

# EPIDEMIOLOGY OF GASTRIC CANCER

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**incliva**  
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ESMO PRECEPTORSHIP  
PROGRAMME

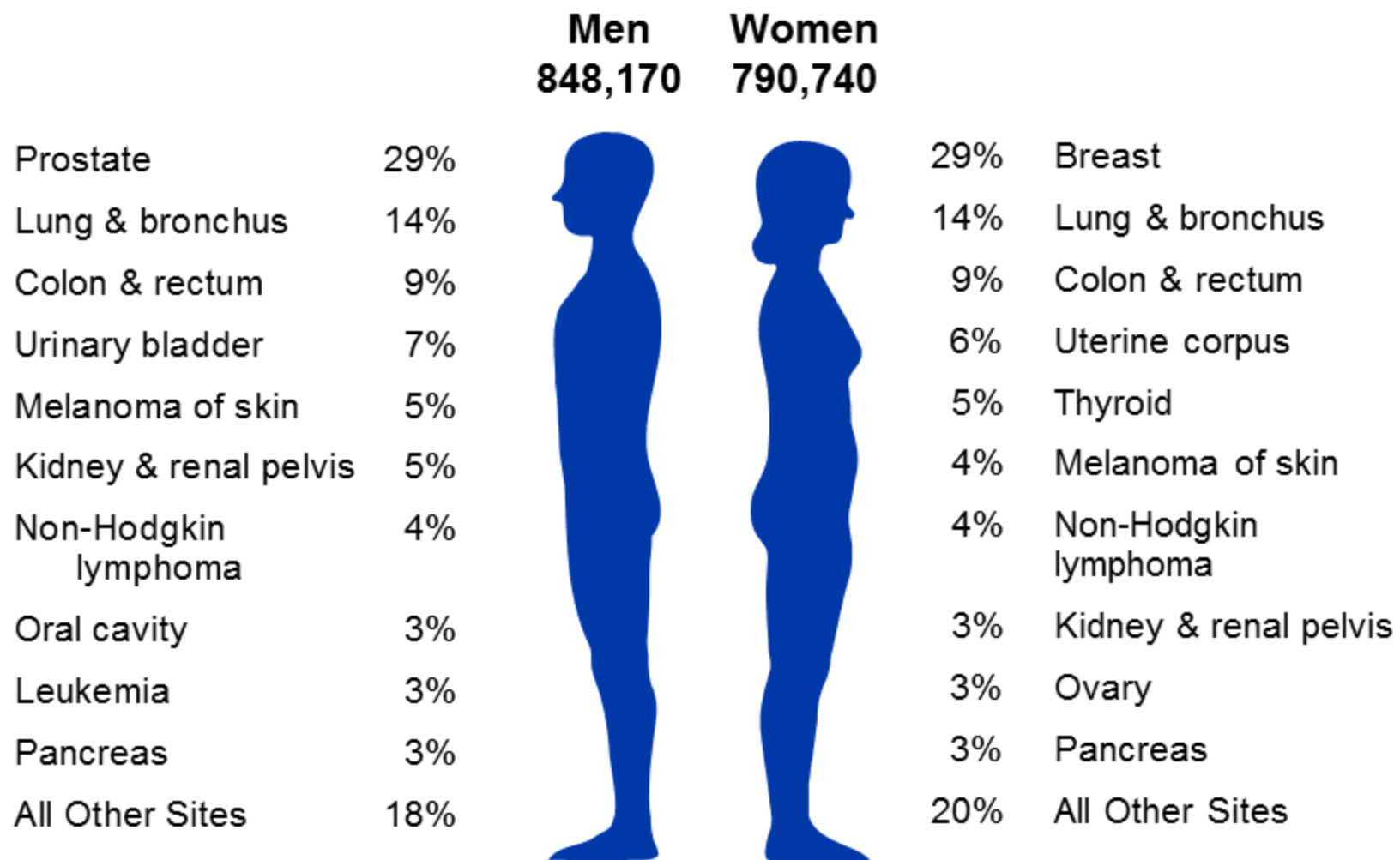
GASTRIC CANCER  
Multidisciplinary management, standards  
of care and future perspectives

Berlin,  
Germany

11 - 12 October 2013

Co-Chairs: Eric Van Cutsem, Belgium  
Andrés Cervantes, Spain

## 2012 Estimated US Cancer Cases\*

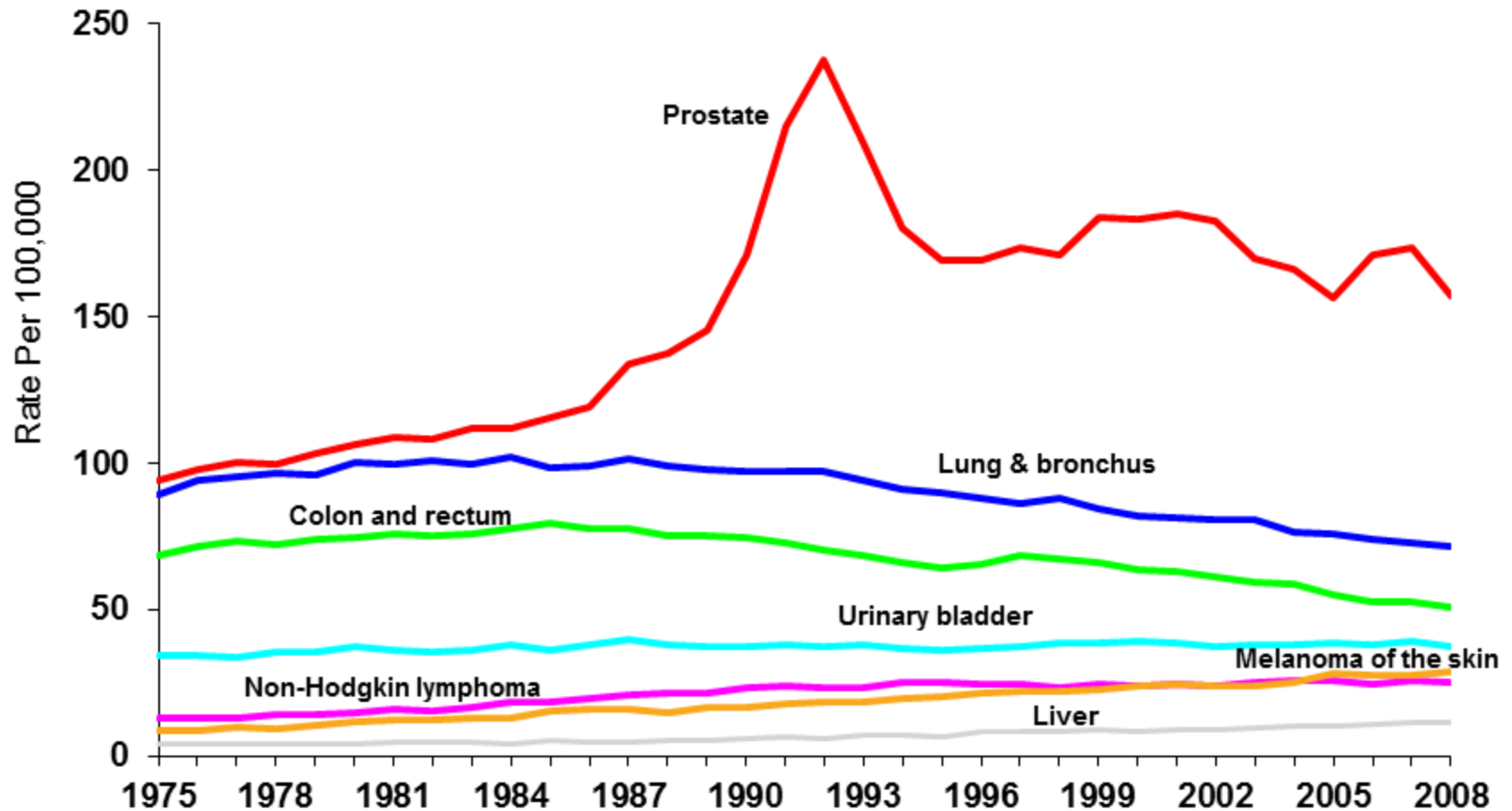


Source: American Cancer Society, 2012

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\*Excludes basal and squamous cell skin cancers and in situ carcinomas except urinary bladder.

