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GASTROESOPHAGEAL CANCER EPIDEMIOLOGY AND CLINICAL PRESENTATION

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DISCLOSURE OF INTEREST

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- Other: Executive Board member of ESMO, Chair of Education ESMO, General and Scientific Director INCLIVA

Outline

- How are data obtained?
- Incidence and Mortality in US
- Global Incidence and Mortality
- Incidence and Mortality in Europe
- Analytical Epidemiology: Etiology

Ten leading cancer types for the estimated new cases in USA by sex in 2018.

Estimated New Cases

Males				Females		
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%**

Siegel RL et al. Cancer Statistics, 2018. CA Cancer J Clin 2018; 68; 7-30

Ten leading cancer types for the estimated deaths in USA by sex in 2017.

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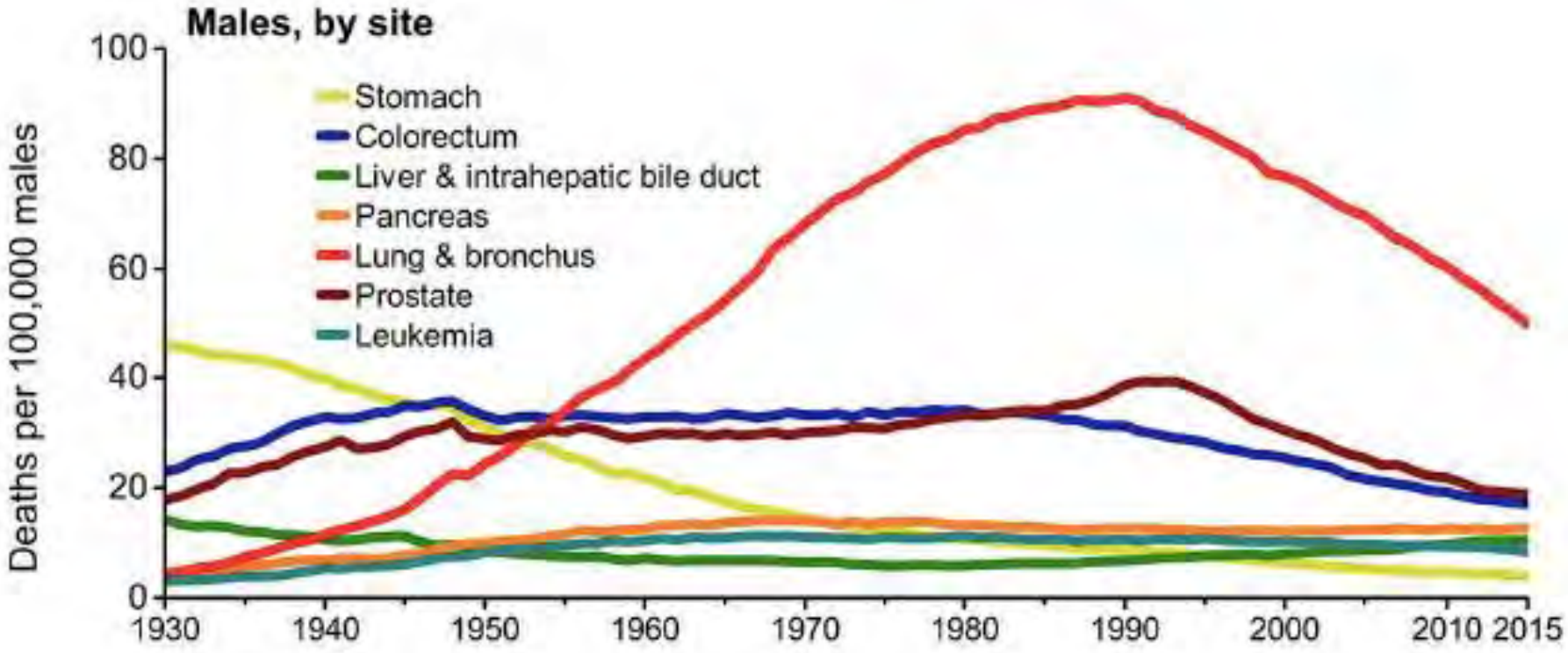
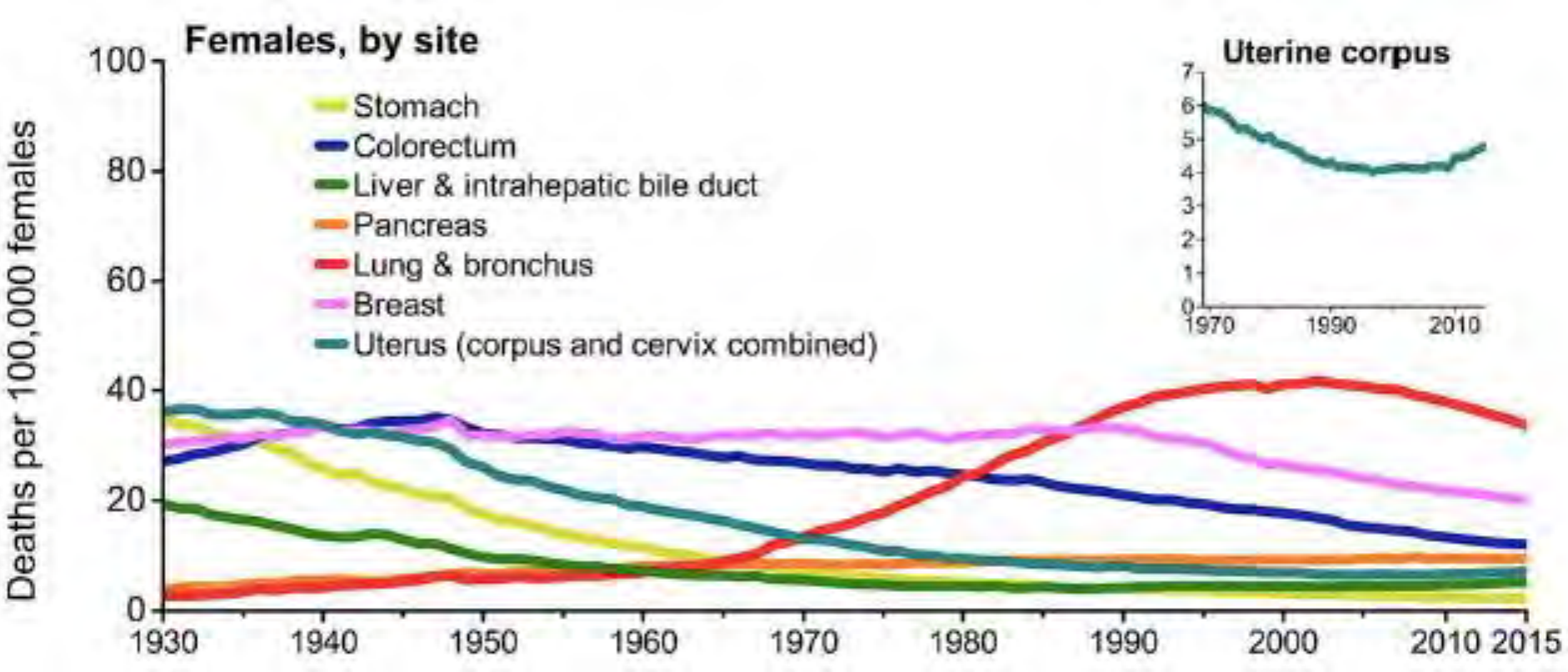
Siegel RL et al. Cancer Statistics, 2018. CA Cancer J Clin 2018; 68; 7-30

Trends in death rates for selected types of cancer in males in USA.



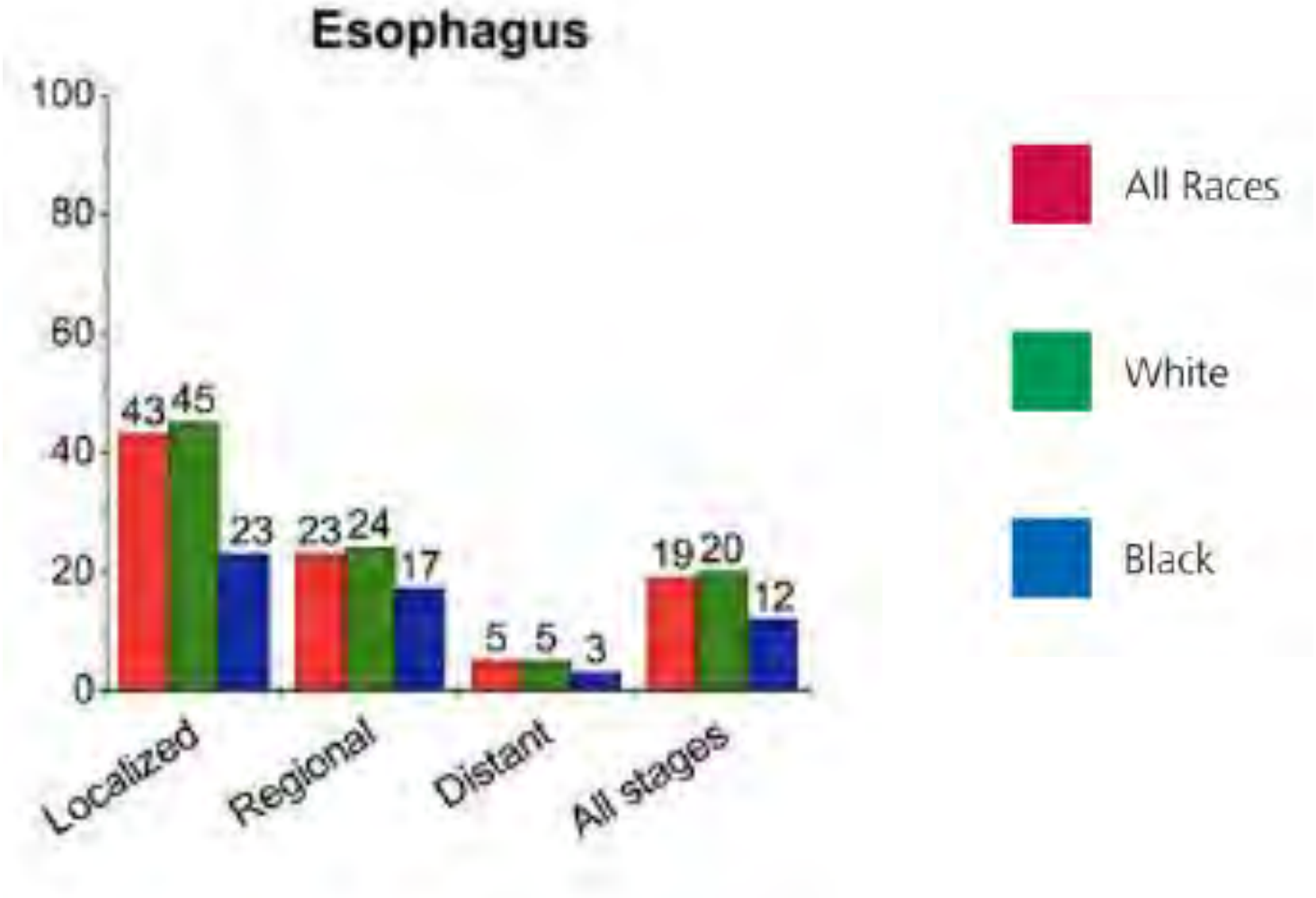
Siegel RL et al. Cancer Statistics, 2018. CA Cancer J Clin 2018; 68; 7-30

Trends in death rates for selected types of cancer in females in USA.



