

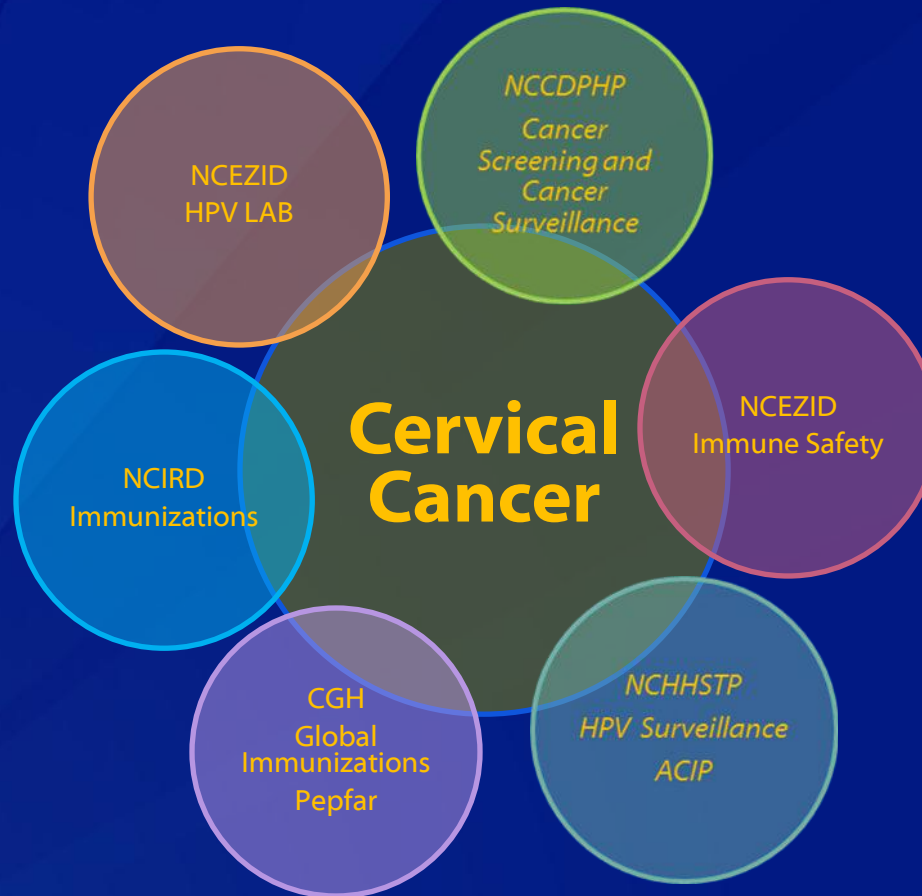
New Cervical Cancer Guidelines: Perspectives by organizations, doctors, and women

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Multiple centers and divisions involved with HPV and Cervical Cancer at CDC



Cervical Cancer in the United States

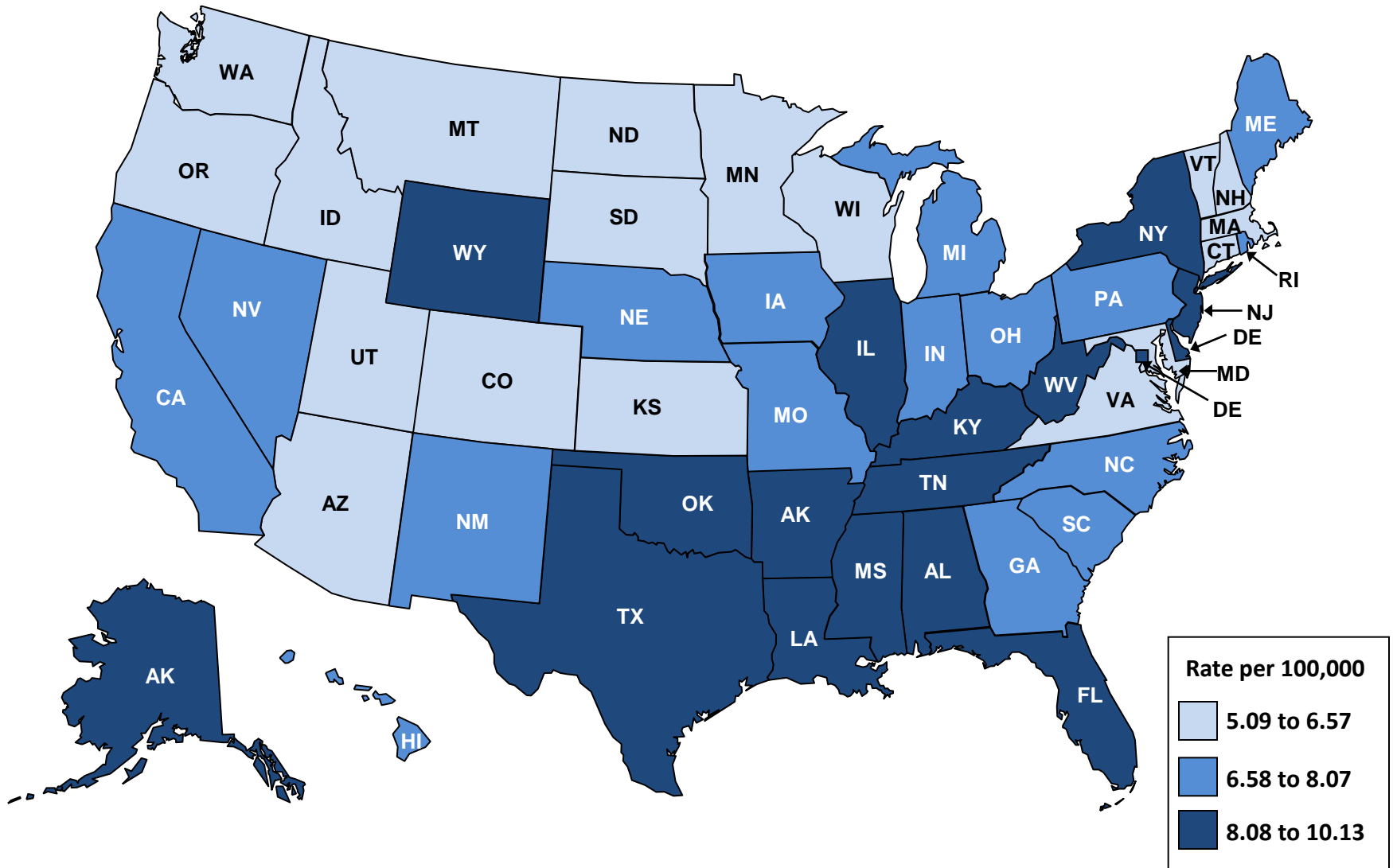
❑ Burden

- ≈12,000 new cases, 7.4 per 100,000
 - Approximately 20-30% are adenocarcinomas
- ≈ 4,000 deaths, 2.4 per 100,000
- Hispanic and Black women at increased risk of getting and dying from cervical cancer

