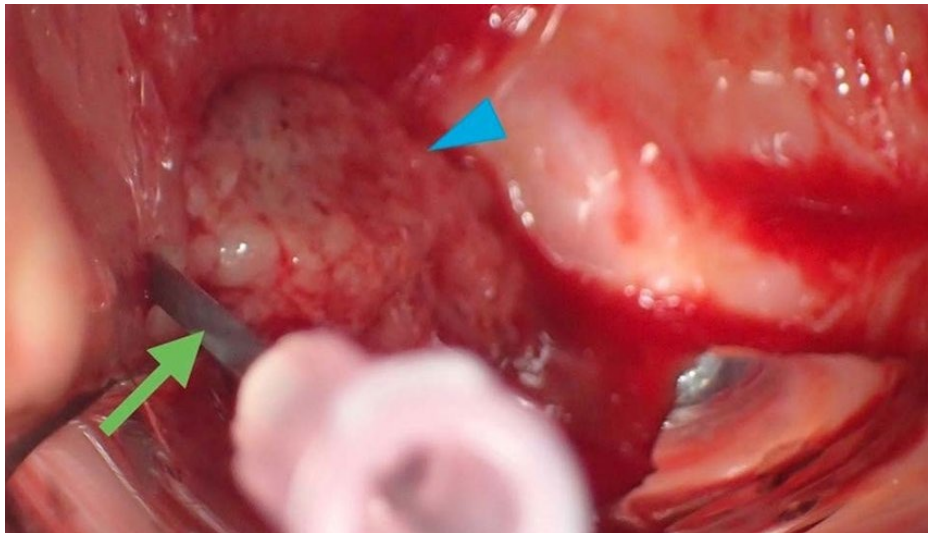


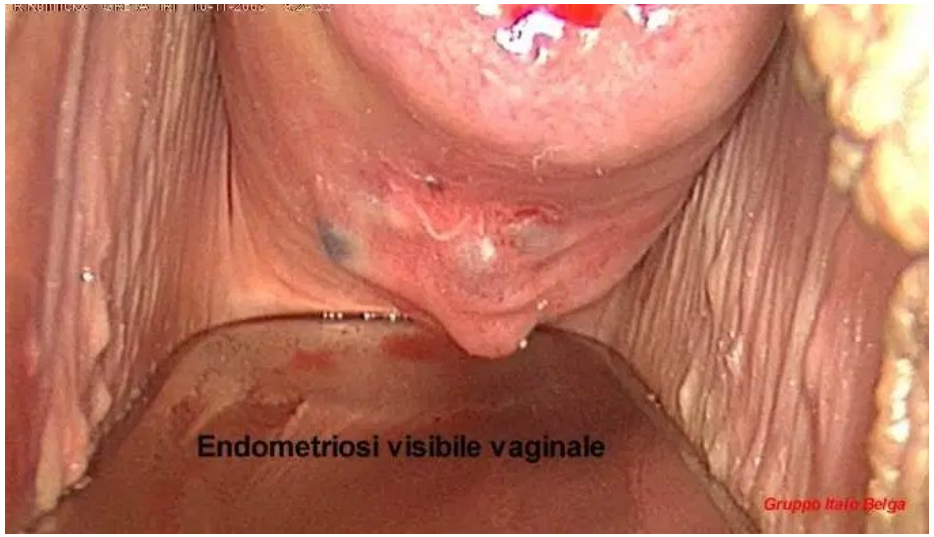
Diagnostic Considerations

- Diagnosis based upon a vaginal biopsy
- No history of a previous gynecologic malignancy

- DIFFERENTIAL DIAGNOSIS
  - Exclude that bleeding from other sites
  - Vaginal atrophy in menopausal women.
  - Vaginal infection
  - Inflammation
  - Trauma may result in bleeding-fissure/laceration

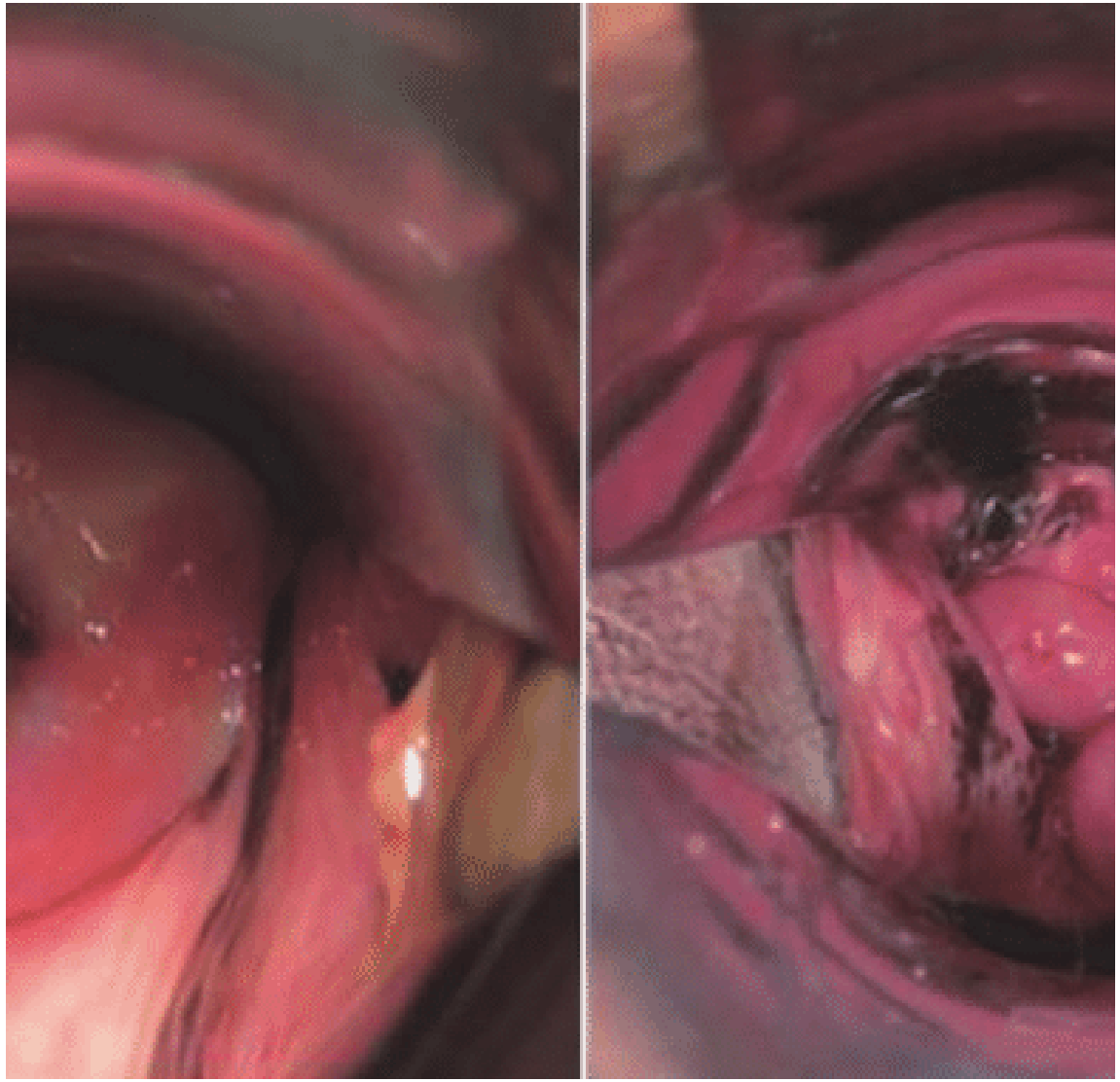
- Vaginal mass may also be benign
  - Gartner duct cysts
  - Vaginal polyps
  - Vaginal adenosis
  - Endometriosis