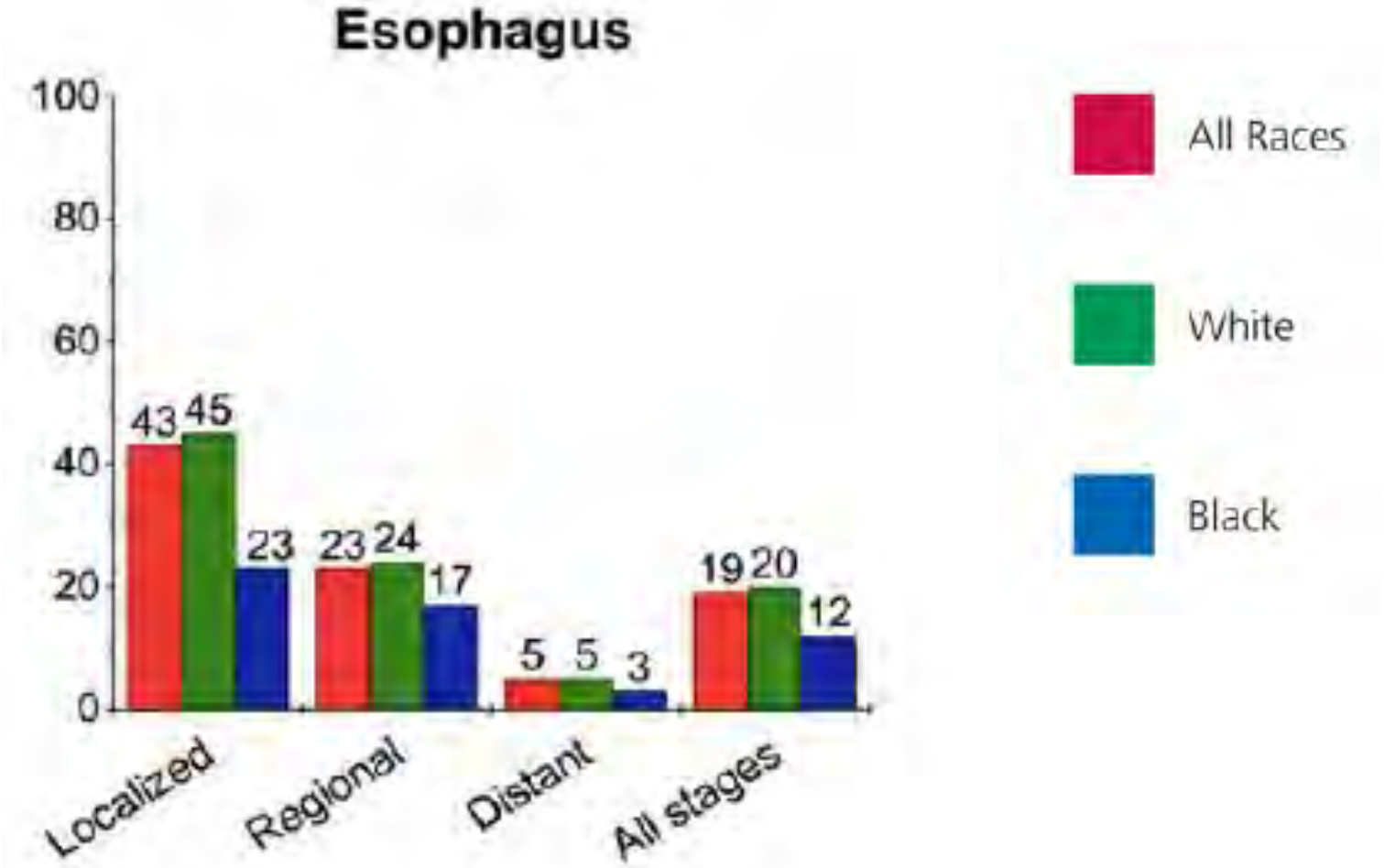
Siegel RL et al. Cancer Statistics, 2018. CA Cancer J Clin 2018; 68; 7-30.

Stage distribution of esophageal cancer from 2007-2013 In USA by race.

