

LUNG CANCER IN EGYPT AND NEIGHBOURING ARAB COUNTRIES: Magnitude of the Problem

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Outline

- Statistics for Lung Cancer: World, North America, Europe, Asia, Africa, Middle East, Egypt and National Cancer Institute (NCI), Egypt
- Epidemiology of Lung Cancer
- Risk Factor of Lung Cancer

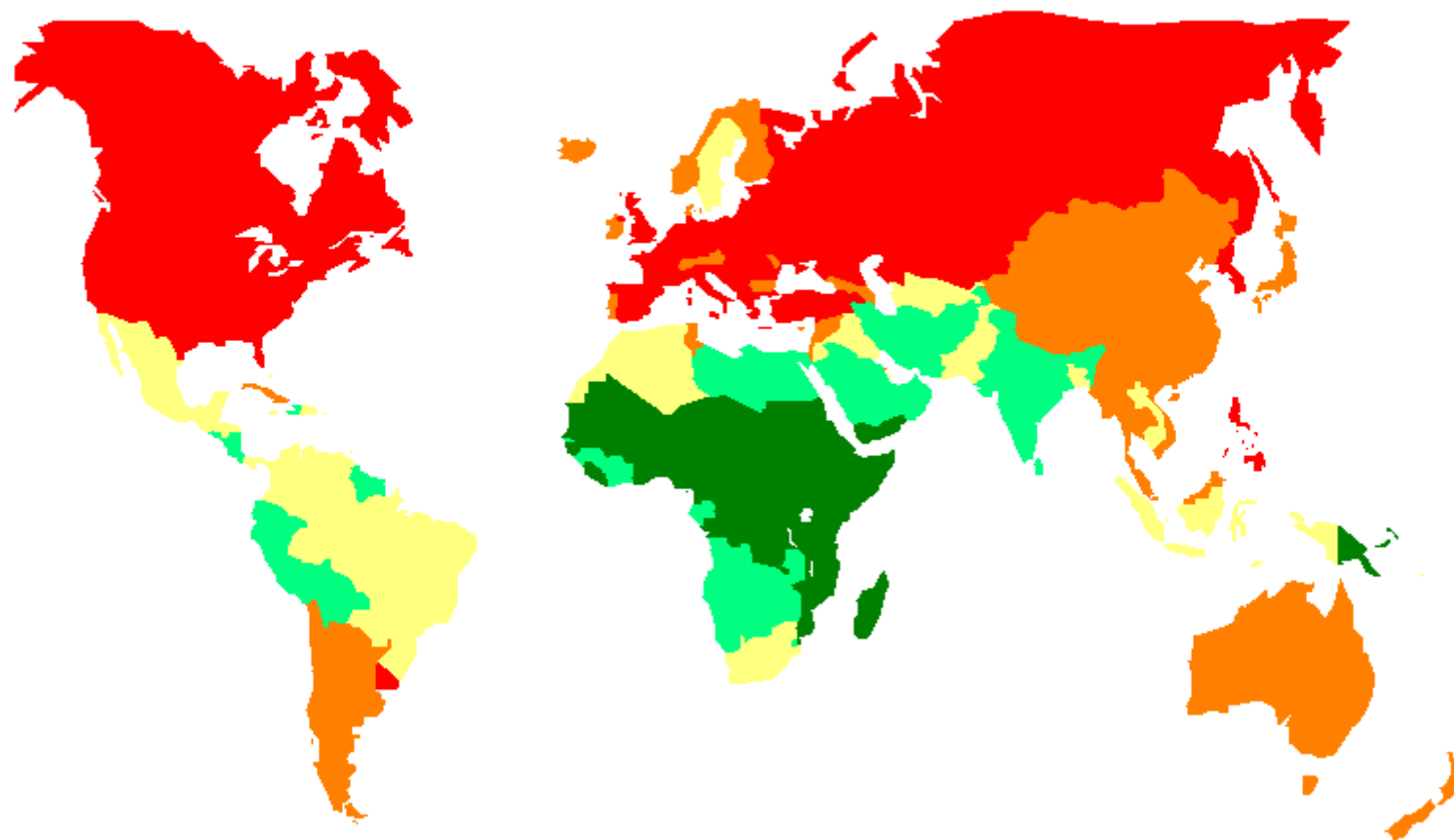
Source of Data

- National Population-based Cancer Registries:
 - Gulf Center for Cancer Registration, 2000
 - Qatar, Oman, Bahrain, and UAE
 - Saudi Arabia, 1999-2000
 - Kuwait, 2001
 - Jordan, 1999
 - Lebanon, Cancer Program-Tumor Registry, 1998
- Regional Population-based Cancer Registries:
 - Egypt: Gharbiah 1999, NCI 2003
 - Algeria: Algiers, Constantine, Oran, & Setif, Globocan 2002
 - Tunisia: Tunis, Sousse, Sfax, Globocan 2002
- All others Globocan 2002, IARC

World

- Lung cancer was rare at the beginning of the century
- Now it is the most frequent cancer in the world
- Global incidence of lung cancer is increasing at 0.5% per year
- A major contribution to this trend comes from the East European and developing countries
- Cancer will remain a major cause of worldwide cancer deaths in the 21th century

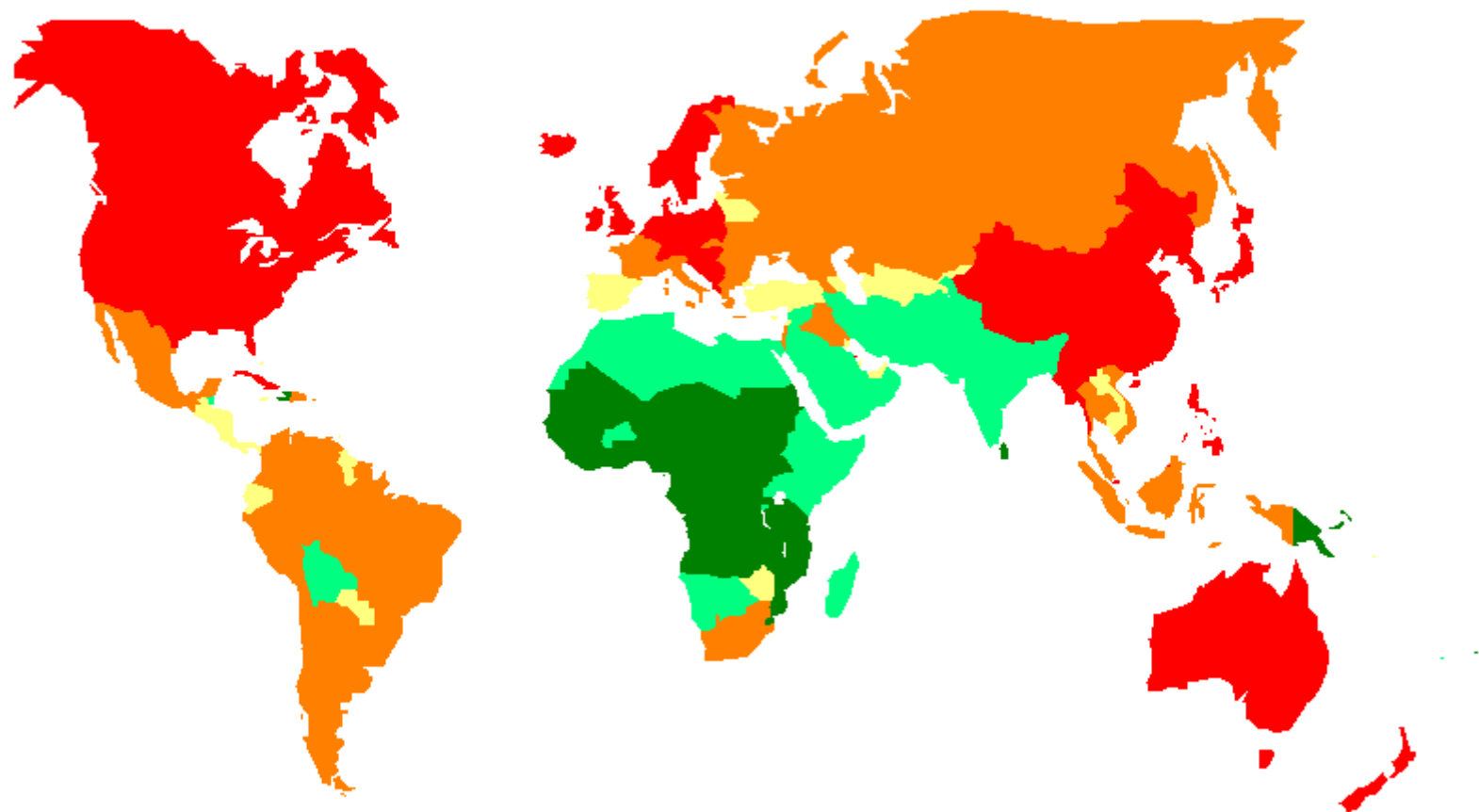
Lung, Males
Age-Standardized incidence rate per 100,000



