

September 2011

Summary

An estimated 12.66 million people were diagnosed with cancer across the world in 2008, and 7.56 million people died from the disease. Just four cancer sites – lung, female breast, colorectum and stomach – accounted for two-fifths of the total cases diagnosed worldwide.

Lung cancer continued to be the most common cancer diagnosed in men worldwide (accounting for 16.5% of all new cases), and breast cancer was by far the most common cancer diagnosed in women (23% of all new cases). As the world's population continues to grow and age, the

burden of cancer worldwide will inevitably increase, even if current incidence rates remain the same. The United Nations high-level meeting in September 2011 provides a huge opportunity in the global fight against cancer and other non-communicable diseases.

Introduction

This report describes the variation in cancer incidence and mortality in different regions of the world. The data are derived from the International Agency for Research on Cancer GLOBOCAN 2008 database (version 1.2), the World Health Organisation (WHO) Global Health Observatory and the United Nations World Population Prospects report.^{1,4} For the purposes of this report, developed regions^a of the world comprise Europe, Northern America, Australia & New Zealand (which form part of Oceania^b) and Japan; developing regions^a comprise all of Africa, Asia (excluding Japan), Latin America & the Caribbean plus Melanesia, Micronesia and Polynesia in Oceania.

Demographic facts

Population size and density

The estimated population of the world in 2008 was 6.75 billion people (Table One), increasing by around 79 million people each year.⁴ The world population is forecast to reach 7 billion people by late 2011, and 9.1 billion by 2050. Around four-fifths of the world's population live in the less developed regions of the world, and the vast majority of the world's population growth is expected to occur in these areas. By 2050, some 87% of the world's population are expected to reside in the developing countries.⁴

China and India are by far the most populated countries in the world, accounting for 20% and 18% of the world's total population in 2008, respectively.⁴ Between 2003 and 2008, approximately a third (32%) of the world's population growth of around 400 million people occurred in India and China, and India is expected to overtake China to become the world's most populated country by 2030. The UK accounted for less than 1% of the world's total population in 2008.⁴

Age distribution and life expectancy

The world population is ageing.⁴ Between 1970 and 2010, the world median^c age increased from 22 years to 29 years, and it is projected to reach 38 years by 2050. The number of people in the world aged 60 and over is

Table One: Population Measures and Cancer Incidence and Mortality, Regions of the World, Estimates Between 2005 and 2010

	Population			Years of Life Expectancy (2005-2010 estimates)	Number of New Cases of Cancer* (2008 estimates)		Number of Cancer Deaths* (2008 estimates)	
	(2008 estimates [total]) (2010 estimates [by age])				% of total	% of total	% of total	% of total
	Total (thousands)	under 15	over 60					
Africa	987,092	40%	5%	54	715,571	6	541,779	7
Eastern Africa	310,570	44%	5%	53	221,076	2	173,676	2
Middle Africa	122,501	45%	5%	48	66,895	1	53,229	1
Northern Africa	205,814	31%	7%	68	164,350	1	120,801	2
Southern Africa	56,936	31%	7%	52	79,179	1	54,818	1
Western Africa	291,270	43%	5%	51	184,071	1	139,255	2
Asia	4,075,309	26%	10%	69	6,092,359	48	4,072,332	54
Eastern Asia	1,546,825	19%	14%	74	3,720,658	29	2,440,351	32
South-Central Asia	1,728,752	31%	7%	64	1,423,213	11	979,914	13
South-Eastern Asia	575,626	27%	9%	70	725,446	6	501,046	7
Western Asia	224,106	32%	7%	71	223,042	2	151,021	2
Europe	731,568	15%	22%	75	3,208,882	25	1,715,240	23
Central and Eastern Europe	293,488	15%	19%	69	983,408	8	626,007	8
Northern Europe	97,918	17%	23%	79	482,080	4	242,422	3
Southern Europe	152,316	15%	24%	80	713,401	6	382,773	5
Western Europe	187,846	16%	24%	80	1,029,993	8	464,038	6
Latin America and Caribbean	576,102	28%	10%	73	906,008	7	542,051	7
Caribbean	41,629	27%	12%	72	79,347	1	47,842	1
Central America	149,580	30%	9%	75	176,564	1	108,328	1
South America	384,892	27%	10%	73	650,097	5	385,881	5
Northern America	345,053	20%	18%	79	1,603,870	13	638,328	8
Oceania	34,937	24%	15%	76	135,864	1	55,072	1
More developed regions	1,229,219	17%	22%	77	5,552,281	44	2,744,840	36
Less developed regions	5,520,843	29%	9%	66	7,107,273	56	4,819,962	64
World	6,750,062	27%	11%	68	12,662,554	100	7,564,802	100

* All cancers excluding non-melanoma skin cancer. Kaposi sarcoma is included for countries in Sub-Saharan Africa only.

expected to almost triple to 2 billion by 2050.⁴ Since cancer is predominantly a disease of the elderly, increases in the number of older people will inevitably lead to more cases of cancer, even if current incidence rates remain the same.

There are large differences in the distribution of age groups between the different regions of the world (Table One).⁴ More than a fifth (22%) of the population living in the more developed regions of the world was aged 60 and over in 2010 and this is expected to rise to 33% by 2050. In contrast, just 9% of the population in the less developed regions of the world was aged 60 and over in 2010, rising to an expected 20% by 2050. The median age for individual countries ranges from around 45 years (for example, in Japan and Germany) to less than 16 years (for example, in Uganda and Niger).⁴

The world life expectancy at birth was

predicted to be almost 68 years in 2005-2010 (Table One), having increased considerably from almost 47 years in the early 1950s.⁴ By 2050, the world life expectancy is expected to exceed 76 years. There are large differences in life expectancy between men and women (65 and 70 years, respectively), and between the more and less developed regions of the world (77 and 66 years, respectively). Life expectancy for individual countries ranges from more than 80 years (for example, in Japan and parts of China) to less than 45 years (for example in Afghanistan and Zimbabwe).⁴

^a The designation 'developed countries' and 'developing countries' follows the geographical definition of the United Nations Statistics Division, <http://unstats.un.org> (accessed May 2011). These definitions are intended for statistical convenience and do not necessarily express a judgment about the stage reached by a particular country or area in the development process.

^b Oceania is a diverse group of countries (mainly islands) in the Pacific Ocean and its vicinity. There are four sub-regions: Australasia (including Australia and New Zealand), Melanesia, Micronesia and Polynesia. The latter three sub-regions comprise thousands of small islands in the Central, Southern and Western Pacific Ocean.

^c The median age is the age that divides a population in equal halves; that is 50% of the population are younger than the median age, and 50% are older.

