

2015 PHILIPPINE CANCER FACTS and ESTIMATES

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INTRODUCTION

The most essential information necessary to win a successful war against cancer are incidence, mortality and survival. Cancer **incidence** and cancer **mortality** tell us the number of new cases and deaths respectively, occurring in a specific population during a particular time frame. Both incidence and mortality are usually expressed as the number of cases per 100,000 population. Cancer **survival** rates tell us how long patients live after being diagnosed, and is usually expressed as the proportion of patients still alive after a period of time, usually 5 or 10 years, or as a ratio of the observed survival in the patient population and the survival expected in the general population (relative survival).

Incidence data tells us if we are successful, or unsuccessful, in cancer prevention. Incidence data is best derived from **population-based cancer registries**. In the *WHO 2008-2013 ACTION PLAN for the Global Strategy for the Prevention and Control of Non-Communicable Diseases*, one of the indicators is the **number of countries with population-based cancer registries**. This was reiterated in the *WHO GLOBAL ACTION PLAN for the Prevention and Control of Non-Communicable Diseases 2013-2030*.

Survival data gives us an idea of the curability, or incurability, of specific types of cancers, as well as the health system's performance in early detection and appropriate treatment of certain curable cancers. Cancer mortality is a sum effect of incidence and survival.

Cancer incidence, mortality and survival give the best information about the general population when the data are **population-based**. Patient selection and approaches to patient management vary considerably between hospitals. Therefore hospital-based data should be applied to the general population with a great deal of caution, or not at all. Hospital-based cancer incidence data are normally reported as frequency distribution (proportions) and not as number of new cases per 100,000 populations.

For almost three and a half decades, two population-based cancer registries –the **Philippine Cancer Society-Manila Cancer Registry (PCS-MCR)** and the **Department of Health-Rizal Cancer Registry (DOH-RCR)** – have been the main source of cancer incidence data in the Philippines. The populations covered are those of Metro Manila and Rizal Province. Data from these two registries have been published by the International Agency for Research on Cancer (IARC) in the series **Cancer Incidence in Five Continents (CI5)** since *Volume V (1978-1982)* up to the latest *Volume X (2003-2007)*.

The Philippine Cancer Society has also published data from the two registries in the series **Cancer in the Philippines**. Volume 5 Part 1 contains 2003-2007 incidence trends, and Part 2 contains 1980-2007 incidence trends, in cooperation with the Finnish Cancer Registry.

For the **Philippine Cancer Facts and Estimates** series, the calculation of national cancer incidence and mortality estimates for the years 1988, 1993 and 1998. The **2005** incidence and mortality estimates were calculated using *GLOBOCAN 2000 Cancer Incidence, Mortality and Prevalence Worldwide Version 1.00 software*, produced by the Descriptive Epidemiology Group of the International Agency for Research on Cancer (IARC). The **2010** incidence and mortality estimates were calculated using the *GLOBOCAN 2008 software version*. The **2015** incidence and mortality estimates were calculated using *GLOBOCAN 2012 version*. The statistical methods used for *GLOBOCAN 2008* are markedly different from those used in *GLOBOCAN 2000 and GLOBOCAN 2002*, and *GLOBOCAN 2008* also includes information not used in the previous *GLOBOCAN* versions. For this 2015 Cancer Facts and Estimates, the 2008-2012 raw registry data of Manila-Rizal population-based registry was used to extrapolate **estimates for 2015. Age-standardized incidence rates, age-standardized mortality rates, cumulative incidence rates (%), and cumulative mortality rates (%) in 2012** are compared for the Philippines and other countries.

IARC-GLOBOCAN has greatly facilitated national estimation of cancer incidence every 5 years and comparisons between countries. IARC also helps to develop and sustain population-based cancer registries worldwide and has been assisting the two Philippine registries from the very start. Population-based survival data of selected leading cancer sites, derived from 2 cohorts of new cancer cases, one cohort consisting of Metro Manila residents alone and a second cohort of Metro Manila and Rizal province residents, and compared with selected ethnic groups in the United States (Filipino-Americans and Caucasians), some African, Asian and Central American populations, and a collection of European countries are described.

