

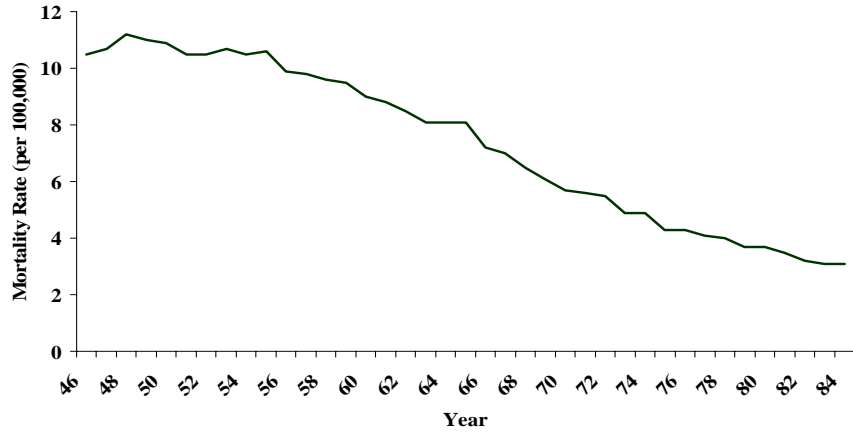
# Cervical Cancer and HPV-related Disease in Texas

82<sup>nd</sup> Annual TPHA Conference  
Vince Fonseca, MD, MPH  
State Epidemiologist

## Cervical Cancer

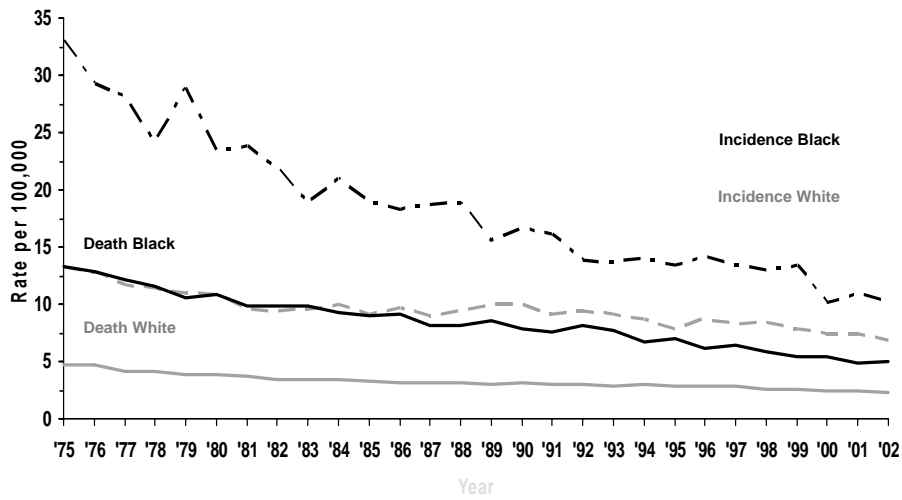
- HPV is the major cause
- HPV infection is common
  - 15% even with just one lifetime sexual partner
  - >50% over lifetime
- Takes years from infection to pre-cancer to cancer: screening effective
- Incidence rises in the late 20s, peaking near age 40 and staying elevated

## Cervical Cancer Mortality Rates, U.S., 1946-1984

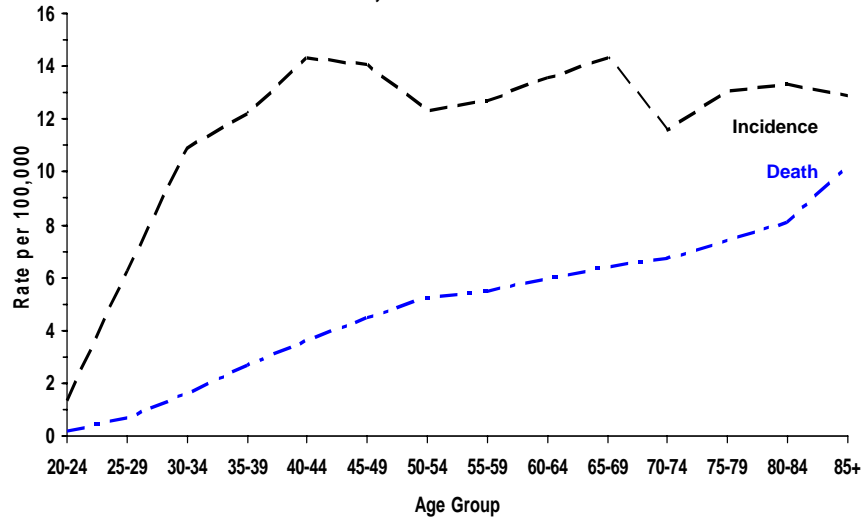


Source: Program for Improving Clinical Pap Smear Programs and Management, Office of Population Affairs, DHHS, 1987.