Cancer incidence and mortality

An estimated 12.66 million people were diagnosed with cancer^d across the world in 2008 (**Table One**).² This equates to around 188 cases for every 100,000 people (using the crude rate^e). The number of new cases ranged from 67,000 in Middle Africa to 3.72 million in Eastern Asia. As expected from the size of Asia's population, the majority of cases (48%) occurred there.^{2,4} Just four cancer sites – lung, female breast, colorectum and stomach – accounted for two-fifths (41%) of the world's total (**Figure One**).² The most common cancer sites in the UK are breast, lung, colorectum and prostate; together, these sites accounted for more than half (54%) of the UK's total in 2008.²

Cancer incidence worldwide is more than a fifth higher in men than in women, with World age-standardised^f incidence rates of 204 and 165 per 100,000, respectively, in 2008.^{2,5} Male incidence rates vary almost four-fold across the different regions of the world; in 2008, rates ranged from 88 per 100,000 in Middle Africa to 334 and 335 per 100,000 in Northern America and Western Europe, respectively. There is slightly less variation in female incidence rates across the different regions of the world (almost three-fold); in 2008, rates ranged from 97 per 100,000 in Middle Africa to 274 per 100,000 in Northern America. The countries with the highest incidence rates in 2008 were France and Australia in males (both 361 per 100,000), and Denmark (325 per 100,000) in females. The UK was 33rd highest out of 184 countries worldwide for males and 12th highest for females.²

Cancer was estimated to account for around 14% of all deaths (due to any cause) worldwide in 2008.^{2,6} This varied four-fold across the regions of the world, from 5% in Africa to 21% in Western Pacific (**Figure Two**). In the UK, more than a quarter (27%) of all deaths were reported to be due to cancer in 2008.^{7,9}

An estimated 7.56 million people died from cancer across the world in 2008 (**Table One**).² The four most common sites of cancer death – lung, stomach, liver and colorectum – accounted for 45% of the world's total cancer mortality (**Figure Three**).² The most common causes of cancer death in the UK are lung, colorectum, breast and prostate; together these sites accounted for almost half (47%) of the UK's total in 2008.²

A summary of the variation in cancer incidence and mortality for the world's most common cancers is provided below.

Lung cancer

Lung cancer has been estimated as the most common cancer in the world for several decades (**Figure Four [page 3]**).^{2,10-14} An

Figure One: The 20 Most Commonly Diagnosed Cancers Worldwide, 2008 Estimates

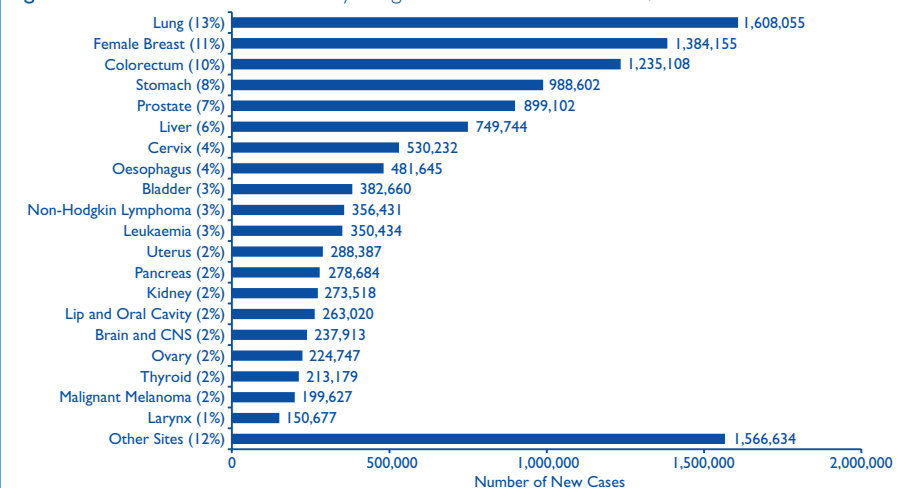


Figure Two: Percentage of all Deaths Due to Cancer; WHO Regions of the World, 2008 Estimates

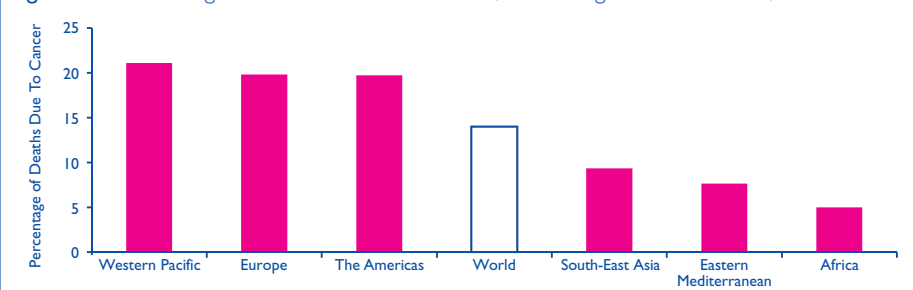
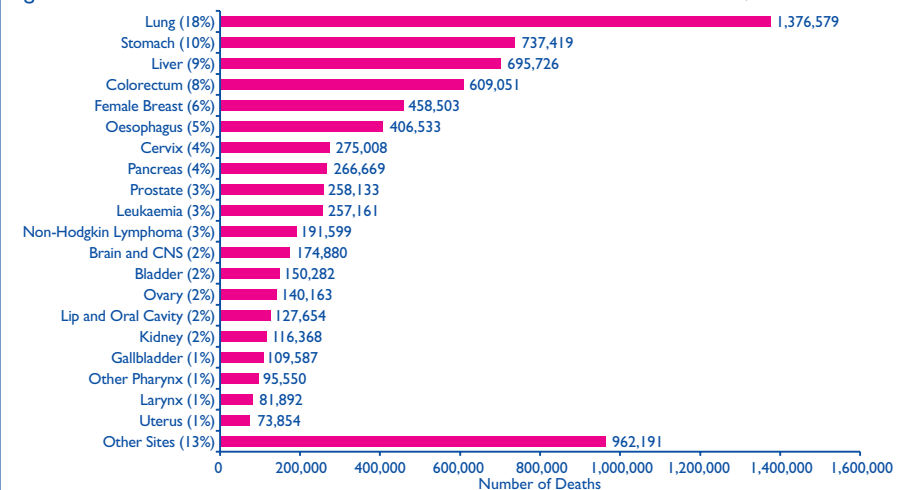


Figure Three: The 20 Most Common Causes of Death from Cancer Worldwide, 2008 Estimates



estimated 1.61 million people across the world were diagnosed with lung cancer in 2008, accounting for 13% of the total (**Figure One**).² More than half (55%) of the cases occurred in the developing world.²

The link between tobacco and lung cancer was established more than fifty years ago,¹⁵ and incidence rates closely reflect past smoking prevalence with a time lag of approximately 20-30 years.^{2,16,17} Manufactured cigarettes were first introduced at the end of the nineteenth century and since then the global consumption of tobacco has been rising steadily.^{17,18} There is estimated to be more than one billion smokers in the world, which is about a quarter of all adults. Smoking prevalence is higher in men than in women in most countries worldwide; the overall world estimates for 2006 were 41%

of men and 9% of women smoking, though this varied considerably by country and age. In many developing countries the consumption of cigarettes is increasing rapidly in both sexes, due to both population growth and the increased targeting of tobacco marketing in these areas (especially to young people). Throughout most of Europe, smoking prevalence has now peaked among men but is increasing in women (particularly in the younger age groups, where teenage girls can be

^d In this report 'cancer' includes all malignant tumours excluding non-melanoma skin cancer (NMSC). NMSCs are often excluded from cancer statistics because they are very common and have been shown to be under-ascertained in cancer registration data.

