Risk Factors for Failing Cervical Cancer Screening in Incidental Cervical Carcinoma at Time of Simple Hysterectomy

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Disclosures

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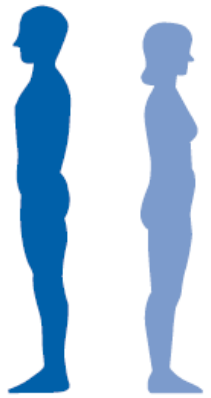
Figure 3. Leading Sites of New Cancer Cases and Deaths – 2018 Estimates

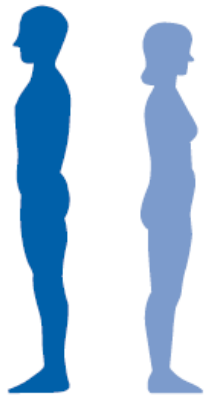
Estimated New Cases

Male			Female		
Prostate	164,690	19%	Breast	266,120	30%
Lung & bronchus	121,680	14%	Lung & bronchus	112,350	13%
Colon & rectum	75,610	9%	Colon & rectum	64,640	7%
Urinary bladder	62,380	7%	Uterine corpus	63,230	7%
Melanoma of the skin	55,150	6%	Thyroid	40,900	5%
Kidney & renal pelvis	42,680	5%	Melanoma of the skin	36,120	4%
Non-Hodgkin lymphoma	41,730	5%	Non-Hodgkin lymphoma	32,950	4%
Oral cavity & pharynx	37,160	4%	Pancreas	26,240	3%
Leukemia	35,030	4%	Leukemia	25,270	3%
Liver & intrahepatic bile duct	30,610	4%	Kidney & renal pelvis	22,660	3%
All sites	**856,370**	**100%**	**All sites**	**878,980**	**100%**



Estimated Deaths

Male			Female		
Lung & bronchus	83,550	26%	Lung & bronchus	70,500	25%
Prostate	29,430	9%	Breast	40,920	14%
Colon & rectum	27,390	8%	Colon & rectum	23,240	8%
Pancreas	23,020	7%	Pancreas	21,310	7%
Liver & intrahepatic bile duct	20,540	6%	Ovary	14,070	5%
Leukemia	14,270	4%	Uterine corpus	11,350	4%
Esophagus	12,850	4%	Leukemia	10,100	4%
Urinary bladder	12,520	4%	Liver & intrahepatic bile duct	9,660	3%
Non-Hodgkin lymphoma	11,510	4%	Non-Hodgkin lymphoma	8,400	3%
Kidney & renal pelvis	10,010	3%	Brain & other nervous system	7,340	3%
All sites	**323,630**	**100%**	**All sites**	**286,010**	**100%**



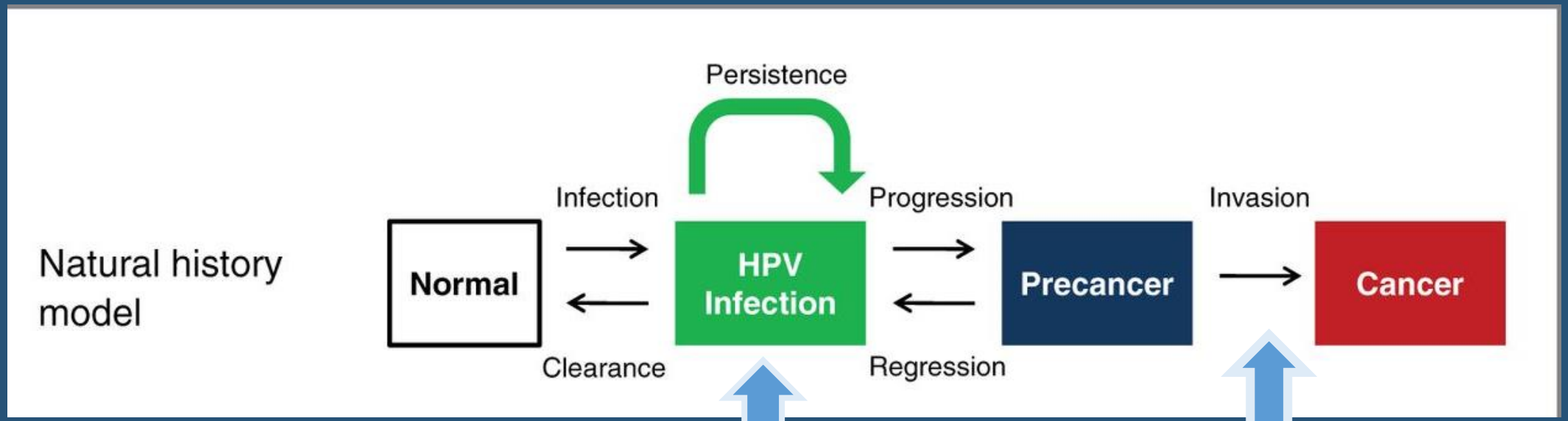
Estimates are rounded to the nearest 10, and cases exclude basal cell and squamous cell skin cancers and in situ carcinoma except urinary bladder. Ranking is based on modeled projections and may differ from the most recent observed data.