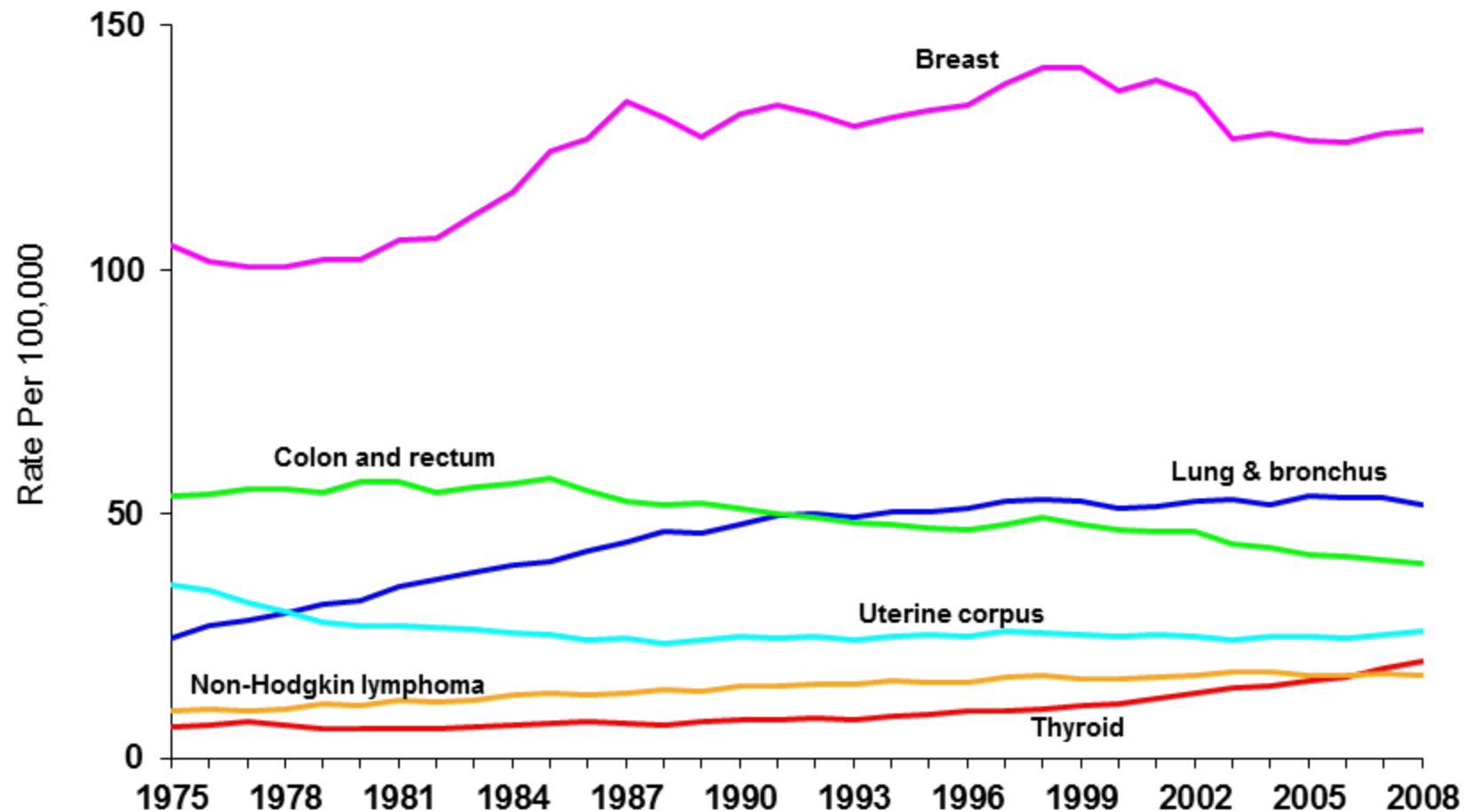
## Cancer Incidence Rates\* Among Men, US, 1975-2008



\*Age-adjusted to the 2000 US standard population and adjusted for delays in reporting.

Source: Surveillance, Epidemiology, and End Results Program, Delay-adjusted Incidence database: SEER Incidence Delay-adjusted Rates, 9 Registries, 1975-2008, National Cancer Institute, 2011.

## Cancer Incidence Rates\* Among Women, US, 1975-2008



\*Age-adjusted to the 2000 US standard population and adjusted for delays in reporting.

Source: Surveillance, Epidemiology, and End Results Program, Delay-adjusted Incidence database: SEER Incidence Delay-adjusted Rates, 9 Registries, 1975-2008, National Cancer Institute, 2011.

## The Lifetime Probability of Developing Cancer for Men, 2006-2008\*

Site	Risk
All sites <sup>†</sup>	1 in 2
Prostate	1 in 6
Lung and bronchus	1 in 13
Colon and rectum	1 in 19
Urinary bladder <sup>‡</sup>	1 in 26
Melanoma <sup>§</sup>	1 in 36
Non-Hodgkin lymphoma	1 in 43
Kidney	1 in 51
Leukemia	1 in 64
Oral Cavity	1 in 69
Stomach	1 in 91

\* For those free of cancer at beginning of age interval.

<sup>†</sup> All Sites exclude basal and squamous cell skin cancers and in situ cancers except urinary bladder.

<sup>‡</sup> Includes invasive and in situ cancer cases

<sup>§</sup> Statistic for white men.

Source: DevCan: Probability of Developing or Dying of Cancer Software, Version 6.5.0 Statistical Research and Applications Branch, NCI, 2011.

## The Lifetime Probability of Developing Cancer for Women, 2006-2008\*

Site	Risk
All sites <sup>†</sup>	1 in 3
Breast	1 in 8
Lung & bronchus	1 in 16
Colon & rectum	1 in 20
Uterine corpus	1 in 38
Non-Hodgkin lymphoma	1 in 51
Urinary bladder <sup>‡</sup>	1 in 87
Melanoma <sup>§</sup>	1 in 55
Ovary	1 in 71
Pancreas	1 in 69
Uterine cervix	1 in 147

\* For those free of cancer at beginning of age interval.