^e Crude rates are calculated using a simple formula in which the number of cases is divided by the corresponding population and multiplied by 100,000.
^f Cancer incidence and mortality rates are often age-standardised according to arbitrary European or World Standard Populations, allowing unbiased comparisons of rates with respect to age (for example, over time, between sexes or between different geographical areas). All rates presented in this report are age-standardised according to the World Standard Population (see reference 5).

as likely to smoke as teenage boys). Worldwide, the number of smokers is continuing to rise, and without intervention this will lead to large increases in the incidence of lung cancer in the coming decades.^{17,18}

Lung cancer incidence is more than double in men than in women worldwide (rate ratio 2.5 : 1.0).² Male lung cancer incidence rates vary twenty-fold across the regions of the world. In 2008, the highest incidence rates were seen in Central and Eastern Europe at 57 per 100,000 (Figure Five [a]).² The proportion of men smoking is also high in this region, with Russia, Ukraine and Belarus having some of the highest age-standardised smoking prevalence estimates in the world (with 70%, 64% and 64% of men currently smoking any form of tobacco, respectively).¹⁸ Male lung cancer incidence rates were very low in Middle, Western and Eastern Africa (3-4 per 100,000) in 2008. However, these regions are experiencing an increasing rate of tobacco use, with many countries reporting age-standardised smoking prevalence estimates in excess of 25% (the highest being Mauritius with 36% of men currently smoking a tobacco product).¹⁸ The UK male lung cancer incidence rate was 44th highest out of 184 countries worldwide.²

There is wider variation (forty-fold) in female lung cancer incidence across the regions of the world. In 2008, the highest incidence rates were seen in Northern America at 36 per 100,000 (Figure Five [b]).² Though the proportion of smokers is moderate in US women (with an age-standardised prevalence estimate of 22% of women smoking a tobacco product), the current lung cancer incidence rates will have been driven by earlier, higher smoking prevalence (around 30% of women were reported to smoke cigarettes in the 1970s).^{18,19} Female lung cancer incidence rates were lowest in four of the five African regions (1-2 per 100,000). Smoking prevalence is also currently very low in these regions (age-standardised smoking prevalence estimates are less than 5% for most countries) - but, as with men, this is expected to rise in the future.¹⁸ The UK lung cancer incidence rate was relatively high for females at joint 7th highest out of 184 countries worldwide.²

Lung cancer is the most common cause of death from cancer worldwide, estimated to be responsible for nearly one in five (18%), or 1.38 million, cancer deaths in 2008 (Figure Three).² Survival from lung cancer is poor in both developing and developed regions of the world (the mortality to incidence ratio, that is the number of deaths divided by the number of cases, was 0.86 in 2008);² and as such geographical patterns in mortality closely follow those in incidence (Figures Five [a] and [b]).

Breast cancer

Breast cancer is by far the most common

Figure Four: Trends in the Ranking of New Cases of Cancer Worldwide, Selected Cancers, 1975-2008

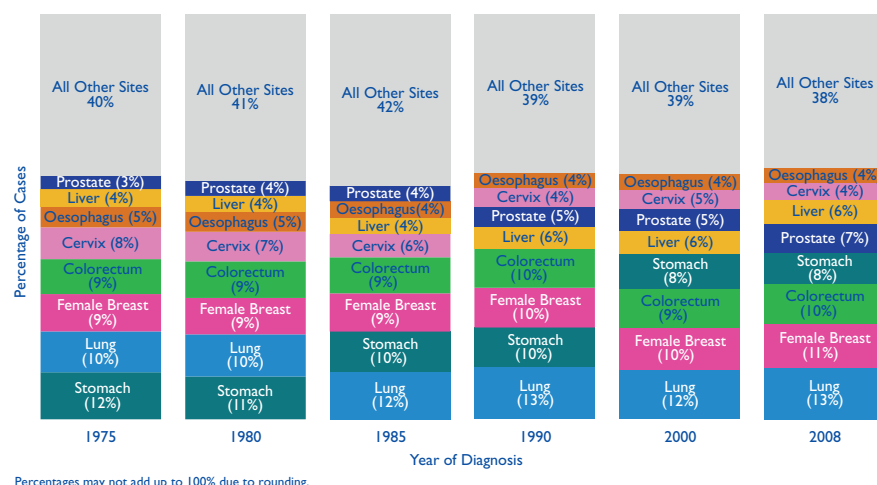


Figure Five [a]: Lung Cancer (ICD-10 C33-C34), Males, World Age-Standardised Incidence and Mortality Rates, Regions of the World, 2008 Estimates

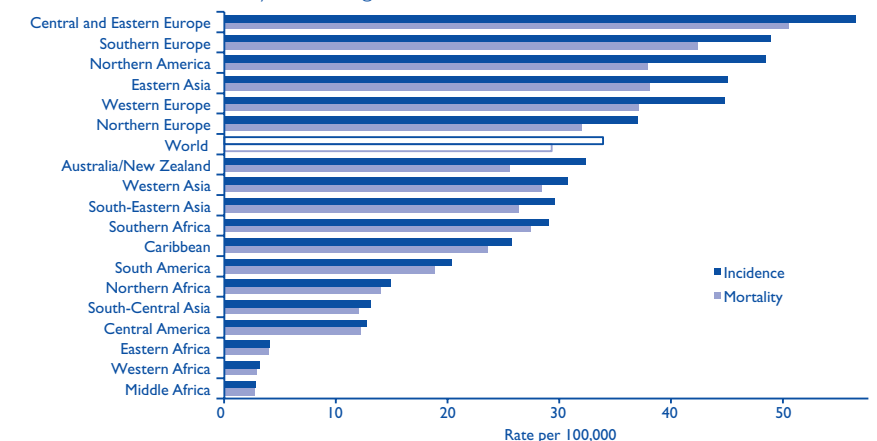
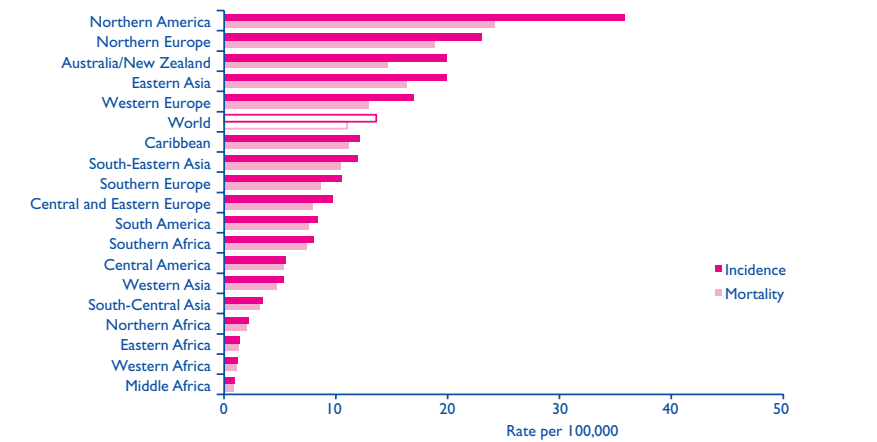