❑ Screening

- HP 2020 target: 93% of women 21-65 should have a Pap test in past 3 years
- 83% of women 21-65 report having a Pap test within past 3 years
- Women 50-64 have lowest rates of screening
- Black women and white women similar rates of screening
- Hispanic women and Asian women lower rates
- Foreign-born lower rates

Cervical Cancer Rates by State, 2004-2008



Screening Failures

- ❑ **Among women who have never been screened**
 - 50-60%
- ❑ **Among women not screened in the past 5 years**
 - 10%
- ❑ **Among women lost to followup**
 - 10%
- ❑ **Among errors in samples and interpretation**
 - 30%

Screening Principles

- ❑ **Want to prevent morbidity and mortality from cervical cancer**
- ❑ **Benefits should outweigh harms**
- ❑ **Average-risk, Asymptomatic population**

New Cervical Cancer Screening Guidelines

	ACS 2012	USPSTF 2012	ACOG 2012
Age to start	Age 21	Age 21	Age 21
Women ages 21-29	Cytology every 3 years	Cytology every 3 years	Cytology every 3 years
Women ages 30-65	Cotesting every 5 years (preferred) or Every 3 years with Pap alone	Cotesting every 5 years or Every 3 years with Pap alone	Cotesting every 5 years (preferred) or Every 3 years with Pap alone
Women ages >65	Discontinue after age 65 years (adequate screen)	Discontinue after age 65 years -	Discontinue at age 65 years (adequate screen)
Total Hysterectomy	Discontinue (if no history of CIN2+)	Discontinue (if no history of CIN2+)	Discontinue (if no history of CIN2+)
Screening among fully vaccinated	Same as for non- vaccinated	Not reviewed	Same as for non- vaccinated

The "annual" Pap test is dead!


A PAPER TEST FOR EVERY WOMAN EVERY YEAR!
-American Cancer Society 1957

How much protection do we lose by not doing Pap tests every year?

- ❑ Percentage reduction in rate of invasive cervical cancer in cohort of women aged 35 - 64 with different frequencies of screening
- ❑ Assumes at least negative Pap prior to age 35
 - Next Pap 1 yr: 93.5%
 - 30 Paps required over 30 years
 - Next Pap 2 yrs: 92.5%
 - 15 Paps required over 30 years
 - Next Pap 3 yrs: 90.8%
 - 10 Paps required over 30 years
 - Next Pap 5 yrs: 83.6%
 - 8 Paps required over 30 years



What are the harms of abandoning annual screening?

- ❑ **Markov model based on NBCCEDP data**
- ❑ **Assumed ≥ 3 prior consecutive negative Paps**
- ❑ **Cancers prevented by doing Pap annually instead of every 3 years**
 - Age 30 – 44: 3 / 100,000 women
 - Age 45 – 59: 1 / 100,000 women
- ❑ **Additional tests needed to find each incremental cancer**
 - Age 30 – 44: 69,665 Paps plus 3,861 colpos
 - Age 45-59: 209,324 Paps plus 11,502 colpos

Age to start is now 21 years

- ❑ **Women under 21 should not be screened regardless of sexual onset**
- ❑ **HPV is common after sexual onset**
- ❑ **Cervical cancer is rare in women under 25 years of age**
- ❑ **Harms outweigh the benefits**
 - An abnormal Pap and low-grade precancers can trigger LEEP
 - Leeps have increase risk of reporductive health outcomes
 - Preterm birth
 - Low birthweight
 - Premature Rupture of Membranes
- ❑ **Canadian Task Force recommending age 25 to start screening**