CANCER: BASIC DATA

What causes cancer?

Normally, the cells that make up the body reproduce themselves in an orderly fashion and have specific life spans. Dead and worn-out tissues are replaced, injuries are repaired and the body stays healthy. When exposed to some substances, like certain chemicals and viruses, some susceptible cells undergo changes in their genes called mutations. The substances that cause these genetic mutations are called carcinogens. Examples of carcinogens, also called **cancer initiating or promoting substances**, are numerous chemicals in cigarette smoke, viruses that cause chronic infection of the liver and the uterine cervix, hormones such as estrogen, and ultraviolet rays from the sun. These **cellular genetic mutations** if left unchecked will eventually enable the cells to behave in a manner totally different from normal cells. They keep on reproducing, live much longer, and can spread and reproduce in other parts of the body. Cancer cells serve no useful purpose and when too numerous and widespread, they cause serious damage and death.

Although carcinogens are capable of initiating cellular genetic mutations, the body is also quite capable of repairing these mutations. When the mutations are so extensive that repair is no longer possible, the body can get rid of these rogue cells. If

the rogue cells cannot be killed, the body is often successful in keeping them at bay. These defence mechanisms are also referred to as **cancer protecting mechanisms**. These mechanisms are in peak fighting form in any healthy person. The **major promoters of health** are healthy diet, physical fitness and possibly less stress.

Lately, non-genetic factors that cause the genes to express themselves differently (**epigenetic factors**) have been recognized to also play important roles in the initiation/promotion/protection of specific types of cancer and other diseases. Epigenetic factors also respond to pressures in the external and internal environment.

The major factors involved in the causation of cancer, as well as many other chronic degenerative diseases, are CIGARETTE SMOKING, UNHEALTHY DIET, ALCOHOL DRINKING, PHYSICAL INACTIVITY, OBESITY, HORMONES, VIRUSES, and IONISING RADIATION.

The numerous battles in the deadly war between cancer initiating/promoting mechanisms and the body's cancer protecting defences begin early in life, are happening every day, and continue over many decades, until the body wins or loses. The war is not lost overnight. It is usually a case of too much of cancer promoting substances over too long a period of time, combined with not enough cancer protecting mechanisms because of unhealthy lifestyles that eventually defeat the body.

A few individuals have an inherited predisposition to develop specific cancers, such as breast cancer and colon cancer, or to cancer in general, but for these persons cancer is not inevitable. If they avoid the cancer promoting substances, and strengthen their defences by maintaining healthy lifestyles from childhood, they will win.

Table 1. Estimated New Cancer Cases in 2012 by Age -Groups, All sites, Philippines (GLOBOCAN 2012)

Age - Group	Males		Females	
	Rate per 100,000	No. of Cases	Rate per 100,000	No. of Cases
0-14	7.3	1,257	5.6	916
15-39	23.7	4,838	55.1	10,940
40-44	89.0	2,298	211.4	5,546
45-49	155.5	3,492	282.3	6,533
50-54	276.7	5,223	349.1	6,948
55-59	429.5	6,609	397.3	6,711
60-64	593.1	6,278	461.8	5,555
65-69	767.1	5,169	531.3	4,364
70-74	895.9	3,934	590.5	3,549
75+	925.5	3,960	606.9	4,129
All Ages	139.9	43,058	143.4	55,191

Table 2. Estimated New Cancer Deaths in 2012 by Age -Groups, All sites, Philippines (GLOBOCAN 2012)

Age - Group	Males		Females	
	Rate per 100,000	No. of Cases	Rate per 100,000	No. of Cases
0-14	4.5	776	3.4	554
15-39	12.0	2,455	15.7	3,118
40-44	48.7	1,258	70.0	1,836
45-49	87.4	1,963	108.5	2,512
50-54	156.2	2,948	155.0	3,086
55-59	267.5	4,117	205.9	3,479
60-64	418.3	4,428	269.0	3,236
65-69	582.1	3,922	359.6	2,954
70-74	820.1	3,601	491.0	2,951
75+	1,211.3	5,183	681.3	4,635
All Ages	107.4	30,651	78.6	28,361

As a general rule, the incidence of cancer increases with increasing age. **Table 1** above shows that in **2012, Childhood Cancer** (0-14 years) comprised only **2.2%** of all cancer cases, and that **25%** of the cases that **occurred among persons 65 years and older**. **Table 2** shows that the mortality rates and number of deaths also significantly increased with increasing age, with mortality rates and number of deaths lowest among children and highest among those 65 years and older.