Third most common gynecologic cancer

13,240 new cases
4,170 deaths

Incidence

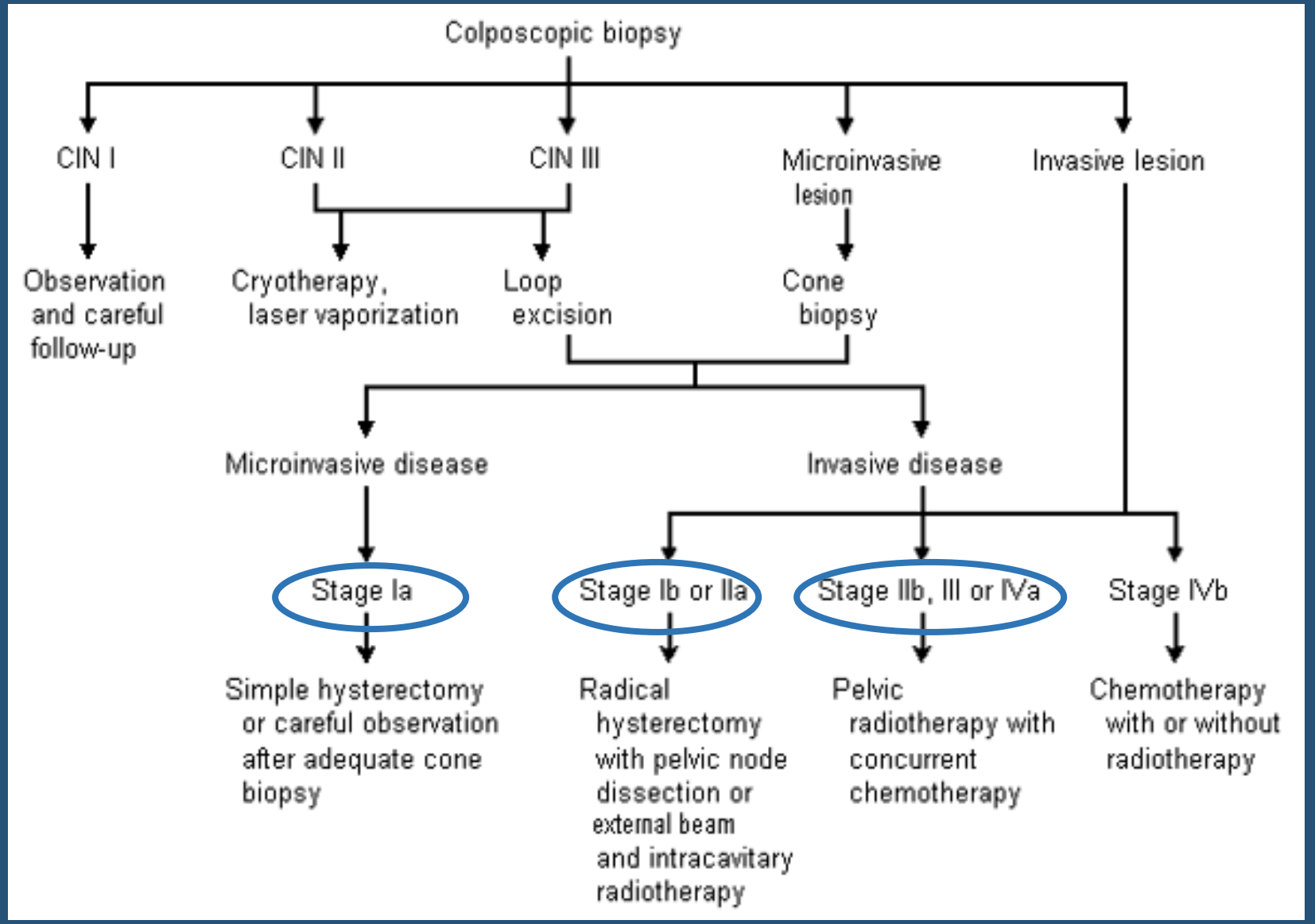
US: 7.5 per 100,00
Oklahoma: 9.2 per 100,00