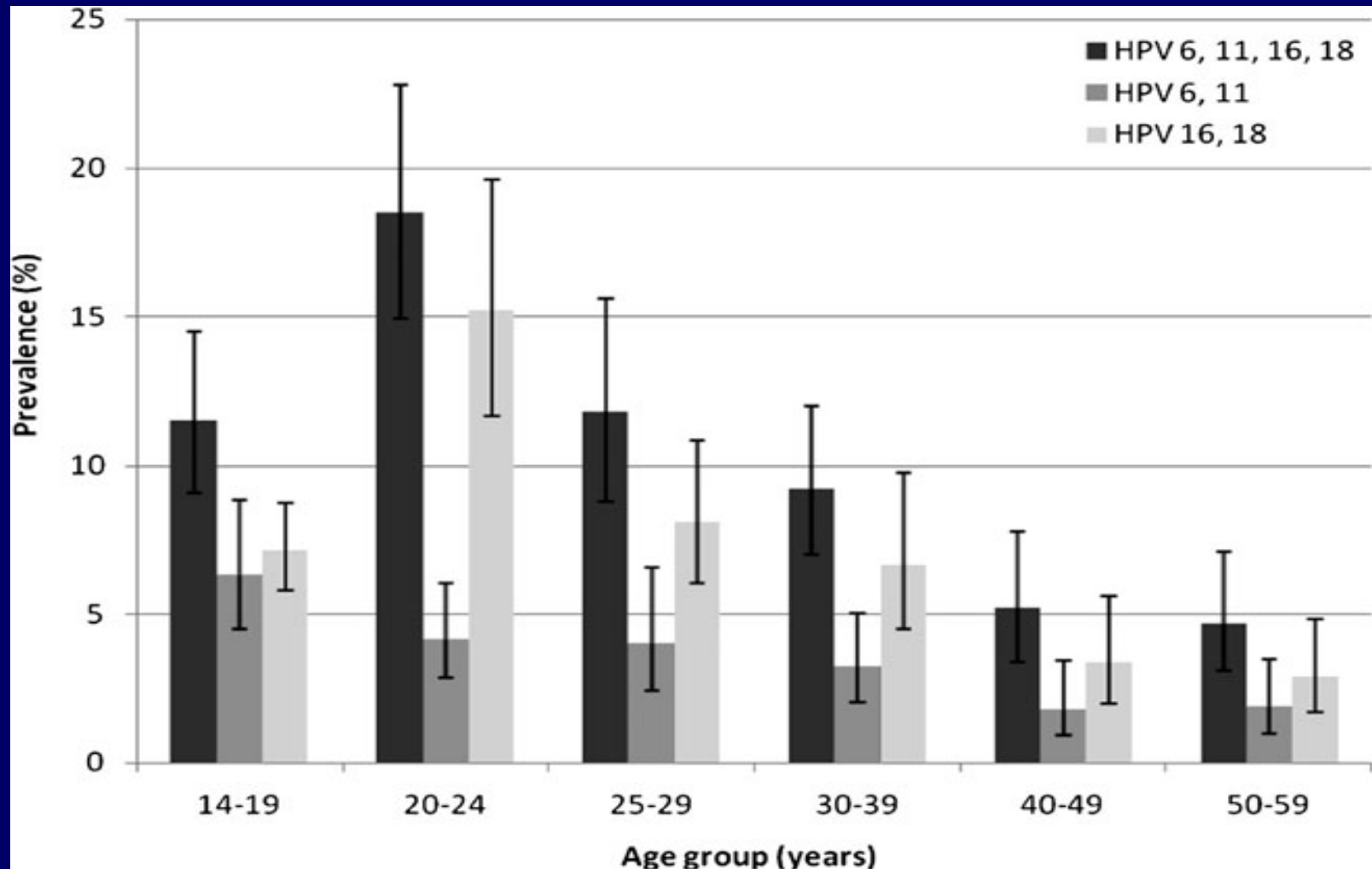
Cervical Cancer is Rare among Young Women

- ❑ **0.1% of cervical cancers in U.S.**
- ❑ **Rate 1.5/ 1,000,000**
 - Ave 14 cancers per year
 - Too rare to report under age 15
 - Age 20-24: 125 cancers per year (14 / million)
- ❑ **~2,737,000 Paps done per year age 15-19**
 - 200,000 Pap tests per cancer
 - At \$60 per Pap = \$11,646,800 per cancer
 - Age 35-39: 4,921 Paps at 300-375K per cancer

Pap , No HPV testing in women under 21-29?

- ❑ Cytology every 3 years**
- ❑ HPV testing should not be used for screening**

Prevalence of HPV 6, 11, 16, 18 among females, NHANES, 2003-2006



Happy 30th Birthday!

What Test Will be on the Menu and What Test Will You Have?