Figure Five [b]: Lung Cancer (ICD-10 C33-C34), Females, World Age-Standardised Incidence and Mortality Rates, Regions of the World, 2008 Estimates



cancer diagnosed in women worldwide (ranking second in both sexes combined). An estimated 1.38 million women across the world were diagnosed with breast cancer in 2008 (Figure One), accounting for nearly a quarter (23%) of all cancers diagnosed in women (11% of the total in men and women).² Incidence is generally high in the developed countries and markedly lower in developing countries, though differences in population sizes mean that approximately equal numbers of cases were

diagnosed in the developed and developing regions in 2008 (around 690,000 cases each).^{2,16} Breast cancer incidence has increased in most countries worldwide in the last decades, with the most rapid increases occurring in many of the developing countries.¹⁶ Reproductive behaviour and the use of exogenous hormones, as well as differences in weight, exercise, diet and alcohol consumption, are thought to underlie the differences.^{16,20-23} It has been estimated that breast cancer rates in developed

countries could be half that of current rates if women had more children and breastfed for longer.²⁴

Female breast cancer incidence rates vary nearly five-fold across the regions of the world. In 2008, rates ranged from around 20 per 100,000 in Eastern and Middle Africa to 90 per 100,000 in Western Europe (Figure Six).² The countries with the highest incidence rates in 2008 were Belgium and Denmark (109 and 101 per 100,000, respectively). The incidence rate for UK women was high at 11th highest out of 184 countries worldwide.²

Breast cancer is the most common cause of death from cancer in women worldwide (ranking fifth in both sexes combined), estimated to be responsible for almost 460,000 deaths in 2008 (Figure Three).² There is less variation in female breast cancer mortality across the regions of the world, largely due to better survival in the (high incidence) developed countries, with rates ranging from 6 per 100,000 in Eastern Asia to 19 per 100,000 in Southern and Western Africa in 2008 (Figure Six).^{1,2} The UK was joint 30th highest out of 184 countries worldwide.²

Colorectal cancer

Colorectal (including anal) cancer is the third most common cancer in the world. An estimated 1.24 million people worldwide were diagnosed with colorectal cancer in 2008, accounting for 10% of the total (Figure One).² There is wide geographical variation in incidence across the world, much of which can be attributed to differences in diet, particularly the consumption of red and processed meat, fibre and alcohol, as well as bodyweight and physical activity.^{16, 25-29} Incidence rates of colorectal cancer are increasing in countries where rates were previously low (especially in Japan, but also in other Asian countries) as diets become more Westernised, and either gradually increasing, stabilising (Northern and Western Europe) or declining (North America) with time.¹⁶ In 2008, almost 60% of cases were diagnosed in the developed world.²

Colorectal cancer incidence worldwide is noticeably higher in men than in women (rate ratio 1.4 : 1.0).² In both sexes there are ten-fold differences in incidence between the different regions of the world (Figures Seven [a] and [b]).² In 2008, male incidence rates ranged from 4 per 100,000 in Middle Africa to 46 per 100,000 in Australia/New Zealand, and female rates ranged from 3 per 100,000 to 33 per 100,000 in the same regions. The countries with the highest incidence rates in 2008 were Slovakia (61 per 100,000), Hungary (56 per 100,000) and the Czech Republic (54 per 100,000) for males, and New Zealand (38 per 100,000), Israel (36 per 100,000), Denmark and Norway (both 34 per 100,000) for females. The UK was 26th highest out of 184 countries

Figure Six: Breast Cancer (ICD-10 C50), Females, World Age-Standardised Incidence and Mortality Rates, Regions of the World, 2008 Estimates

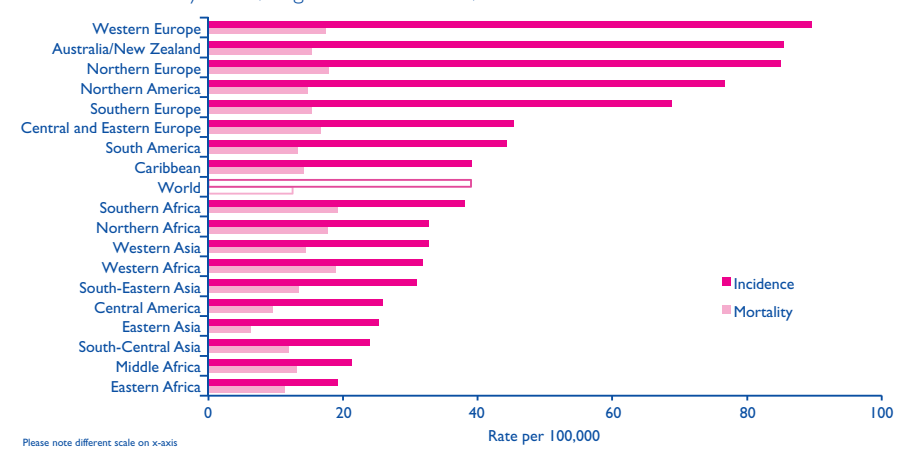


Figure Seven [a]: Colorectal Cancer (ICD-10 C18-C21), Males, World Age-Standardised Incidence and Mortality Rates, Regions of the World, 2008 Estimates

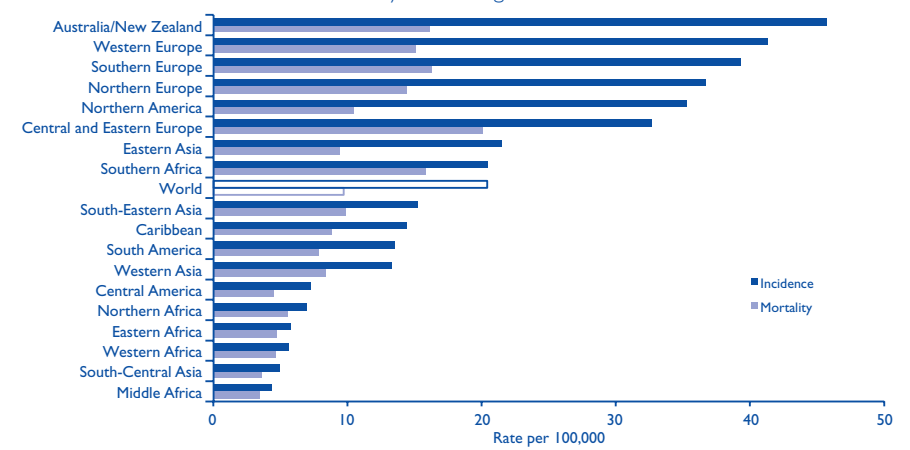
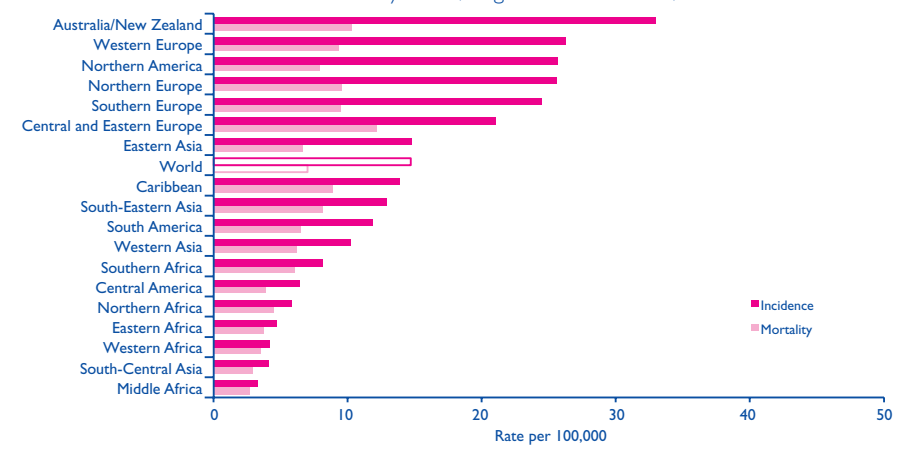