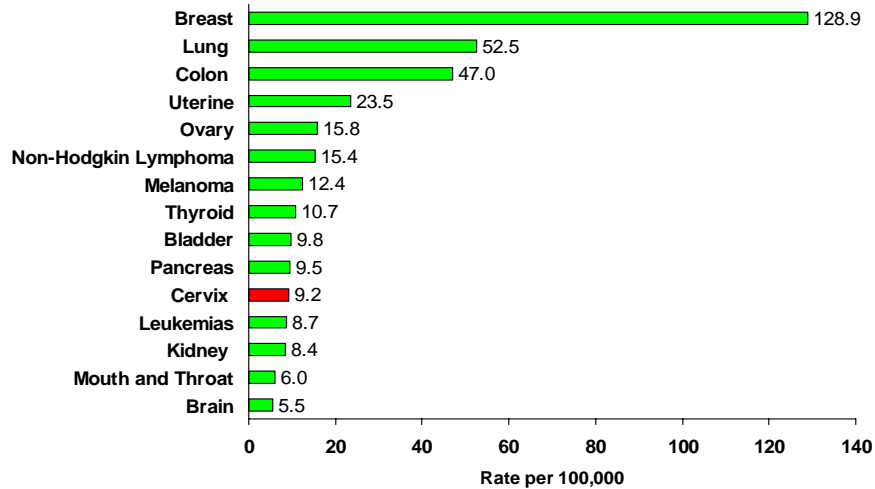
## Invasive Cervical Cancer Incidence and Mortality Rates, by Race, US, 1975-2002



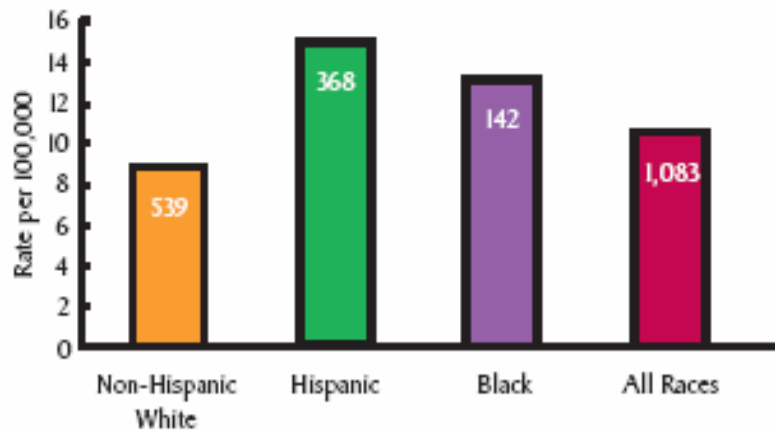
### Invasive Cervical Cancer Incidence and Mortality Rates,\* by Age Group, SEER in U.S., 1998-2002



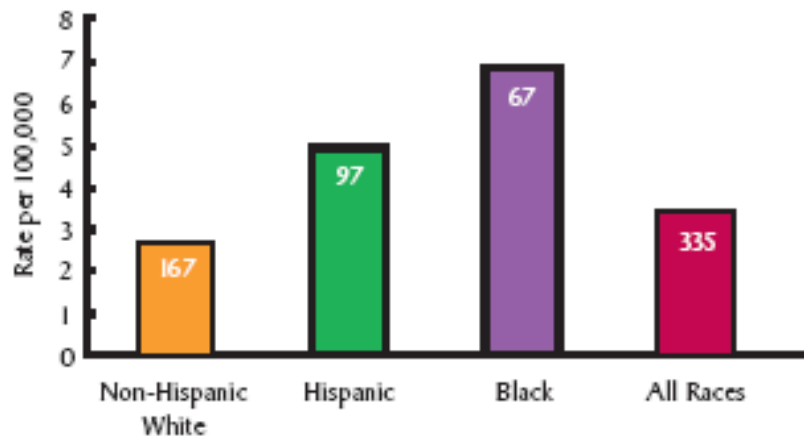
### Age-Adjusted Invasive Cancer Incidence Rates, Among Women, US, 2000