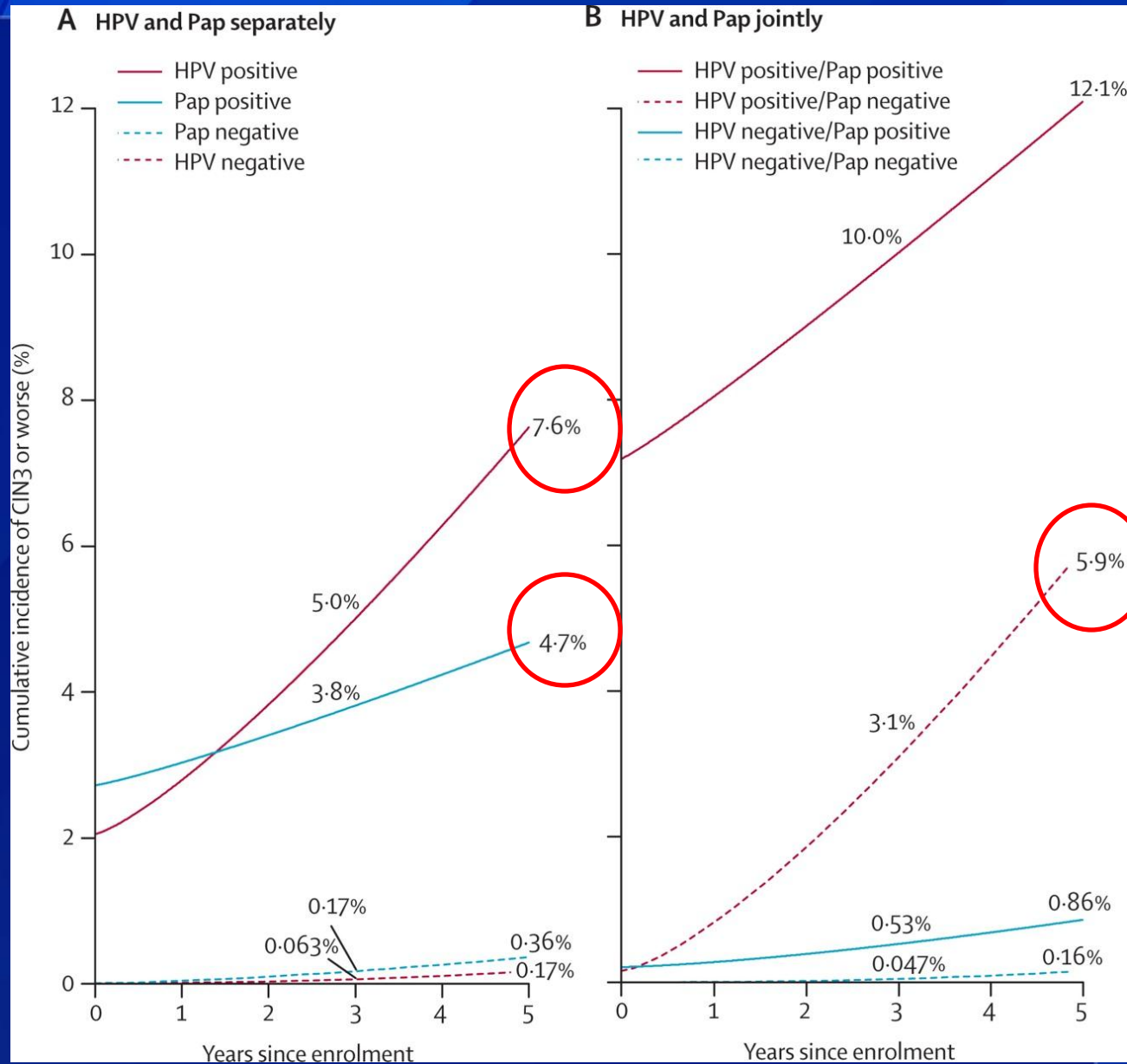


HPV Co-testing and 5 year Intervals

- ❑ Recommended for women 30-64 years old
- ❑ Co-testing leads to earlier diagnosis of CIN 3+ and Cancer
- ❑ Incorporating HPV finds more AIS than cytology alone
- ❑ Negative cytology plus negative HPV allows spacing screening beyond every three years.
- ❑ More women will have HPV+ test, normal cytology that will need closer surveillance

Follow-up of 5 yrs of Co-testing Kaiser N Cal.

More CIN 3+ diagnosed by HPV than Pap within 2 years – almost doubled by 5 years.



5 yr cumulative CIN 3+ in >300,000 women

Katki, Kinney, et al Lancet oncol.2011;12:663072

Follow-up with repeat co-testing in one year per 2006 ASCCP Guidelines.

Positive HPV diagnoses more AIS and Adenocarcinoma than Cytology alone

331,818 women enrolled in Kaiser N. Cal

Significantly more AIS and Adenoca diagnosed over 5 yrs if initial screen:

- HPV + vs Pap + (p<0.0001)
- HPV + / Pap – vs HPV -- / Pap + (p<0.0001)

	AIS	Adenocarcinoma
Total	70	27
Pap Negative	42 (60%)	23 (85%)
Pap Positive	28 (40%)	4 (15%)
HPV Positive	56 (80%)	21 (78%)
Pap -- / HPV +	31 (44%)	17 (63%)
Pap + / HPV --	3 (4%)	0

A negative HPV DNA test offers better protection after 6 years than a negative Pap does after 3 years.

- Joint European Cohort Study compared HPV testing with conventional Pap in 6 countries
- N=24,295

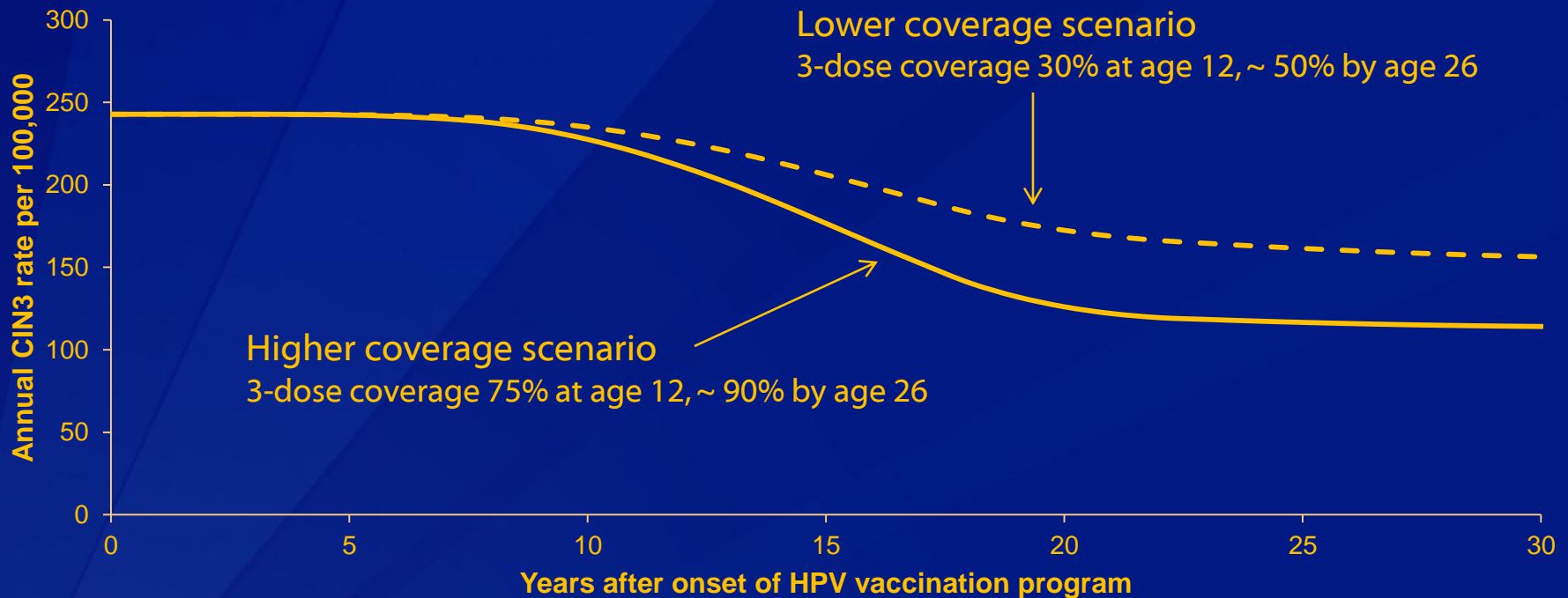
Rate of CIN 3+ after baseline negative test

	<u>3 yrs</u>	<u>4 yrs</u>	<u>5yrs</u>	<u>6yrs</u>
Pap –	0.51%	0.69%	0.83%	0.97%
HPV-	0.12%	0.19%	0.25%	0.27%

Why didn't guidelines in United States change for screening among vaccinated?