In 2012, 13 out of 100 males and 14 out of 100 females in the Philippines would have had some form of cancer if they would have lived up to age 75. Eleven out of 100 males and 7 out of 100 females would have died from cancer before age 75.

Can cancer be prevented?

At least 1/3 of all cancers can be prevented.

Cancer protecting mechanisms prevent cancer. A healthy lifestyle that is started in childhood, particularly eating a **HEALTHY DIET**, maintaining **PHYSICAL FITNESS** and **MINIMIZING/ PROPERLY COPING with STRESS** may decrease the risk of cancer, coronary artery disease, hypertension, stroke and diabetes.

A **healthy diet** is low in animal fat, rich in starchy foods (such as cereals, tubers and pulses), with substantial **fruits and vegetables**. The micronutrients found in fruits and vegetables, such as vitamins, minerals and trace elements, are essential in maintaining the defence mechanisms that protect the body. An unhealthy diet is rich in fat, salt and free sugars, and/or in smoked, salt-pickled/-preserved foods.

Physical fitness is achieved through a **lifelong** active lifestyle. Physically fit individuals are not overweight, quite productive, with high self-esteem, and successful in coping with stress. Formally planned exercise as well as usual walking, stair climbing, and myriad manual activities regularly performed result in physical fitness.

Increasing mental, social, psychological and spiritual **stress** seems to accompany economic progress, and at the same time coping mechanisms are eroded. While increasing stress may be inevitable, traditional support structures within the family and community ought to be strengthened, and new institutional mechanisms established, to help individuals and families cope with day to day stress.

Cancer promoting agents should be avoided. Cigarette smoke is the most pervasive cancer causing substance. The numerous carcinogenic agents found in cigarette smoke cause cancers of the lung, mouth, pharynx, larynx, esophagus, other cancers, and other acute and chronic diseases. The damage is not inflicted on the smoker alone but on everyone who inhales cigarette smoke (**second hand smoke [SHS] or passive smoking**).

High alcohol consumption also increases the risk of many cancers. **Betel-quinid chewing** causes cancer of the mouth and this habit should be avoided.

Some viral infections of the liver can result to chronic active hepatitis which can then lead to cirrhosis and liver cancer. **Hepatitis B virus (HBV)** is the most common cause of liver cancer in the Philippines. **HBV vaccination** should prevent majority of liver cancer in the country.

Human papilloma virus (HPV) causes cancer of the uterine cervix and is transmitted through sexual intercourse. Safe sex, including the use of barrier protective devices such as condoms, is currently the most effective means of preventing sexually transmitted diseases. **HPV vaccines** are available.

Ultraviolet rays from the sun are capable of causing skin cancer, particularly in fair-skinned persons. Excessive sun exposure should be avoided, and the use of umbrellas, wide-brimmed hats and sun-bloc preparations ought to be encouraged.

Many cancers of the LUNG, LIVER, CERVIX, ORAL CAVITY, STOMACH, COLON/RECTUM, LARYNX and SKIN MELANOMA, which comprise 42% of all cancers in both sexes, can be prevented.

Can cancer be cured?

At least 1/3 of all cancers can be cured.

Majority of cancers can be cured if they are detected early. However at present, not all cancers can be detected early enough to be cured. At least a third of all cancers can be cured when detected and treated early, and particularly when curative treatment is available.

Surgery is currently the most effective and widely accessible form of treatment for majority of cancers that can be cured if detected early. **Radiotherapy** can cure small cancerous growths such as cancer of the mouth and larynx. **Chemotherapy** alone can cure certain types of cancer such as acute lymphocytic leukemia in children, testicular cancer, and choriocarcinoma of the uterus. In some instances radiotherapy, hormone therapy and/or chemotherapy can be added to surgery as **adjuvant** treatment and will improve curability.