HISTOPATHOLOGY

- Squamous cell carcinoma
- Verrucous carcinoma
- Adenocarcinoma
- Sarcoma
- Melanoma



STAGING

- Clinical staging is based upon findings from:
  - Physical examination
  - Cystoscopy, proctoscopy, and chest and skeletal radiography
  - The results of biopsy or FNA of the inguinal/femoral or other nodes
  - Information available from examination of the resected specimen, including pelvic and peritoneal lymph nodes, is to be used, as noted using the TNM system.

- Routes of spread:
  - Direct extension to pelvic soft tissue structures: parametria, bladder, urethra, rectum
  - Lymphatic spread to the pelvic and paraaortic lymph nodes
  - Hematogenous dissemination to other organs, including the lungs, liver, and bone

PROGNOSIS

The most important variable affecting prognosis is the stage at the time of presentation

The size and depth of tumor penetration

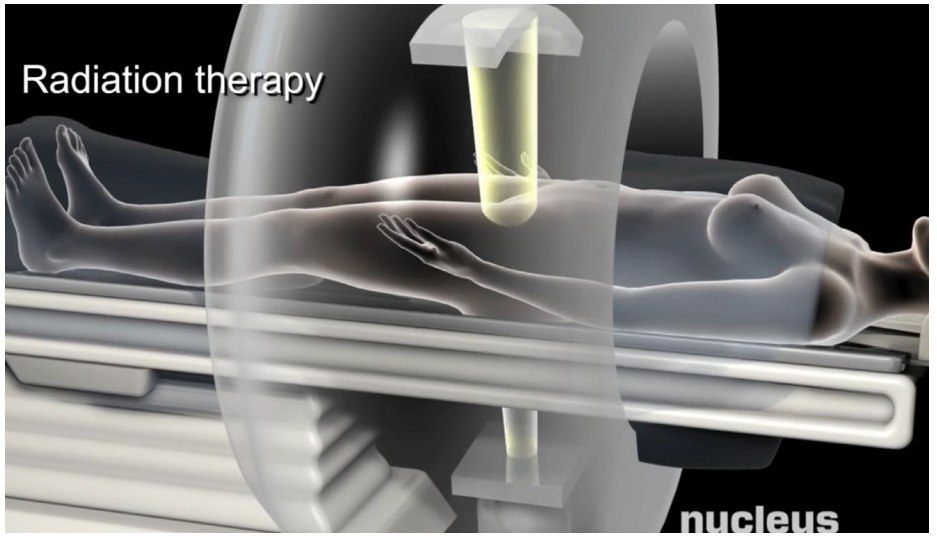
Data from a United States National Cancer Database

- 5 survival 65 versus 84 percent in tumors ≤4 cm
- mortality 51 percent higher in women with melanoma compared with SCC vaginal cancer

TREATMENT

- No randomized trials defining treatment for vaginal cancer
- Treatment approach is extrapolated from cervical and anal cancers
- Treatment plans should be individualized
  - Location, size, and clinical stage of the tumor.
  - Local anatomic constraints, which may not permit wide negative surgical margins
  - Exenterative procedure may be needed
  - Psychosexual issues, including the patient's desire to maintain a functional vagina.

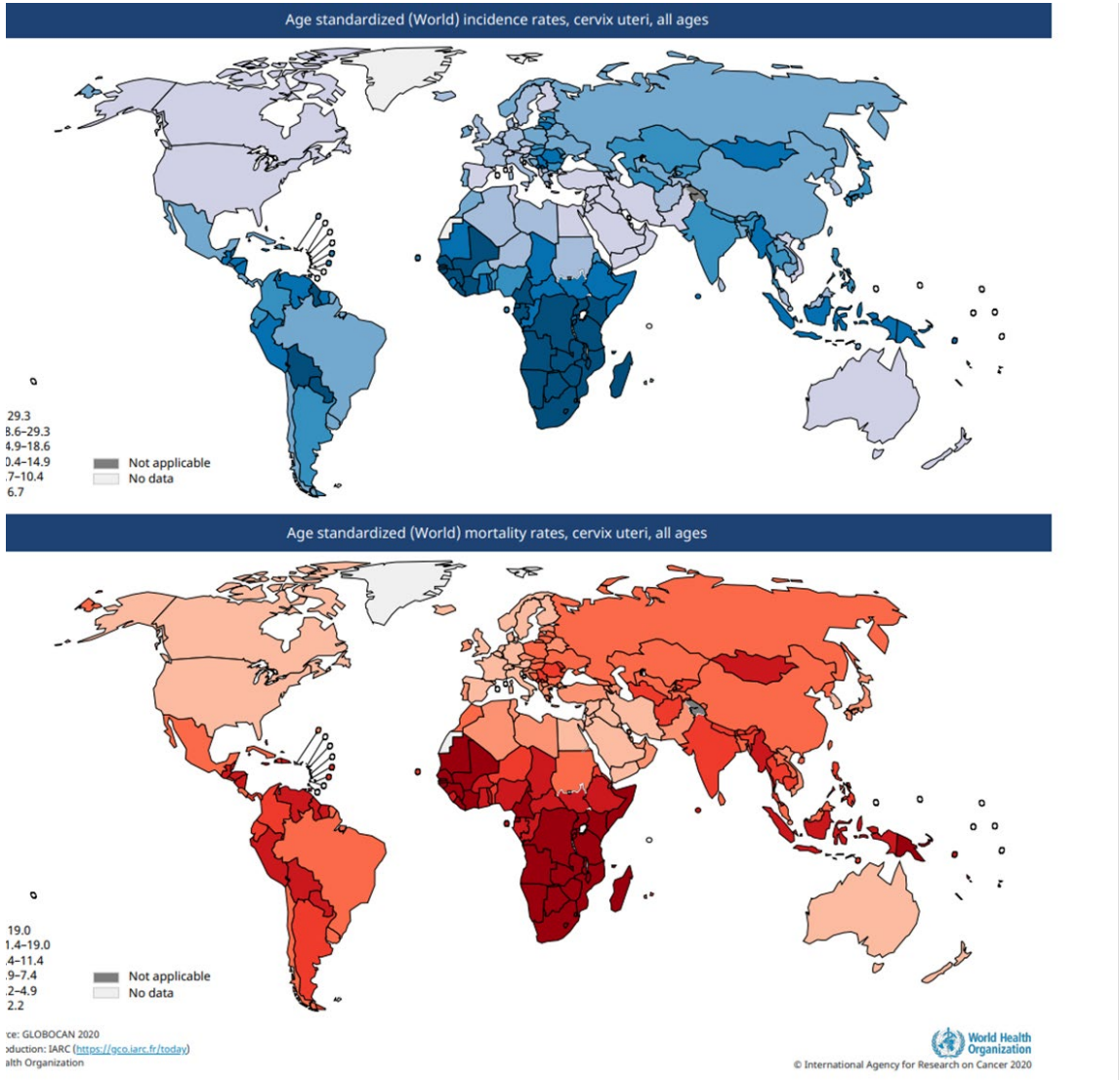
- Surgery — Requires a radical hysterectomy, upper vaginectomy, and bilateral pelvic lymphadenectomy.
- Chemoradiation
- Radiation therapy
- Neoadjuvant therapy