- ❑ **Low vaccine coverage**
 - Lower completion rates
 - Unclear if vaccination is occurring before sexual debut
- ❑ **Opportunistic Screening**
- ❑ **Medical Records don't connect**
 - Screeners don't see vaccination records or screening history
- ❑ **Waiting to see actual impact on lesions/disease vs. modeling**
- ❑ **Individual vs. Population-based**

Predicted reduction in CIN3 among 20- to 29-year-olds after onset of HPV vaccination based on US data



Based on model of Chesson et al (Vaccine 2011) and includes indirect effects (herd immunity). The model assumed 95% efficacy against HPV 16/18, with no cross-protection. HPV 16/18 were assumed to account for 58.6% of CIN3.

Future Screening needs to be more in light of HPV vaccination

Vaccination

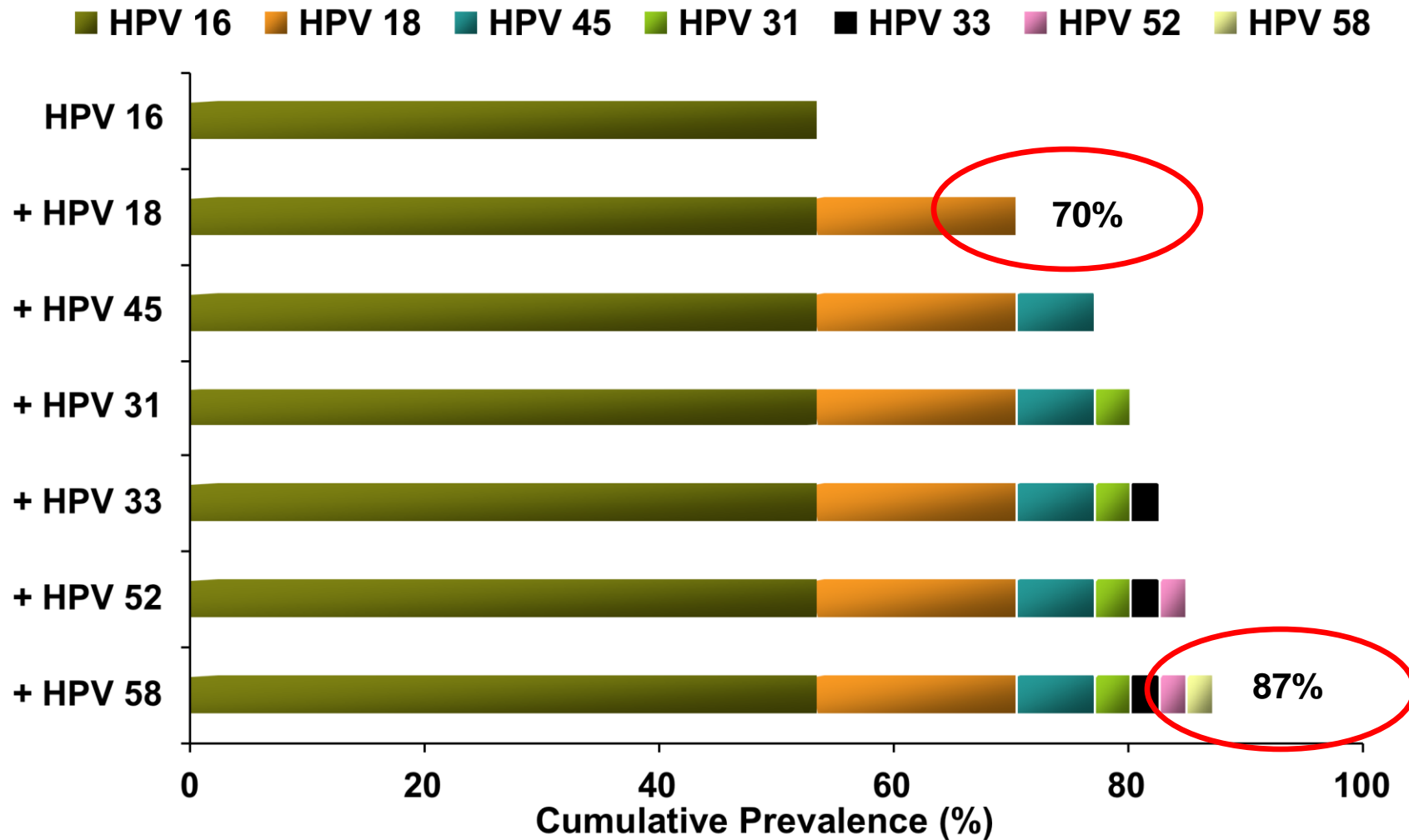
Decreased HPV prevalence (HPV 16/18)