These common cancers can be detected early and when treated properly can be cured - BREAST, CERVIX, COLON, RECTUM, ORAL, THYROID, PROSTATE. These comprise 42% of all cancers, 27% of cancers in males, and 58% of cancers among females.

What about cancers that can neither be prevented nor detected early?

All cancer patients with distressful symptoms can have **adequate palliative care** that can result in an acceptable **quality of life**.

Palliative care is the active total care of patients whose disease is not responsive to curative treatment. Control of pain, and of psychological, social and spiritual problems are

Many aspects of palliative care are also applicable earlier in the course of the illness, in conjunction with anticancer treatment, and to relieve symptoms caused by anticancer treatment. **Palliative care** affirms life and regards dying as a normal process that neither hastens nor postpones death, provides relief from pain and other distressing symptoms, integrates the psychological and spiritual aspects of patient care, offers a support system to help patients live as actively as possible until death, and offers a support system to help the family cope during the patient's illness and in their own bereavement.

Freedom from cancer pain is essential to palliative care. Every year, 6 million people worldwide and at least 200,000 Filipinos suffer from cancer pain, majority of which are not satisfactorily relieved in spite of the availability of well-established, simple and cost-effective methods for cancer pain relief. The WHO method of cancer pain relief is very effective, simple and inexpensive. When used properly, the method is capable of relieving cancer pain in at least 90% of cases. This is based on the use of drugs which can be administered by mouth, and by the clock rather than "on demand". The drugs are increased from non-opioids to mild opioids, and then to strong opioids (3-step analgesic ladder) to keep the patient continuously pain-free.

By using oral medications, the focus of treatment shifts from the hospital to the **home**. The patient can return to a meaningful and productive life. Large numbers of patients with incurable cancer, mostly in progressive minded developed countries in Europe and North America are currently back at work, their pain relieved by strong opioids taken by mouth, by the clock, at the right dose. ***The right drug in the right dose and route given at the right time will relieve cancer pain.***

**Opioids do not cause addiction among patients treated for cancer pain.
Strong opioids should not be withheld until the patient is dying.
The prescription of strong opioids does not mean that death is near.**

An acceptable quality of life does not only involve cancer pain relief. There are other symptoms which should be relieved, as well as psychological, social and spiritual problems which are to be attended to. **The FAMILY is the unit of care in palliative medicine, and the HOME is the ideal location of palliative care.**

CANCER SITUATION and CONTROL in the PHILIPPINES

Prevention

In 2003-2004, smoking prevalence had decreased to 56% and 12% among males and females respectively, from 64% and 19% in 1989. Per capita consumption of cigarettes had increased from 1,990 in the 1970s to 2,160 in the 1980s, and then decreased to 1,462 in 1995. Around 95% of the population could have been exposed to second hand smoke (SHS) in 1999. The first **Philippine Global Adult Tobacco Survey** (GATS 2009) showed that although more than 90% were aware that smoking causes serious illness, 28% were current tobacco smokers (48% among men and 9% among women), and 49% were exposed to cigarette smoke in their homes. There is still a huge need for a strong and sustained campaign for a total ban on all forms of tobacco

advertising and sponsorships, prohibition of sales to minors, and prevention of SHS exposure everywhere, including homes. Graphic health warnings ought to be placed in tobacco products. An increase in the taxes on cigarettes will be very helpful.

Another important indicator required in the WHO NCD Action Plans is the number of countries with reliable standardized data on the major non-communicable disease risk factors (*WHO STEPS Surveillance Manual*). The Philippine Food and Nutrition Research Institute (FNRI) of the Department of Science and Technology (DOST) has been using this WHO Method of NCD risk factors surveillance in its National Nutrition and Health Surveys (NNHeS).

There had been a steady decline in the consumption of fruits and vegetables. The **8th National Nutrition and Health Survey (NNHeS 2013)** reported that overweight/obesity had increased from 26.6% in 2008 to 68% (BMI \geq 30.0) in 2013. The prevalence among adults of hypertension increased from 22% in 1993 to 25.3% in 2008. Prevalence of high fasting blood sugar among adults also increased, from 3.9% in 1998 to 4.8% in 2008. Dyslipidemia had significantly increased from 2003-2008.