Invasive Cervical Cancer

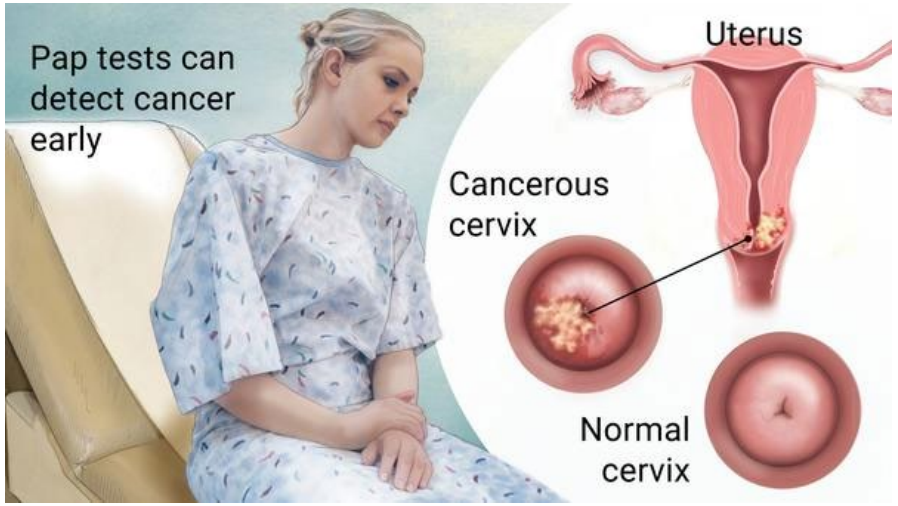
Cervical Cancer

- GLOBOCAN (2020)
  - Fourth most common cancer among women globally
  - 604,000 new cases (Est)
  - 342,000 deaths (Est)
  - 90% of the new cases and deaths worldwide in 2020 occurred in low- and middle-income countries



Key facts

- HPV 16 and 18 responsible for nearly 50% of high grade cervical pre-cancers
- Women with HIV are 6 times more likely to develop cervical cancer compared to women without HIV.
- Vaccination against HPV and screening and treatment of pre-cancer lesions is a cost-effective way to prevent cervical cancer.
- Cervical cancer can be cured if diagnosed at an early stage and treated promptly.
- Comprehensive cervical cancer control includes
  - **primary** prevention (vaccination against HPV)
  - **secondary** prevention (screening and treatment of pre-cancerous lesions)
  - **tertiary** prevention (diagnosis and treatment of invasive cervical cancer)
  - **palliative** care



Introduction

Human papillomavirus

- central to development of cervical neoplasia
- can be detected in 99% percent of cervical cancers

Common histologic types

- Squamous Cell 70-75%
- Adenocarcinoma 25%

Epidemiology

Worldwide 2020

- 604,000 new cancer cases
- 342,000 deaths

United States

- 14,500 new cases of invasive cervical cancer
- 4300 cancer-related deaths occur each year

Global incidence and mortality rates

- Depends on the presence of screening programs
- Cervical precancer and cancer detection
- Human papillomavirus (HPV) vaccination

Four major steps in cervical cancer development

- Oncogenic HPV infection of the metaplastic epithelium at the cervical transformation zone
- Persistence of the HPV infection
- Progression of a clone of epithelial cells from persistent viral infection to precancer
- Development of carcinoma and invasion through the basement membrane.

Human papillomavirus: High- and low-risk types for causing cervical cancer

High-risk (oncogenic or cancer-associated) types
Common types: 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 68, 69, 82
Low-risk (non-oncogenic) types
Common types: 6, 11, 40, 42, 43, 44, 54, 61, 72, 81

Data from: Centers for Disease Control and Prevention. National Cancer Institute Factsheet. Human papillomavirus and cancer: Questions and answers (Accessed on June 11, 2012).

UpToDate®

RISK FACTORS

HPV-related

- Early onset of sexual activity
- Multiple sexual partners
- History of STIs
- Early age at first birth
- History of VIN or VAIN
- Immunosuppression

Non-HPV-related

- Low socioeconomic status
- Cervical cancer is less common in patients whose sexual partners are circumcised males
- Genetics
- Cigarette smoking
- Oral contraceptive use

Final Recommendation Statement

Cervical Cancer: Screening

August 21, 2018

Recommendations made by the USPSTF are independent of the U.S. government. They should not be construed as an official position of the Agency for Healthcare Research and Quality or the U.S. Department of Health and Human Services.

This topic is being updated. Please use the link(s) below to see the latest documents available.

