Annual Report to the Nation on the Status of Cancer, 1975-2009

National Cancer Institute
Surveillance Research Program

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Anne-Michelle Noone, MS
Kathy Cronin, PhD, MPH
Mark Schiffman, MD, MPH
Brenda K Edwards, PhD
Focus: Burden & Trends in HPV-Associated Cancers and HPV Vaccination Coverage Levels

- Journal of the National Cancer Institute
  - ePub: Jan 7, 2013 4 pm embargo; Print Issue 3, Feb 2013

- Special Feature (Dr. Lowy)
  - Trends of HPV associated cancers
  - Prevalence of HPV vaccination coverage & Pap testing

- Coordinated & shared responsibility since 1998
  - National Cancer Institute (NCI)
  - Centers for Disease Control & Prevention (CDC)
  - American Cancer Society (ACS)
  - North American Association of Central Cancer Registries (NAACCR)

- ACS (lead)
  - Also: Cancer Statistics, 2013 published in January
1,660,290 estimated new cases in 2013

580,350 estimated deaths in 2013

Long-term cancer mortality trends (1930-2009)

Regional variation in cancer rates

Based on NCI SEER website:

Probably of developing invasive cancers

Stage at diagnosis

5-year relative survival rates

Cancer occurrence by race/ethnicity
Selected Key Findings

- Decline in cancer mortality continues
- Decline in cancer incidence for men
- Cancer incidence stable for women
- Childhood cancer (age 0-14)
  - Incidence increased
  - Mortality decreased

Dr. Lowy to present:
- 32% of girls aged 13-17 received three doses of HPV vaccine in 2010
  - 35% in 2011
  - Coverage lower among uninsured and some Southern states
- 87% of women aged 21-65 had a Pap test in last 3 years
- Incidence of HPV-related oropharyngeal cancer increased among white men and women
- Incidence of anal cancer increased among white and black men and women
- Incidence of cervical cancer generally declined among almost all women
Cancer Incidence & Mortality Statistics

- Cancer incidence
    - With and without delay adjustment
    - SEER areas, 14% coverage
  - Short-term trends (2000-2009)
    - By race and ethnicity
    - SEER + NPCR, 87% coverage
  - Short-term rates (2005-2009)
    - By race and ethnicity
    - SEER + NPCR, 93% coverage

- Cancer mortality
  - Entire US (source: CDC’s National Center for Health Statistics)
10 Year Average Annual Percent Change (AAPC) For Observed and Delay-Adjusted Incidence Rates

All Cancer Sites by Sex

- **Men**
  - 1992-1994: \(-5.6^*\)
  - 1998-2006: \(-0.5^*\)
  - 2005-2009: \(-0.2\)

- **Women**
  - 1992-1998: \(0.8^*\)
  - 1994-2009: \(-0.6^*\)
  - 2005-2009: \(1.0\)

*The AAPC is statistically significant from 0 (p<.05)*

Incidence data from SEER 13, 1992-2009
Recent Delay-adjusted SEER Incidence Trends with AAPC, 2000-2009
By Cancer Site*

**Men**

- Thyroid: 3.7*
- Liver & IBD: 2.9*
- Kidney & Renal Pelvis: 2.5*
- Melanoma of the Skin: 1.3*
- Pancreas: 0.5*
- Myeloma: 0.5
- Non-Hodgkin Lymphoma: 0.2
- Leukemia: 0.2
- Esophagus: 0
- Oral Cavity & Pharynx: 0
- Brain & Other Nervous System: -0.2
- Urinary Bladder: -0.5
- All Sites: -0.6*
- Stomach: -1.7*
- Lung & Bronchus: -1.9*
- Prostate: -1.9*
- Colon & Rectum: -2.6*
- Larynx: -2.8*

**Women**

- Thyroid: 7.0*
- Kidney & Renal Pelvis: 3.1*
- Liver & IBD: 3.0*
- Melanoma of the Skin: 1.7*
- Pancreas: 1.4*
- Corpus & Uterus: 1.0*
- Leukemia: 0.5*
- Non-Hodgkin Lymphoma: 0.4
- Myeloma: 0.3
- Brain & ONS: 0
- All Sites: 0
- Lung & Bronchus: -0.3*
- Breast: -0.6
- Urinary Bladder: -0.8*
- Stomach: -0.8*
- Oral Cavity & Pharynx: -0.9*
- Ovary: -0.9*
- Colon & Rectum: -2.1*
- Cervix Uteri: -2.5*

* 10 year AAPC is statistically significant from 0 (p<.05) based on joinpoint model fit to SEER 13 delay adjusted rates from 1992-2009
**Long-Term US Mortality Trends with AAPC, 2000-2009**