Figure Seven [b]: Colorectal Cancer (ICD-10 C18-C21), Females, World Age-Standardised Incidence and Mortality Rates, Regions of the World, 2008 Estimates



worldwide for males and 20th highest for females.²

Colorectal cancer is the fourth most common cause of cancer death worldwide, estimated to be responsible for almost 610,000 deaths in 2008 (Figure Three).² There is a six-fold variation in male mortality rates between the regions of the world, and a five-fold variation in female rates (Figures Seven [a] and [b]).² In 2008, mortality rates were highest in Central and Eastern Europe (20 and 12 per 100,000 in males and females, respectively), and lowest in

Middle Africa and South-Central Asia (3-4 per 100,000 in both sexes). The UK was joint 47th highest out of 184 countries worldwide for males and 48th highest for females.²

Stomach cancer

In the mid 1970s stomach cancer was estimated as the most commonly diagnosed cancer worldwide (Figure Four), but falls in incidence mean that it now ranks fourth.^{2, 10-14} An estimated 990,000 people were diagnosed with stomach cancer worldwide in 2008, accounting for 8% of the total (Figure One).²

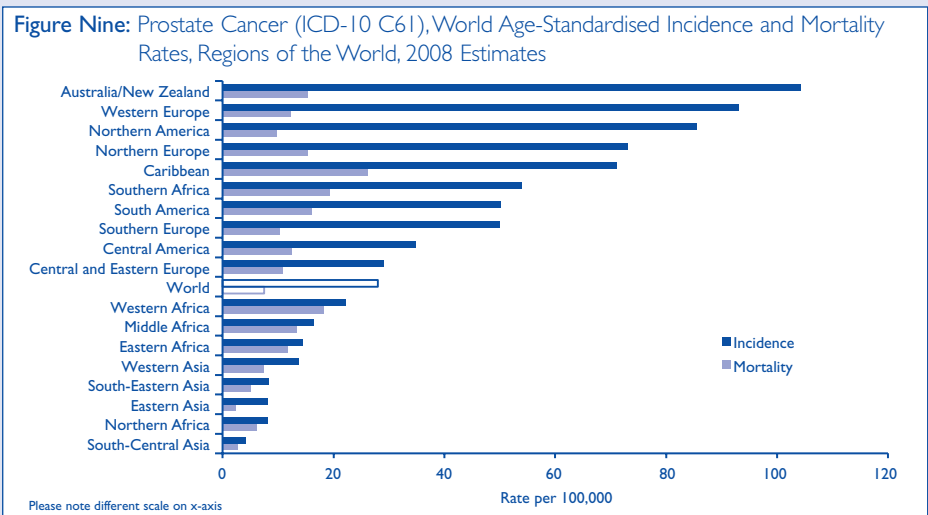
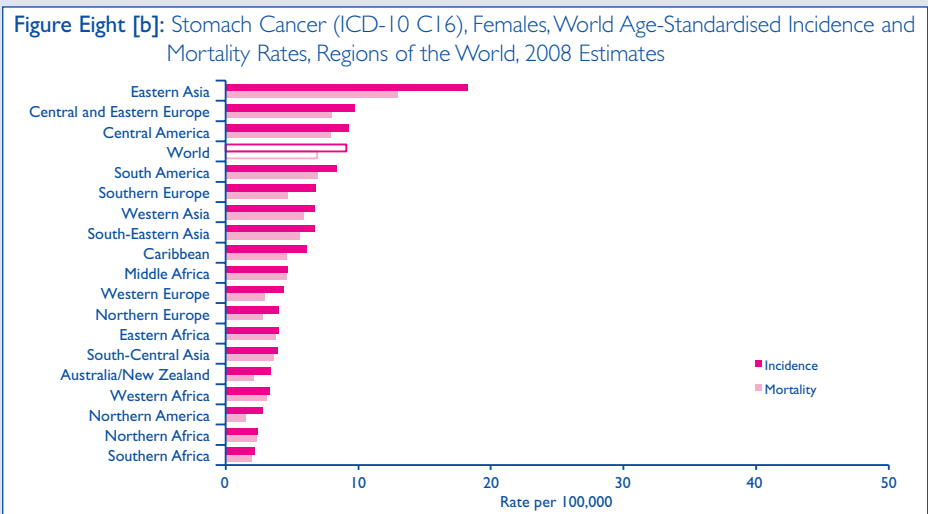
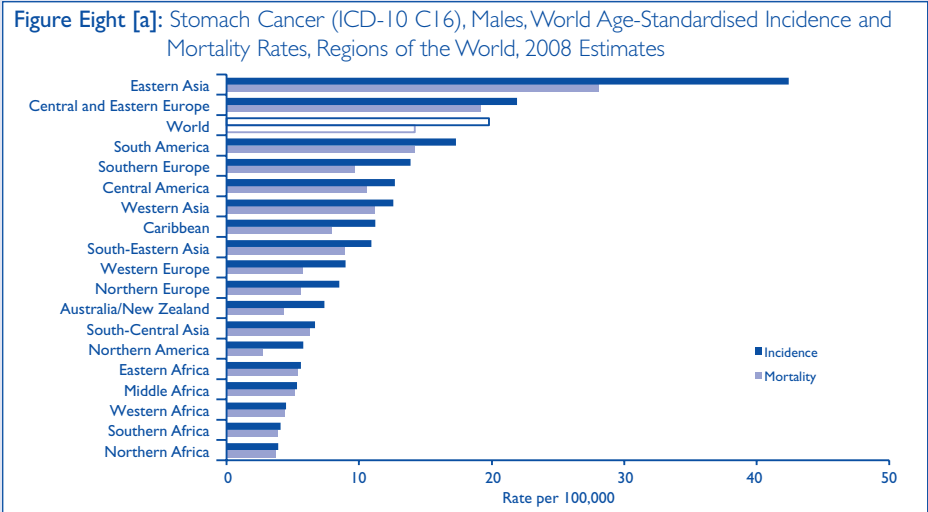
There is wide geographical variation in incidence across the world, much of which is related to differences in diet and *Helicobacter pylori* infection (which has an estimated prevalence of up to 90% in parts of the developing world).^{16,30} Incidence rates of stomach cancer have been declining worldwide for several decades.^{16,31} The reasons for this decline are not well understood, but may include improvements in diet, food preservation and storage (which are linked with falls in the prevalence of *Helicobacter pylori*). In 2008, more than 60% of cases occurred in Eastern Asia (72% in the developing world overall).²