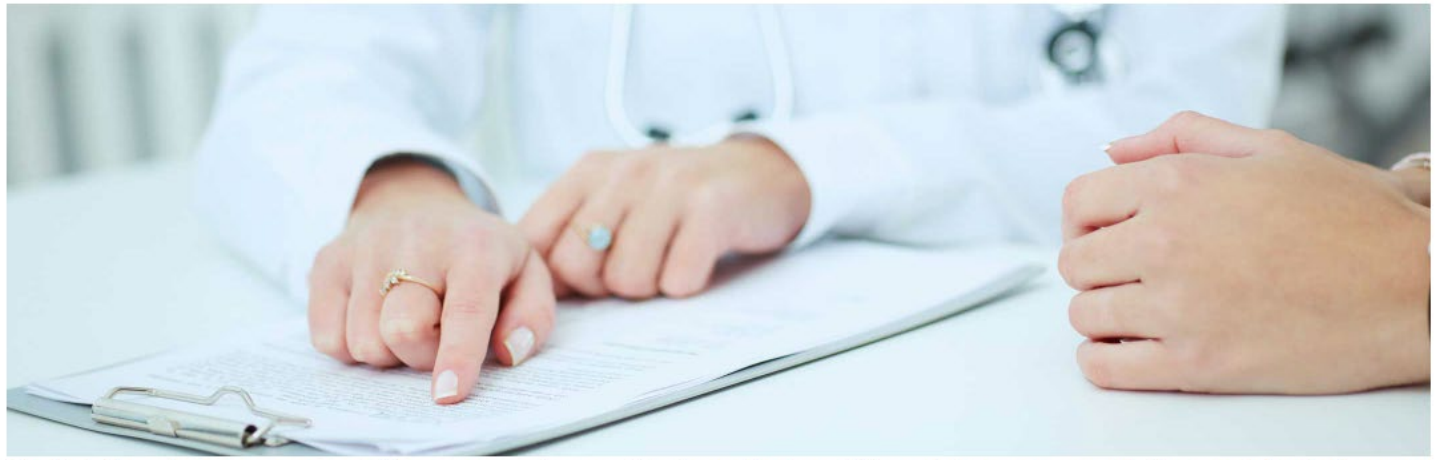
Update in Progress for Cervical Cancer: Screening

Women aged 21 to 65 years	The USPSTF recommends screening for cervical cancer every 3 years with cervical cytology alone in women aged 21 to 29 years. For women aged 30 to 65 years, the USPSTF recommends screening every 3 years with cervical cytology alone, every 5 years with high-risk human papillomavirus (hrHPV) testing alone, or every 5 years with hrHPV testing in combination with cytology (cotesting). See the Clinical Considerations section for the relative benefits and harms of alternative screening strategies for women 21 years or older.	A
Women younger than 21 years	The USPSTF recommends against screening for cervical cancer in women younger than 21 years.	D
Women who have had a hysterectomy	The USPSTF recommends against screening for cervical cancer in women who have had a hysterectomy with removal of the cervix and do not have a history of a high-grade precancerous lesion (ie, cervical intraepithelial neoplasia [CIN] grade 2 or 3) or cervical cancer.	D
Women older than 65 years	The USPSTF recommends against screening for cervical cancer in women older than 65 years who have had adequate prior screening and are not otherwise at high risk for cervical cancer. See the Clinical Considerations section for discussion of adequate prior screening and risk factors that support screening after age 65 years.	D

Cervical Cancer: Screening

An Update for This Topic is In Progress

LAST UPDATED: Mar 10, 2022



The Task Force keeps recommendations as current as possible by routinely updating existing recommendations and developing new recommendations. A multistep process is followed for each recommendation. The Task Force uses gold standard methods to review the evidence and is transparent at each step of the recommendation development process.

Public Comments are Closed for this topic.

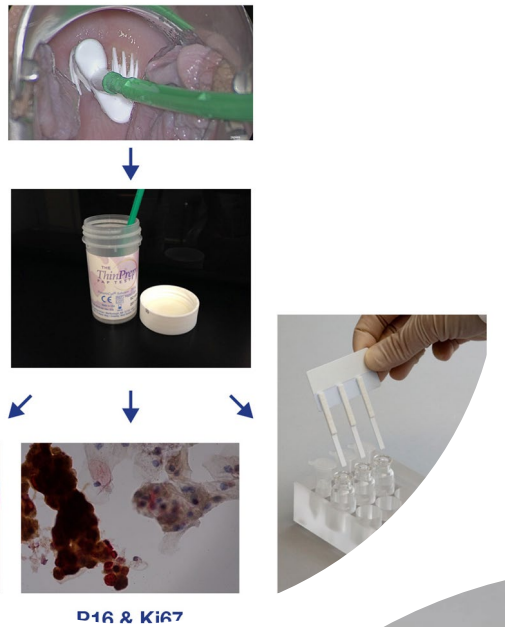
See Current Final Recommendation Statement for Cervical Cancer: Screening(2018)