■ < 4.7 ■ < 13.7 ■ < 25.0 ■ < 46.4 ■ < 94.6

GLOBALCAN 2002, IARC

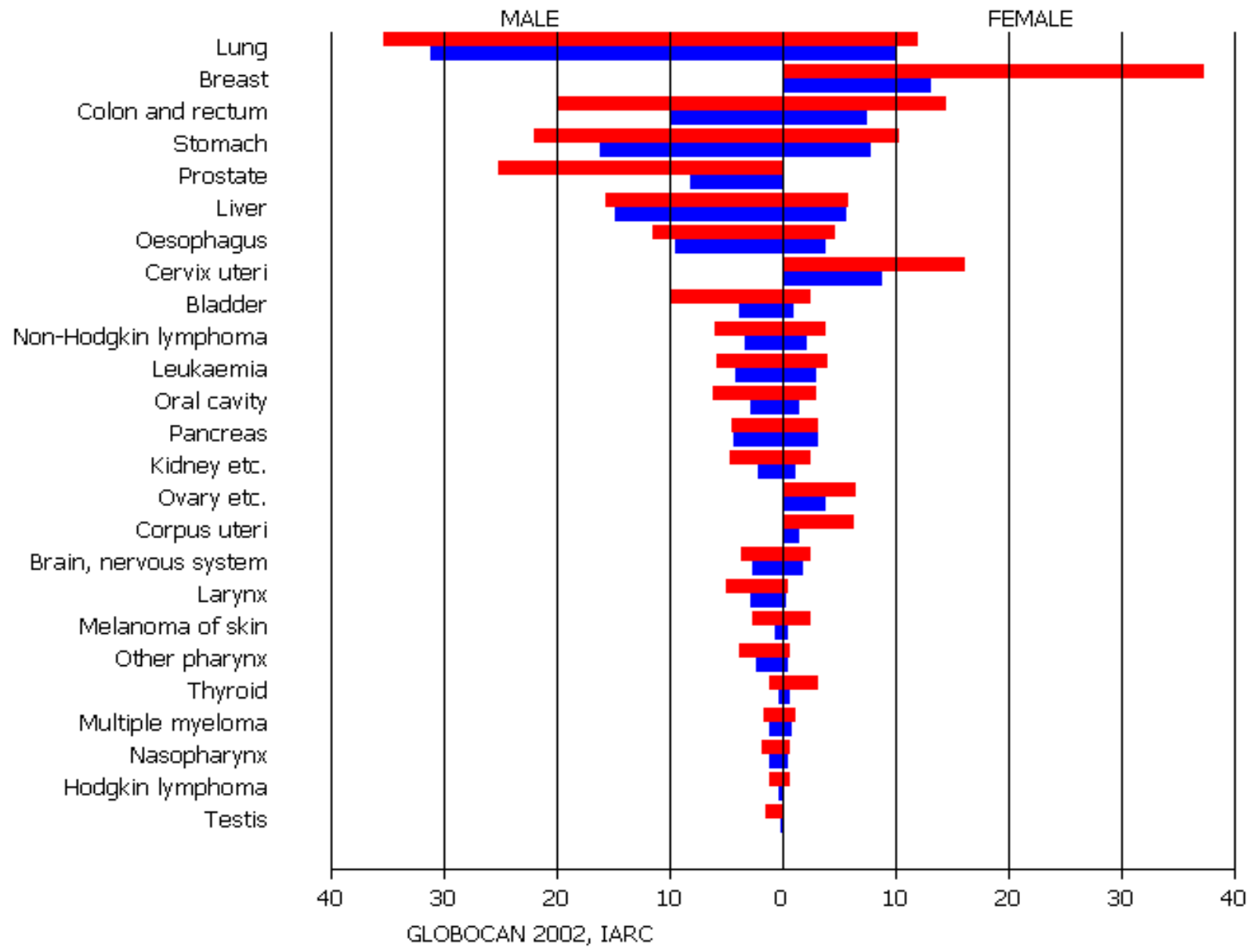
Lung, Females
Age-Standardized incidence rate per 100,000



■ < 1.7 ■ < 3.7 ■ < 6.5 ■ < 11.5 ■ < 36.1

GLOBALCAN 2002, IARC

World Age-Standardized rate per 100,000 (all ages)

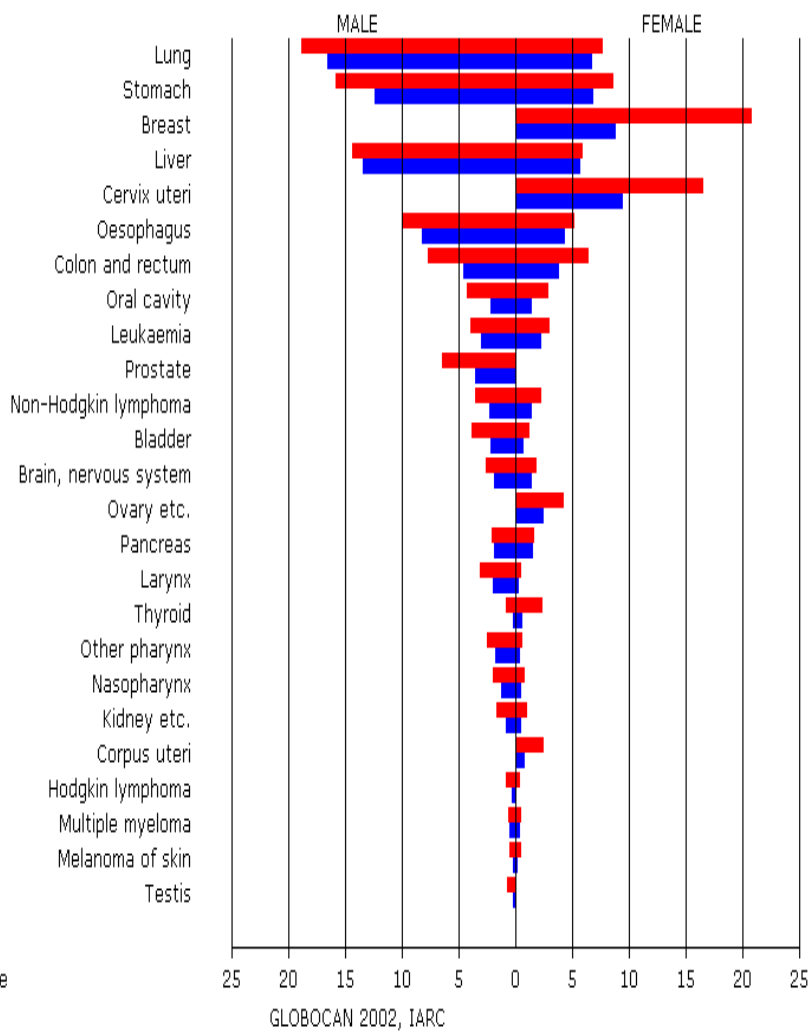


World Estimated New Cancer Cases, Deaths, Age-adjusted Incidence and Death Rates by Gender