Stomach cancer incidence worldwide is more than double in men than in women (rate ratio 2.2 : 1.0).² There is an eleven-fold variation in male incidence rates between the regions of the world, and an eight-fold variation in female rates (Figures Eight [a] and [b]).² In 2008, the highest incidence rates for both sexes were in Eastern Asia (42 and 18 per 100,000 in males and females, respectively), and the lowest were in Northern and Southern Africa (4 and 2 per 100,000 in males and females, respectively). The countries with the highest incidence rates in 2008 were Republic of Korea for males (62 per 100,000) and Guatemala and Republic of Korea for females (26 and 25 per 100,000, respectively). The UK was joint 99th highest of the 184 countries worldwide for males and joint 136th highest for females.²

Stomach cancer is the second most common cause of death from cancer worldwide, estimated to be responsible for a tenth, or nearly 740,000, of all cancer deaths in 2008 (Figure Three).² Stomach cancer mortality rates closely follow the trend for incidence rates (the ratio of mortality to incidence was 0.75 in 2008), with a similar variation in rates across the regions of the world (Figures Eight [a] and [b]).² The UK was joint 129th highest out of 184 countries worldwide for males and joint 151st highest for females.²

Prostate cancer

Prostate cancer is the fifth most common cancer in both sexes combined and the second most common cancer in men. An estimated 900,000 men worldwide were diagnosed with prostate cancer in 2008, accounting for almost one in seven (14%) cancers diagnosed in men (7% of the total in men and women [Figure One]).² There have been large increases in the incidence of prostate cancer in many countries worldwide, coupled with little change or small declines in mortality.¹⁶ Much of this increase can be attributed to the widespread use of prostate-specific antigen (PSA) testing in many Western countries (which detects both invasive cancers at an earlier stage as well as latent, non-lethal tumours that might otherwise have remained asymptomatic and undiagnosed during a man's lifetime).^{32,33} The developed countries carry the biggest burden of prostate



cancer, accounting for nearly three-quarters (72%) of the total in 2008.²

Prostate cancer incidence varies more than twenty-fold across the regions of the world. Incidence rates are highest in Australia/New Zealand and Western Europe (104 and 93 per 100,000 in 2008, respectively), where prostate cancer screening and PSA testing is common, and lowest in South-Central Asia (4 per 100,000 [Figure Nine]).² The risk of developing prostate cancer is high in black Caribbean and black African men and low in Asian populations,

suggesting important genetic determinants of risk also exist.^{34,35} The countries with the highest incidence rates in 2008 were Martinique (a French island in the Caribbean) and Barbados (174 and 140 per 100,000, respectively). The UK was 33rd highest out of 184 countries worldwide.²

Prostate cancer is the sixth most common cause of death from cancer in men worldwide (ranking ninth in both sexes combined), estimated to be responsible for 258,000 deaths in 2008 (Figure Three).² Since PSA testing has a

much greater effect on prostate cancer incidence than mortality, there is much less variation in mortality between the more and less developed of the regions of the world (11 and 6 per 100,000 in 2008, respectively, compared with incidence rates of 62 and 12 per 100,000, respectively). In 2008, mortality rates ranged from 3 per 100,000 in Eastern and South-Central Asia to 26 per 100,000 in the Caribbean. The UK was joint 67th highest out of 184 countries worldwide.²

Liver cancer

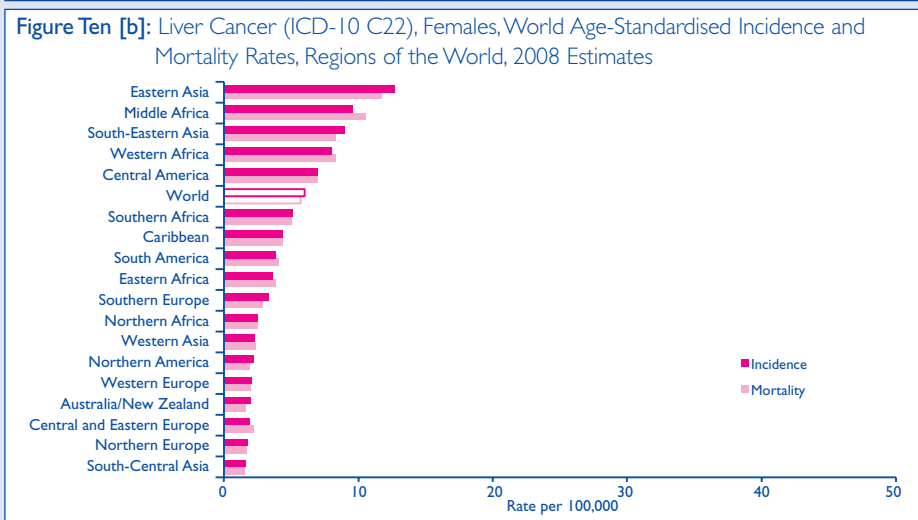
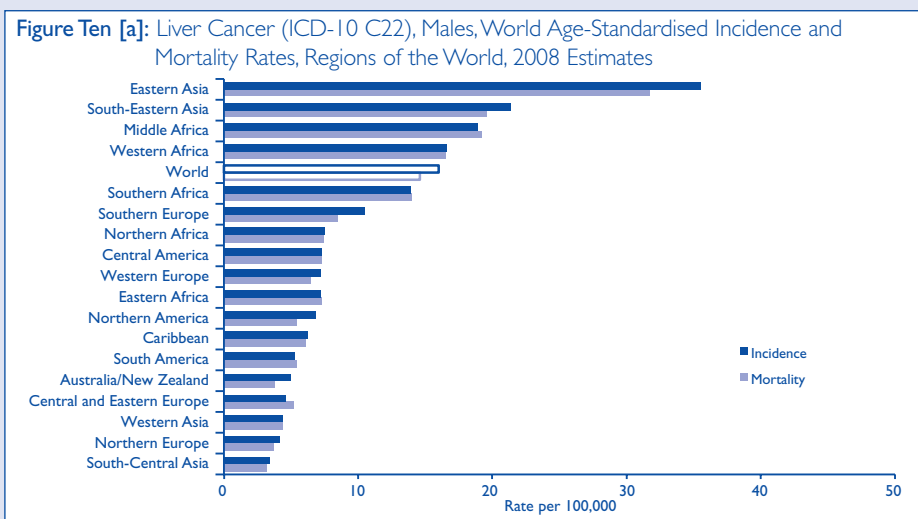
Liver cancer^g is the sixth most common cancer in the world. An estimated 750,000 people worldwide were diagnosed with liver cancer in 2008, accounting for 6% of the total (Figure One).² Over the past two decades, large increases in incidence (particularly in younger age groups) have been reported in the USA, Japan and parts of Europe.¹⁶ The major risk factors for liver cancer include chronic infection with hepatitis B and C^h (accounting for 54% and 31% of cases worldwide, respectively), the consumption of foods contaminated with aflatoxinⁱ and heavy alcohol consumption.^{16, 30, 36, 37} The developing countries carry the biggest burden of liver cancer, with more than eight out of ten (84%) cases being diagnosed there in 2008.²