By Cancer Site*

### Males

- **Liver & IBD**: 2.6*
- **Melanoma of the Skin**: 0.8*
- **Pancreas**: 0.4*
- **Soft Tissue inc. Heart**: 0.2*
- **Urinary Bladder**: 0.0
- **Esophagus**: -0.3
- **Kidney & Renal Pelvis**: -0.4*
- **Brain & Other Nervous Syste**: -0.4
- **Leukemia**: -0.8*
- **Myeloma**: -1.1*
- **Oral Cavity & Pharynx**: -1.3*
- **All Sites**: -1.8*
- **Lung & Bronchus**: -2.3*
- **Larynx**: -2.5*
- **Non-Hodgkin Lymphoma**: -2.7*
- **Colon & Rectum**: -2.9*
- **Stomach**: -3.4*
- **Prostate**: -3.5*

### Females

- **Liver & IBD**: 1.5*
- **Pancreas**: 0.4*
- **Corpus & Uterus**: 0.3*
- **Urinary Bladder**: -0.4*
- **Lung & Bronchus**: -0.6*
- **Kidney & Renal Pelvis**: -0.9*
- **Brain & Other Nervous Syste**: -0.9*
- **Ovary**: -1.3*
- **All Sites**: -1.5*
- **Leukemia**: -1.4*
- **Esophagus**: -1.7*
- **Breast**: -1.9*
- **Cervix Uteri**: -1.9*
- **Gallbladder**: -2.3*
- **Myeloma**: -2.3*
- **Oral Cavity & Pharynx**: -2.3*
- **Stomach**: -2.7*
- **Colon & Rectum**: -2.9*
- **Non-Hodgkin Lymphoma**: -3.4*

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*10 year AAPC is statistically significant from 0 (p<.05) based on joinpoint model. Incidence data from SEER 13, mortality data from NCHS.*
**Lung & Bronchus: Men**

**Incidence and Mortality Age-Adjusted Trends**

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**Incidence**

- White
- ▲ Black
- + Asian/Pacific Islander
- ♦ American Indian/AK Native
- ● Hispanic*

**US Mortality**

- ■ White
- ▲ Black
- + Asian/Pacific Islander
- ♦ American Indian/AK Native
- ● Hispanic*

*Hispanic is not mutually exclusive from other groups

Incidence data from SEER 13 1992-2009, Mortality data from NCHS

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*Rate per 100,000*
Lung & Bronchus: Women Incidence and Mortality Age-Adjusted Trends

Incidence

US Mortality

*Hispanic is not mutually exclusive from other groups
Incidence data from SEER 13 1992-2009, Mortality data from NCHS
Colon & Rectum
Incidence and Mortality Age-Adjusted Trends

Incidence

US Mortality

*Hispanic is not mutually exclusive from other groups
Incidence data from SEER 13 1992-2009, Mortality data from NCHS
Breast (Women) Incidence and Mortality Age-Adjusted Trends

Incidence

US Mortality

- White
- Black
- Asian/Pacific Islander
- American
- Indian/AK Native
- Hispanic*

Incidence data from SEER 13 1992-2009, Mortality data from NCHS

*Hispanic is not mutually exclusive from other groups
Prostate (Men)
Incidence and Mortality Age-Adjusted Trends

Incidence data from SEER 13 1992-2009, Mortality data from NCHS

*Hispanic is not mutually exclusive from other groups
Pancreas
Incidence and Mortality Age-Adjusted Trends

Incidence

US Mortality

*Hispanic is not mutually exclusive from other groups
Incidence data from SEER 13 1992-2009, Mortality data from NCHS
Liver & Intrahepatic Bile Duct Incidence and Mortality Age-Adjusted Trends

Incidence

US Mortality

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Incidence data from SEER 13 1992-2009, Mortality data from NCHS
Kidney & Renal Pelvis
Incidence and Mortality Age-Adjusted Trends

Incidence

US Mortality

*Hispanic is not mutually exclusive from other groups
Incidence data from SEER 13 1992-2009, Mortality data from NCHS
Corpus & Uterus, NOS
Incidence and Mortality Age-Adjusted Trends

Incidence

US Mortality

Source: Jamison PM et al Cancer, Epidemiology, Biomarkers & Prevention 2012.

*Hispanic is not mutually exclusive from other groups
Incidence data from SEER 13 1992-2009, Mortality data from NCHS
Corpus & Uterus, NOS by Type
Incidence Trends with Correction for Hysterectomy

Melanoma of the Skin among White Men & Women
Incidence and Mortality Age-Adjusted Trends

Incidence data from SEER 13 1992-2009, Mortality data from NCHS

*Hispanic is not mutually exclusive from other groups
Thyroid Incidence and Mortality Age-Adjusted Trends

Incidence data from SEER 13 1992-2009, Mortality data from NCHS

*Hispanic is not mutually exclusive from other groups

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Incidence data from SEER 13 1992-2009, Mortality data from NCHS
2012 ARN Collaborators

- **ACS:** Ahmedin Jemal, Edgar Simard, Priti Bandi, Debbie Saslow

- **CDC:** Christina Dorell, Lauri Markowitz, Meg Watson, S. Jane Henley, Robert Anderson, David Yankey

- **NAACCR:** Betsy Kohler, Maria Schymura

- **NCI:** Anne-Michelle Noone, Kathy Cronin, Mark Schiffman, Brenda K. Edwards