In Luzon Island, physical inactivity was observed in 57% of adults aged 20-65 years. A 2001 national survey reported that regular drinking (consumption of alcoholic beverages \geq 4 days per week) was observed in 13% and 6% of males and females respectively. Per capita alcohol consumption increased by more than 50% from 1970-1972 to 1994-1996.

HBV vaccines have been available in the country since 1984. The Department of Health had included HBV vaccination as part of the Expanded Program of Immunization (EPI) in 1992. The 2008 NNHeS reported that 85% of children 0-48 months had received HBV vaccination. Meanwhile, in the private sector, HBV vaccination had been widely promoted and accepted by families that can afford it, starting in the 1980s.

Two types of HPV vaccines were introduced in 2006. The Department of Health, alarmed by the rapid rise in new cases of HIV/AIDS, promoted the practice of safe sex including the use of condoms. The Catholic Church, as it had consistently done for decades, is vigorously opposing condom use, claiming that condom use is a sin and would lead to sexual promiscuity.

The traffic mess in Metro Manila and other urban centers illustrate a very unhealthy situation wherein everyday millions live in an environment that is conducive to cancer and a host of other diseases. Vehicular emissions loaded with **harmful chemicals**, notably from trucks, buses, jeepneys and tricycles, in addition to cigarette smoke, pervade the air..

**In order to PROMOTE HEALTH AND PREVENT CANCER
and OTHER MAJOR DISEASES successfully,
an INTEGRATED and COMPREHENSIVE EFFORT that is doable and sustainable
must be undertaken simultaneously by all sectors of society.**

Early Detection and Prompt Treatment

In the Philippines, in spite of nearly two decades of “**Awareness Campaigns**” conducted by the public and private sectors, such as those on breast, cervix and colorectal cancers, majority of these cancers are still not diagnosed and treated at an earlier, more curable stage. Early detection or screening for cancer has not been implemented on a nationwide scale by the government.

The reality is that more than 80% of Philippine families cannot afford out-of-pocket expenses needed for basic medical care. The 2005-2007 preliminary estimates of the Philippine National Health Accounts (PNHA) released by the National Statistical Coordination Board (NSCB) revealed that the total expenditure as a percentage of GDP decreased from 3.4% in 2005 to 3.2% in 2007. Private out-of-pocket expenditure in 2007 was 54.3% of total health expenditure, with government contributing 13.0% and local government units (LGUs) contributing 13.3%. The share of Social Insurance was 8.5%, down from 9.8% in 2005. The main national health insurance provider, PhilHealth, in cooperation with local government units, has been steadily increasing the enrolment of indigent families, and aiming to insure a large portion of indigent families and the self-employed, particularly starting but slow during the immediate past year or so with the advent of the Universal Health Law and Sin Tax Law.

It may be that most Filipino women may in fact be already aware that breast cancer is curable when detected and treated early. Recent evidence indicate that majority of women with detected breast lumps will indeed have the mass biopsied if they were assured that the treatment will be free. It is not only the direct costs of treatment that will have to be considered. Indirect, but equally important, socioeconomic factors will have to be considered, such as transportation costs, care for the children and household while the mother is in hospital, perception and attitudes of the husband, and attitudes about perceived other “mandatory” treatment such as chemotherapy. Institutional factors may pose additional barriers, such as long queues and waiting times, unnecessary tests, and bureaucratic regulations and procedures.

Contrary to the continuing misperception that most Filipinos lack awareness that certain common cancers are curable when detected and treated early, it could be that due to socio-economic realities, majority actually have no choice.

Palliative Care

In September 1991, the Philippine Cancer Society Inc. started its **Patient Outreach Services**, the first palliative care program in the Philippines. The 2007 Directory of the Asia Hospice Palliative Care Network shows that there are 35 registered Philippine facilities, 18 located outside of Metro Manila.

In the Philippines the prescription of morphine and other strong opioids are regulated and relatively few physicians would seek to be licensed to prescribe opioids

thus constitute the major barriers to the effective treatment of severe pain either caused by cancer, following major operations, or many other very painful conditions. More Filipino Physicians must come forward equipping themselves to treat cancer pain armed with the necessary tools to do so but compliant also to government regulations.