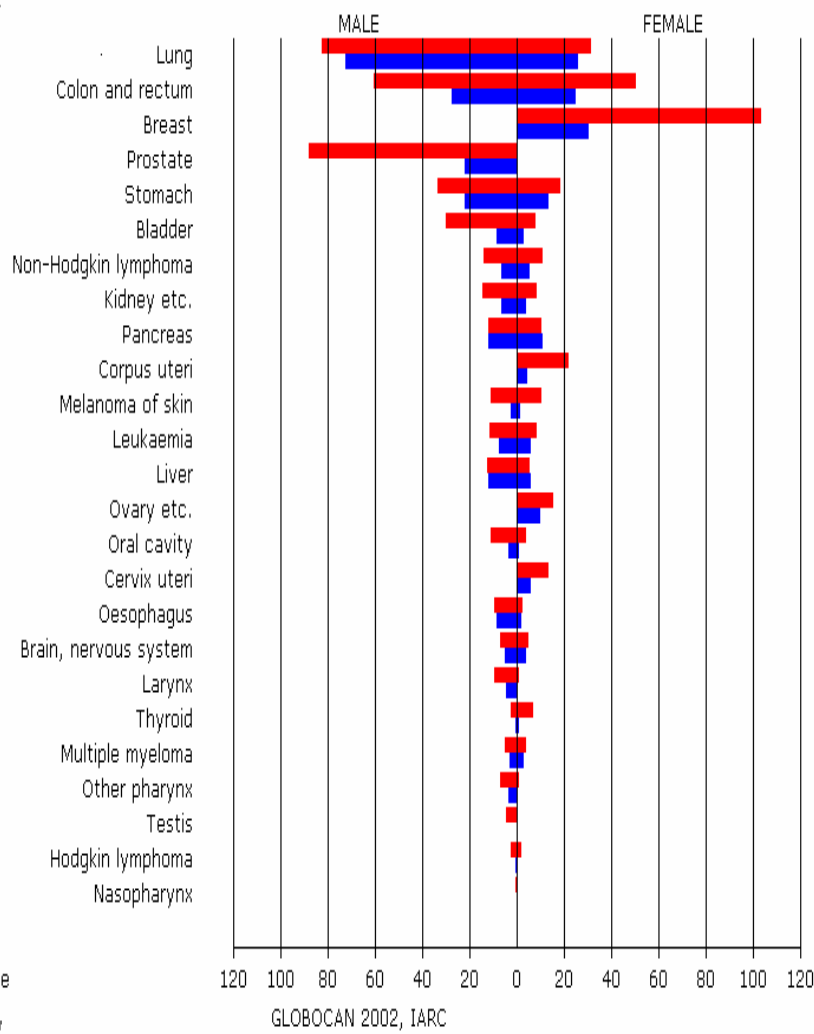
Gender	Number of new cases	Age-adjusted incidence rate	Number of deaths	Age-adjusted death rate
Men	965,241	35.5	848,132	31.2
Women	386,891	12.1	330,786	10.3

Rates/100,000

Less developed regions
Crude rate per 100,000 (all ages)



More developed regions
Crude rate per 100,000 (all ages)



World Estimated New Cancer Cases and Age-adjusted Incidence Rates, More and Less Developed Countries

	Males		Females	
	Number of new cases	Age-adjusted incidence rate	Number of new cases	Age-adjusted incidence rate
More developed	481,950	54.9	194,731	17.1
Less developed	481,029	25.9	191,192	9.4

Rates/100,000

Age-adjusted Incidence Rates, by World Regions



*Incidence per 100,000 population.

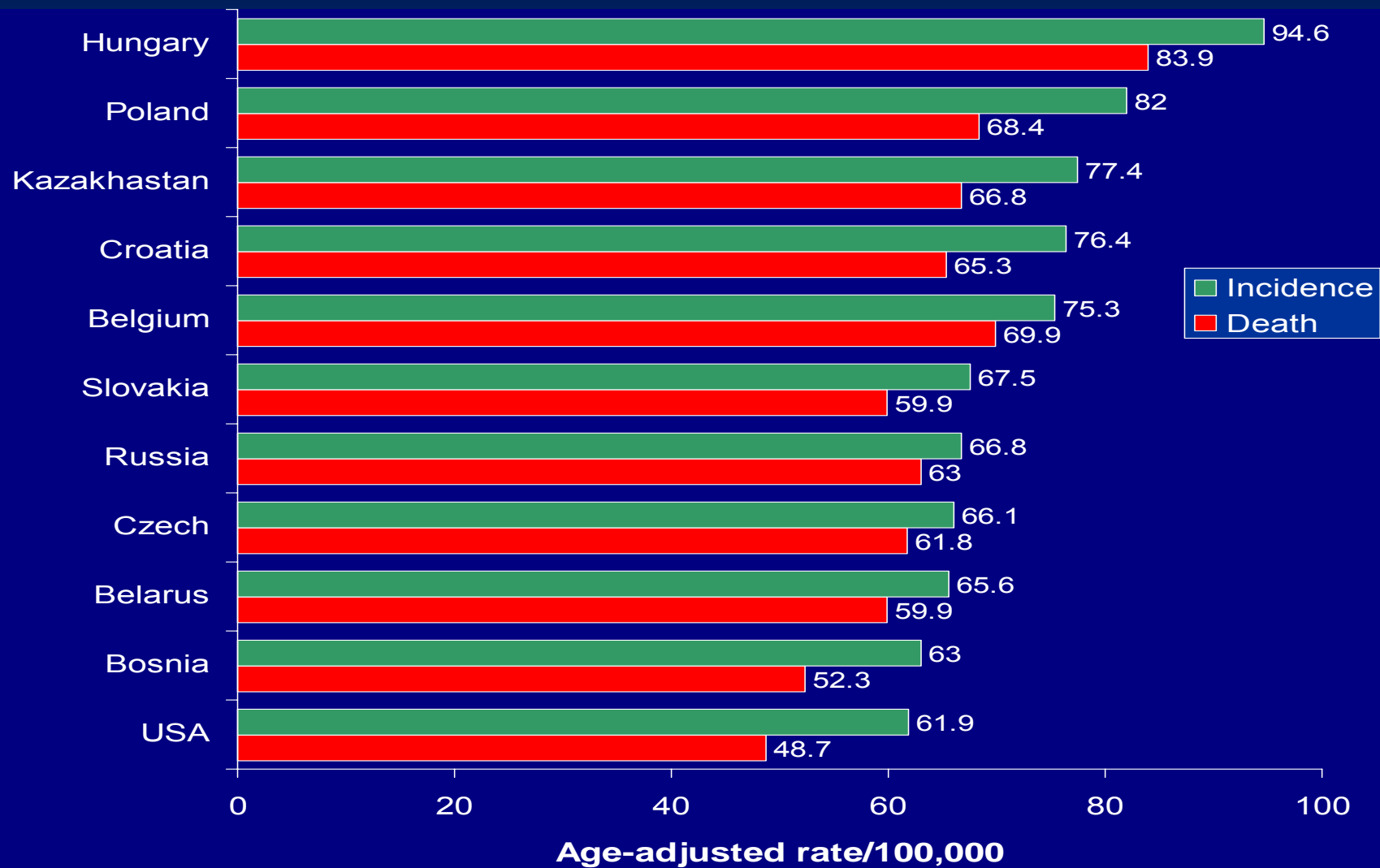
North America

- In 2005, an estimated 172,570 Americans will be diagnosed with lung cancer, and 163,510 will die from it
- It is the second most common cancer among both men and women after prostate cancer in men and breast cancer in women
- It is the leading cause cancer-related deaths, accounting for around 28% of all cancer deaths.
- It kills more people than breast, prostate, colon, and pancreas cancers combined.
- Nearly 60% of people diagnosed with lung cancer die within 2 years. This had not improved in 10 years.