Pap test characteristics will be affected

Decrease in procedures

Change strategy to HPV-based screening

Cervical Cancer Screening Still Needs to Continue

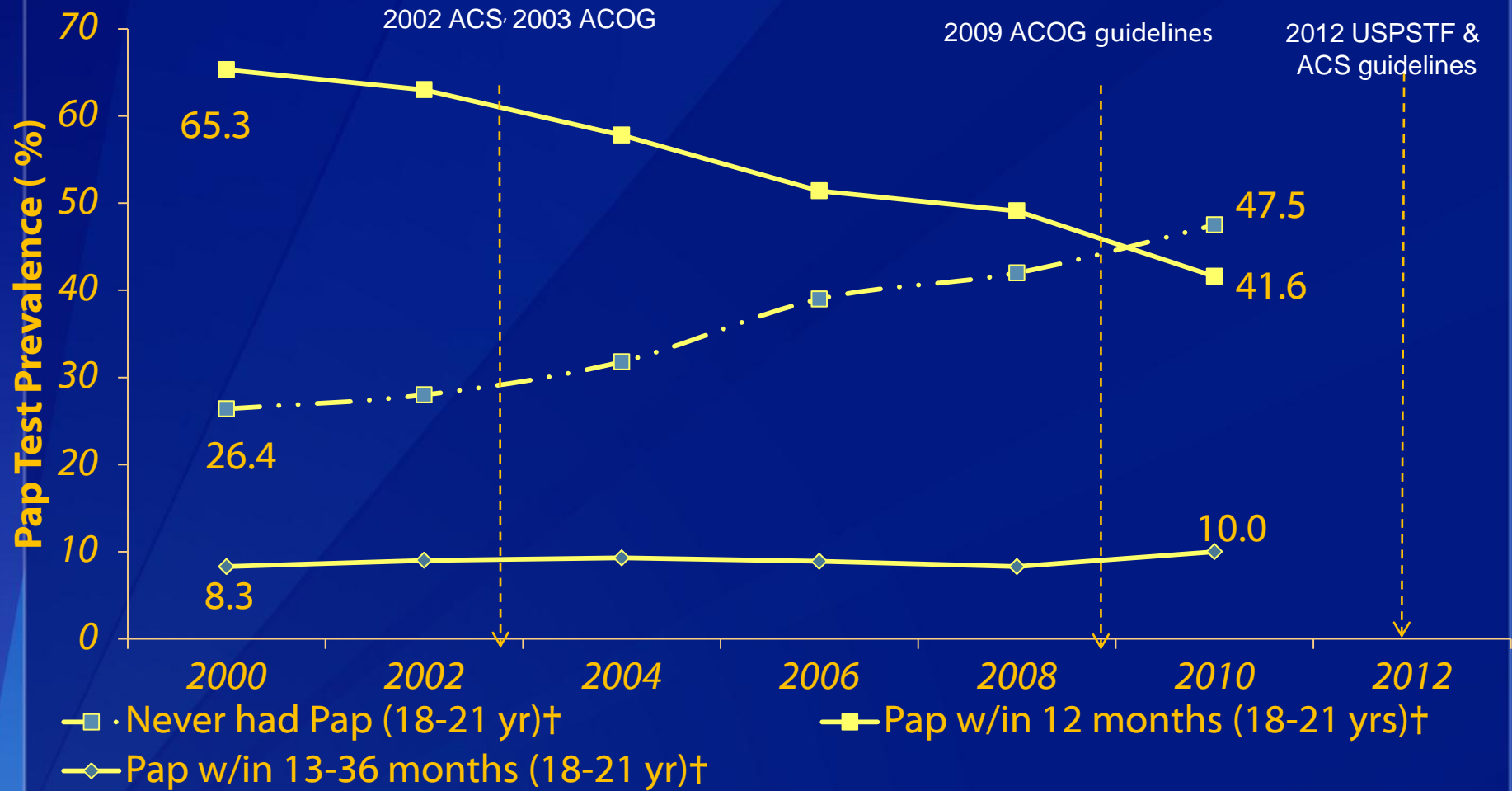


Stopping Screening?

- ❑ **Adequately screened women with a cervix age 65**
- ❑ **Hysterectomy**
- ❑ **Women with history of CIN2+ need routine screening for 20 years**

WOMEN'S BEHAVIORS

Trends in Pap testing among women 18-21 years, Behavioral Risk Factor Surveillance Survey (BRFSS), U.S. 2000-2010



How do Women feel?

- ❑ **More women think a Pap test screens for more than it does**
- ❑ **Many women don't know difference between Pap and Pelvic**
- ❑ **Having a Pap test once a year was the most widely accepted and preferred screening option**
 - Approximately 14% felt Pap every 3 years acceptable
 - Approximately 8% felt Pap and HPV ever 5 years acceptable
- ❑ **Women were least accepting of not having their Pap test until age 21 years**
- ❑ **Women over age 60 years were more accepting of stopping screening at age 65 than younger women**

PROVIDER SURVEYS

Provider Surveys

❑ Prior to new guidelines

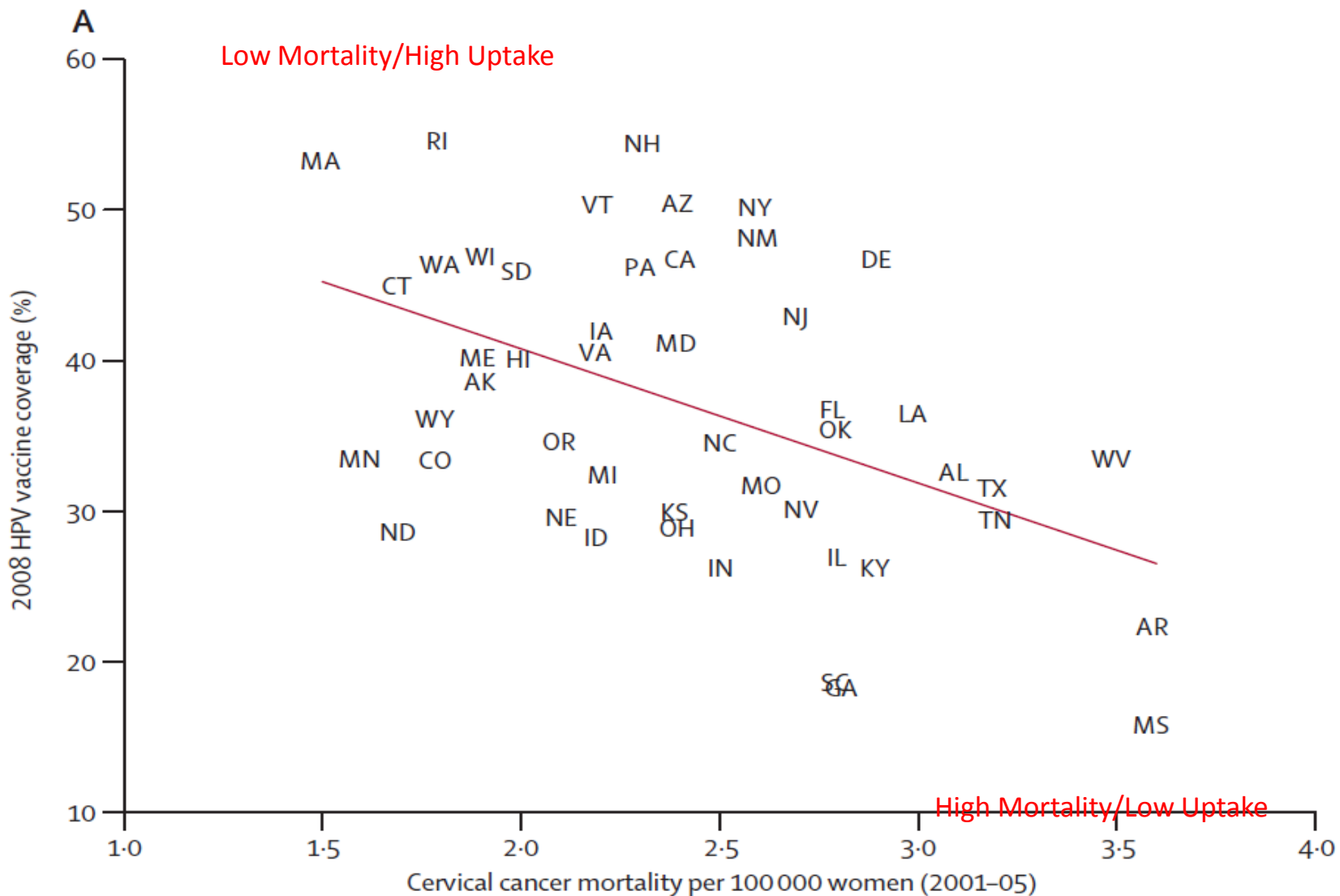
- Guideline inconsistent screening common
- Annual screening common in three different CDC Surveys