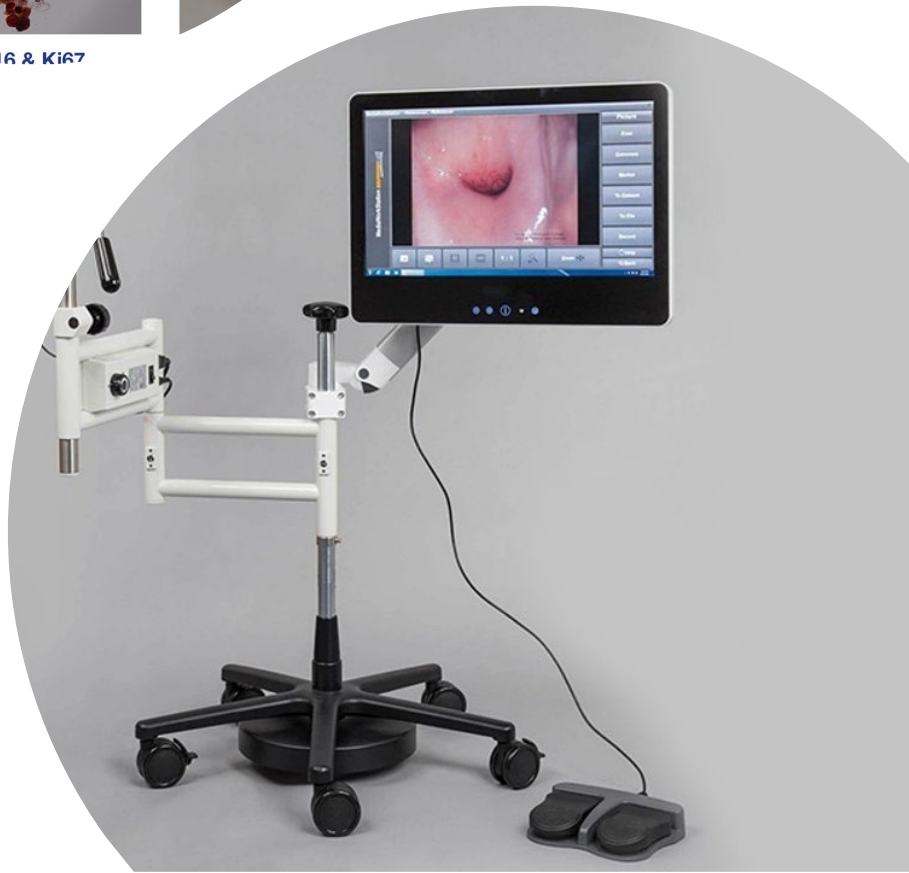
Final Research Plan

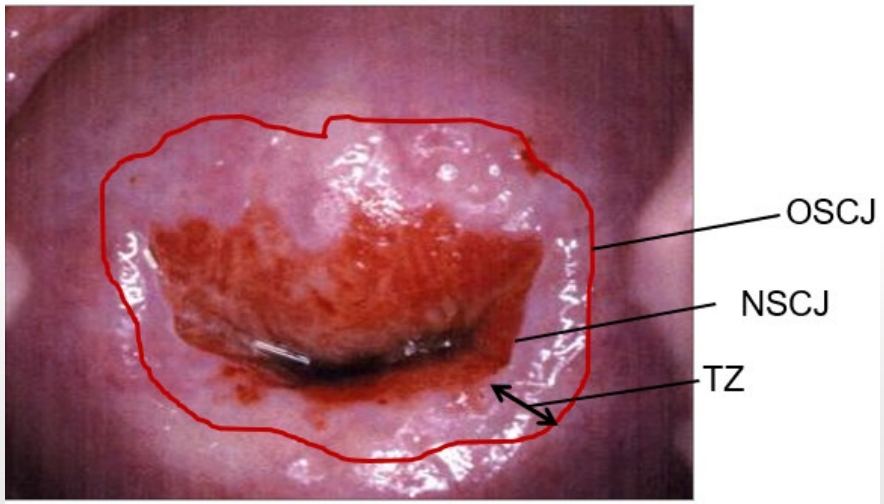
Supporting Evidence	Related Resources & Tools
Draft Research Plan	

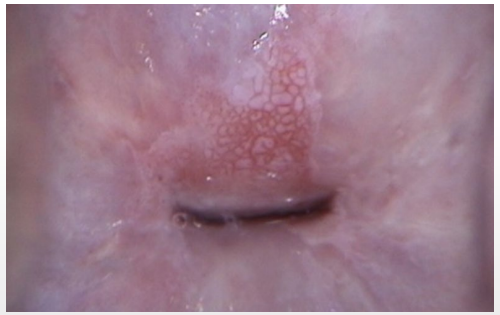
DIAGNOSIS

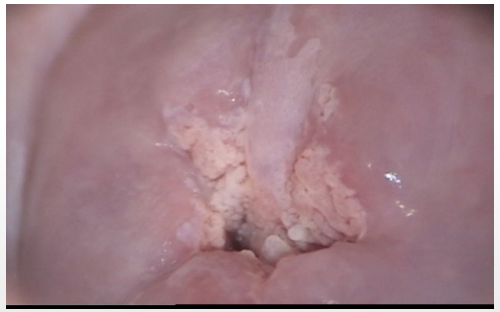
- Physical examination
- Cervical cytology
- Colposcopy
- Cervical biopsy