HPV implicated 99% of all cervical cancers

HPV vaccine primary prevention

Screening secondary prevention


Colposcopic biopsy
CIN I
CIN II
CIN III
Microinvasive lesion
Invasive lesion
Observation and careful follow-up
Cryotherapy, laser vaporization
Loop excision
Cone biopsy
Microinvasive disease
Invasive disease
Stage Ia
Stage Ib or IIa
Stage IIb, III or IVa
Stage IVb
Simple hysterectomy or careful observation after adequate cone biopsy
Radical hysterectomy with pelvic node dissection or external beam and intracavitary radiotherapy
Pelvic radiotherapy with concurrent chemotherapy
Chemotherapy with or without radiotherapy

Indications for Simple Hysterectomy

- Benign indications[4]:
  - Uterine fibroids (51%)
  - AUB (42%)
  - Pain/Endometriosis (30%)
  - Pelvic Prolapse (18%)
- Premalignant indications:
  - Persistent cervical dysplasia
  - Endometrial hyperplasia

ASCCP Guidelines[6,7]

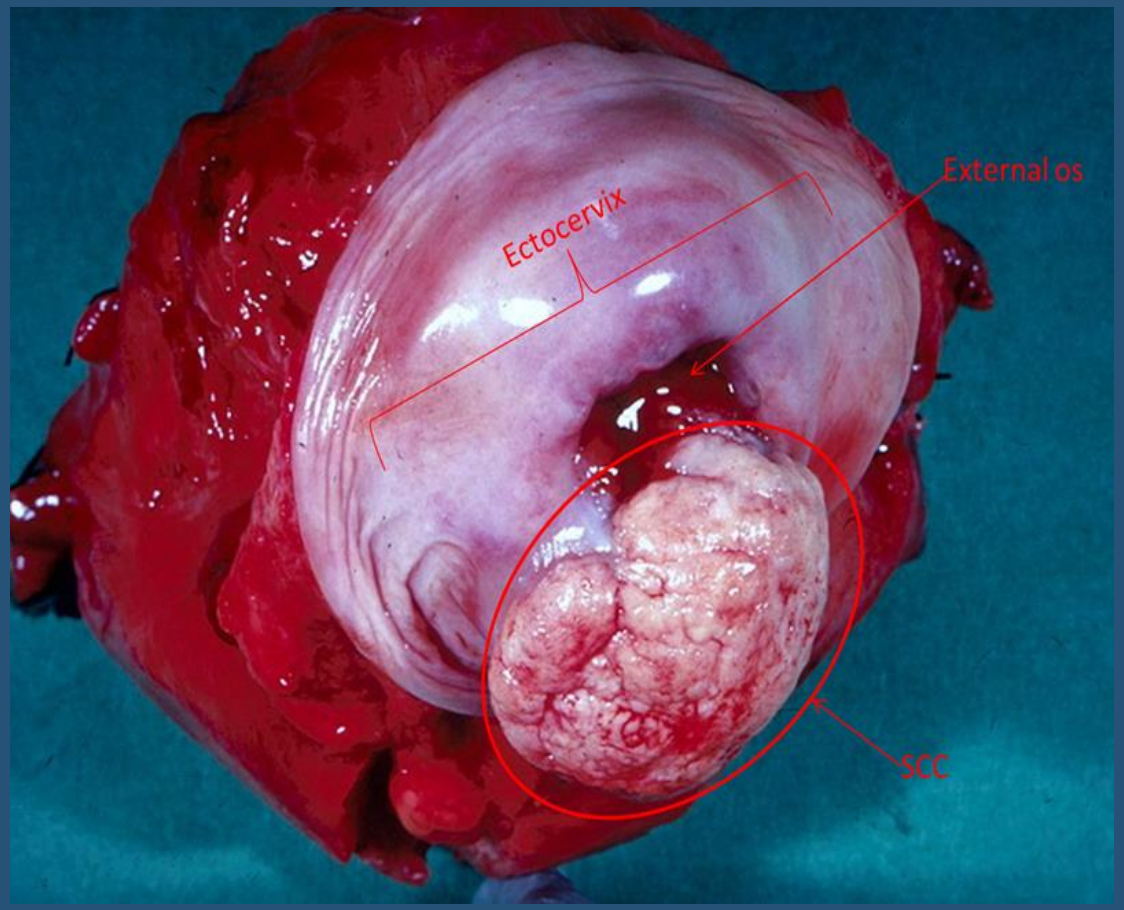
Table 1. Screening Guidelines for Cervical Cancer

Age Group	Recommendation
<21 y	No screening recommended
21-29 y	Cytology (Pap smear) every 3 years Abnormal Pap tests may be followed up with HPV testing
30-65 y	Cytology + HPV testing every 5 years (the preferred recommendation) *or* Cytology every 3 years
>65 y	No cervical cancer screening required if the woman has had regular screening in the previous 10 years and no serious precancers in the last 20 years *or* Continue testing if an abnormality was found in the last 20 years

HPV: human papillomavirus. Source: References 9-13.