❑ Now

- HPV co-testing was the most popular cervical cancer screening test recommendation
- The most common screening interval was every 3 years
- Most clinicians started recommending Pap tests at age 21

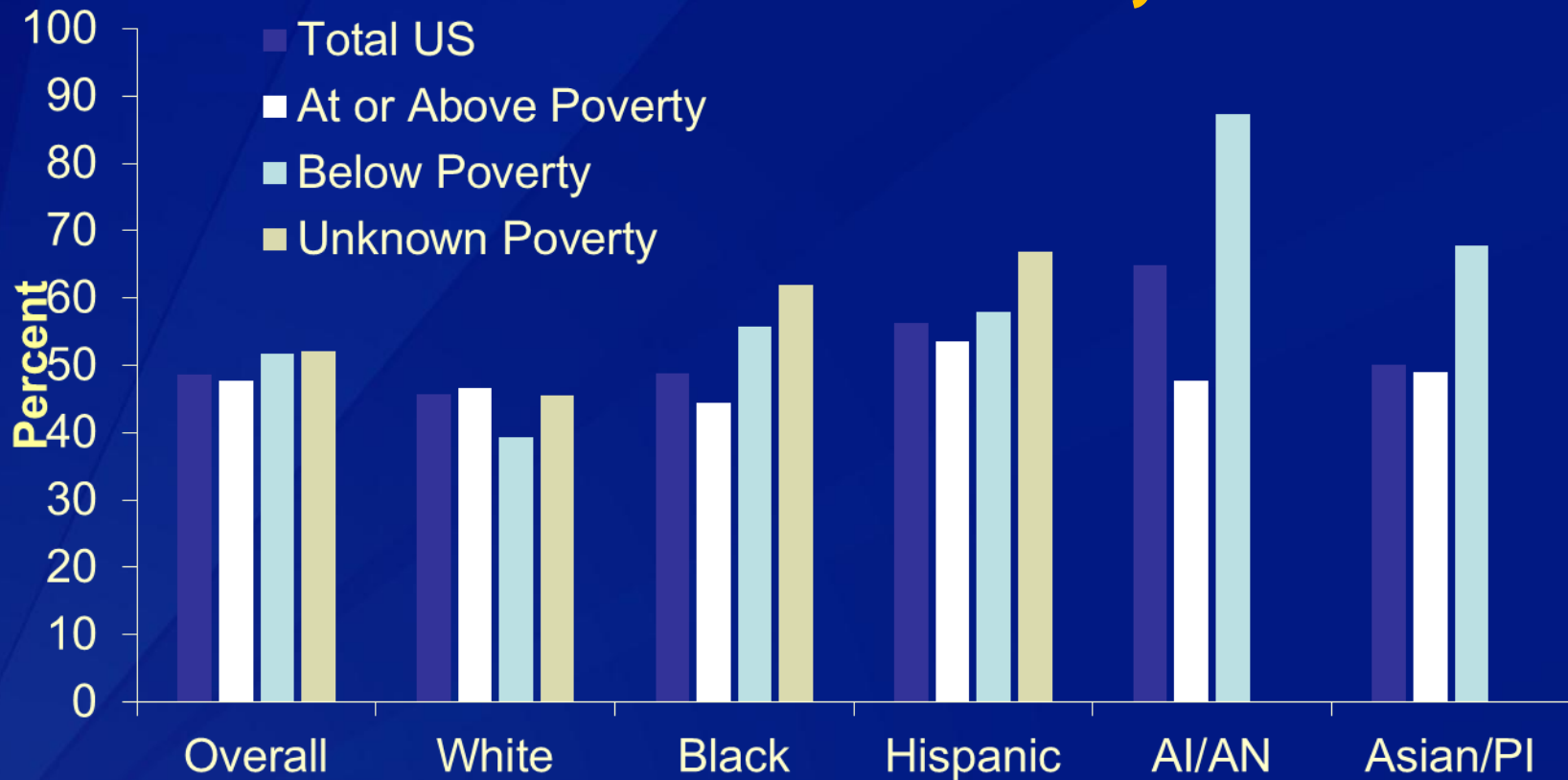
DISPARITIES

By State: HPV Vaccine Uptake/Cervical Cancer Death Rates



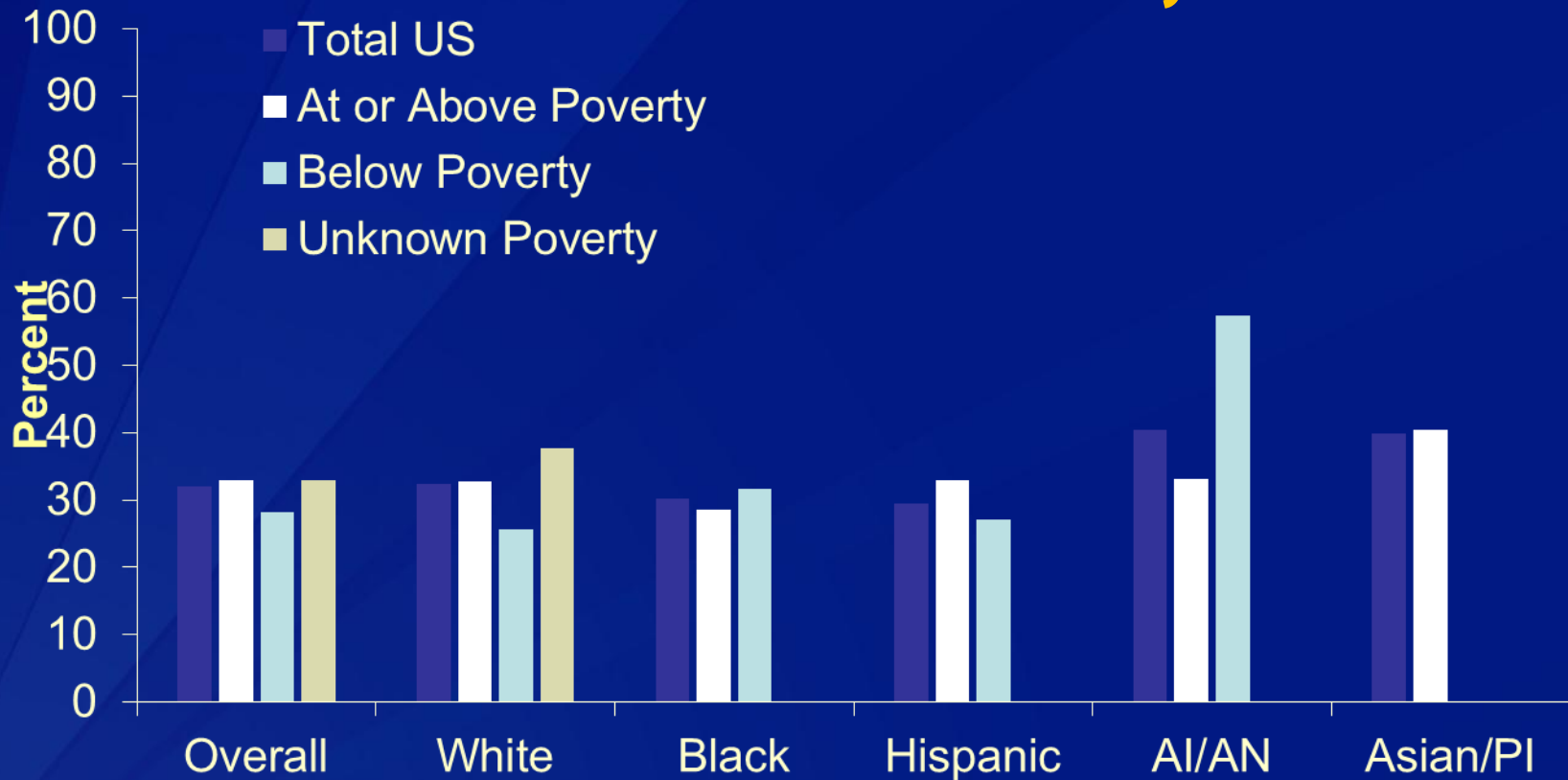
Estimated ≥ 1 Dose HPV Vaccine Coverage, Females 13-17 Years

National Immunization Survey 2010



Estimated 3 Dose HPV Vaccine Coverage, Females 13-17 Years

National Immunization Survey 2010



SURVEILLANCE

New Screening Guidelines in Other Countries

❑ Canada

- Start age at 25
- Cytology every 3 years 25-69
- NO recommendation of HPV testing yet
- Will not recommend HPV co-testing

❑ England-

- Currently screening at age 25 since 2003
- Moving towards HPV-based testing (pilot)

❑ Scotland, Wales, N Ireland

- Considering changing screening age to 25

❑ WHO guidelines (2014)

- Screen once in a lifetime between ages 30-49
- VIA, HPV, cytology

What about for HPV vaccinated girls?

□ Australia-

- High vaccine coverage
- Currently have the youngest age to start screening (18) and screen every 2 years
- Established HPV vaccine registry
- Existing Pap test registry

□ England-

- High vaccine coverage
- Currently screening at age 25
- Established screening registry

Change is coming

□ Australia

- Formal review of screening announced: 'Renewal' (includes consideration of primary HPV screening)