Europe

- Considering both men and women together, cancer of the lung is the commonest cancer in Europe.
- There is a wide variation in incidence and death rates in Europe.
- Central and Eastern Europe have the highest incidence and death rates, 65.7/100,000 and 59.7/100,000.
- For men, incidence rates range from a low of 21.1/100,000 in Sweden to a high of 94.6/100,000 in Hungary. Death rates range from 22.6/100,000 to 83.9/100,000

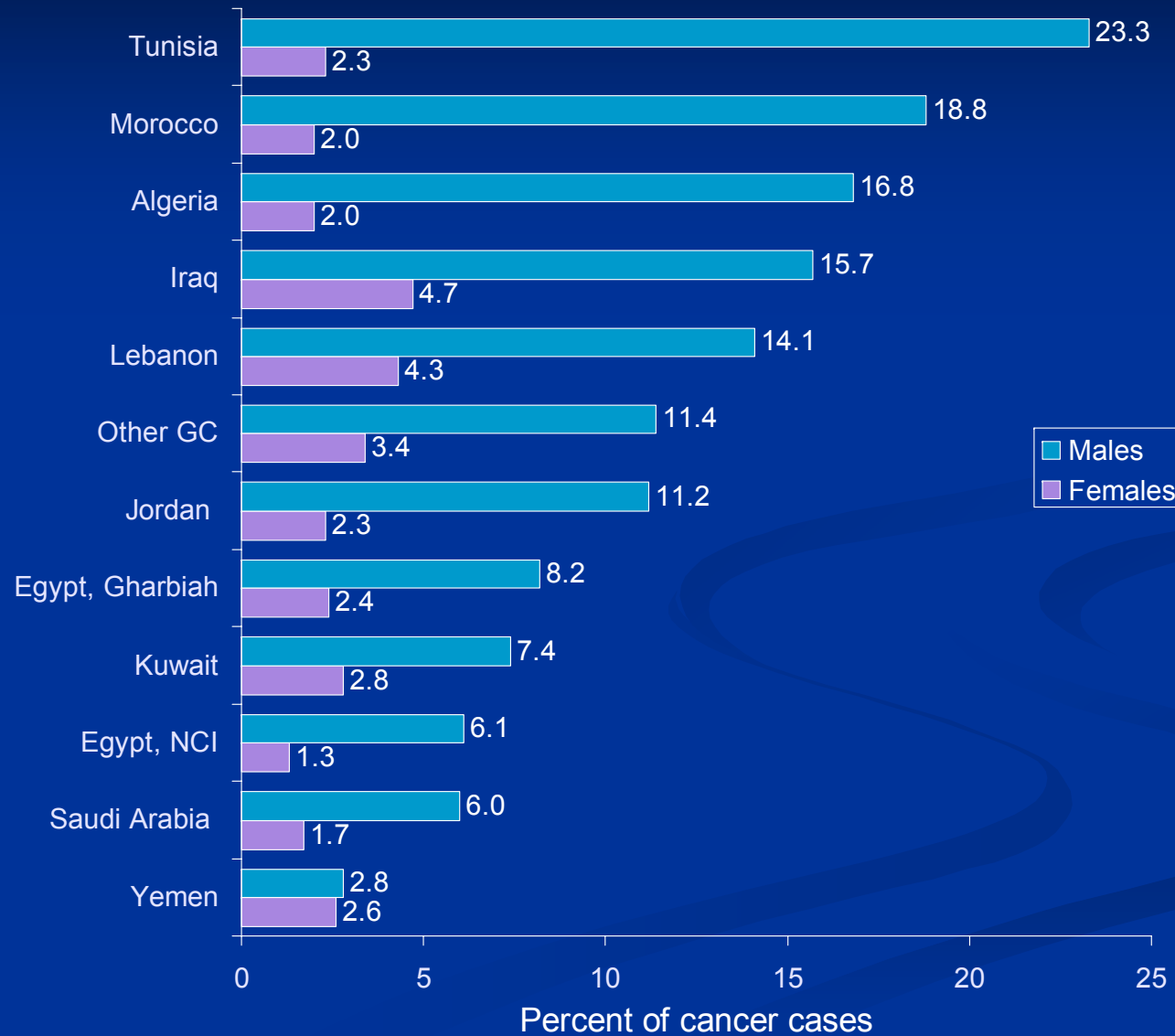
Countries with Highest Age-Adjusted Rates, Globocan 2002



Most Common Cancer Sites in Selected Arab Countries, Males

Country	1 st	2 nd	3 rd	4 th	5 th
Egypt	Bladder	Liver	NHL	Lung	Colorectal
Tunisia	Lung	Bladder	Prostate	Larynx	Colorectal
Algeria	Lung	Bladder	Stomach	Prostate	Colorectal
Jordan	Lung	Bladder	Prostate	NHL	Skin
KSA	NHL	Liver	Leukemia	Colorectal	Lung
Kuwait	Colorectal	NHL	Prostate	Lung	Liver
Lebanon	Bladder	Lung	Prostate	Colorectal	Stomach
Yemen	NHL	HD	Liver	Leukemia	Colorectal