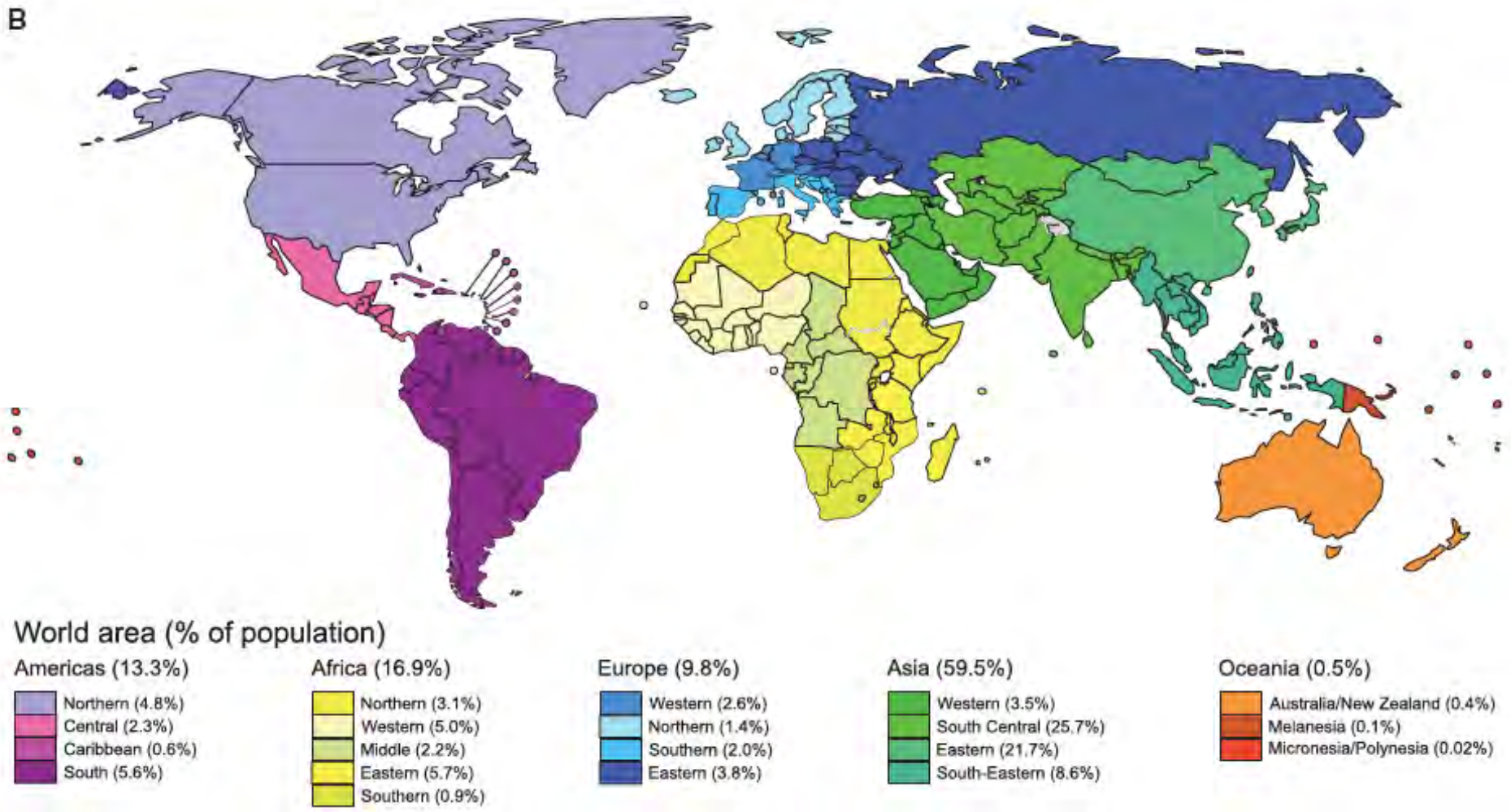


Siegel RL et al. Cancer Statistics, 2018. CA Cancer J Clin 2018; 68; 7-30

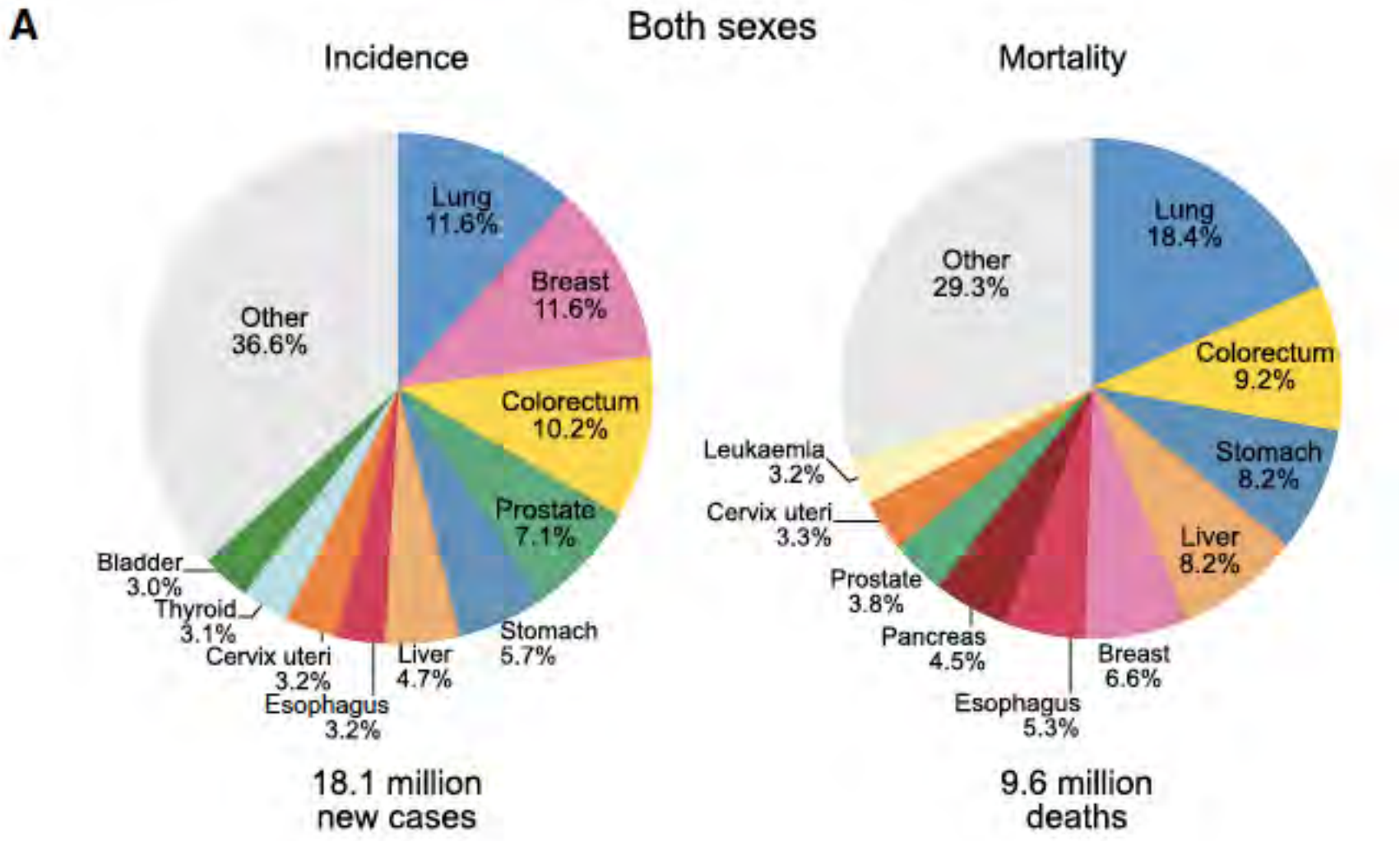
5 Year relative survival of esophageal cancer by race and stage at diagnosis from 2007-2013 In USA.



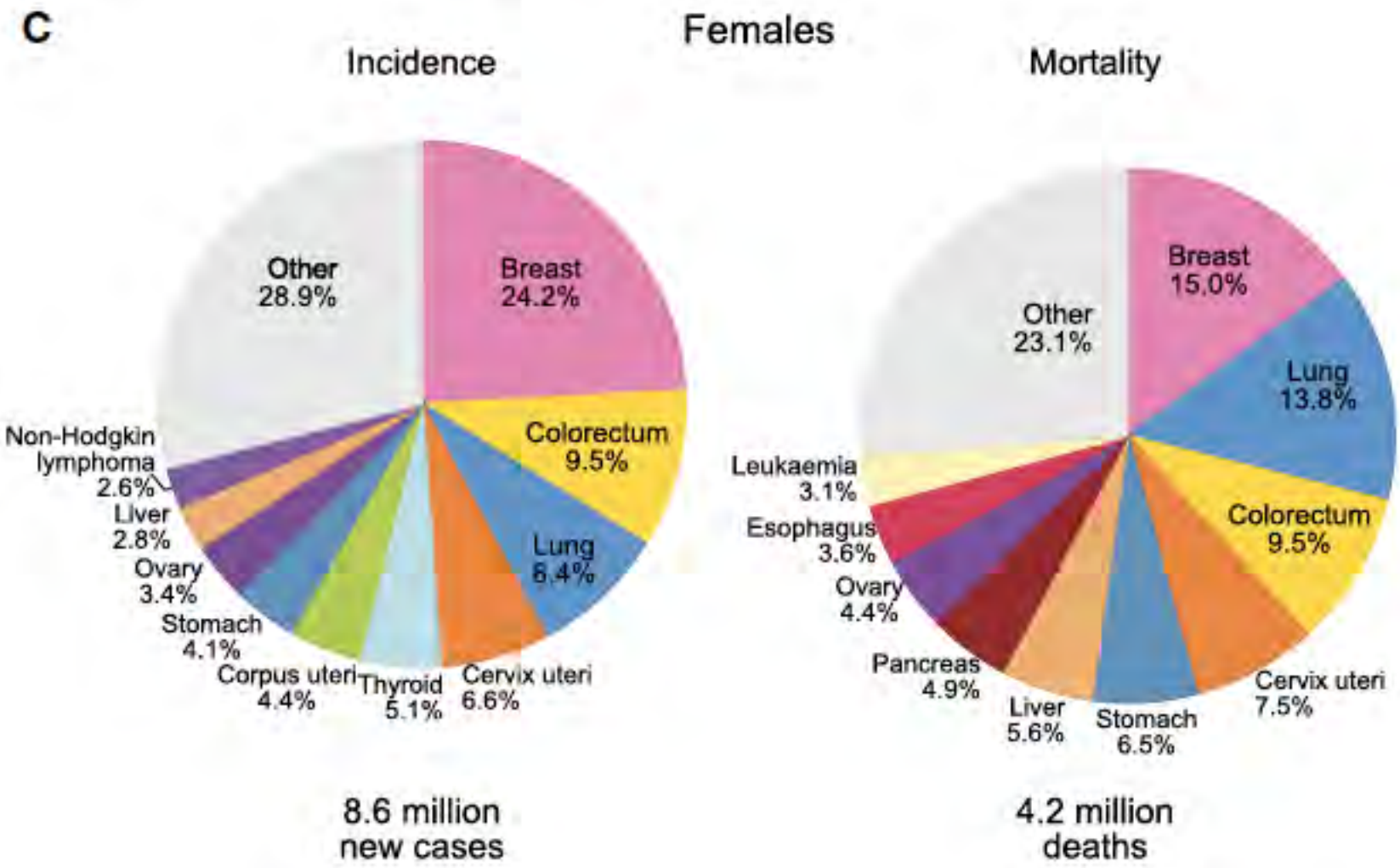
Siegel RL et al. Cancer Statistics, 2018. CA Cancer J Clin 2018; 68; 7-30



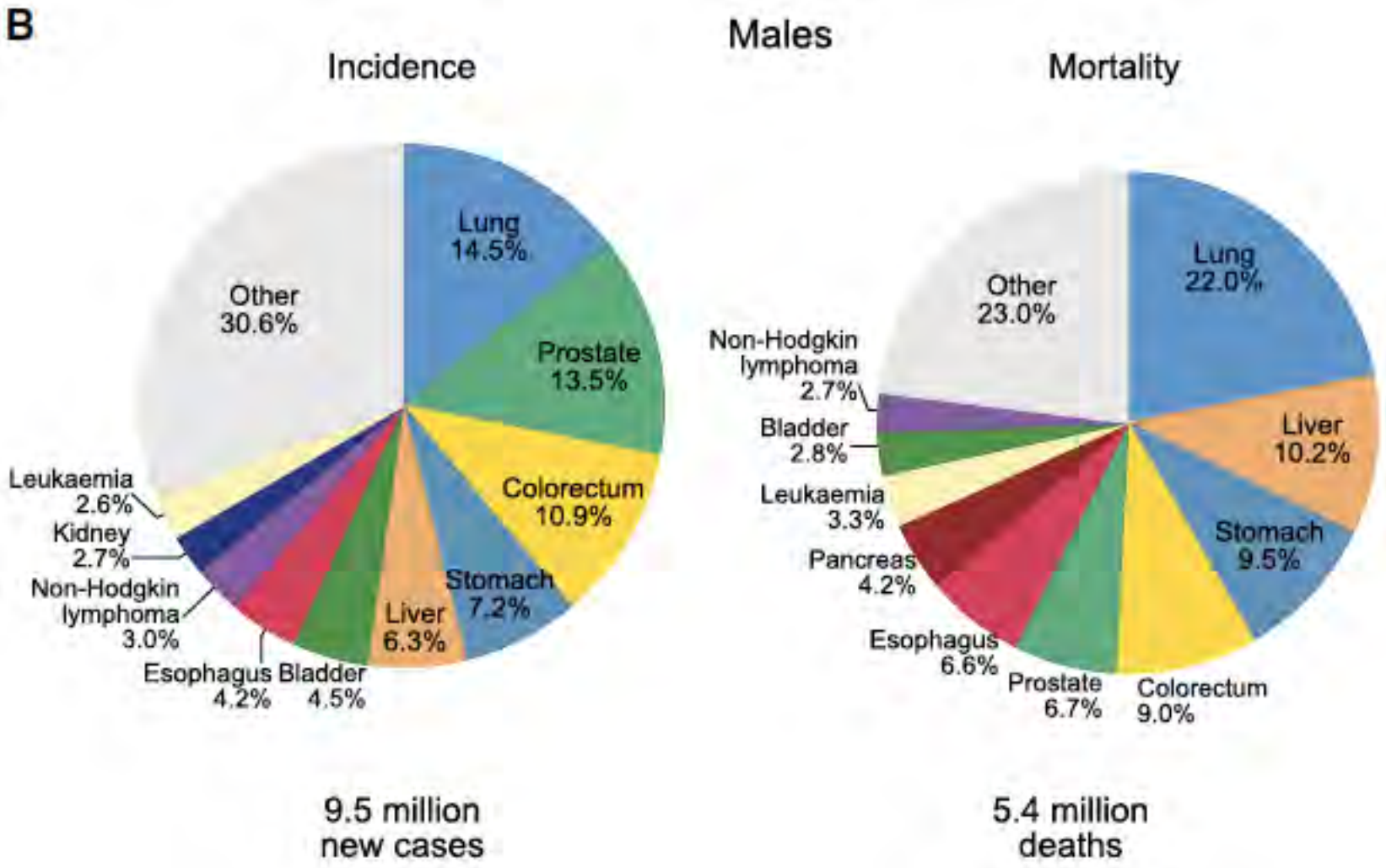
Bray F et al. Global Cancer Statistics, 2018. CA Cancer J Clin 2018; 68; on line.



Bray F et al. Global Cancer Statistics, 2018. CA Cancer J Clin 2018; 68; on line.