PHILIPPINE GOVERNMENT INITIATIVES

Philippine Cancer Control Program

The DOH institutionalized the Philippine Cancer Control Program way back in 1990 looking at epidemiology to public information to early detection to training, treatment and pain relief, focusing on breast, cervix, and lung cancers. This early 2016, an AO was done revisiting the AO in 1990, adding the creation of a National Cancer Control Committee once more focusing on similar goals. **Specific Objectives:** Operationalize the **National Cancer Registry and Surveillance System**; Reduce mortality and improve overall survival and quality of life of people with various cancer types through **early diagnosis and prompt treatment**; Reduce the incidence of **prioritized cancers associated with the most common avoidable risk factors**; Ensure that prioritized cancer control services are provided in an **equitable and sustainable way at all levels of care**; **Increase and expand the coverage of cancer treatment**, including but not limited to the use of innovative drugs and psychosocial support in the preventive, treatment, and survivorship stage of the patient and family, if necessary; Set **regulatory and accreditation standards for cancer institute/ center**, as an integral part of DOH and government hospitals including private hospitals as applicable that follows a **multi-disciplinary/ interdisciplinary team approach to cancer management** ; Develop and update regularly a **compendium of guidelines or standards** for prioritized cancers including childhood cancers.

To this list, we add **re-examine and improve the health financing systems for cancer management**

These are still just objectives and the key is to MAKE ALL that is WRITTEN TO DO SINCE 1990 HAPPEN - beyond any changes in political administration- a rigorous and passionate implementation sustainable over the years under good governance. On the other hand a mere AO might not really do it (as so experience by the 1990 version), so we strongly propose to **make the AO into a LAW!!!**

Cancer Registration

The DOH has identified the **Philippine Cancer Society – Manila Cancer Registry (PCS-MCR) as its lead partner organization** for population-based cancer registration. Cancer incidence, mortality and survival data will be the basis for formulating, implementing, monitoring and assessment of cancer control programs. The DOH will promulgate directives to concerned agencies that will facilitate the operations of cancer registries in selected areas in the country, particularly that of a uniform mandatory reporting system. There will be linkage with the National Statistics Office, such as access to death certificates which are essential to the determination of cancer

survival. The DOH will also provide financial assistance to the PCS-MCR and actively relate with existing and potential benefactors of other cancer registries.

Healthy Lifestyle

The DOH has an Integrated Program for the prevention of Non-Communicable Diseases, promoting a healthy lifestyle and integrating this at the community level with the local government units (LGUs), and professional and civic organizations. This will continue to focus on 1) avoidance of cigarette smoking and exposure to second hand smoke; 2) a healthy diet and avoidance of overweight/obesity; 3) increased physical activity; and, 4) avoidance of excessive alcohol consumption.

Control of Tobacco

The Tobacco Regulation Act was realized in **2003** augmented by the Consumers Act of the Philippines – regulating smoking in public places, sales to minors, packaging and labelling , advertising, promotion and sponsorships. There has been strong lobby against the implementation of the Law up to this time.

Cervical Cancer Screening

The Establishment of a Cervical Cancer Screening Program was ordered by the government (DOH) in **2005**, but this has yet to be implemented adequately.

Hepatitis B Infection Control

The control of hepatitis b infection stated in **1990** including this in the expanded program on immunization, followed by the Mandatory Infants & Children Health **Immunization Act in 2011** including Hep B vaccine free to infants within 24 hrs of birth.

Evaluation of the implementation of the Hep B Birth Dose within 24 hours of birth noted <50% coverage with more health facilities giving the dose beyond 24 hours, so mainly practice by private hospitals. The target goal of <2% sero-prevalence among infants in 2012 was not reached.

Universal Health Care Act, 2013

To improve health care and health care funding in the country, the Universal Health Care Act was legislated in 2013... and ensures that all Filipinos, especially the poorest of the poor, will get health insurance coverage from the Philippine Health Insurance Corp. (PhilHealth), Mandates a **national health insurance program (NHIP)** as the means for the healthy to help pay for the care of the sick and for those who can afford medical care to subsidize those who cannot, and is Compulsory in all provinces, cities and municipalities, notwithstanding the existing health insurance programs of local government units.