Frequency of Lung Cancer in Arab World



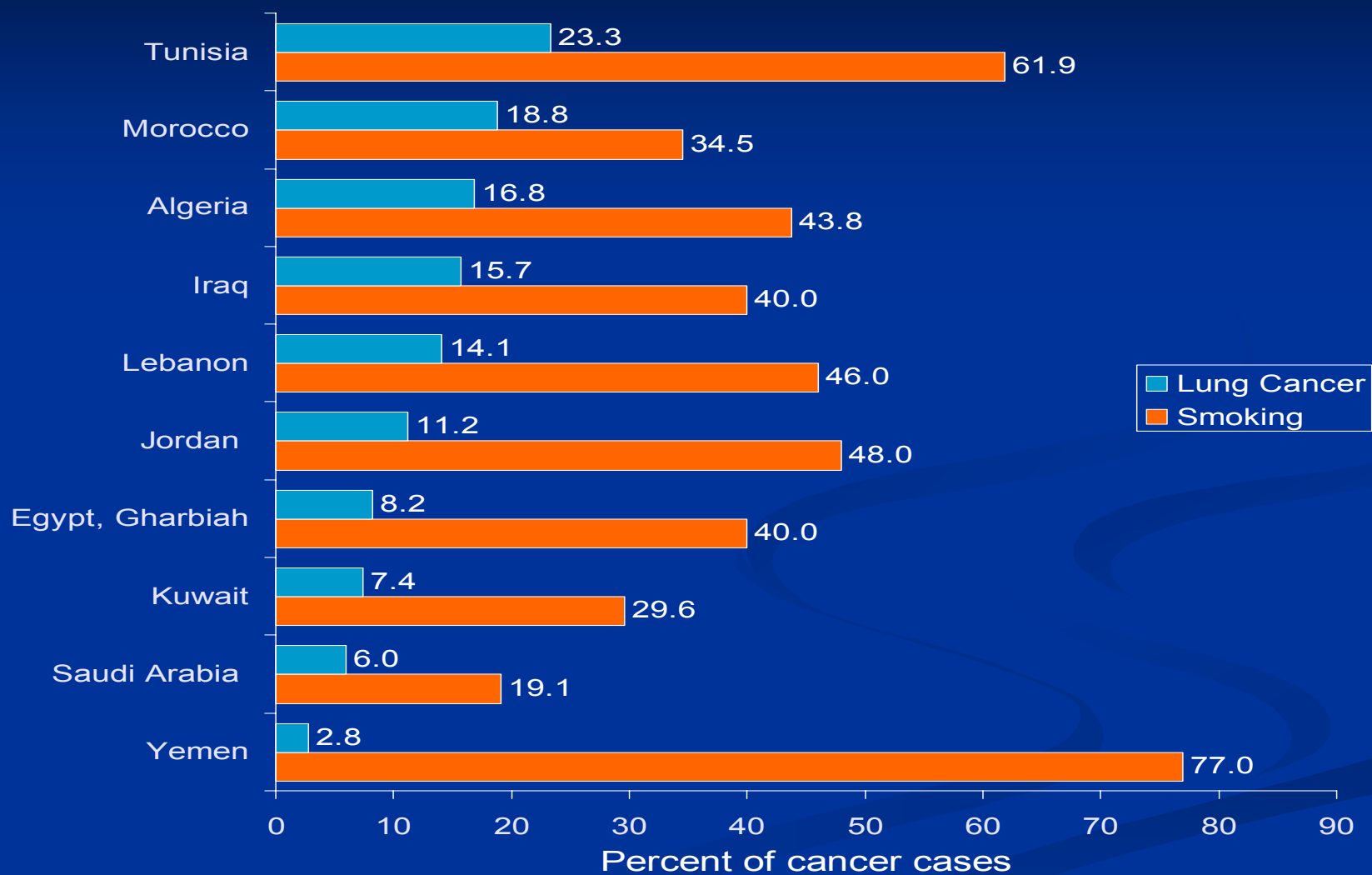
Male to Female Ratio of Lung Cancer Cases in Arab World

Country	% of Males Cases	% of Females Cases	Male to Female ratio
Tunisia	23.3	2.3	10.1
Morocco	18.8	2.0	9.4
Algeria	16.8	2.0	8.4
Jordan	11.2	2.3	4.9
Egypt, NCI	6.1	1.3	4.7
Saudi Arabia	6.0	1.7	3.5
Egypt, Gharbiah	8.2	2.4	3.4
Other GC	11.4	3.4	3.4
Iraq	15.7	4.7	3.3
Lebanon	14.1	4.3	3.3

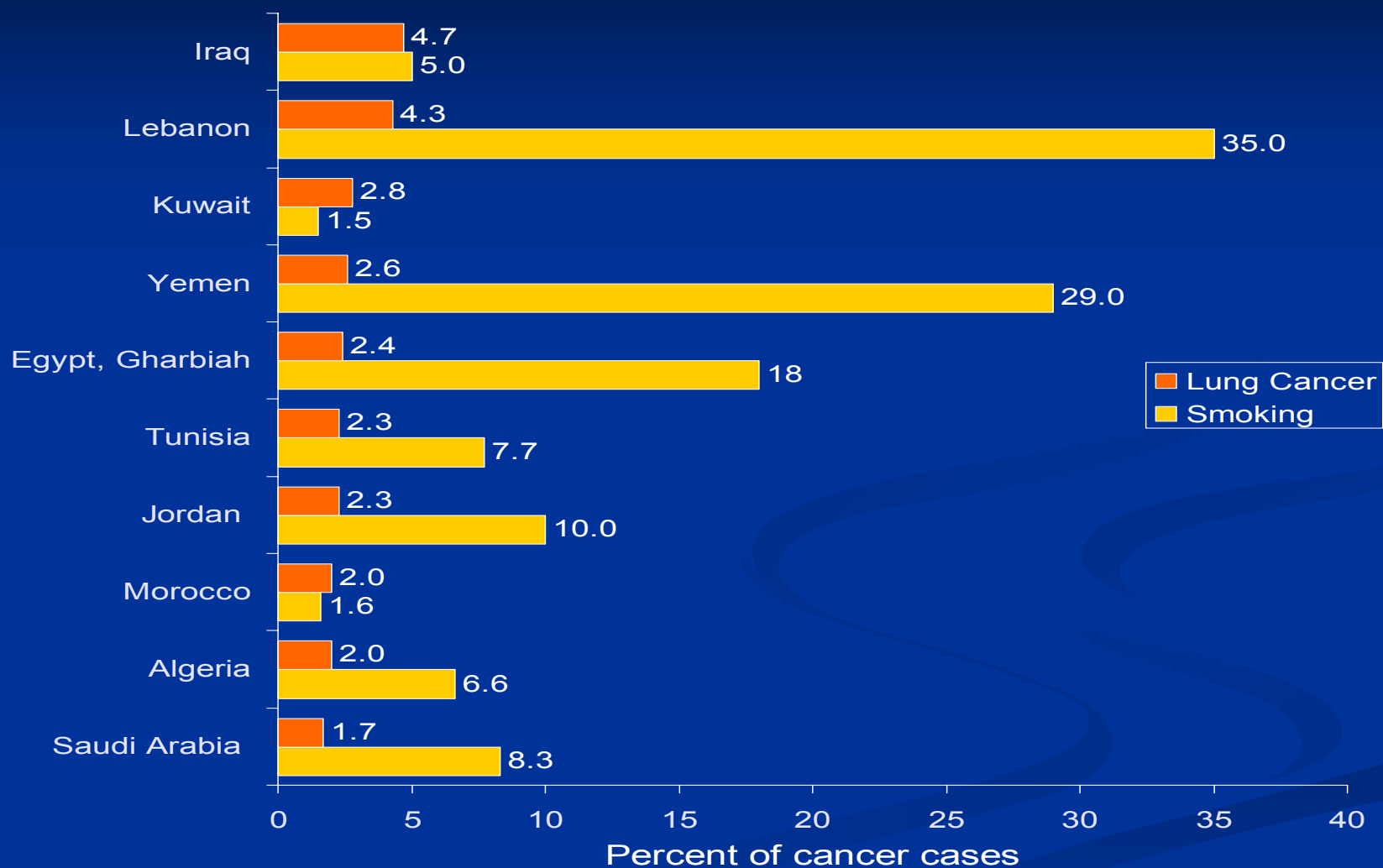
Age of Lung Cancer Male Cases in Selected Arab World

Country	Median (years)	% <45 years
Egypt (NCI)	60.0	12.1
Egypt (Gharbiah)	62.5	6.3
Saudi Arabia	65.8	6.6
Kuwait	70.0	5.0
Jordan	63.2	7.5
Bahrain	69.5	0.0
Oman	61.2	2.7
USA	70.0	3.0