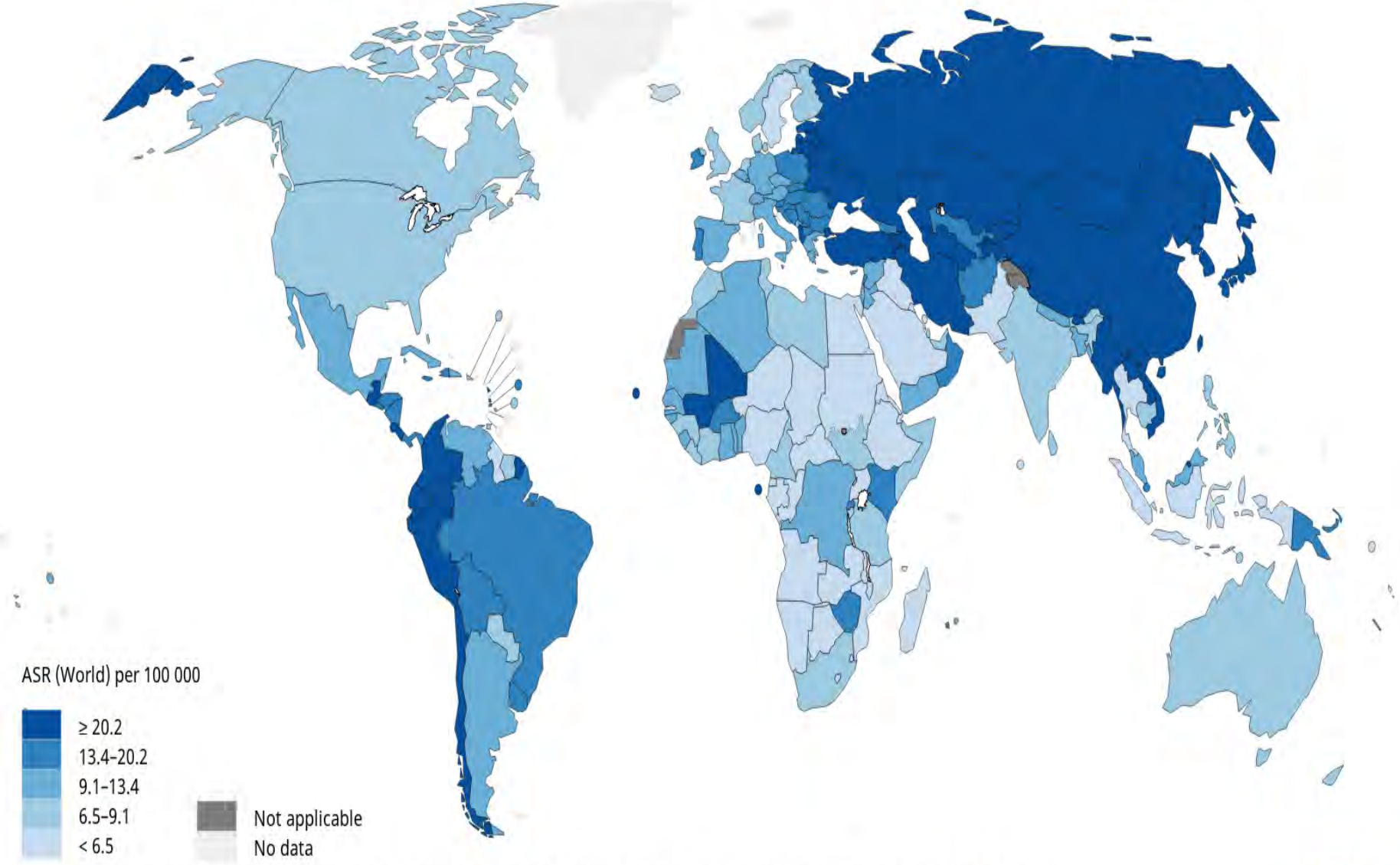


Bray F et al. Global Cancer Statistics, 2018. CA Cancer J Clin 2018; 68; on line.



Bray F et al. Global Cancer Statistics, 2018. CA Cancer J Clin 2018; 68; on line.

Estimated age-standardized incidence rates (World) in 2018, stomach, both sexes, ages 25-84



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Data source: GLOBOCAN 2018
Graph production: IARC (http://gco.iarc.fr/today)
World Health Organization

World Health Organization
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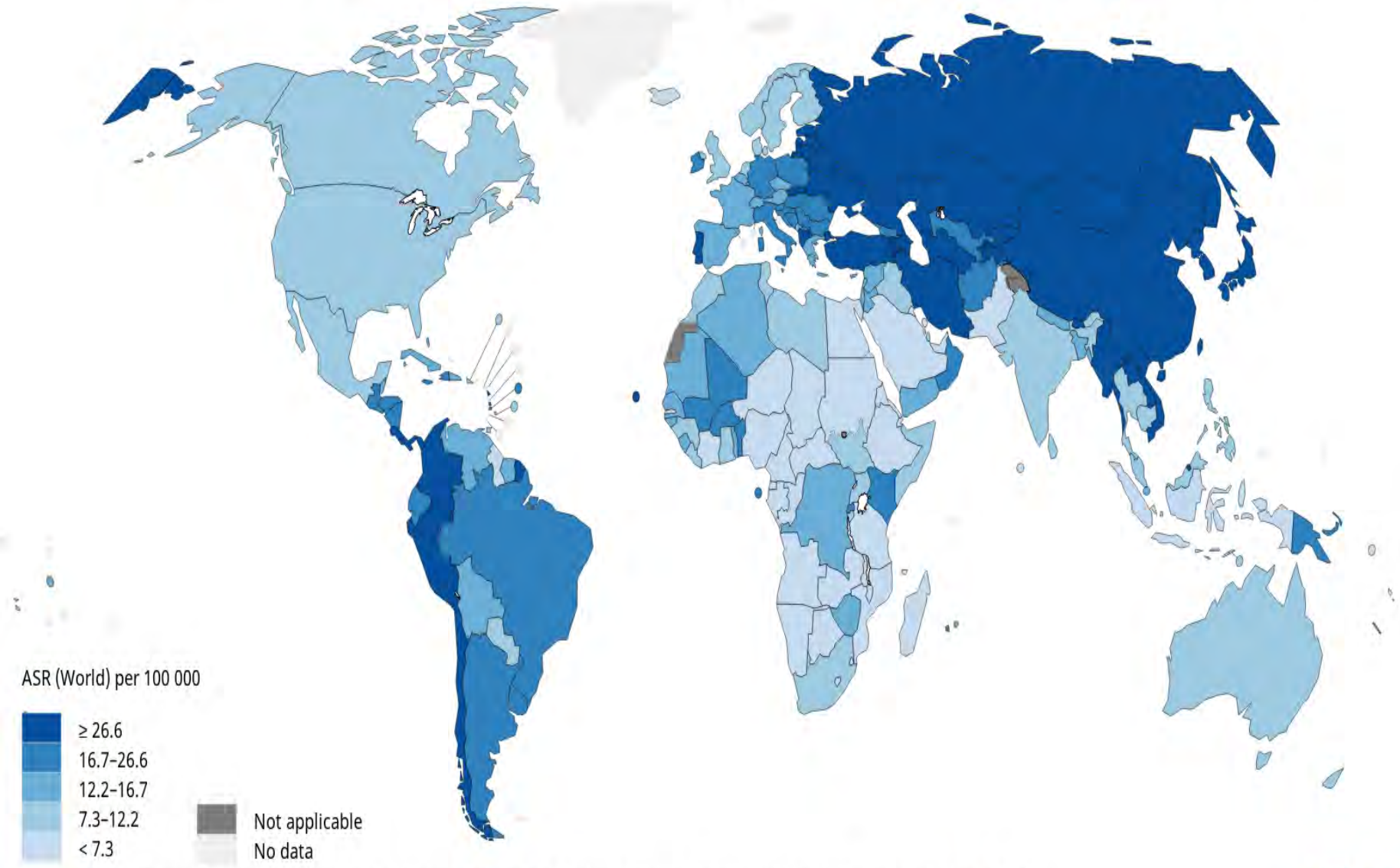
Estimated age-standardized incidence rates (World) in 2018, stomach, males, ages 25-84



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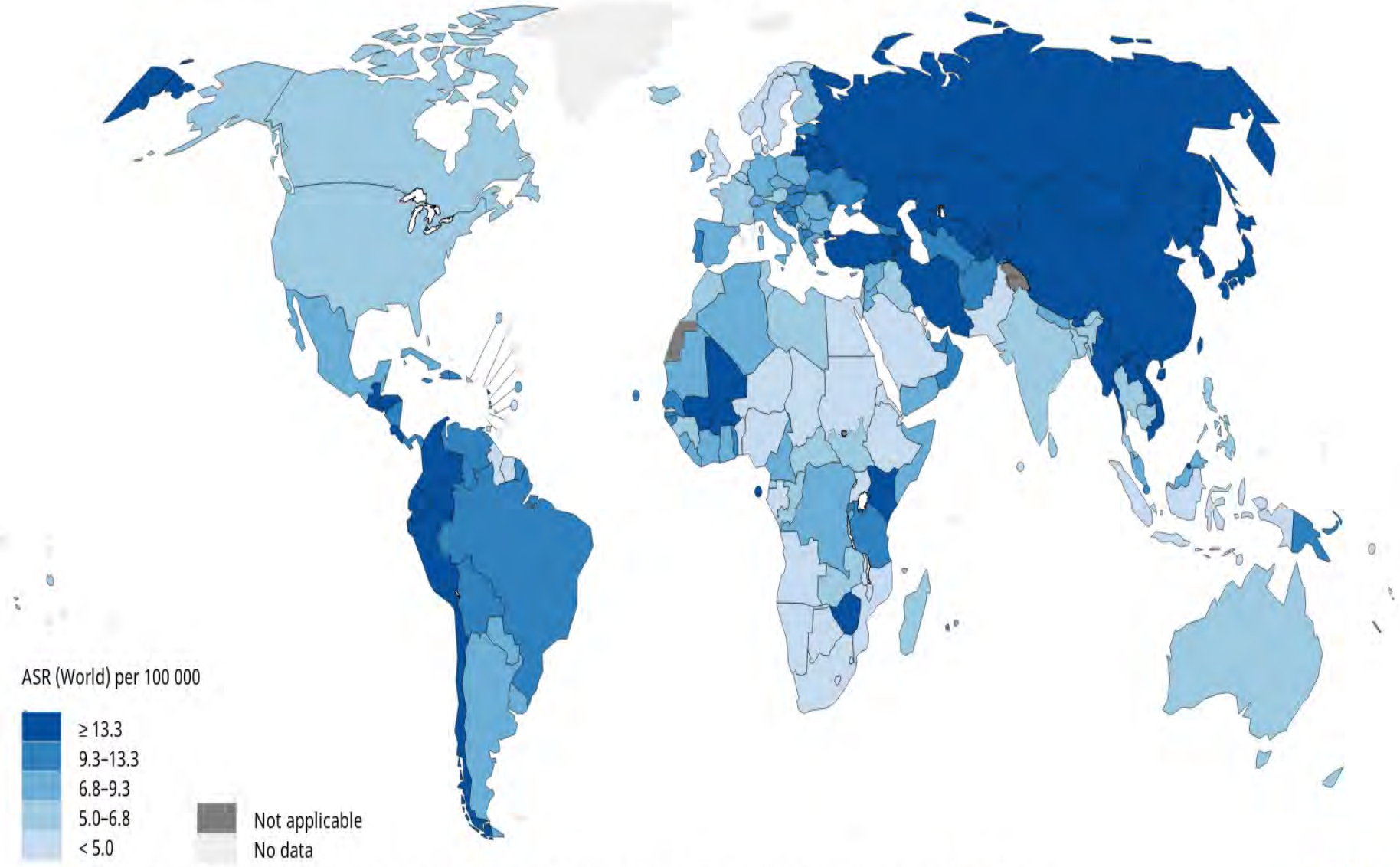
Estimated age-standardized incidence rates (World) in 2018, stomach, females, ages 25-84