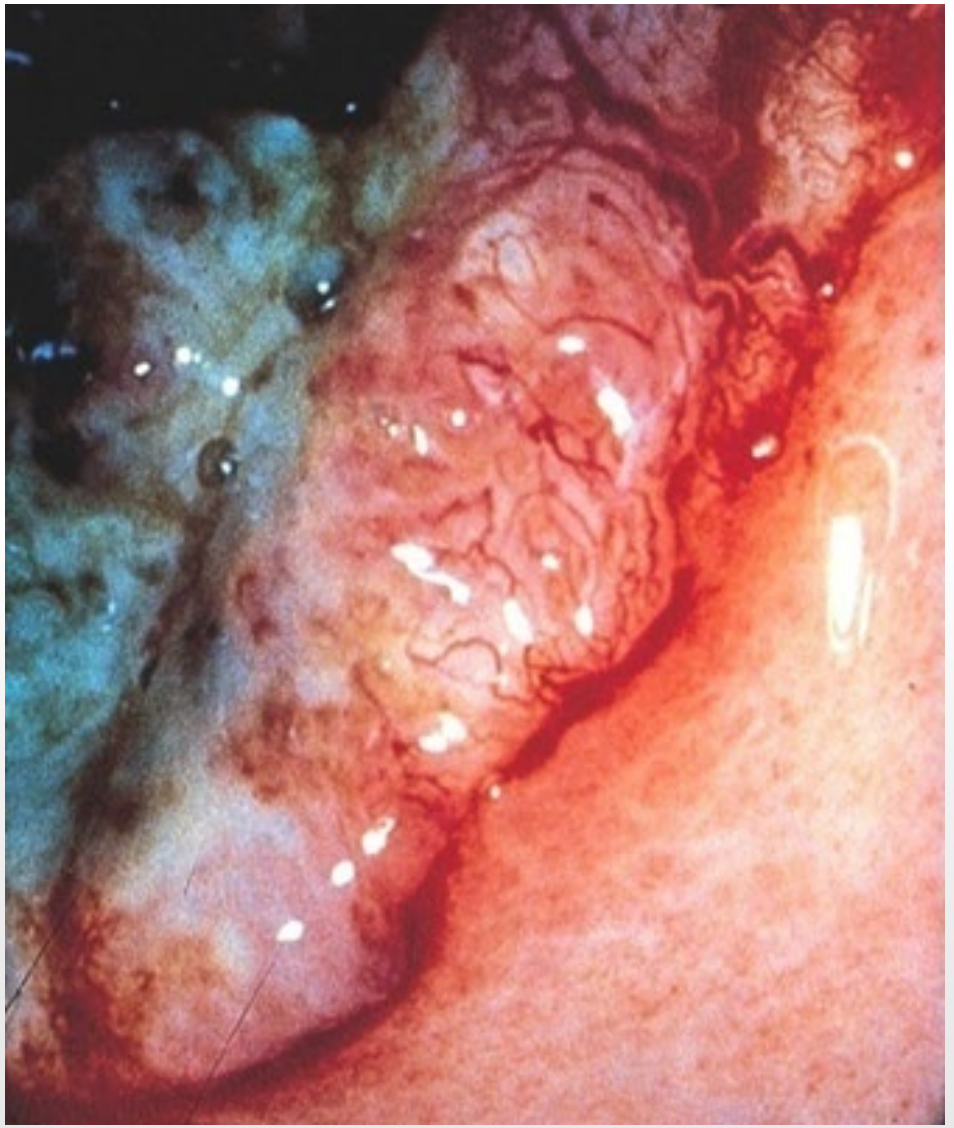


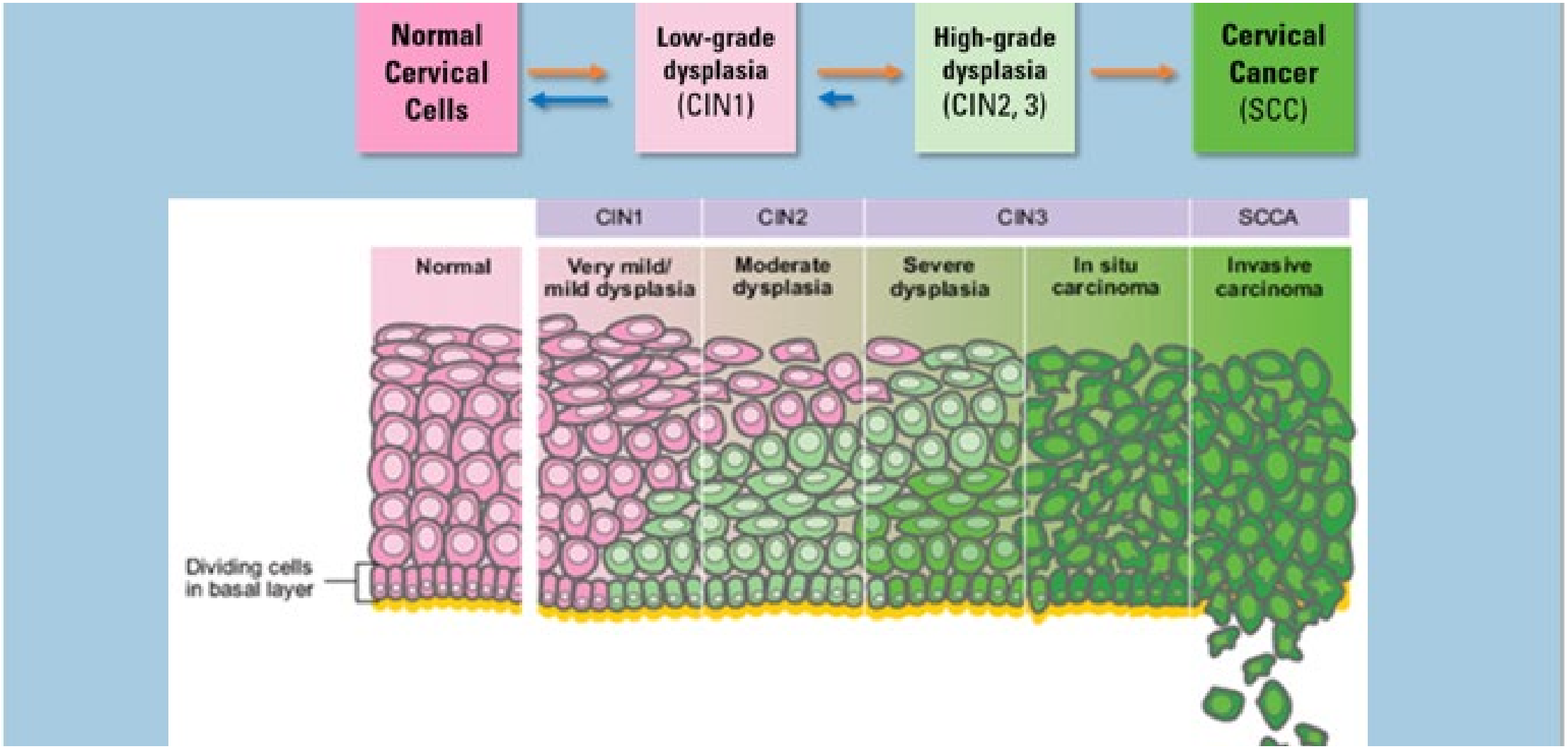



OSCJ
NSCJ
TZ

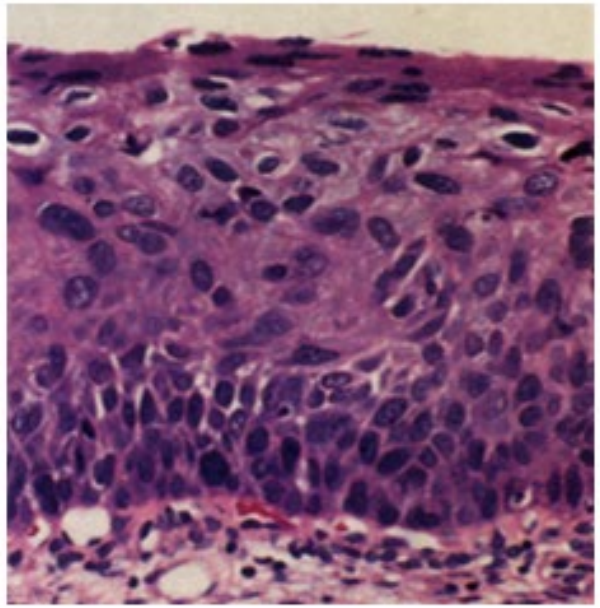


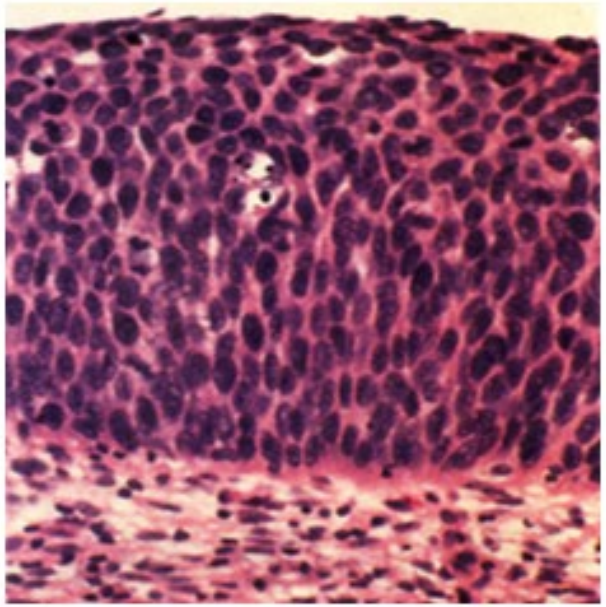


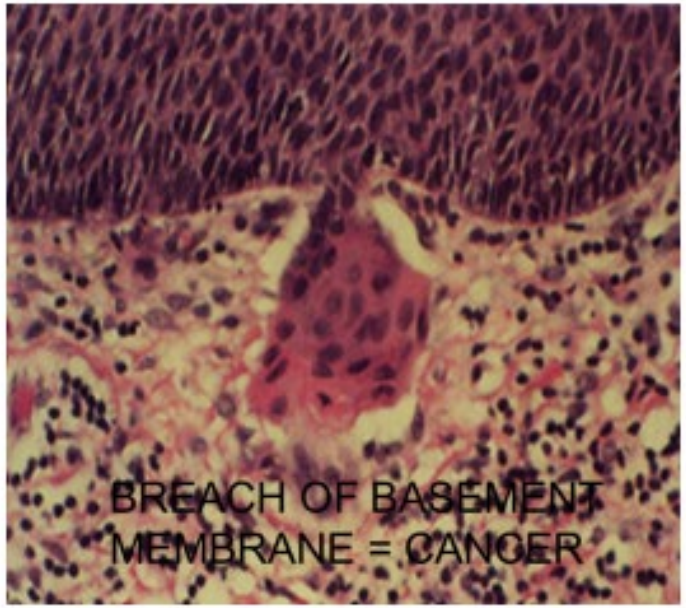



Normal Cervical Cells
Low-grade dysplasia (CIN1)
High-grade dysplasia (CIN2, 3)
Cervical Cancer (SCC)
CIN1
CIN2
CIN3
SCCA
Normal
Very mild/ mild dysplasia
Moderate dysplasia
Severe dysplasia
In situ carcinoma
Invasive carcinoma
Dividing cells in basal layer