Frequency of Lung Cancer & Prevalence of Smoking in Arab World, Males



Frequency of Lung Cancer & Prevalence of Smoking in Arab World, Females



UICC Globalink, Tobacco Control Country profiles 2003

Most Common Histology of Lung Cancer Selected in Arab Countries

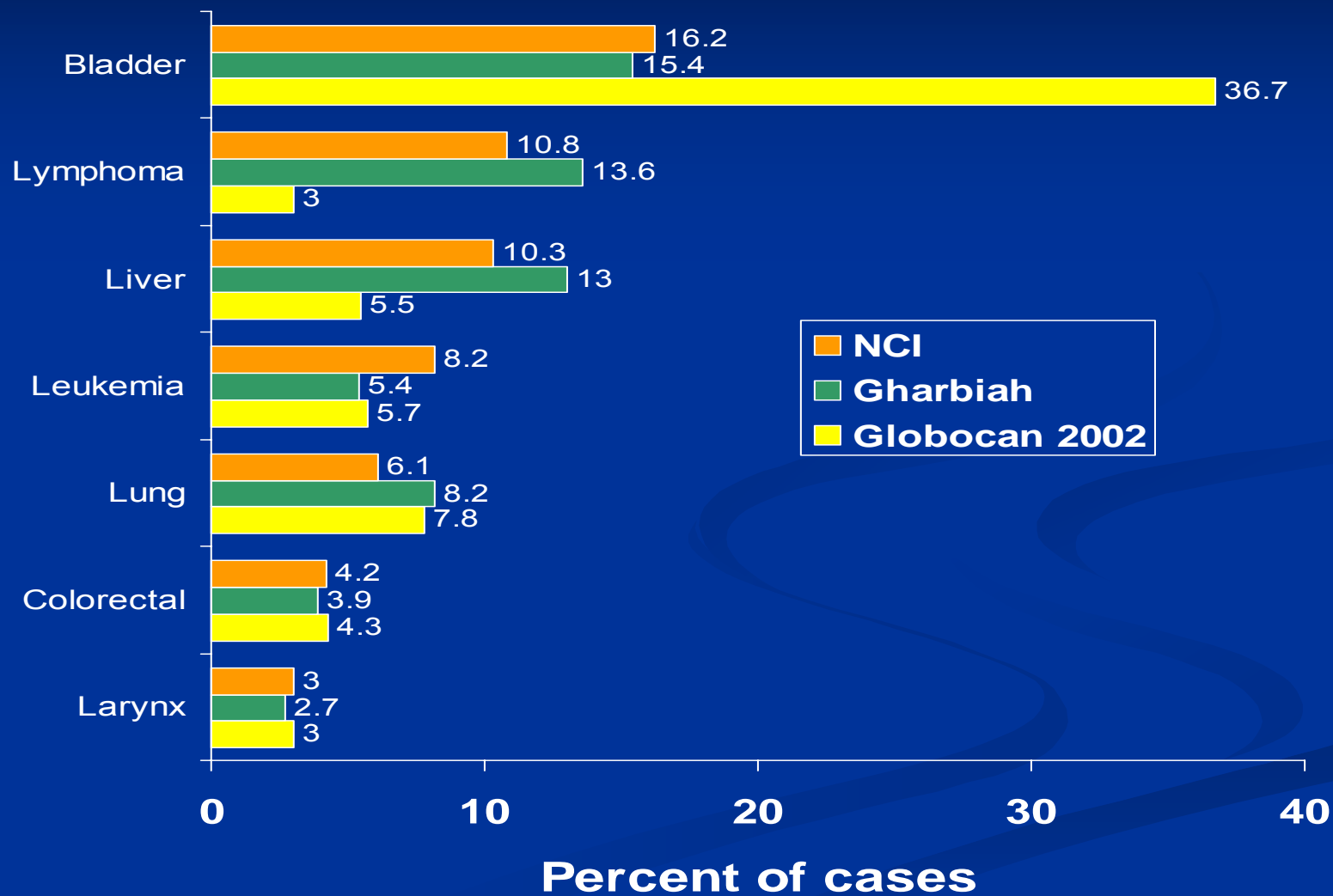
Histology	Saudi Arabia	Jordan	Egypt, NCO
Adenocarcinoma	30%	19%	40%
Squamous cell carcinoma	27%	19%	19%
Small & large cell carcinoma	10%	23%	11%

Egypt

- Accurate epidemiological data on lung cancer in Egypt is not available since a comprehensive national population-based cancer registry is lacking
- However, official statistics as well as institution and hospital-based studies show that it is the second most common cancer in men and second leading cause of cancer death, after bladder cancer