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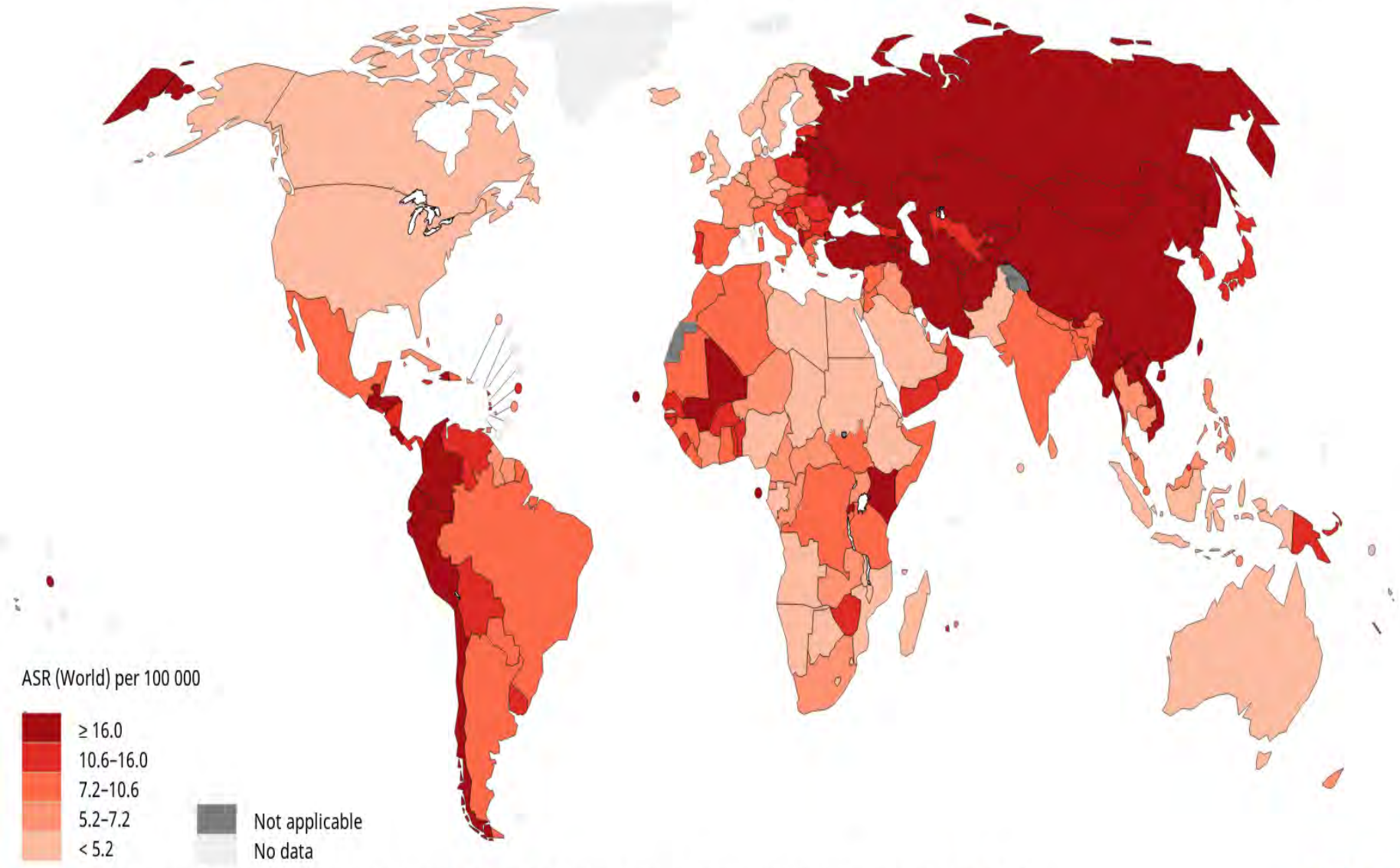
Estimated age-standardized mortality rates (World) in 2018, stomach, both sexes, ages 25-84



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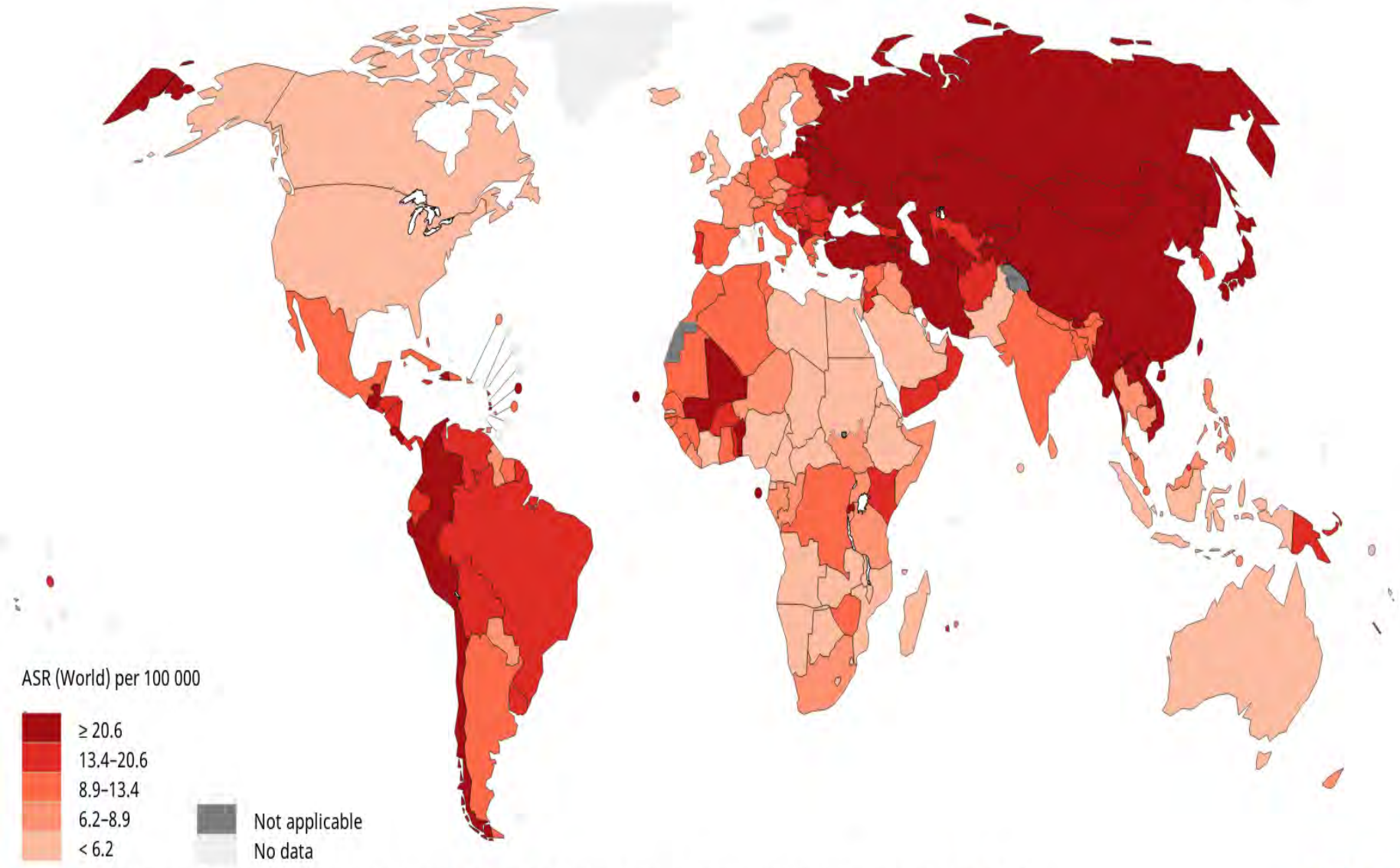
Estimated age-standardized mortality rates (World) in 2018, stomach, males, ages 25-84



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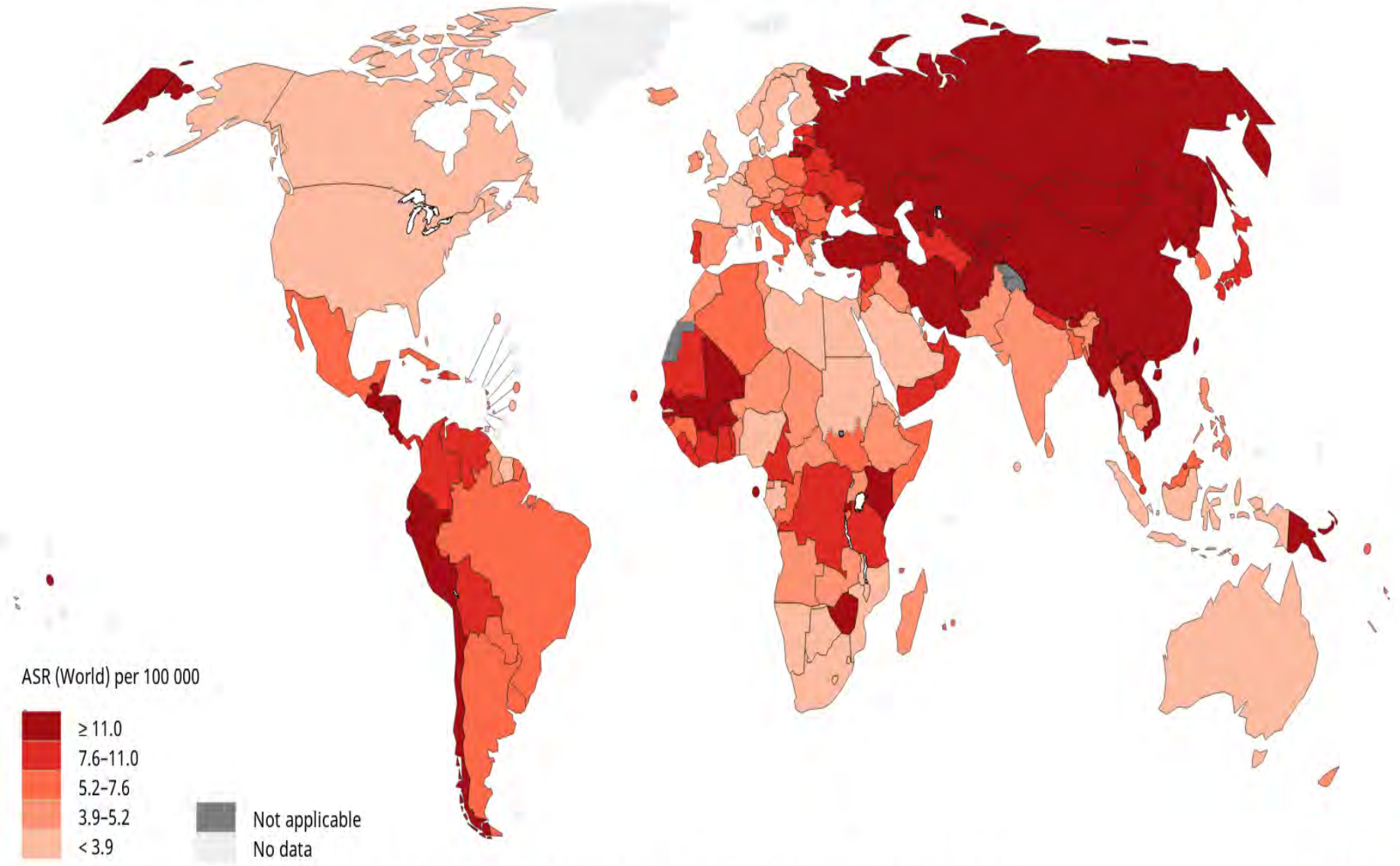
Estimated age-standardized mortality rates (World) in 2018, stomach, females, ages 25-84