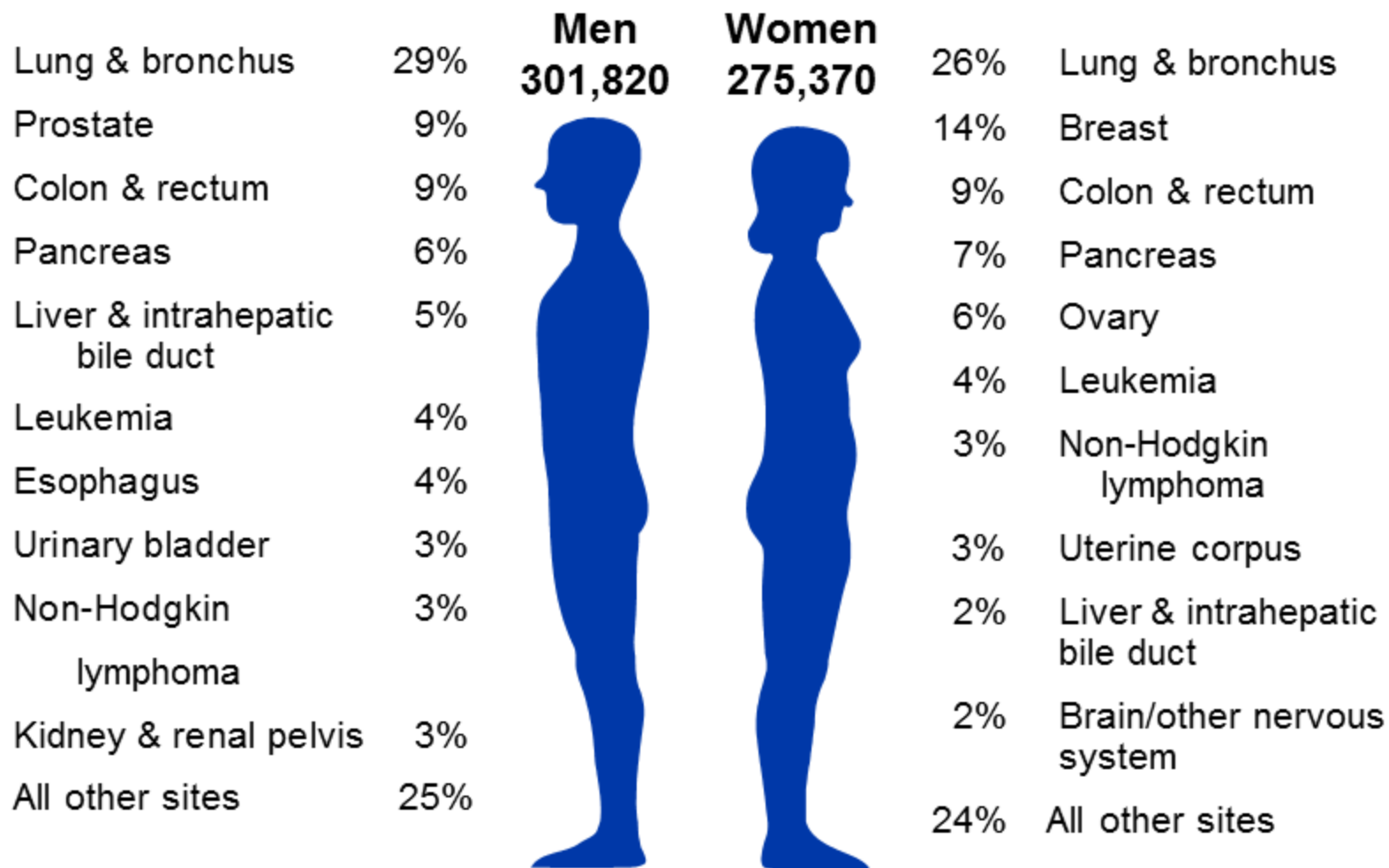
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<sup>‡</sup> Includes invasive and in situ cancer cases

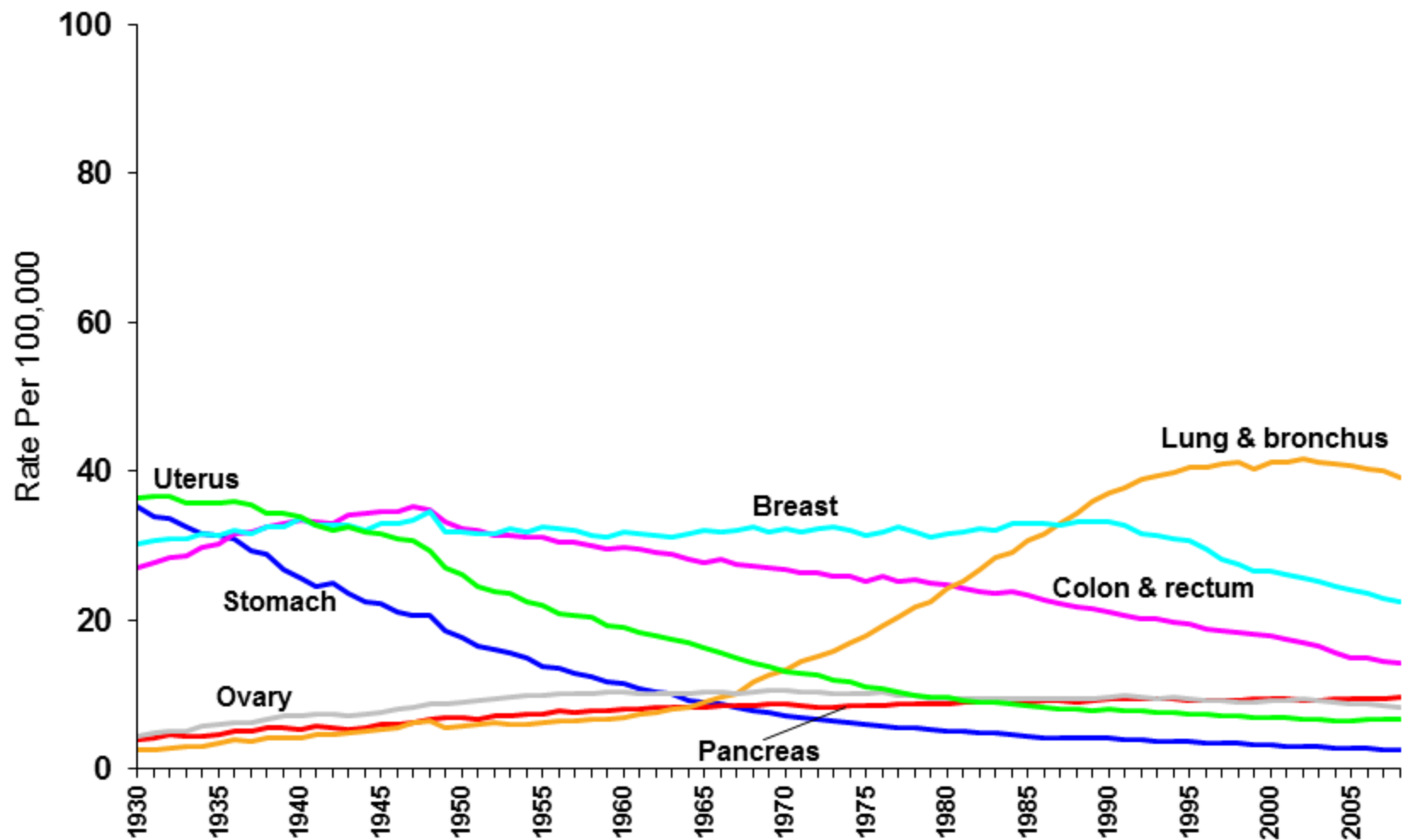
<sup>§</sup> Statistic for white women.

Source: DevCan: Probability of Developing or Dying of Cancer Software, Version 6.5.0 Statistical Research and Applications Branch, NCI, 2011.