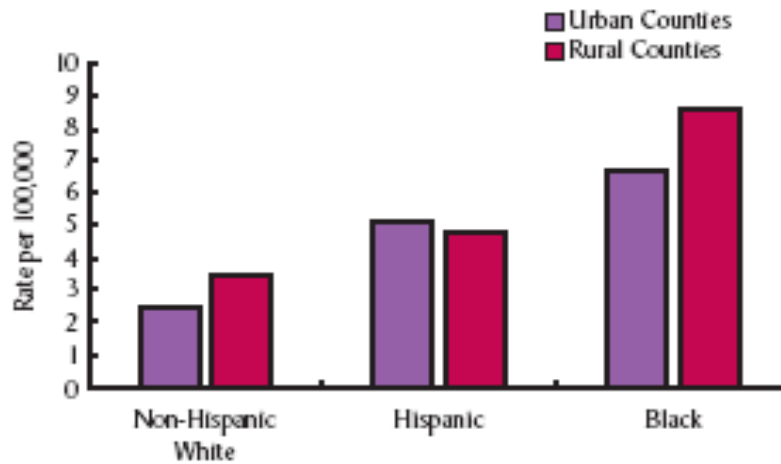
Cervical Cancer Incidence Rates and Average Annual Cases by Race/Ethnicity, Texas, 1999–2003



Cervical Cancer Mortality Rates and Average Annual Deaths by Race/Ethnicity, Texas, 1994–2003



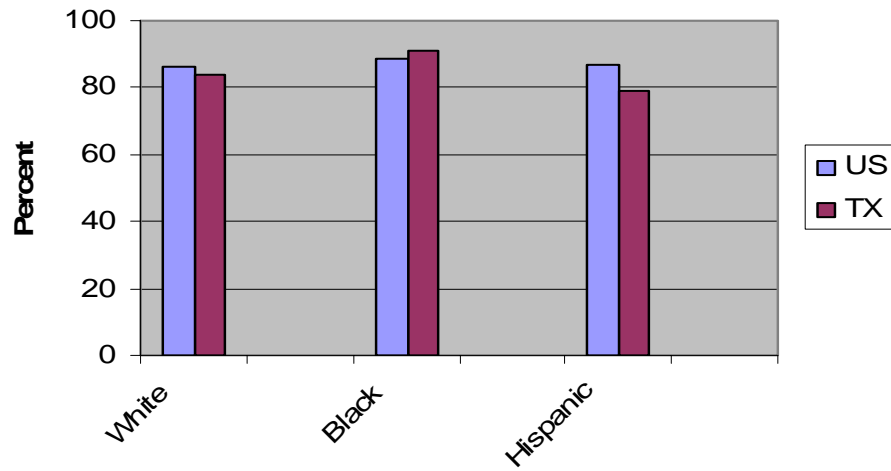
## Cervical Cancer Mortality Rates Compared by Urban and Rural Counties, Texas, 1994–2003



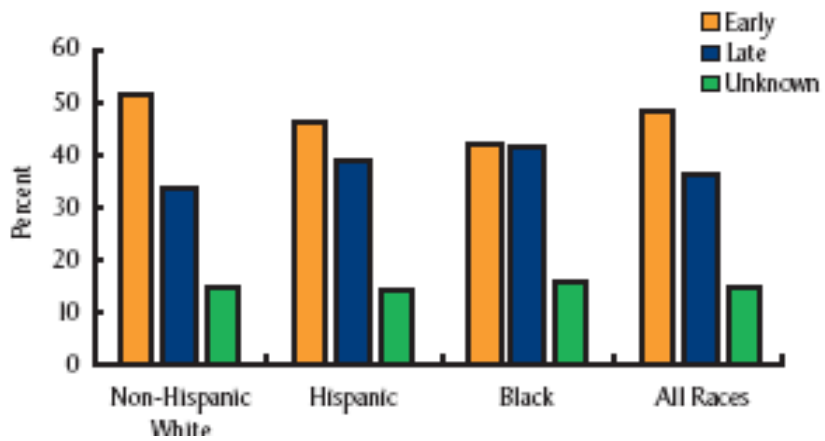
## Prevention of Cervical Cancer

- Prevent pre-cancers
  - HPV vaccine prevents infection with HPV types that cause 70% of cervical cancer if given before onset of sexual activity
  - Don't smoke
- Screen (Pap) and treat pre-cancer

### Percentages of Women 18 and Older Who Have Had a Recent Pap Test, 2004



### Cervical Cancer Stage at Diagnosis by Race/Ethnicity, Texas, 1999–2003



## Annual HPV-related Costs in Texas Women and Men, in millions, preliminary

Condition	Costs (\$M)
Genital Warts	19.6
Abnormal Cervix Tests	114.1
Cervical Cancer	40.5
<b>Total</b>	<b>174.3</b>

## The Vaccine(s)

- Gardasil®--Merck: Recombinant (not live) vaccine
  - Virus-like particles (VLPs) of capsid protein
- Protects against 4 HPV Types:
  - 16 & 18: responsible for 70% of cervical cancer
  - 6 & 11: responsible for 90% of genital warts
- FDA Approved for females age 9-26: June 2006
  - 3 doses: 0; 2 months; 6 months
- Advisory Committee on Immunization Practices (ACIP) recommends<sup>1</sup>
  - Routinely for females 11-12 (start as early as 9)
  - Catch-up vaccination for females 13-26
- Also Cervarix® (GlaxoSmithKline)
  - Types 16 & 18 only; Not yet FDA Approved