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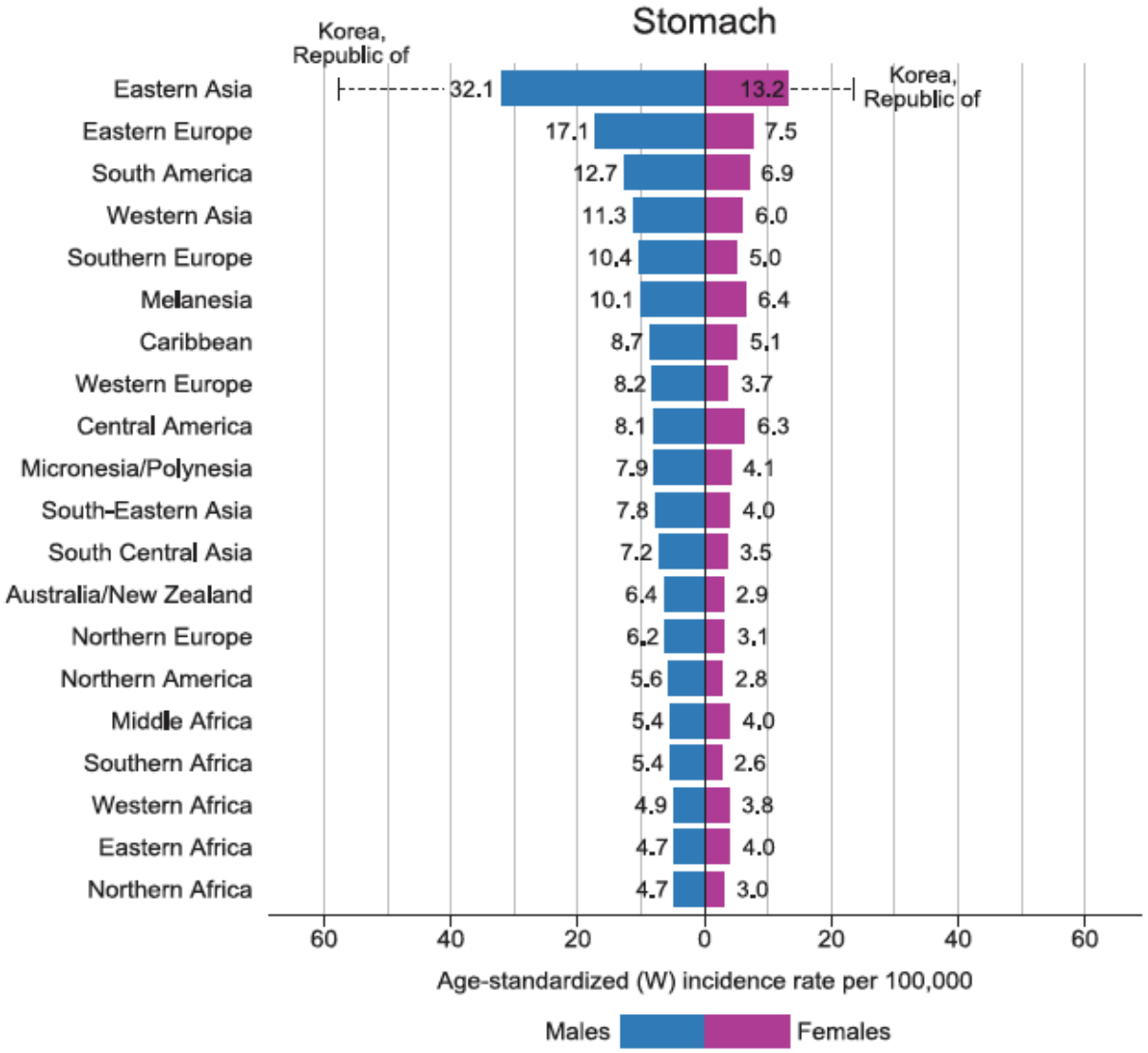
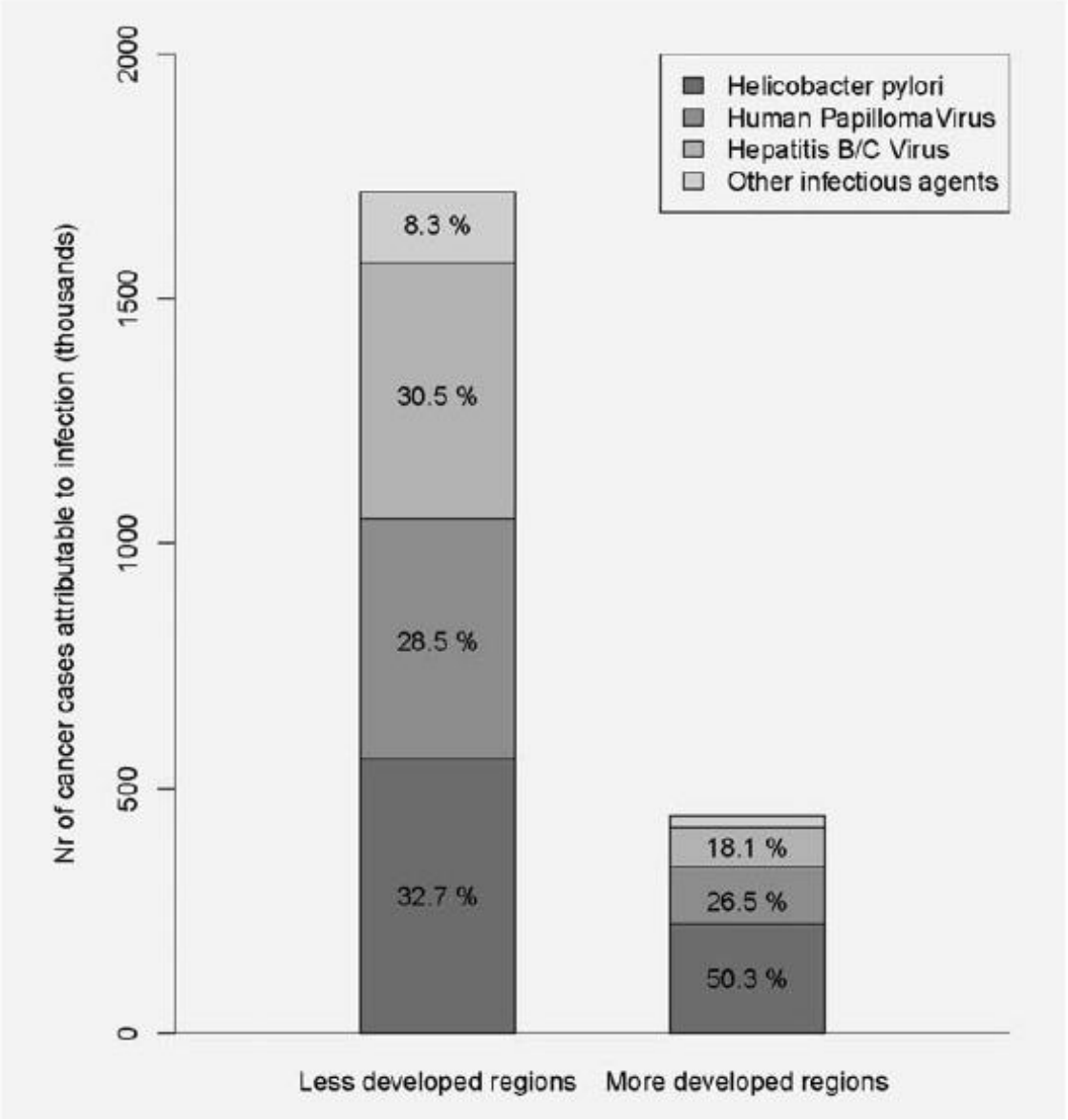
Gastric cancer incidence rate by sex and world area