## 2012 Estimated US Cancer Deaths



## Cancer Death Rates\* Among Women, US, 1930-2008



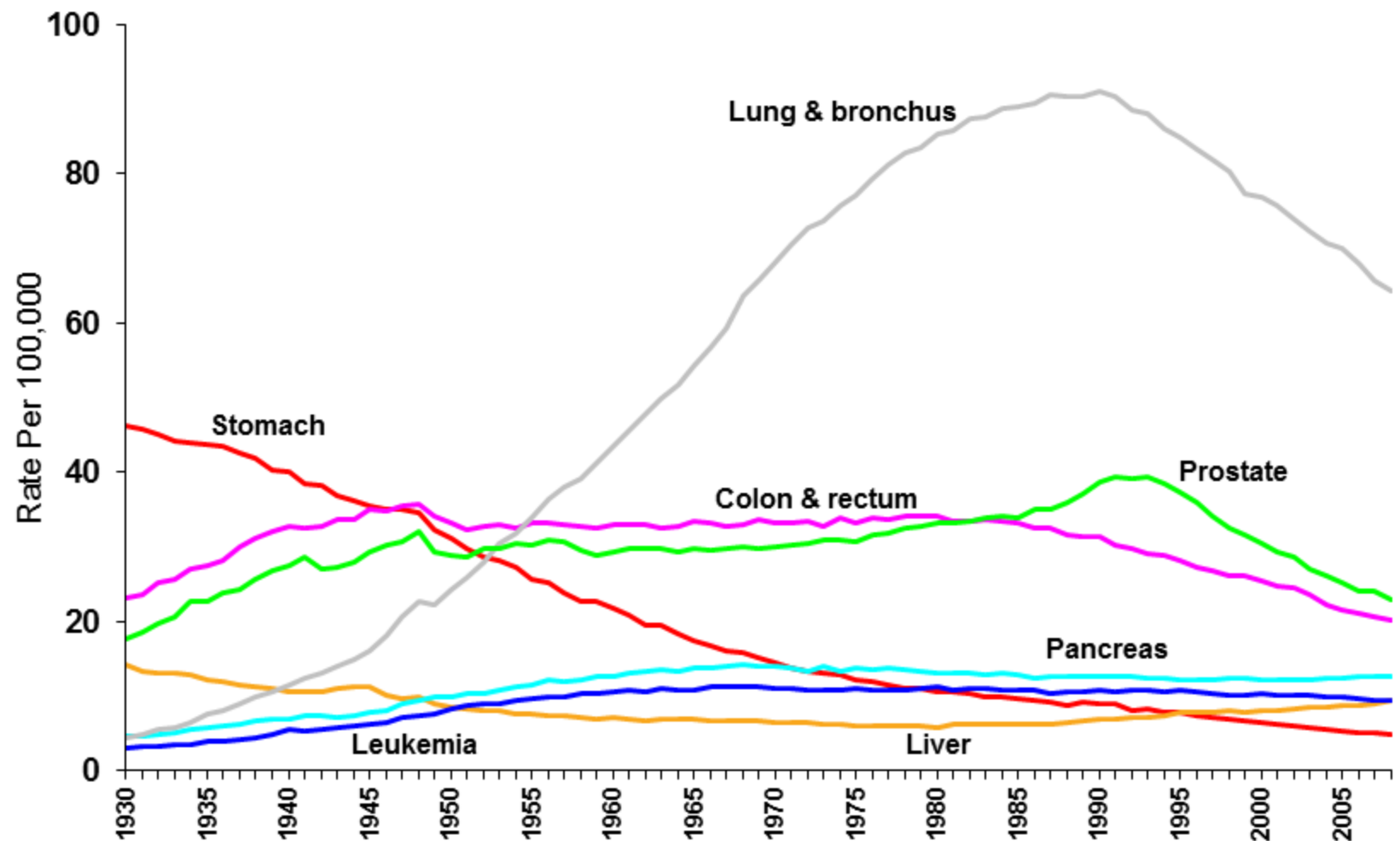
\*Age-adjusted to the 2000 US standard population.

Source: US Mortality Data 1960-2008, US Mortality Volumes 1930-1959, National Center for Health Statistics, Centers for Disease Control and Prevention.

Siegel, R et al. CA Cancer J Clin 2012;62:10-29



## Cancer Death Rates\* Among Men, US, 1930-2008

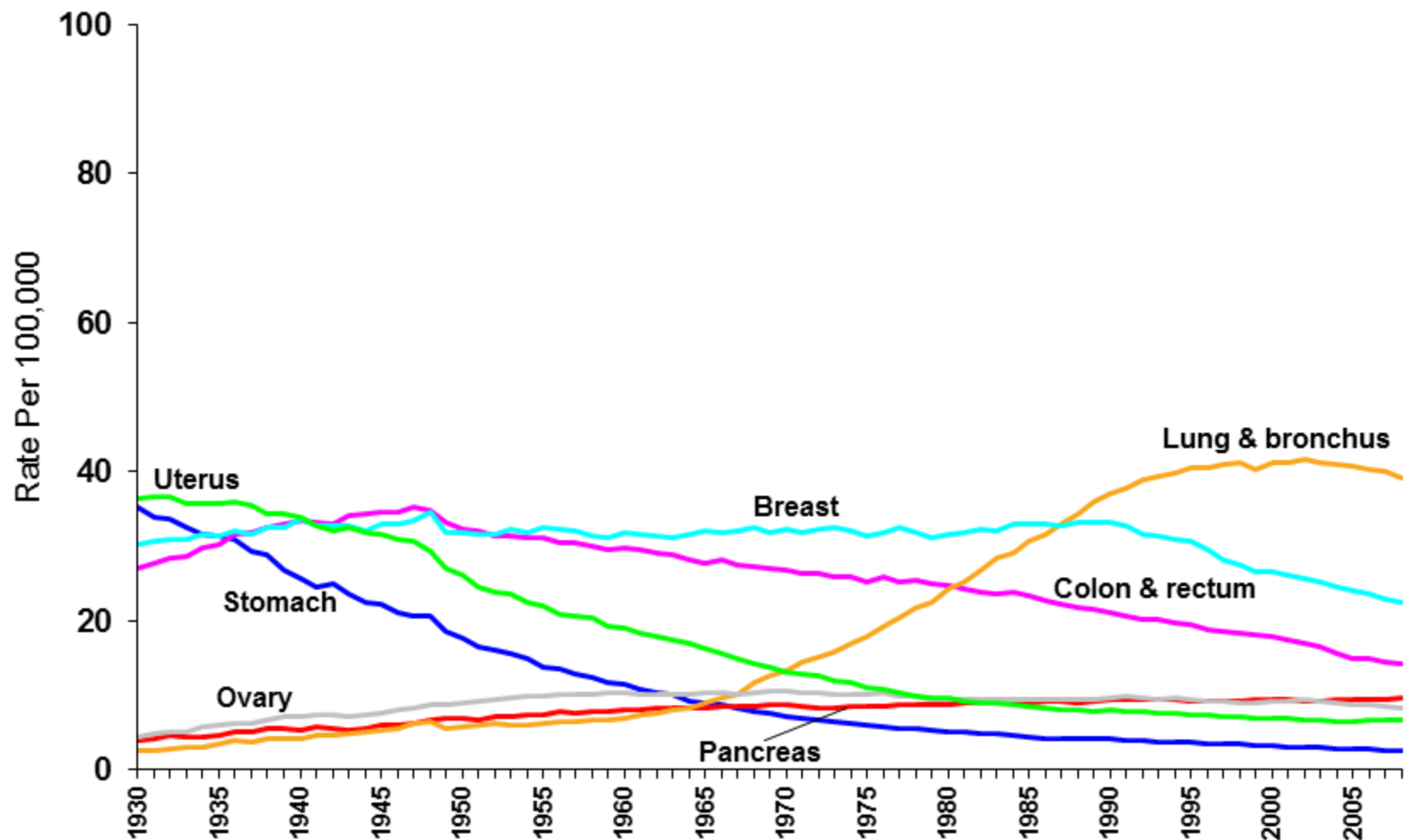


\*Age-adjusted to the 2000 US standard population.