Incidental Invasive Cervical Cancer

- Incidence difficult to define. Most studies are majority microscopic disease and non-US populations[8-12]
- Terminology not uniform:
  - “Occult” ~ microscopic disease
  - “Cut through” ~ macroscopic disease
  - “Incidental” ~ any



Why it matters

- Adjuvant radiotherapy or radical reoperation is mandatory after inadequate operation.
- Those with residual disease after simple hysterectomy (gross tumors or microscopic positive surgical margins) or IIb disease are at higher risk for locoregional recurrence following treatment and have a worse 5 year OS
  - 38-50% vs 60-70% in those treated appropriately [14]
- Evidence for higher toxicity associated with post hysterectomy radiation therapy [15]

Objectives

- Review patient cases with incidental cervical carcinoma at time of simple hysterectomy.

- Determine risk factors associated with inappropriate execution of cervical cancer screening guidelines and/or risks factors for screening failures.

Demographics

- N= 59 subjects
  - Median age 44 years (range 30-82)
  - Caucasian (93%, n=55)
- Indication:
  - AUB (57%, n=34)
  - Dysplasia (41%, n=24)
  - Pain (24%, n=14)
  - Fibroids (10%, n=6)
- Insurance status:
  - Under- or uninsured: 23.7%, n=14
- Histology:
  - SCC (63%, n=37)
  - Adenocarcinoma (30%, n=18)
  - other (7%, n=4)
- Stage:
  - Ia1, Ia2, Ib1 (65%, n=38)
  - Ib2, IIa (7%, n=4)
  - IIb, III, IV (15%, n=9)
- Referring provider
  - ObGyn (71%, n=42)
  - Unknown (22%, n=13)
  - GenSurg/Other (7%, n=4)

Results

- Cervical dysplasia was a listed indication for surgery in 41% (n=24) of subjects.
- Inappropriate screening was found in 71% (n=42) of the referrals.
- False negative screening occurred in 22% (n=13) subjects.
- Incomplete data or documentation in 6% (n=4)

Results: Mistakes in Screening

- Inappropriate screening was found in 71%, n=42 of the referrals.
  - 38% (n=16) of the there was no documented pap smear
  - 21% (n=9) of the time the pap wasn't triaged appropriately
  - 17% (n=7) received pap and colposcopy but not conization
  - 23% (n=10) had a LEEP that wasn't managed appropriately.

Results: Mistakes in Screening

N=43	No pap (n=17)		Pap but failed colposcopy (n=9)		Colpo but failed treatment (n=7)		Excised but failed referral (n=10)	
Age: n=40	</=45 (n=10) >45 (n=7)	p= 0.50	</=45 (n=6) >45 (n=3)	p=0.91	</=45 (n=3) >45 (n=2)	p=0.80	</=45 (n=7) >45 (n=2)	p=0.70
Histology: SCC vs AC n=43	SCC (n=10) Other (n=7)	p= 0.48	SCC (n=7) Other (n=2)	p= 0.37	SCC (n=4) Other (n=3)	p=0.75	SCC (n=7) Other (n=2)	p= 0.37
Insurance Yes vs No N=39	Yes (n=13) No (n = 4)	p=0.95	Yes (n=7) No (n=2)	p= 0.94	Yes (n=7) No (n=2)	p=0.34	Yes (n=7) No (n=1)	p=0.43

Results: Screening Failures

- False negative screening occurred in 24% (n=14) of 59 subjects.
  - There was no significant association with age, insurance status, or histology to risk of false negative screening.

N=59	Age: n=54 </= 45 (n=34) > 45 (n=20)		Histology: n=57 SCC (n=37) Other (n=20)		Insurance: n=53 Yes (n=41) No (n=12)	
False negative screen (n=14) Mistake in screening (n=45)	</=45 (n=8) 45 yo (n=6)	p=0.60	SCC (n=7) Other (n=7)	p=0.31	Yes (n=11) No (n=3)	p=0.90

Conclusions

- Failure to adhere to screening guidelines was most common reason for ICC at the time of simple hysterectomy
- Less frequently, false negative screening was the cause.
- No independent risk factor in either group was able to be identified in this small single institutional study.

Future Directions

- Continue patient and provider education regarding adherence to pre-operative cervical cancer screening
- Continue to collect data on the best management of incidentally found cervical cancer, especially in bulkier disease and presence of positive margins.

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