- Literature review (Renewal Stage 1) and cost-effectiveness modelling of new technologies (Renewal Stage 2) due to be completed and report released end-2013
- Stages 3 and 4 (data and quality systems and patient acceptability evaluations) due to be completed 2014
- In parallel, investigator-initiated COMPASS trial of primary HPV vs. cytology is due to recruit 100,000 women from 2013-15 – will act as sentinel experience for HPV testing

□ United Kingdom

- Cost-effectiveness modelling of primary HPV screening in England, based on data from ARTISTIC trial, has been completed
 - Funded by the NHS National Cervical Screening Program
 - Planning pilot evaluations of primary HPV screening in areas already using HPV as triage test

What can you as a cervical cancer survivor do?

- ❑ **Encourage HPV vaccination for age-eligible men and women**
- ❑ **Support the new Cervical cancer screening guidelines**
 - Realize that HPV co-testing is promising but may not fit all needs
 - Women who want more frequent screening (cytology)
 - Mobile populations
- ❑ **Less cervical cancer screening doesn't mean less care**
- ❑ **Highlight the horses and the zebras**
- ❑ **Destigmatize HPV and Cervical Cancer Screening**
- ❑ **Affordable Health Care Act & Electronic Medical Records**
- ❑ **Surveillance**
 - Screening, Vaccine Registries
 - How many women that get cervical cancer are never/rarely screened

“The best strategy for preventing cervical cancer is to use the most accurate test at the longest possible interval.”-Jack Cuzick

Acknowledgements

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