Source: US Mortality Data 1960-2008, US Mortality Volumes 1930-1959, National Center for Health Statistics, Centers for Disease Control and Prevention.

Siegel, R et al. CA Cancer J Clin 2012;62:10-29

## Cancer Death Rates\* Among Women, US, 1930-2008



\*Age-adjusted to the 2000 US standard population.

Source: US Mortality Data 1960-2008, US Mortality Volumes 1930-1959, National Center for Health Statistics, Centers for Disease Control and Prevention.

Siegel, R et al. CA Cancer J Clin 2012;62:10-29

**Special Section**  
**Cancers with Incidence Trends**  
*see page 25*

**Male**

HPV-related oropharynx	7.8
Esophageal adenocarcinoma	7.2
Pancreas	17.1
Liver & intrahepatic bile duct	12.3
Thyroid	7.0
Kidney & renal pelvis	26.2
Melanoma of the skin	30.3

**Female**

HPV-related oropharynx	1.7
Esophageal adenocarcinoma	1.0
Pancreas	13.2
Liver & intrahepatic bile duct	4.1
Thyroid	21.0
Kidney & renal pelvis	13.6
Melanoma of the skin	19.5

AAPC = average annual percent change  
 100,000 population and were age-adjusted  
 be of any race.

**Source:** North American Association of  
 National Program of Cancer Registries.

**Overall**

	Rate	AAPC
<b>Male</b>		
HPV-related oropharynx	7.8	3.9*
Esophageal adenocarcinoma	7.2	1.7*
Pancreas	17.1	0.8*
Liver & intrahepatic bile duct	12.3	3.9*
Thyroid	7.0	6.2*
Kidney & renal pelvis	26.2	2.4*
Melanoma of the skin	30.3	2.1*
<b>Female</b>		
HPV-related oropharynx	1.7	1.6*
Esophageal adenocarcinoma	1.0	1.9*
Pancreas	13.2	0.9*
Liver & intrahepatic bile duct	4.1	1.9*
Thyroid	21.0	7.3*
Kidney & renal pelvis	13.6	2.9*
Melanoma of the skin	19.5	2.3*

**Incidence by Race/Ethnicity**

American Indian or Alaska Native		Hispanic/Latino†	
Rate	AAPC	Rate	AAPC
7.1	-0.1	4.4	0.3
6.6	-0.1	3.7	2.8*
14.8	-0.2	14.6	0.3
21.4	3.4	21.5	2.4*
5.1	0.6	5.4	4.5*
24.4	1.9	24.5	2.0*
5.6	0.3	5.9	-0.3
0.8	NA	0.9	-0.7
0.9	3.2	0.6	-1.1
12.5	-0.4	12.6	0.2
8.1	4.4	8.1	1.0
20.0	3.1*	20.4	6.7*
14.0	3.4*	14.0	2.7*
5.4	1.9	5.4	0.2

NA = sparse data. Incidence rates are per  
 100,000 population (5). †Persons of Hispanic origin may

be of any race. \*Incidence rates are per  
 100,000 population (5). †Persons of Hispanic origin may

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***Special Section:***  
**Cancers with Increasing**  
**Incidence Trends**  
*see page 25*

**Table 3. Trends in Five-year Relative Survival Rates (%) for Cancers with Increasing Incidence by Stage at Diagnosis, Ages 15 Years and Older, 1992-2007**

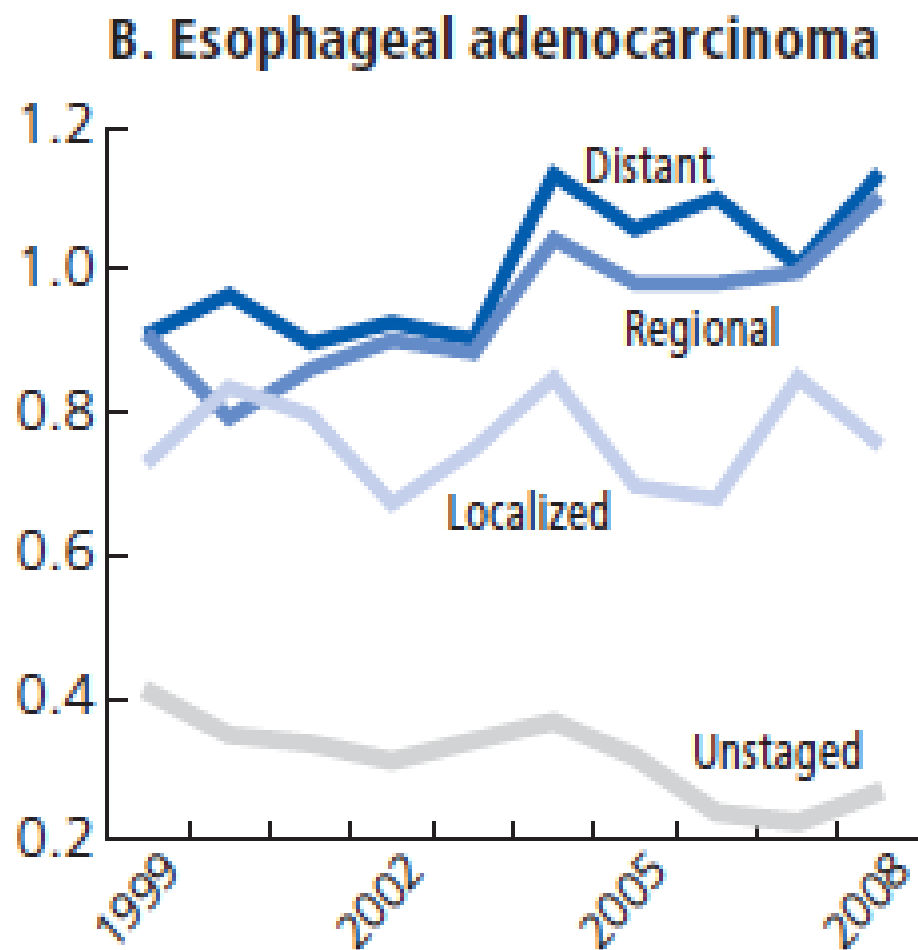
	Localized		Regional		Distant	
	1992-1995	2001-2007	1992-1995	2001-2007	1992-1995	2001-2007
HPV-related oropharynx	63.3	78.3	47.3	66.7	21.7	37.2
Esophageal adenocarcinoma	33.5	49.3	9.4	20.6	1.9	2.8
Pancreas	15.4	21.9	6.3	9.1	1.6	1.8
Liver & intrahepatic bile duct	12.5	27.4	5.8	8.8	1.6	2.5
Thyroid	99.4	99.7	94.5	97.0	60.5	57.3
Kidney & renal pelvis	88.4	91.1	60.0	62.7	7.3	10.1
Melanoma of the skin	96.1	99.5	58.9	66.1	11.9	14.8