## Injection-Site Adverse Events, Days 1 to 5 Following Any Vaccination

Adverse Event	Quadrivalent HPV Vaccine (%)	Aluminum- Containing Placebo (% )	Saline Placebo (%)
<b>Pain</b>	84	75	49
<b>Swelling</b>	25	16	7
<b>Erythema</b>	25	18	12

Package Insert: Gardasil®

## Rationale: Routine Vaccination Females at 11-12 Years

- Prevalent infection, targeting 'high risk' groups not possible
- Vaccination prior to sexual debut
- Implementation advantages; consistent with young adolescent health care visit (Tdap, Menactra)
- High antibody titers after vaccination at this age
- Data through 5 years show no evidence of waning immunity; ongoing studies will monitor duration of protection



**16- to 24-Year-Old North American Women Enrolled in Studies of GARDASIL® (Protocols 007, 013, 015)**

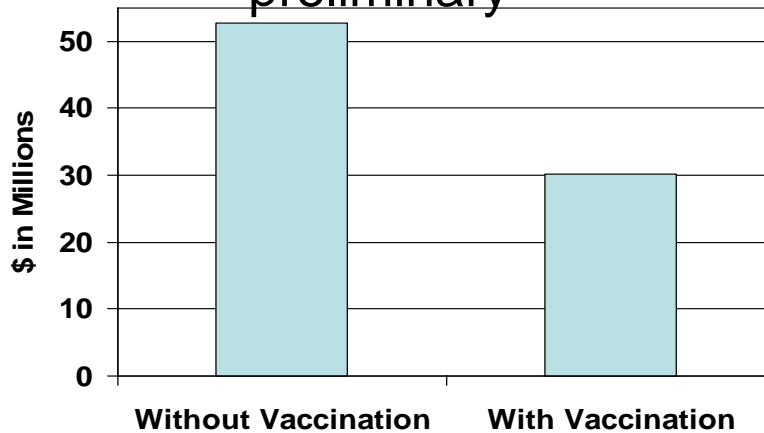
Sero- and/or PCR-Positivity to HPV 6, 11, 16, or 18	Subjects (N = 3587)
Naïve to HPV 6/11/16/18	76.1%
Positive to HPV 6, 11, 16, or 18	23.9%
Positive by Serology	16.7%
Positive by PCR	13.8%
Positivity by Number of Vaccine HPV Types	
Positive to 1 or more types	23.9%
Positive to 2 types	4.8%
Positive to 3 types	1.0%
Positive to 4 types	0.1%

**Annual HPV-related Costs in Texas Women, ages 20-29, in millions, preliminary**

	Costs (\$M)	Avoidable Costs (\$M)	% Decrease
Genital warts	3.02	2.18	72%
Abnormal Cervix Tests	47.05	18.82	40%
Cancer	2.58	1.45	56%
<b>Total</b>	<b>52.66</b>	<b>22.44</b>	<b>43%</b>

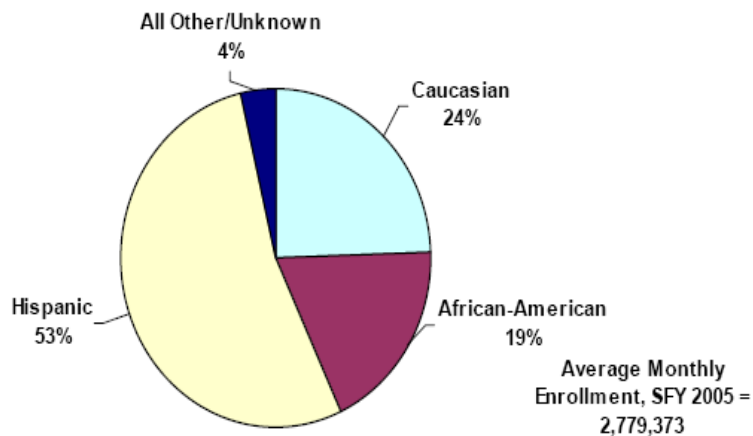
Annual costs could be avoided in this age group starting in about 10 years

## Annual HPV-related Costs in Texas Women, ages 20-29, in millions, preliminary



Annual costs could be avoided in this age group starting in about 10 years

## Texas Medicaid Recipients by Ethnicity, FY 2005



## Summary

- Cervical cancer and HPV-related disease
  - Known cause is very common, effective vaccine for strains that cause 70% of cervical cancer
  - Effective screening, but still groups without good coverage
  - Disproportionately affects uninsured, minority, poor