Liver cancer incidence worldwide is nearly three times as high in men than in women (rate ratio 2.7 : 1.0).² There is a ten-fold variation in male incidence rates between the different regions of the world (Figure Ten [a]) and an eight-fold variation in female rates (Figure Ten [b]).² In 2008, male incidence rates ranged from 3 per 100,000 in South-Central Asia to 36 per 100,000 in Eastern Asia, and female rates ranged from 2 per 100,000 to 13 per 100,000 in the same regions. With high rates of hepatitis B and C infection and widespread alcohol use,³⁸ Mongolia has the highest incidence rates by far (117 and 75 per 100,000 in males and females, respectively). Liver cancer is rare in the UK, and was joint 134th highest out of 184 countries worldwide for males and joint 132nd highest for females.²

Liver cancer is the third most common cause of death from cancer worldwide, estimated to be responsible for nearly 700,000 deaths in 2008 (Figure Three).² The prognosis for liver cancer is poor (the ratio of mortality to incidence was 0.93 in 2008), and as such the geographical patterns in incidence and mortality are very similar (Figures Ten [a] and [b]).²

Cervical cancer

Cervical cancer is the seventh most common cancer in both sexes combined and the third most common cancer in women. An estimated 530,000 women across the world were



diagnosed with cervical cancer in 2008 (Figure One), accounting for nearly one in ten (9%) of all cancers diagnosed in women (4% of the total in men and women).² The developing countries carry the biggest burden of cervical cancer, with more than eight out of ten (86%) cases being diagnosed there in 2008. Much of the variation in incidence can be attributed to geographical differences in population prevalence of human papillomavirus (HPV - a precursor to cervical cancer development), and other co-factors that modify risk in HPV-infected women (such as oral contraceptive use and smoking).^{16, 39-41} Screening programmes have substantially reduced incidence and mortality rates in Western countries, but most women in poorer countries do not have access to effective screening programmes.^{16, 42} HPV vaccination offers a promising option for lowering disease burden in the developing world - though the cost of the vaccines is a major barrier for many developing countries, and there are several other challenges in the widespread implementation (such as delivering the vaccine and educating governments, health professionals and the public).¹⁶

There is more than seven-fold variation in the incidence of cervical cancer between the different regions of the world, with rates ranging from 5 per 100,000 in Western Asia to

35 per 100,000 in Eastern Africa in 2008 (Figure Eleven [page 7]).² The countries with the highest incidence rates in 2008 were Guinea and Zambia (56 and 53 per 100,000, respectively). The UK was 145th highest out of 184 countries worldwide.²

There were an estimated 275,000 deaths from cervical cancer worldwide in 2008 (Figure Three), accounting for 8% of all female cancer deaths (4% of the total in men and women).² Almost nine out of ten (88%) cervical cancer deaths occurred in the developing countries. Mortality varies fifteen-fold between the different regions of the world, with rates ranging from less than 2 per 100,000 in Australia/New Zealand and Northern America to 25 per 100,000 in Eastern Africa in 2008 (Figure Eleven).² The UK mortality rate is low and was joint 157th highest out of 184 countries worldwide.² The high mortality rates in the less developed regions of the world can be attributed to women presenting at a late stage of diagnosis, as well as inadequacies in the availability, accessibility and affordability of treatment.¹⁶ It has been estimated that cervical cancer contributes over 2.7 million years of life lost among women dying between the ages of 25 and 64 years worldwide, some 2.4 million of which occur in the developing countries and only 0.3 million in the developed countries.⁴³

^g In this report liver cancer refers to primary liver cancer only (ICD-10 C22).
^h Hepatitis B is the more common infection in Africa and Asia, whereas Hepatitis C occurs more frequently in Japan, the USA and parts of Europe.
ⁱ Aflatoxins are produced by fungi which can contaminate foodstuffs such as maize and nuts in tropical or sub-tropical countries.

Oesophageal cancer

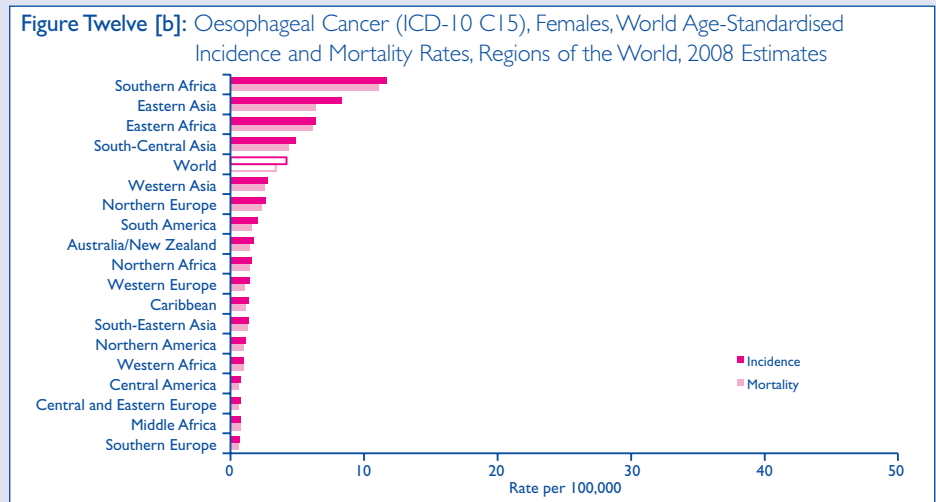
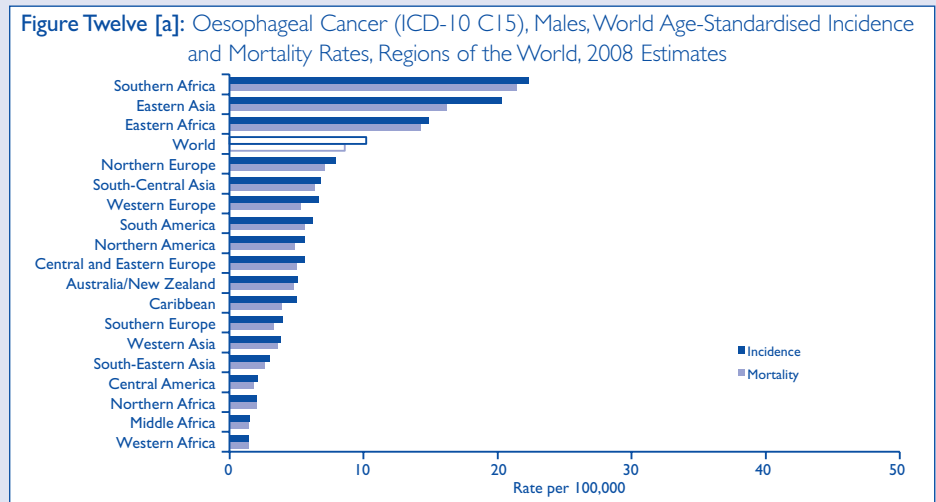
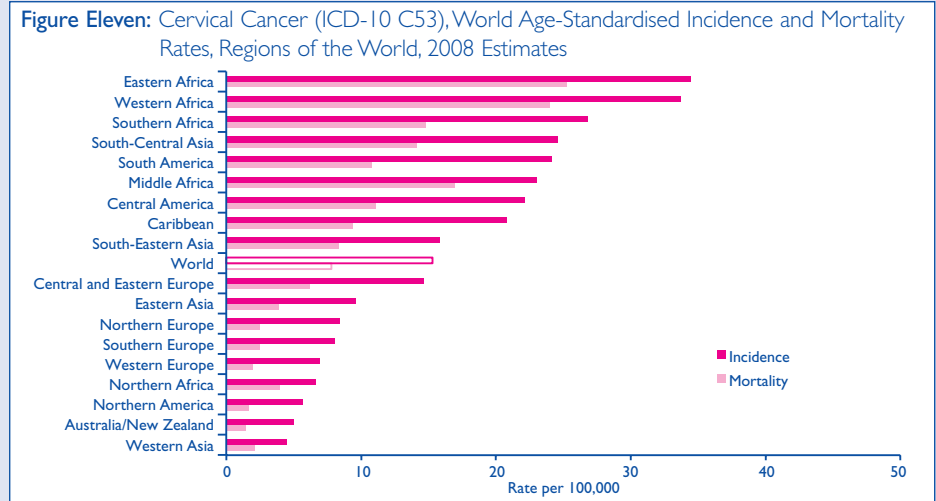
Oesophageal cancer is the eighth most common cancer worldwide. An estimated 480,000 people across the world were diagnosed with oesophageal cancer in 2008, accounting for 4% of the total (Figure One).² The developing countries carry the biggest burden of oesophageal cancer, with more than eight out of ten (83%) cases being diagnosed there in 2008. There are two main histological types of oesophageal cancer: squamous cell carcinoma (SCC), which is associated with tobacco smoking and alcohol; and adenocarcinoma (AC), which is related to reflux disease and excess bodyweight.^{16,44-47} SCC accounts for the vast majority of oesophageal cancers diagnosed in low- and middle-income countries.¹⁶ Since the 1970s the incidence of SCC has remained stable or decreased in most Western countries, while that of AC has increased (particularly in men).⁴⁸⁻⁵⁰ In some Western countries, such as the USA and the UK, AC has now overtaken SCC to become the dominant histology. The UK has the highest reported AC incidence rates in the world.⁵⁰