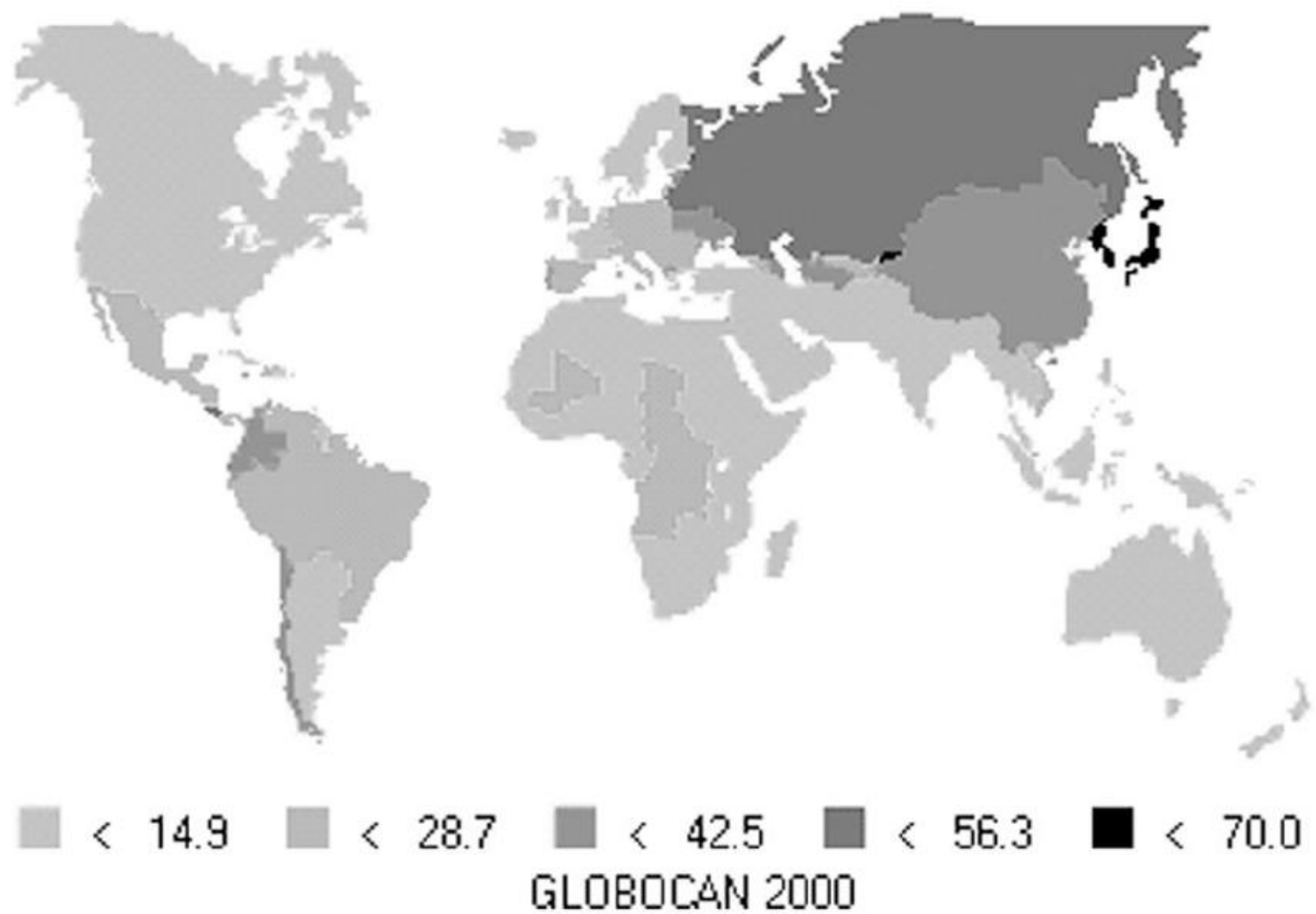
HPV = human papillomavirus.

**Source:** Surveillance, Epidemiology, and End Results (SEER) Program, SEER 13 database 1992-2008. National Cancer Institute.

American Cancer Society, Surveillance Research, 2012

Figure 2. Incidence Rates\* by Stage at Diagnosis for Cancers with Increasing Trends, Ages 15 years and older, 1999-2008.





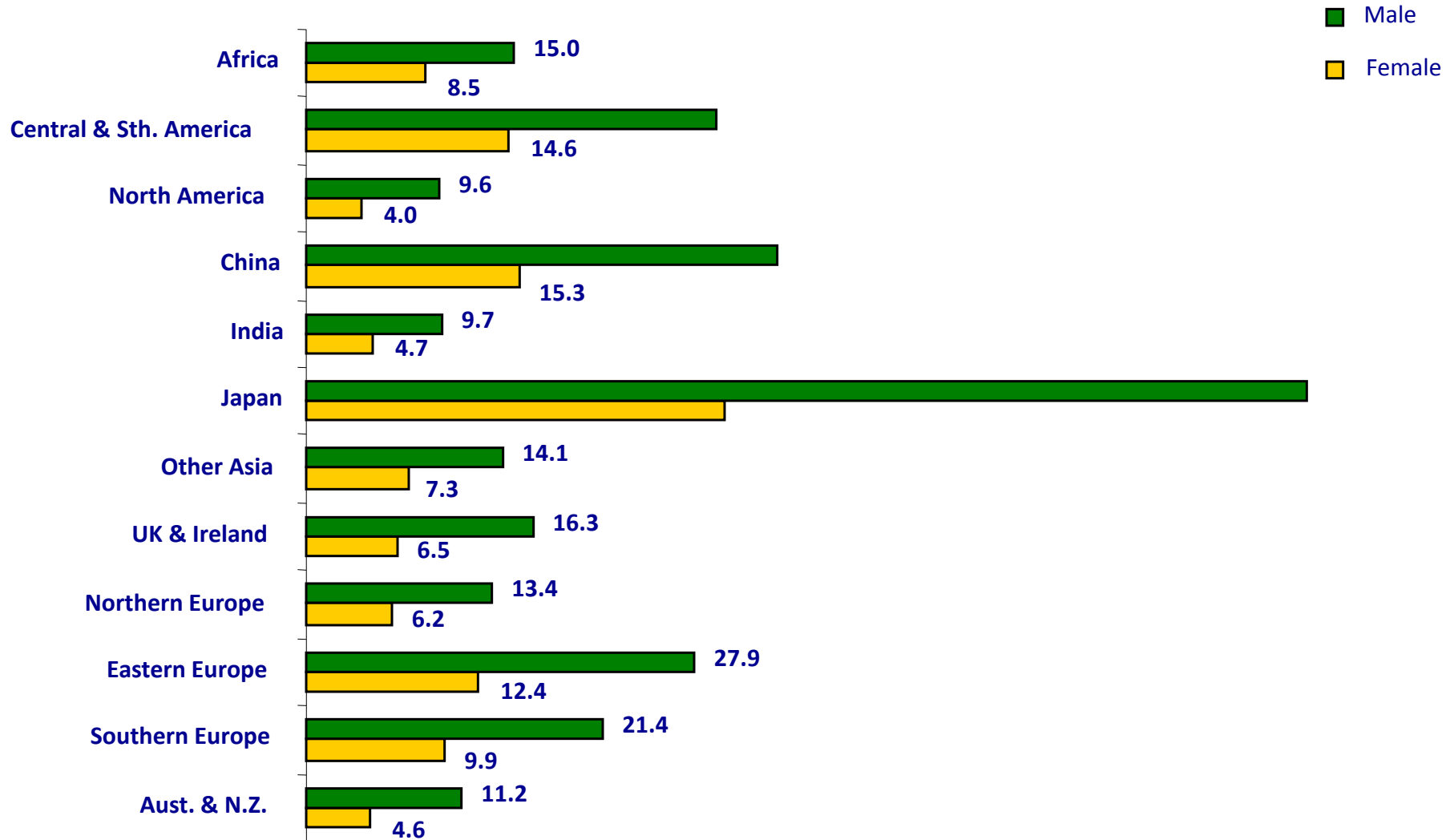
New cases and deaths by cancer site worldwide, 2002 [5].