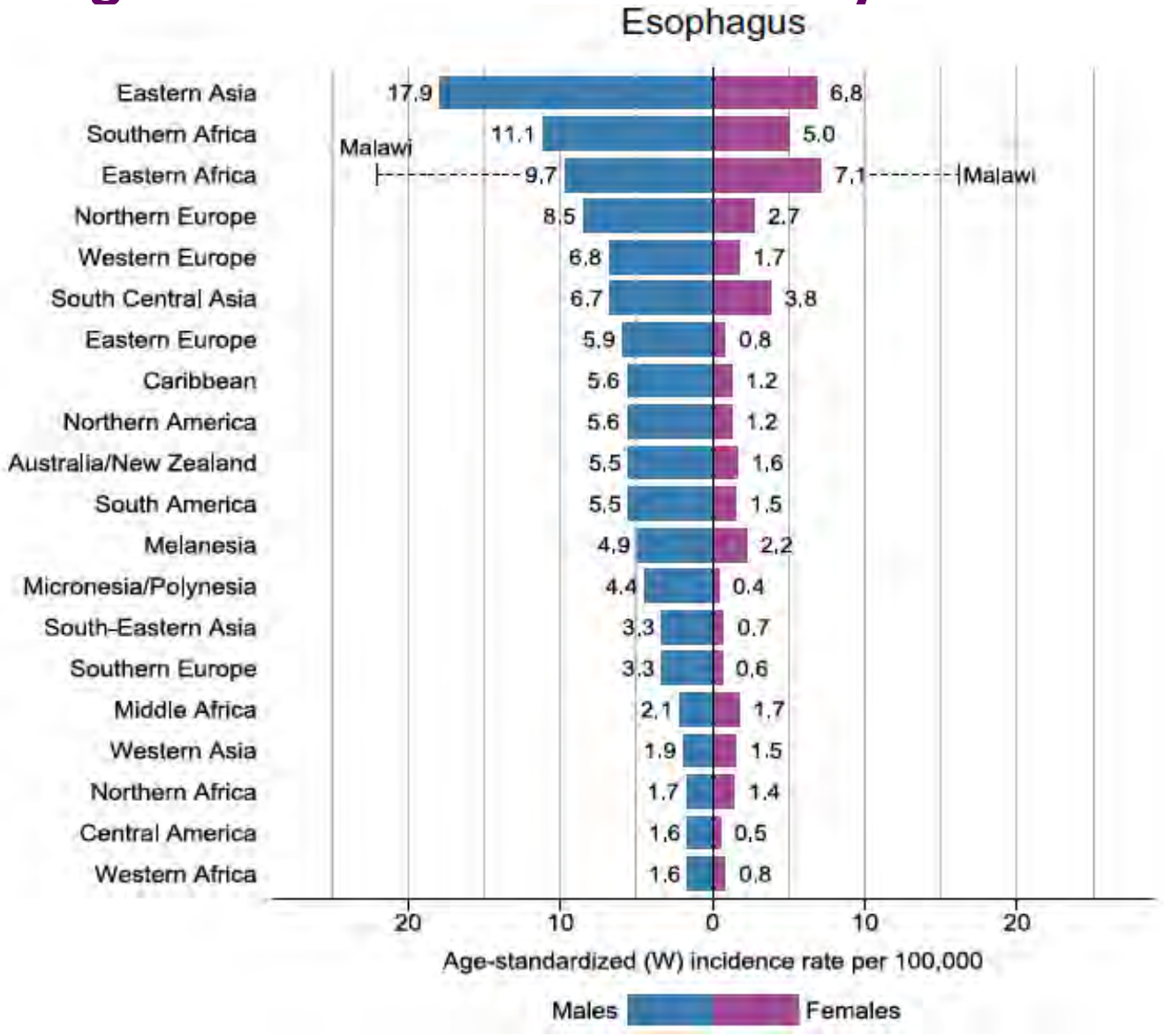
Bray F et al. Global Cancer Statistics, 2018. CA Cancer J Clin 2018; 68; on line.

New cancer cases attributable to infection in 2008



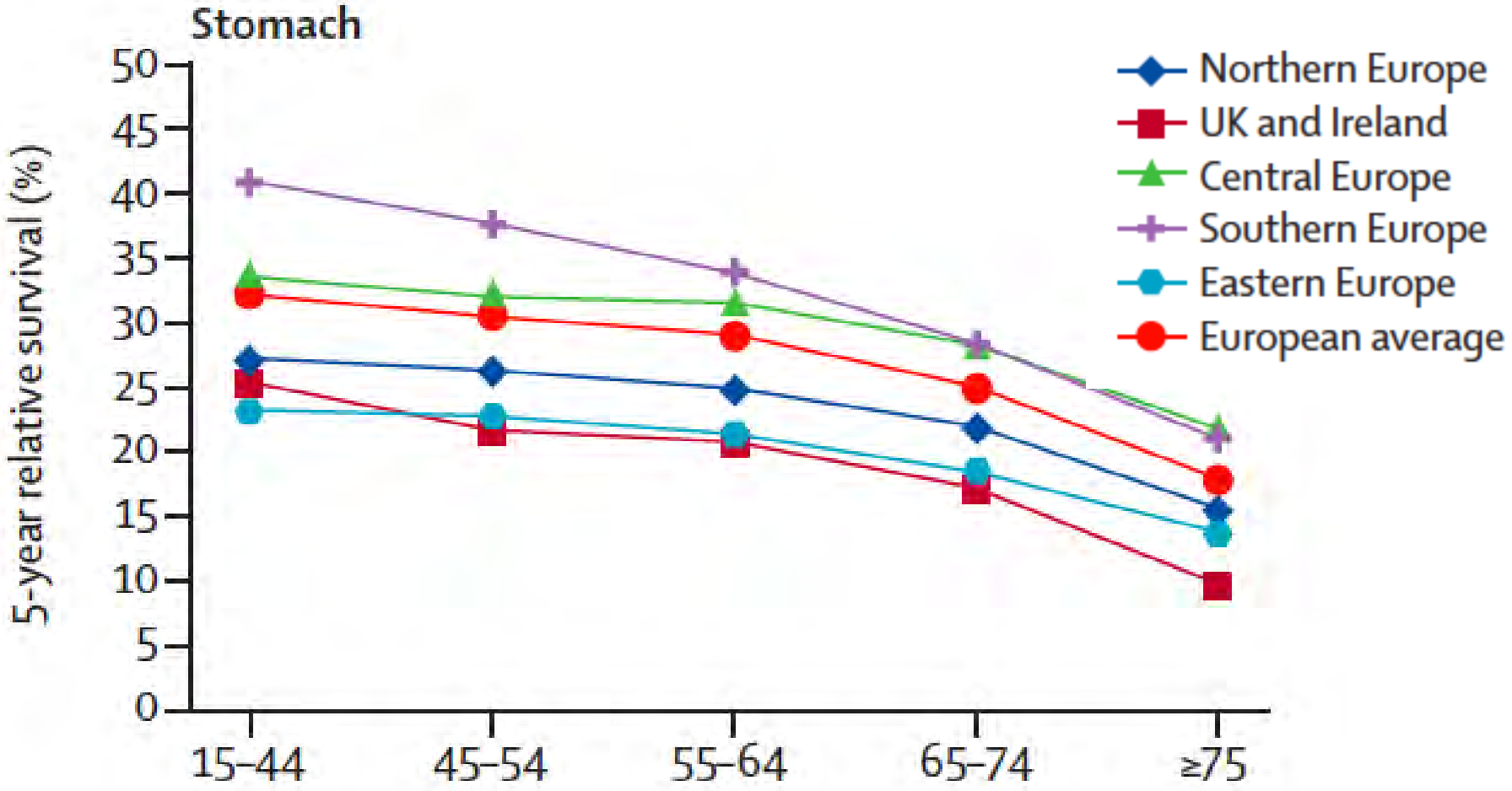
Plummer M, et al. Int J Cancer 2015; 136:487-490

Esophageal cancer incidence rate by sex and world area



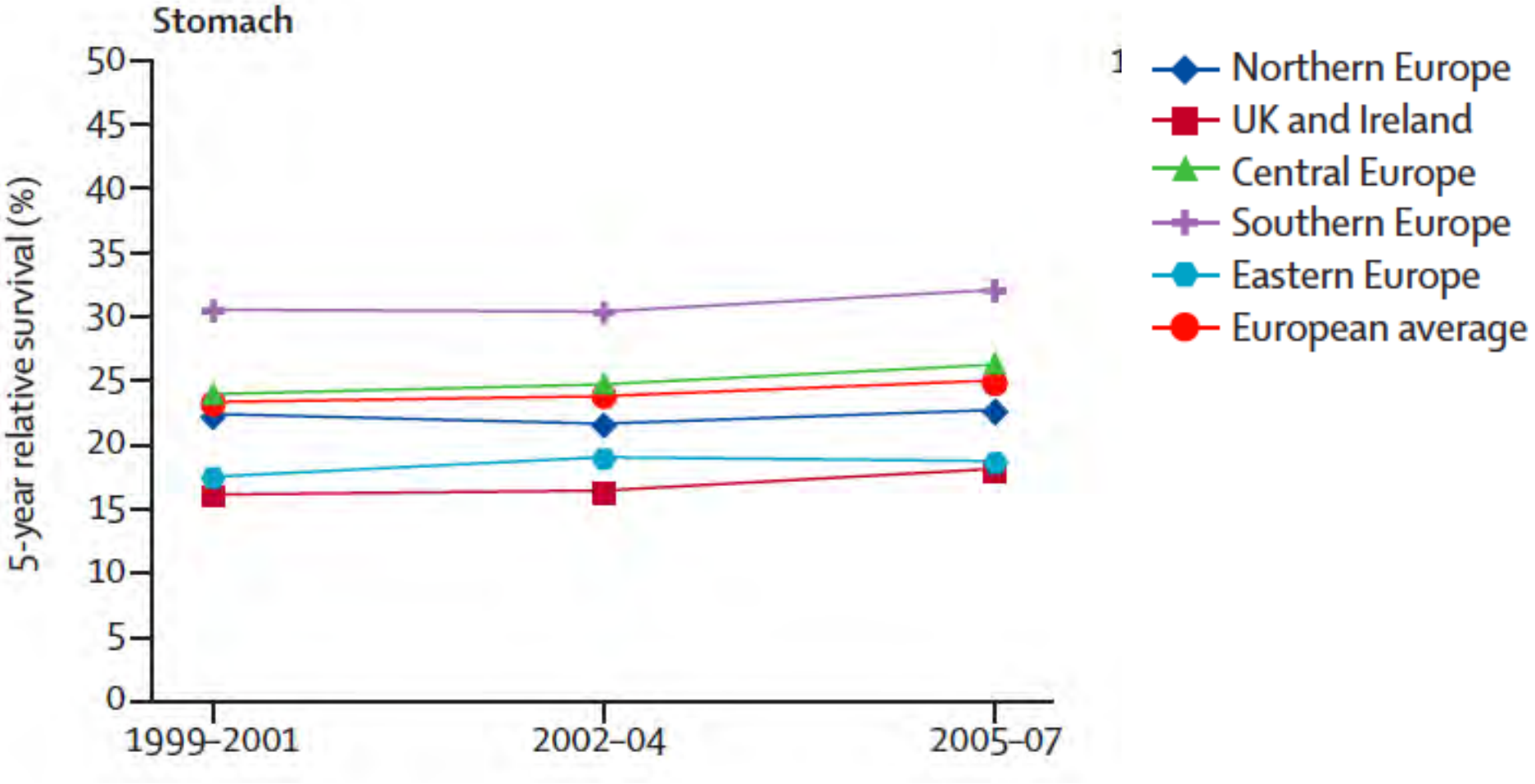
Bray F et al. Global Cancer Statistics, 2018. CA Cancer J Clin 2018; 68; on line.