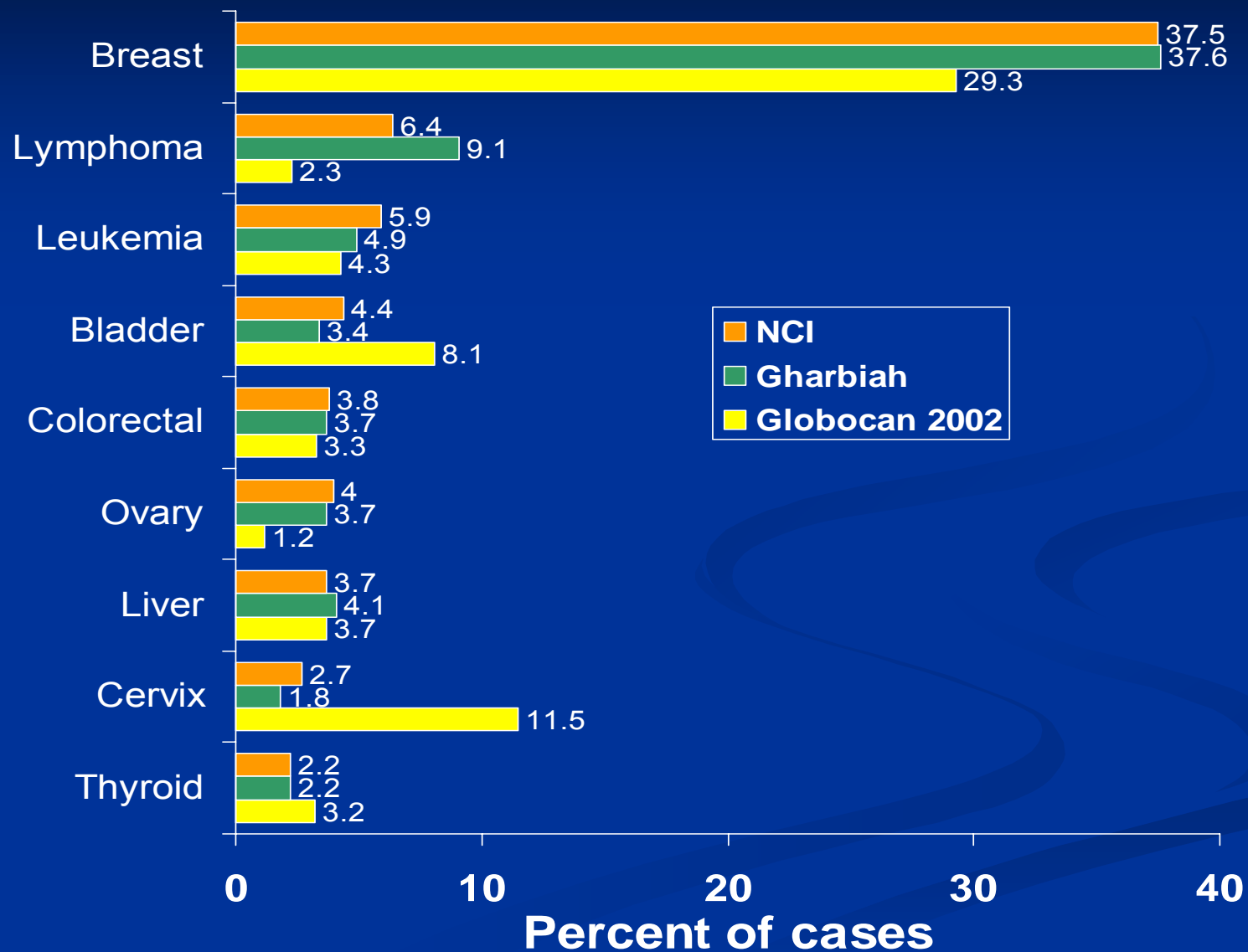
Most Common Sites in Males

NCI, Gharbiah & Globocan

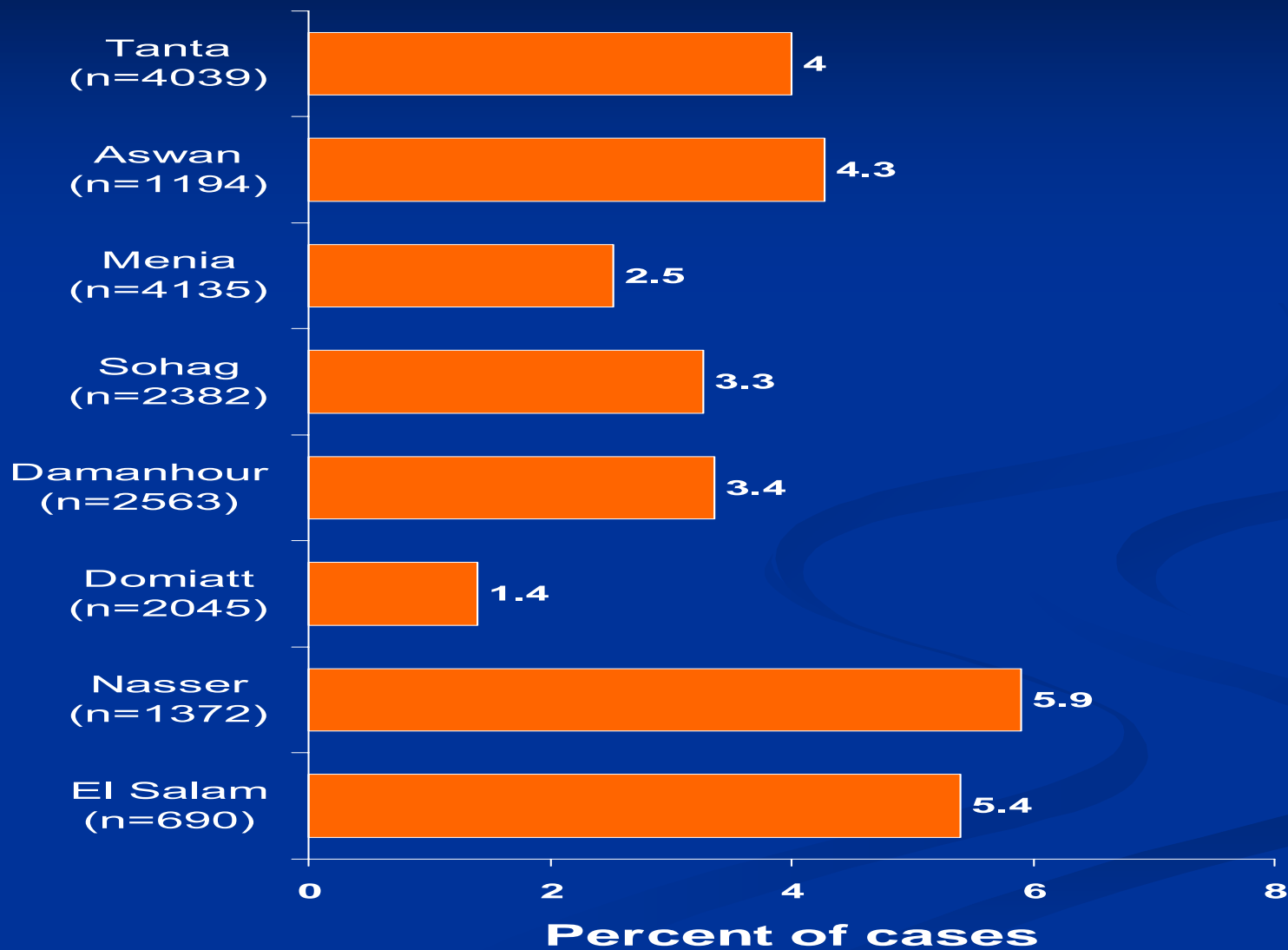


Most Common Sites in Females

NCI, Gharbiah & Globocan

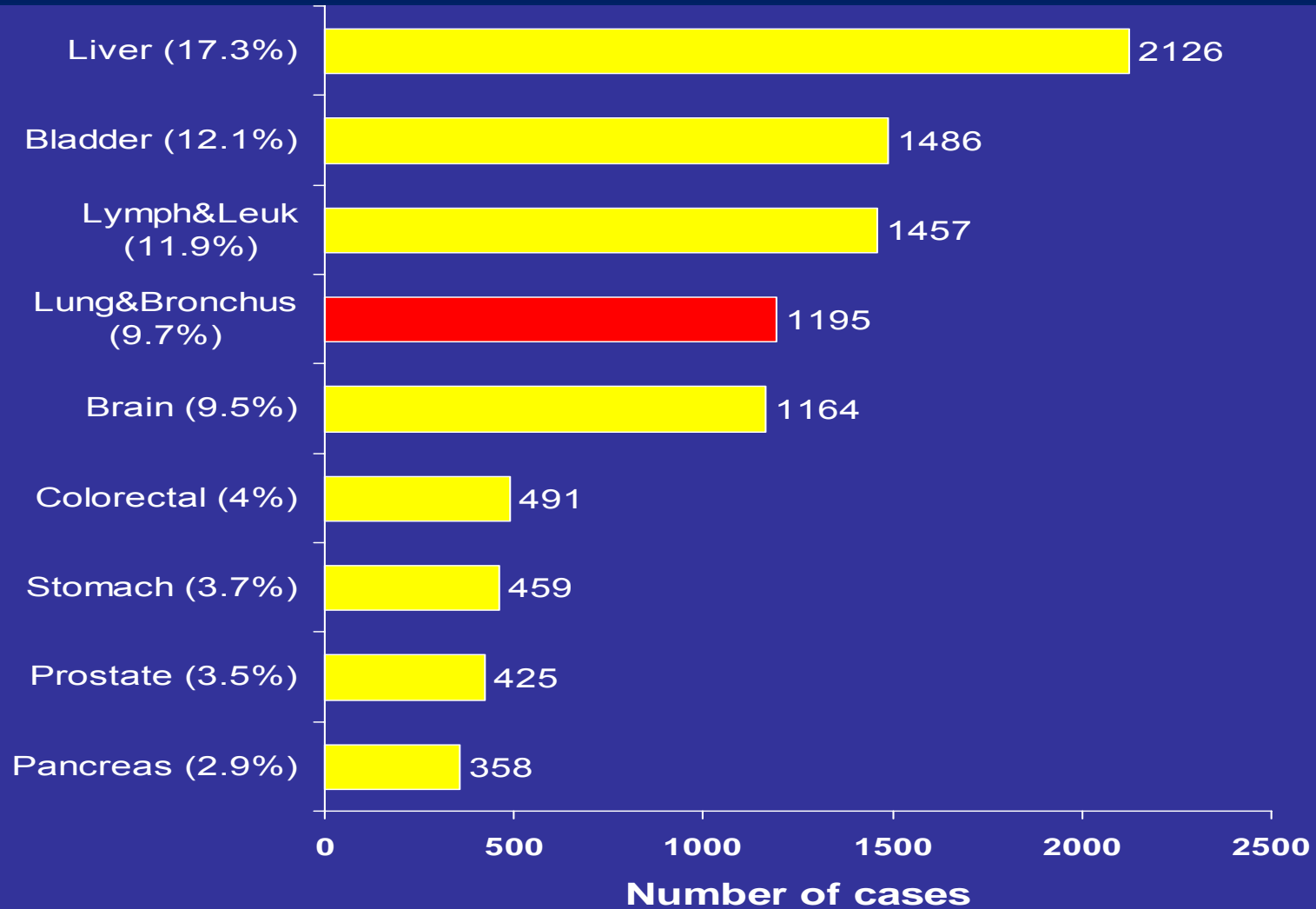


Frequency of Lung Cancer Central Cancer Registry (1/1/99-31/6/01), Egypt



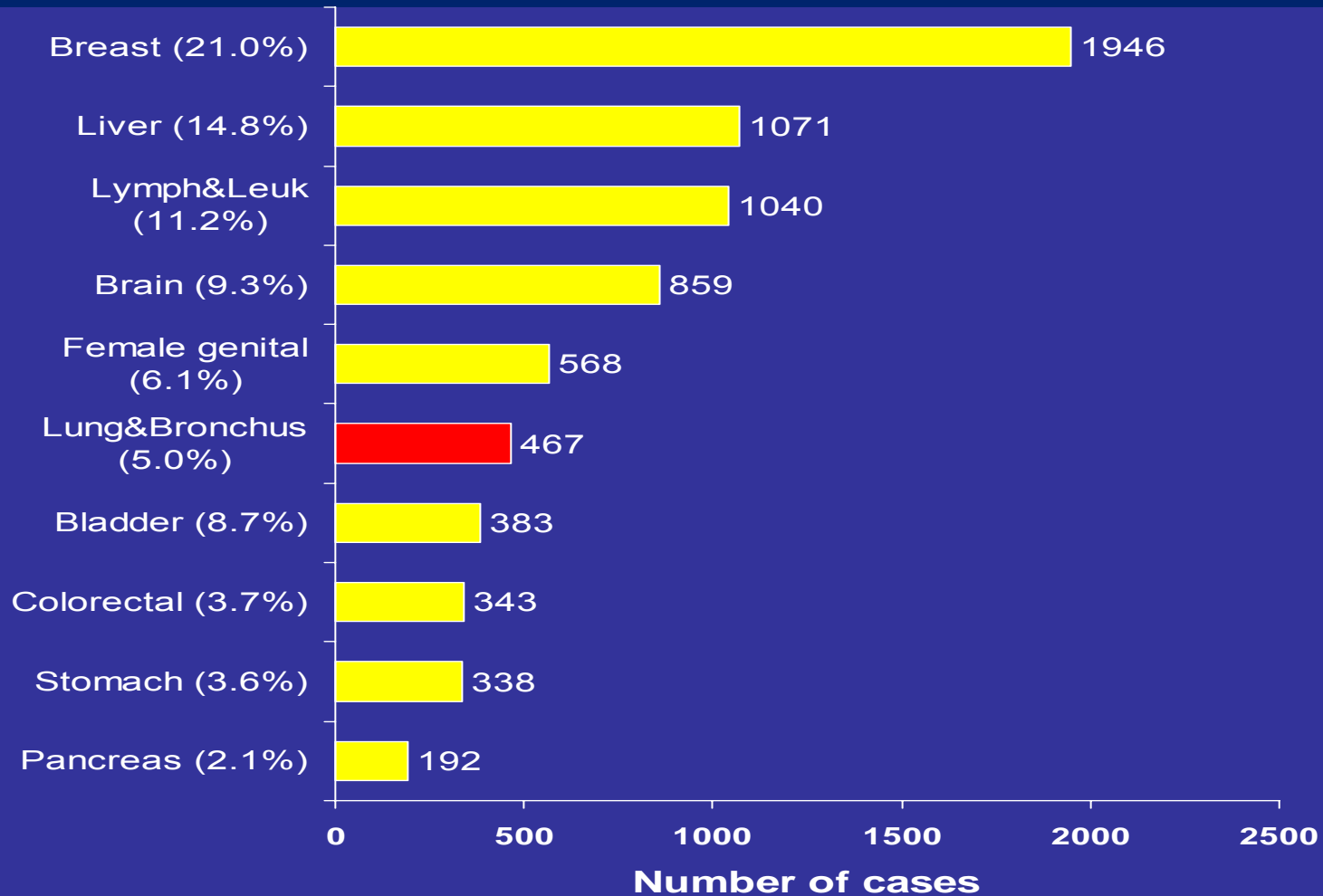
Egypt Mortality Statistics, 2001

Most Common Sites in Men (The Cancer Database, 2001)



Egypt Mortality Statistics, 2001

Most Common Sites in Women (The Cancer Database, 2001)



Survival

- The 1-year survival rate for lung cancer has increased from 34% in 1975 to 42% in 1998.
- Despite major advances in understanding and treating cancer, the 5-year relative survival rate is only 15%, a rate that has improved only slightly over the last 30 years
- According to the World Health Organization, three people die every minute worldwide from lung cancer

5-year survival rates, by World Regions



Descriptive Epidemiology: Gender

- Worldwide, age-adjusted incidence rates of lung cancer among men exceed, twofold or more, than among women
- In the United States, age-adjusted incidence rates in men began to plateau and then declined in the 1980s. Age-adjusted incidence in women increased on average 4.1% per year between 1973 and 1994, but during 1990 to 1994, the average annual increase was only 0.2%

Descriptive Epidemiology: Age

- Age-specific incidence rates increase exponentially until the rates plateau and then decline after the age of 80 in men and the age of 70 in women
- Only 5% to 10% of lung cancer cases are diagnosed under 50 years of age

Descriptive Epidemiology: Race

- The risk of lung cancer in United States black men has been about 50% higher than in white men in the past 10-15 years, but the annual rate of decline since 1985 in black men has been greater than that in white men.
- During 1975 to 1990, the age-adjusted lung cancer incidence in the United States black women was 10% to 20% higher than in white women.

Descriptive Epidemiology: Ethnicity

- The lower age-adjusted lung cancer incidence rates in men and women were registered for the native Americans, Hispanics, and Japanese
- The higher rates were reported in blacks, native Hawaiians, and non-Hispanic whites.

Risk Factors: Smoking