	New cases	Deaths
Lung	1,352,132	1,178,918
Breast	1,151,298	410,712
Colon and rectum	1,023,152	528,978
<b>Stomach</b>	<b>933,937</b>	<b>700,349</b>
Liver	626,162	598,321
Prostate	679,023	221,002
Cervix uteri	493,243	273,505
Esophagus	462,117	385,892
Bladder	356,557	145,009
Non-Hodgkin lymphoma	300,571	171,820
Leukemia	300,522	222,506
Pancreas	232,306	227,023
<b>All sites but skin</b>	<b>10,862,496</b>	<b>6,723,887</b>

5. Parkin DM, Bray F, Ferlay J, et al. Global cancer statistics, 2002. CA: Cancer J Clin 2005;55(2):74–108. [PubMed: 15761078]

# Mean Annual Age-standardized (World Population) Incidence of Gastric Cancer Per 100,000

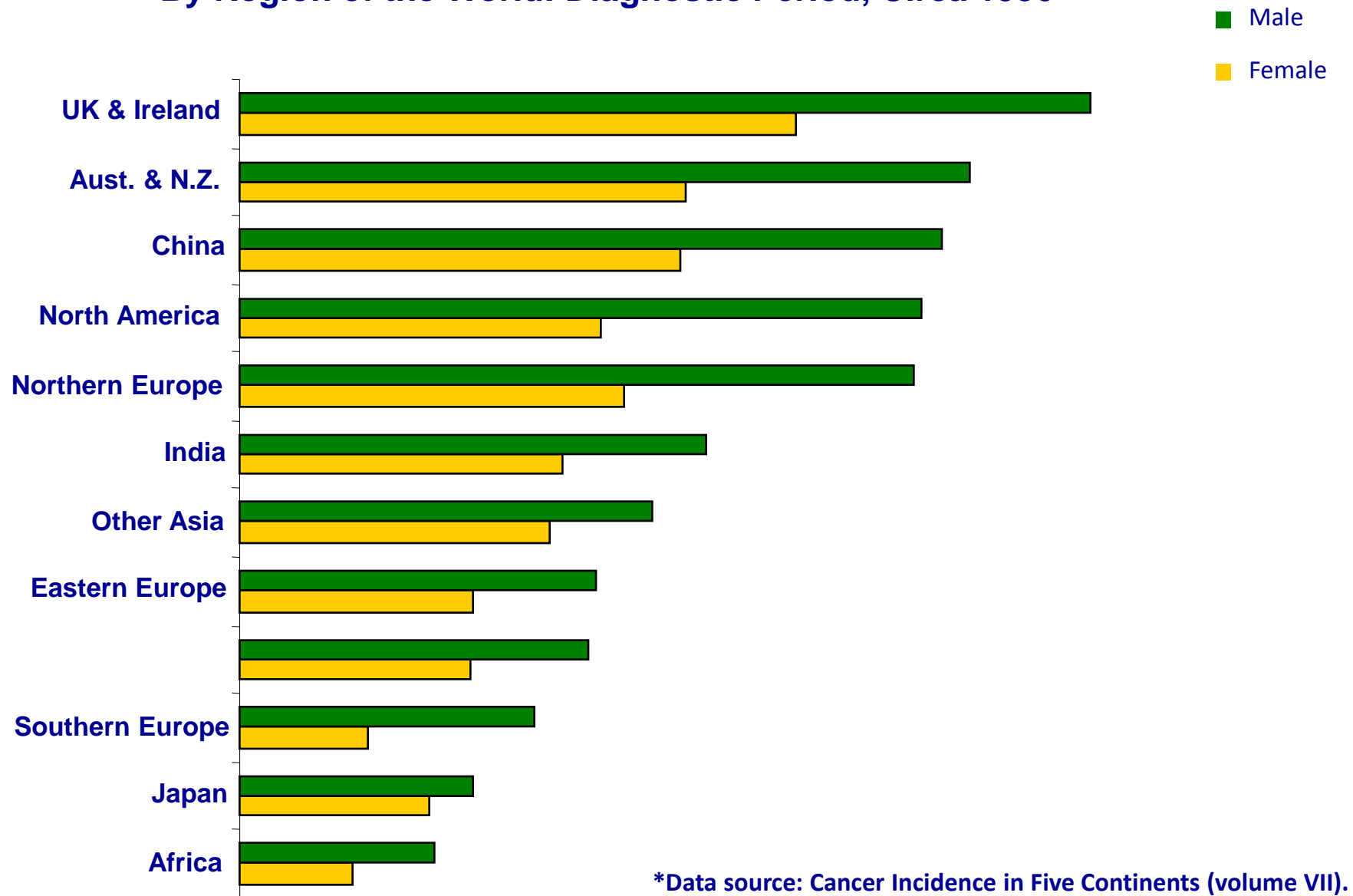
Residents by Region of the World: Diagnostic Period, Circa 1990\*



\*Data source: Cancer Incidence in Five Continents (volume VII).