Age-specific 5-year relative survival gastric cancer diagnosed in 2000-2007. The EUROCARE-5



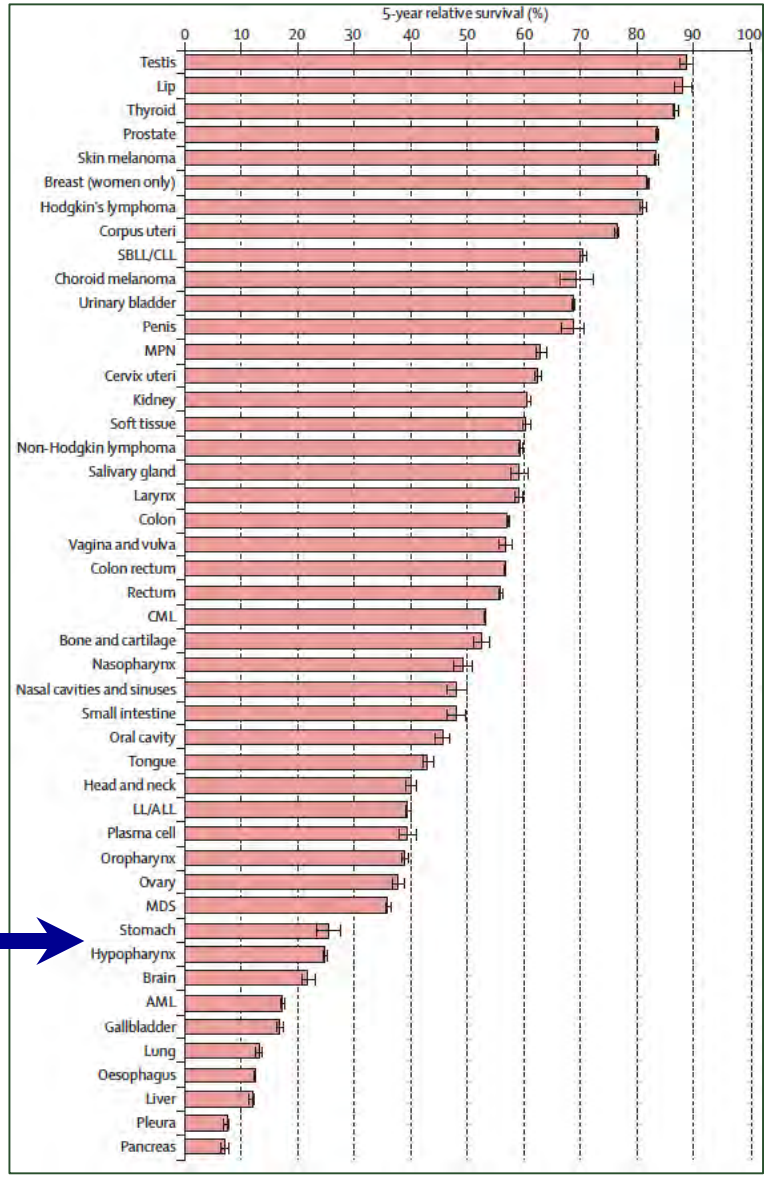
De Angelis R et al. Lancet Oncol 2014; 15:23-34.

Age-standardized 5-year relative survival for gastric cancer followed up in 1999-2007. The EUROCARE-5



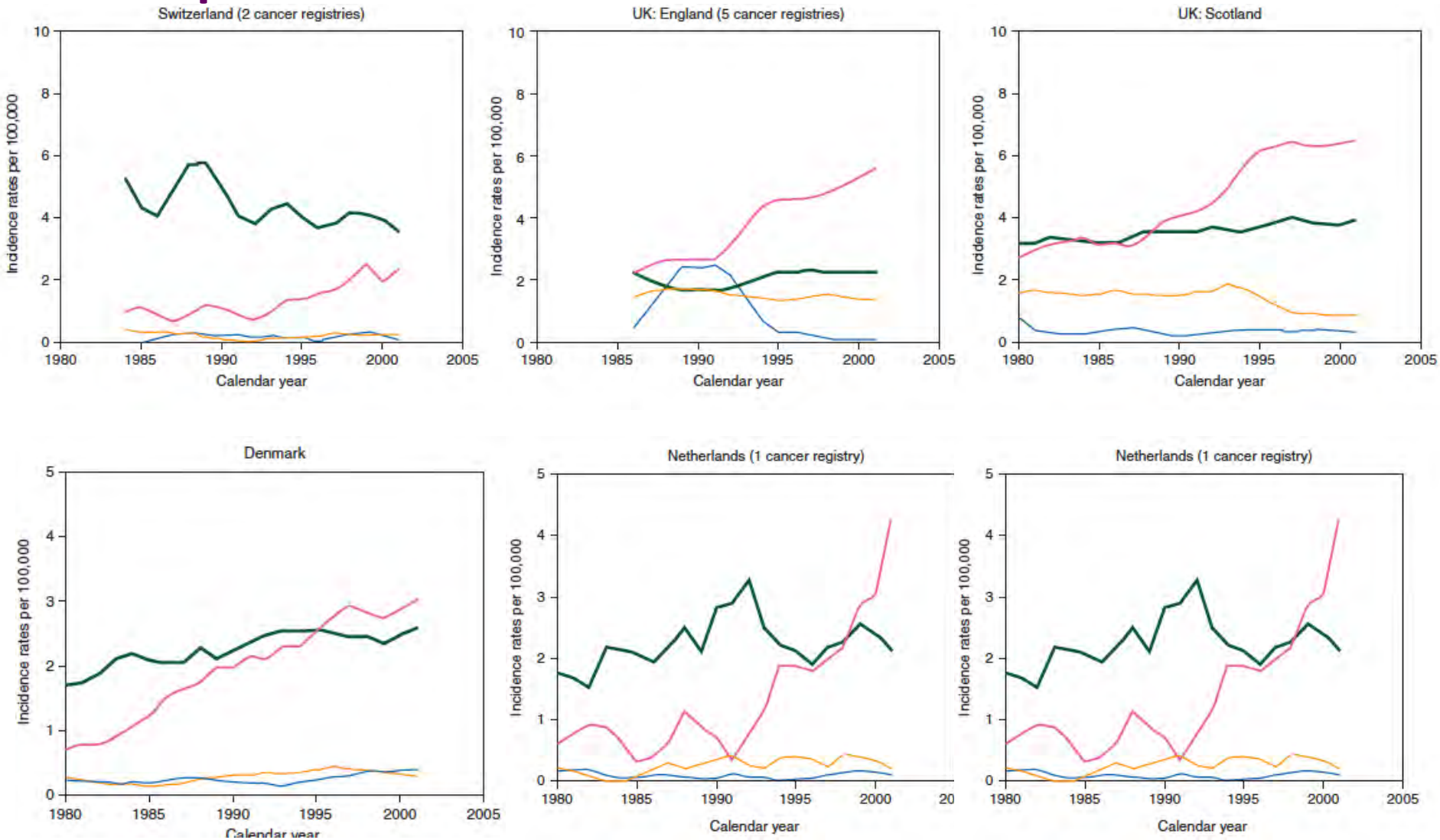
De Angelis R et al. Lancet Oncol 2014; 15:23-34.

European mean age-standardized 5-year relative survival for adult cancer patients diagnosed in 2000-2007. The EUROCARE-5



De Angelis R et al. Lancet Oncol 2014; 15:23-34.

Trends in incidence rate in men for esophageal cancer in Europe.



Castro C et al. Ann Oncol 2014; 25; 283-290.

Gastro-esophageal cancer and Body Mass index

Table 2. Summary RRs of EGCA and BMI between 25 and 30, and BMI over 30 kg/m^2, in strata of selected covariates. Summary RRs of EGCA for the increment of 5 kg/m^2 of BMI

	BMI 25–30		BMI 30+		Increment of 5 kg/m^2 of BMI	
	n	RR (95% CI)	*n*	RR (95% CI)	*N*	RR (95% CI)
Total	20	1.71 (1.50–1.96)	12	2.34 (1.95–2.81)	22	1.11 (1.09–1.14)
Sex						
Men	10	2.13 (1.63–2.78)	5	2.17 (1.56–3.01)	10	1.13 (1.09–1.17)
Women	8	1.59 (1.20–2.09)	5	2.28 (1.64–3.18)	9	1.08 (0.97–1.20)
P heterogeneity[a]		0.42		0.65		
Geographic area						
North America	6	1.51 (1.34–1.70)	3	2.12 (1.62–2.77)	6	1.09 (1.06–1.16)
Europe[b]	12	1.74 (1.43–2.11)	8	2.42 (1.89–3.09)	13	1.12 (1.09–1.15)
Asia	2	2.44 (1.01–5.88)	1	2.10 (0.84–5.23)	3	1.08 (0.98–1.20)
P heterogeneity[a]		0.26		0.68		
Subsite						
EA	17	1.87 (1.61–2.17)	10	2.73 (2.16–3.46)	18	1.13 (1.11–1.16)
GCA	13	1.40 (1.18–1.66)	9	1.93 (1.52–2.45)	14	1.07 (1.04–1.10)
P heterogeneity[a]		*<0.01*		*0.01*		

BMI, body mass index; CI, confidence interval; EA, esophageal adenocarcinoma; EGCA, esophageal and gastic cardia adenocarcinoma; GCA, gastric cardia adenocarcinoma; RR, relative risk.

[a]*P* for heterogeneity between strata.

[b]Including Australia.

Turati F et al. Ann Oncol 2013; 24; 609-617.

FACTS ON GASTRIC CANCER EPIDEMIOLOGY-1

- Incidence of gastric cancer is decreasing in developed countries
- Incidence and mortality remains high in developing countries
- However it is still a severe global health issue
- Males:Females 2:1
- Wide variation in incidence accross countries
- Highest incidence in East Asia (Korea, Japan, Mongolia and China), Central and Eastern Europe and South America
- Lowest incicence in North America, Nothern Europe and Africa

FACTS ON GASTRIC CANCER EPIDEMIOLOGY-2

- Regional variations reflect differences in dietary patterns, food storage and availability of fresh products
- Prevalence of Helicobacter pylori infection
- Chronic infection of H. Pylorii accounts for 90% of cases of non cardia gastric cancer
- Declining incidence may be due to:
  - Increase availability of fresh fruits and vegetables
  - Decreased reliance in salt preserved food
  - Decreased incidence of H. pylori infection
  - Decreased smoking in western countries

Ford AC, et al. Br Med J 2014; 348; g3174.

FACTS ON GASTRIC CANCER EPIDEMIOLOGY-3

- Increased Incidence and Mortality of upper third gastric cancer plus junctional and lower third adenocarcinoma of the esophagus
- In USA and Europe and in countries where the incidence of non cardia gastric cance is low
- Predominant in males with high BMI and tobacco users