- The overwhelming role of smoking in the causation of lung cancer has been repeatedly demonstrated over the past 50 years:
 - 87% of lung cancer cases are thought to result from smoking
 - The longer you smoke and the more packs per day you smoke, the greater your risk
 - Secondhand or environmental tobacco smoke increase the risk
 - A nonsmoker married to a smoker has a 30% greater risk
 - Workers exposed to tobacco smoke at the workplace are at a higher risk
 - Cigar smoking and pipe smoking are almost as likely to cause smoking than cigarettes smoking
 - No evidence that low tar cigarettes reduces risk

Risk Factors: Smoking

- Smoking has been implicated in:
 - 80% of lung cancer deaths in men
 - 75% of lung cancer deaths in women
 - 13% of lung cancer deaths in nonsmokers
 - 28% of all cancer deaths

Risk Factors: other than smoking

- Asbestos: Asbestos workers are about 7 times more likely to die of lung cancer
- Radon (from mining or indoor exposure):
 - Risk may be doubled or tripled if you lived for many years in a contaminated house
 - Smokers are especially sensitive to the effect of radon
 - High radon levels in some mines increase the risk for miners

Risk Factors: other than smoking

Other “occupational carcinogens”

(cancer-causing agents found in workplace)

- Radioactive ores such as uranium
- Inhaled chemicals or minerals such as:
 - Arsenic
 - Vinyl chloride
 - Nickel chromates
 - Chloromethyl ethers
 - Coal products
 - Mustard gas
- Fuels such gasoline
- Diesel exhaust

Risk Factors: other than smoking

- Marijuana
 - It has been hard to prove a connection because it is not easy to gather information about the use of illegal drugs
 - Many marijuana also smoke cigarettes
- Radiation therapy:
 - Particularly if they smoke
 - Hodgkin's disease or after mastectomy for breast cancer
- Recurring inflammation: Tuberculosis and some types of pneumonia often leave scars. This increases risk of adenocarcinoma type
- Personal/family history

Risk Factors: other than smoking

- Other mineral exposures
 - People with silicosis and berylliosis (lung diseases caused by breathing in certain minerals) also have a higher risk
- Diet (vitamins A, C, E, β -carotene deficiencies)
- Air pollution
 - It may slightly increase the risk

Thank You