High-Grade Lesion → Cancer







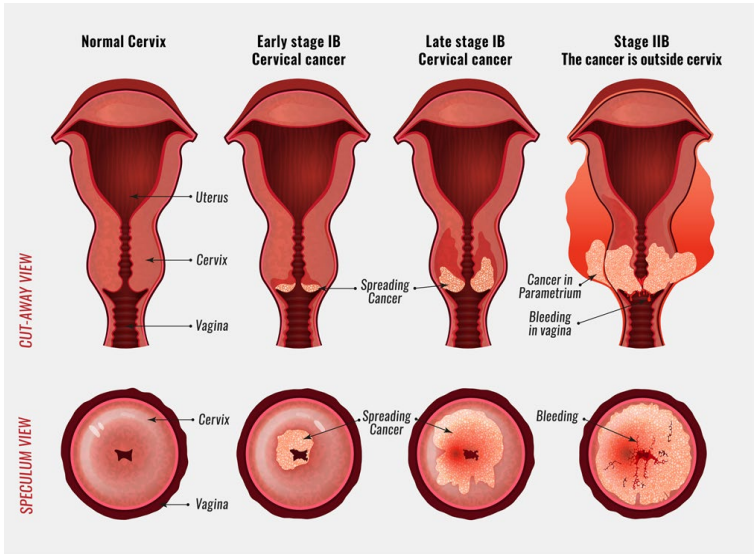
STAGING

International Federation of Gynecology and Obstetrics (FIGO) staging of cancer of the cervix uteri (2018)

Stage	Description
I	The carcinoma is strictly confined to the cervix (extension to the uterine corpus should be disregarded)
IA	Invasive carcinoma that can be diagnosed only by microscopy, with maximum depth of invasion <5 mm*
IA1	Measured stromal invasion ≤3 mm in depth
IA2	Measured stromal invasion >3 mm and ≤5 mm in depth
IB	Invasive carcinoma with measured deepest invasion >5 mm (greater than Stage IA), lesion limited to the cervix uteri¶
IB1	Invasive carcinoma >5 mm depth of stromal invasion, and ≤2 cm in greatest dimension
IB2	Invasive carcinoma >2 cm and ≤4 cm in greatest dimension
IB3	Invasive carcinoma >4 cm in greatest dimension
II	The carcinoma invades beyond the uterus, but has not extended onto the lower third of the vagina or to the pelvic wall
IIA	Involvement limited to the upper two-thirds of the vagina without parametrial involvement
IIA1	Invasive carcinoma ≤4 cm in greatest dimension
IIA2	Invasive carcinoma >4 cm in greatest dimension
IIB	With parametrial involvement but not up to the pelvic wall
III	The carcinoma involves the lower third of the vagina and/or extends to the pelvic wall and/or causes hydronephrosis or nonfunctioning kidney and/or involves pelvic and/or para-aortic lymph nodes[Δ]
IIIA	The carcinoma involves the lower third of the vagina, with no extension to the pelvic wall
IIIB	Extension to the pelvic wall and/or hydronephrosis or nonfunctioning kidney (unless known to be due to another cause)
IIIC	Involvement of pelvic and/or para-aortic lymph nodes (including micrometastases), irrespective of tumor size and extent (with r and p notations)[Δ]
IIIC1	Pelvic lymph node metastasis only
IIIC2	Para-aortic lymph node metastasis
IV	The carcinoma has extended beyond the true pelvis or has involved (biopsy proven) the mucosa of the bladder or rectum. (A bullous edema, as such, does not permit a case to be allotted to Stage IV.)
IVA	Spread to adjacent pelvic organs
IVB	Spread to distant organs

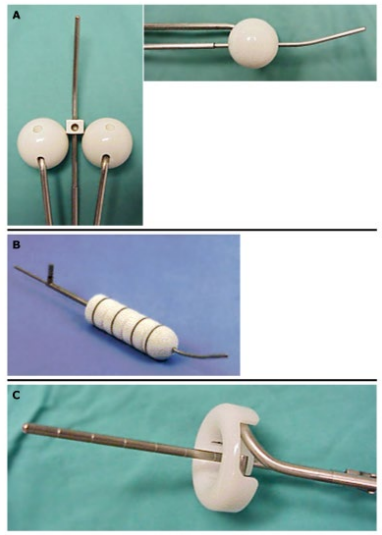
When in doubt, the lower staging should be assigned.

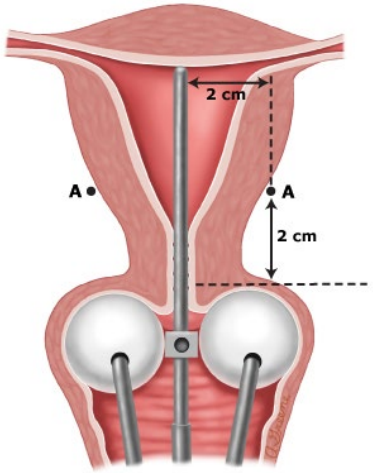
* Imaging and pathology can be used, where available, to supplement clinical findings with respect to tumor size and extent, in all stages.



TREATMENT

- Surgery
- Radiation
- Chemotherapy
- Radical hysterectomy
- Neoadjuvant





SUMMARY AND RECOMMENDATIONS

- **Locally advanced cervical cancer**: disease confined to the cervix with a clinically visible tumor >4 cm **(stage IB3**), disease that invades beyond the uterus, but involves less than the upper two-thirds of the vagina **(stage II);** disease that extends to the pelvic sidewall, involves the lower third of vagina, and/or causes hydronephrosis or nonfunctioning kidney (**stage III);** or disease that extends to the rectum or bladder, or beyond the true pelvis **(stage IVA**).
- For women with locally advanced cervical cancer,
  - we suggest primary chemoradiation rather than primary surgery
  - neoadjuvant chemotherapy followed by surgery
  - or radiation therapy (RT) (Grade 2B).
  - We acknowledge that there are greater benefits to treatment for women with earlier-stage (stage IB to IIB) rather than later-stage (stage III to IVA) disease. We suggest weekly cisplatin during RT rather than combination chemotherapy (eg, cisplatin plus fluorouracil) during RT (Grade 2B).

- **Positron emission tomography (PET)/computed tomography (CT)** in all patients with locally advanced cervical cancer in order to define the extent of disease and evaluate the pelvic and para-aortic lymph nodes.

https://www.uptodate.com/contents/management-of-locally-advanced-cervical-cancer?search=cervix%20cancer%20treatment&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1#H29

SUMMARY AND RECOMMENDATIONS

- For women with a positive PET/CT scan showing para-aortic node involvement, some experts perform a lymphadenectomy or CT-guided biopsy for pathologic confirmation. Other experts do not perform further evaluation if the PET/CT scan is positive. (See 'Pretreatment evaluation' above and 'Treatment of para-aortic nodes' above.)