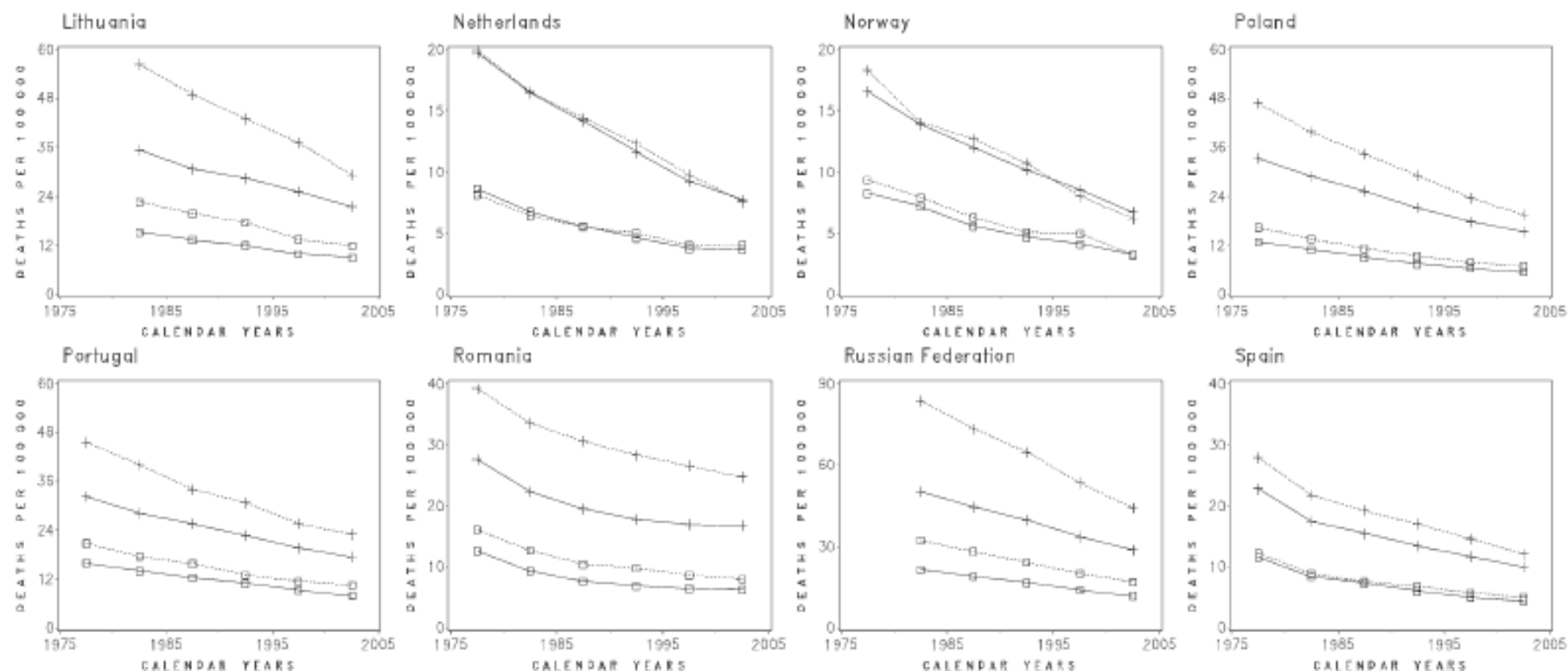


# **% Of Annual Age-standardized (World Population) Incidence Rates Applying To the Gastric Cardia, By Region of the World: Diagnostic Period, Circa 1990\***



**\*Data source: Cancer Incidence in Five Continents (volume VII).**

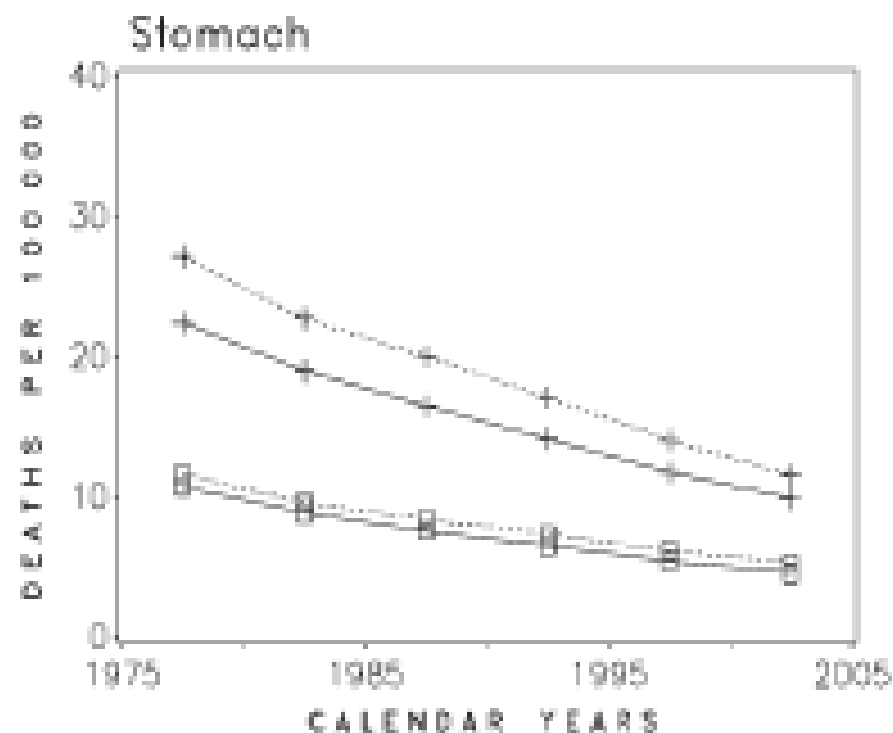
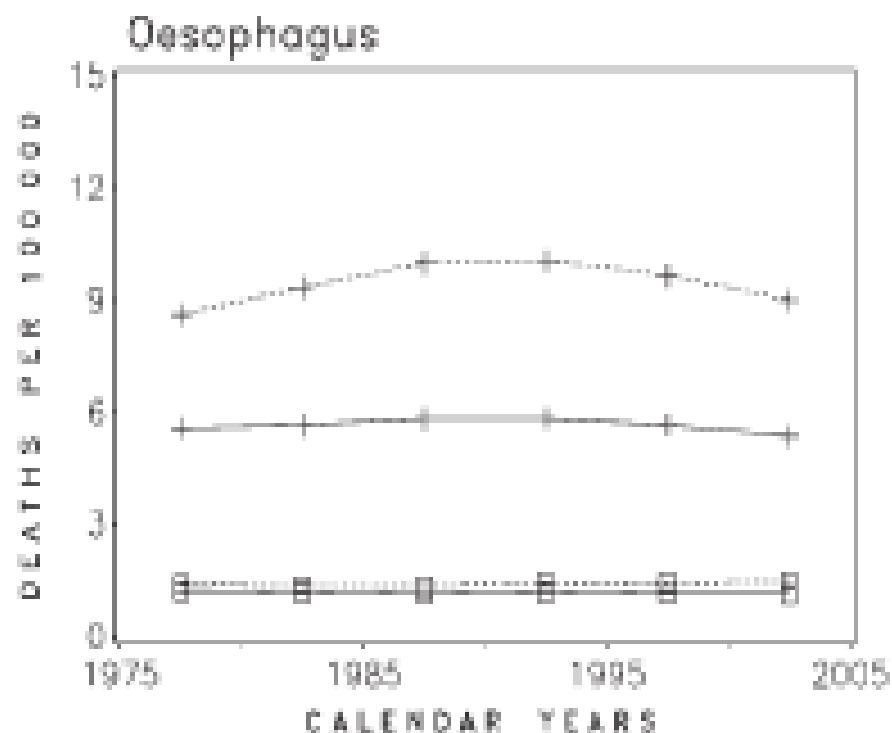
# Cancer mortality in Europe, 2000–2004, and an overview of trends since 1975



La Vecchia C, et al. Ann Oncol 2010; 21:1323

# Cancer mortality in Europe, 2000–2004, and an overview of trends since 1975

## European Union



La Vecchia C, et al. Ann Oncol 2010; 21:1323

# GASTRIC CANCER DIFFERENCES BETWEEN CARDIAS OR CORPORAL LOCATION

	CARDIAS	CORPUS
INCIDENCE	RISING	DECREASING
HELICOBACTER	+	++++
SOCIAL STATUS	UPPER	LOW
HISTOLOGY	DIFFUSE	INTESTINAL
DNA CONTENT	ANEUPLOIDY HIGH S PHASE	DIPLOID
SPREAD	EARLY HEMATOGENOUS	LATE LOCOREGIONAL

**Table 84-2 ■ Symptoms at Diagnosis by Gastric Cancer Localization**

Symptom	Proximal (n = 553)	Nonproximal (n = 689)	p Value
Abdominal pain	276 (50%)	447 (65%)	<.001
Weight loss	222 (40%)	277 (40%)	NS
Dysphagia	210 (38%)	83 (12%)	<.001
Nausea/vomiting	88 (16%)	182 (26%)	<.001
Early satiety	73 (13%)	132 (19%)	.005
Bleeding	89 (16%)	116 (17%)	NS

*Abbreviation:* NS, not significant.

**THANKS**