Oesophageal cancer incidence worldwide is more than double in men than in women (rate ratio 2.4 : 1.0).² In both sexes there are more than fifteen-fold differences in incidence between the different regions of the world (Figures Twelve [a] and [b]), with rates ranging from 1 per 100,000 in Western Africa to 22 per 100,000 in Southern Africa in males in 2008, and 1 per 100,000 in Southern Europe to 12 per 100,000 in Southern Africa in females.² The countries with the highest incidence rates in 2008 were South Africa and China in males (24 and 23 per 100,000, respectively) and Mongolia in females (16 per 100,000). The UK was 30th highest out of 184 countries worldwide for males and joint 38th highest for females.²

Oesophageal cancer is the sixth most common cause of death from cancer worldwide, estimated to be responsible for nearly 410,000 deaths in 2008 (Figure Three).² Oesophageal cancer mortality closely follows the geographical patterns for incidence (Figures Twelve [a] and [b]), with the highest mortality rates occurring in Southern Africa in 2008 (21 and 11 per 100,000 in males and females, respectively).² The UK was joint 30th highest out of 184 countries worldwide for males and 41st highest for females.²

Cancer of the lip and oral cavity

Cancers of the lip and oral cavity account for 2% of the cancer burden worldwide (an estimated 263,000 cases in 2008 [Figure One]), but they are the second most common cancer in males and the fourth most common cancer in females in South-Central Asia, accounting for 7% of the total cancers diagnosed in this region in 2008.² Tobacco and betel[†] chewing explains the high incidence in some developing



countries, whereas tobacco smoking and alcohol consumption are the major causes of oral cancer in developed countries.^{16,45,51,52}

Malignant melanoma

Less than 2% of all cancers worldwide are malignant melanomas (an estimated 200,000 cases in 2008 [Figure One]).² The majority of malignant melanomas are caused by heavy sun exposure in white-skinned populations.^{16,53} Incidence rates are highest by far in Australia/New Zealand (37 per 100,000 in 2008), where it is the third most common cancer in both males and females, accounting for one in nine

(11% in 2008) of the total cases.² Rates are increasing rapidly in Nordic populations, attributed to increased sun exposure during holidays at lower latitudes.¹⁶

Kaposi sarcoma

Kaposi sarcoma is an extremely rare form of cancer in most regions of the world, but it is one of the most common in Sub-Saharan Africa, where an estimated 34,500 cases were diagnosed in 2008.²

[†] The chewing of betel-quid (generally made up of betel leaf, areca nut and slaked lime) is widely practiced in many parts of Asia and in Asian-migrant communities elsewhere in the world.

There are four subtypes of Kaposi sarcoma, all of which are caused by infection with Human herpesvirus-8. The most common subtype, called epidemic or AIDS-related Kaposi sarcoma, develops in people who are infected with the Human immunodeficiency virus (HIV) - the virus that causes Acquired Immune Deficiency Syndrome (AIDS). Kaposi sarcoma was a rare cancer until the 1980s, when the advent of AIDS saw incidence rates increase dramatically around the world.¹⁶ The introduction of highly active anti-retroviral therapy for HIV in the 1990s led to a sharp decline in incidence in the developed world, but Kaposi sarcoma still remains an extremely common cancer among AIDS patients in Sub-Saharan Africa.^{2,16,54}

Future

An estimated 12.66 million people were diagnosed with cancer across the world in 2008, and 7.56 million people died from the disease.² As the world's population continues to grow and age, the burden of cancer will inevitably increase, even if current incidence rates remain the same. More than half of all cancers worldwide are already diagnosed in the developing countries, and without intervention this proportion is predicted to rise in the coming decades.¹

In 2008, the World Health Organisation (WHO) identified cancer as one of four leading threats to human health and development (along with cardiovascular diseases, chronic respiratory diseases and diabetes).⁵⁵ The WHO

states that the global burden of cancer can be reduced and controlled by implementing three evidence-based strategies: preventing cancer from occurring in the first place, detecting cancer earlier, and managing patients with cancer.⁵⁶ In September 2011, the United Nations General Assembly is holding a high-level meeting on non-communicable diseases to address the threat posed to low- and middle-income countries.⁵⁷ While it is clear that tackling cancer worldwide will remain one of the major challenges in the 21st century, this high-level meeting will finally put cancer on the global agenda, providing the biggest and best opportunity to drive forward major change in this area.

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Further information

For a list of other CancerStats reports and PowerPoint presentations, all freely available online, visit our Publications website <http://publications.cancerresearchuk.org> or email cancerstats@cancer.org.uk for more information and help.

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