- •For women with suspected or pathologically confirmed para-aortic node involvement, we suggest primary chemoradiation with extended-field RT (Grade 2C). However, consideration of the risks of treatment should be discussed with patients.

- •We suggest not administering full extended-field RT for women without known or suspected para-aortic node involvement (Grade 2C).

https://www.uptodate.com/contents/management-of-locally-advanced-cervical-cancer?search=cervix%20cancer%20treatment&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1#H29

SUMMARY AND RECOMMENDATIONS

- We suggest not performing a post-treatment hysterectomy following primary chemoradiation (Grade 2C).

- Some experts offer patients with an initially large cervical lesion (>7 cm), lower uterine segment involvement, or a high post-treatment residual tumor volume a simple hysterectomy at the completion of treatment.

- Following primary treatment with curative intent
  - patients are monitored serially with history and physical examination and Pap smears
  - For prognostic purposes obtain a PET/CT three to four months following completion of therapy.

https://www.uptodate.com/contents/management-of-locally-advanced-cervical-cancer?search=cervix%20cancer%20treatment&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1#H29

Prognosis- Major Factors

- Stage
- Nodal status
- Depth of Invasion
- Lymphovascular space invasion
- Histologic type and grade

https://www.uptodate.com/contents/management-of-locally-advanced-cervical-cancer?search=cervix%20cancer%20treatment&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1#H25

FIGO stage, the five-year survival rate, 2018

- Stage IB – 80 percent
- Stage IIA – 63 percent
- Stage IIB – 58 percent
- Stage III – 30 percent
- Stage IVA – 16 percent

What is a 5-year relative survival rate?

A **relative survival rate** compares women with the same type and stage of cervical cancer to women in the overall population. For example, if the **5-year relative survival rate** for a specific stage of cervical cancer is 90%, it means that women who have that cancer are, on average, about 90% as likely as women who don't have that cancer to live for at least 5 years after being diagnosed.

https://www.cancer.org/cancer/cervical-cancer/detection-diagnosis-staging/survival.html

Where do these numbers come from?

The American Cancer Society relies on information from the SEER* database, maintained by the National Cancer Institute (NCI), to provide survival statistics for different types of cancer.

The SEER database tracks 5-year relative survival rates for cervical cancer in the United States based on how far the cancer has spread. The SEER database, however, does not group cancers by FIGO stages (stage 1, stage 2, stage 3, etc.). Instead, it groups cancers into localized, regional, and distant stages:

- **Localized:** There is no sign that the cancer has spread outside of the cervix or uterus.
- **Regional:** The cancer has spread beyond the cervix and uterus to nearby lymph nodes.
- **Distant:** The cancer has spread to nearby organs (like the bladder or rectum) or distant parts of the body such as the lungs or bones.

https://www.cancer.org/cancer/cervical-cancer/detection-diagnosis-staging/survival.html

5-year relative survival rates for cervical cancer

Based on women diagnosed with cervical cancer between 2011 and 2017.

SEER Stage	5-year Relative Survival Rate
Localized	92%
Regional	58%
Distant	18%
All SEER stages combined	66%

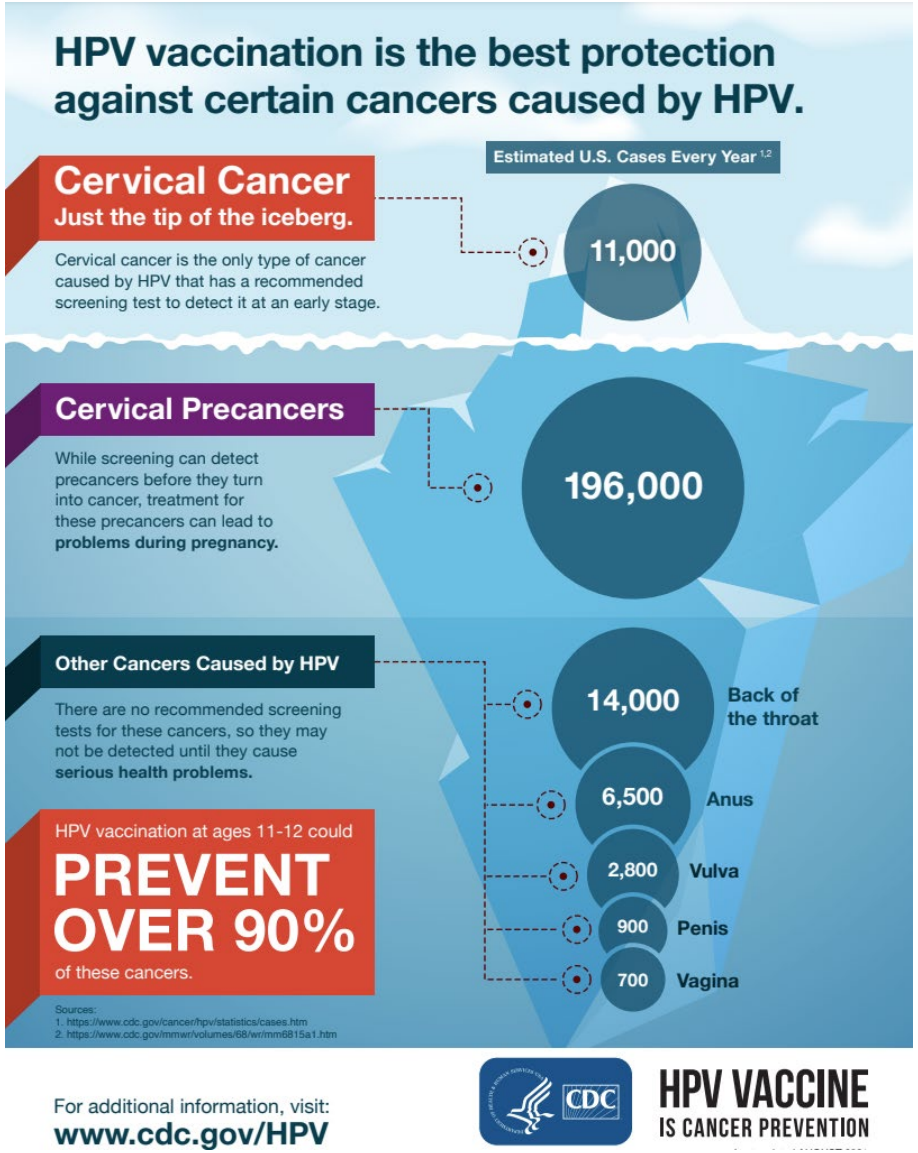
https://www.cancer.org/cancer/cervical-cancer/detection-diagnosis-staging/survival.html

HPV Vaccination is Cancer Prevention

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

A 9-Valent HPV Vaccine against Infection and Intraepithelial Neoplasia in Women



Thank You