The funds for this would come from the **2012 Sin Tax Law**, which significantly increased the prices of cigarettes and liquor in the country.

To make the Universal Health Care Act work, in 2014 the DOH through the Philippine National Center for Disease Prevention & Control-Degenerative Disease Office has developed **clinical pathway guidelines** for selected non-communicable diseases (NCDs) and Craft **service packages** for NCDs identified in three major program clusters, which include **Cancer** (Breast, Cervical, Prostate, Colorectal). The service packages include from preventive to curative to rehabilitative services at the barangay to district to regional to specialty levels of care – but this has yet to be realized.

Implementing the Philippine Medicines Policy

The DOH National Center for Pharmaceutical Access & Management (DOH NCPAM) has been implementing the Philippine Medicines Policy in 2011 and started to improve access to cancer drugs starting with **Acute Lymphocytic Leukemia** for children and **Breast Cancer** for women.

The medicines access program started first in the four largest government hospitals in Metro Manila. The project included a **Patient Navigation System** with the Philippine Cancer Society, with patient navigators assisting patients move swiftly through the formidable socioeconomic obstacles that are encountered daily by our less fortunate citizens and which are the major barriers to early detection and treatment of breast cancer. Initially hospital-based, evidence-based and community-oriented standard protocols on the efficient diagnosis, preoperative work-up, primary treatment, adjuvant treatment and surveillance of patients are set up. Institutional procedures will be improved to avoid delays and strict monitoring of compliance will be implemented. Nevertheless, a hospital-based program by itself is not expected to lead to a significant increase in the proportion of cases detected with earlier stages. In order to truly promote earlier detection and treatment, the project will have to be brought to the community level, in cooperation with LGUs and civic organizations.

This Access Program serves as a gateway to the Philippine Health Insurance Z Package for Cancer...

The PhilHealth Z Benefits

The Philippine Health Insurance Corporation (PhilHealth) implemented its Case Type Z Benefit Packages (Z Benefits) last 2012. The Z Benefits focus on providing relevant financial risk protection against illnesses perceived as medically and economically catastrophic especially affecting Filipinos belonging to the marginalized sectors of society. There are currently Z packages for ALL, breast, cervix and prostate cancers, at every early stage of implementation among a few pilot government hospitals. Acceptance of the first Z package (breast cancer) was and still is having resistance mainly due to its low peso amount; the Z packages on ALL, cervix cancer, and colorectal cancer have not met as much resistance.

NCAPM and PHIC has been collaborating on improving access to health care, and just recently started developing the national clinical practice guidelines for early stage BrCa particularly concerned on the inclusion of aromatase inhibitors, trastuzumab, and HER2neu testing based on economic feasibility within a low-middle resource setting.

CANCER ESTIMATES in 2015, PHILIPPINES

Table 3 shows that in **2015**, the predicted number of new cases will be about 109,280 new cases (both sexes), 48,138 among males and 61,142 among females. There will be about 66,151 cancer deaths (both sexes), 34,391 in males and 31,760 in females.

Cancer Sites	New Cases			Deaths		
	Male	Female	Both Sexes	Male	Female	Both Sexes
Oral Cavity	1406	1247	2653	592	512	1104
Nasopharynx	1315	591	1906	671	302	973
Other pharynx	898	465	1363	744	409	1153
Esophagus	586	223	809	508	197	705
Stomach	1582	1133	2715	1344	957	2301
Colon/Rectum	5250	4375	9625	3040	2483	5523
Liver	6070	2579	8649	5874	2461	8335
Pancreas	936	959	1895	825	841	1666
Larynx	1251	324	1575	542	152	694
Lung	9995	3684	13679	8709	3066	11775
Skin Melanoma	175	155	330	81	71	152
Breast		20267			7384	
Cervix Uteri		7289			3151	
Corpus Uteri		2451			565	
Ovary		2657			1610	
Prostate	5526			2912		
Testis	217			102		
Bladder	761	348	1109	330	155	485
Kidney	710	406	1116	423	246	669
Brain/ Nervous System	1186	1017	2203	853	724	1577
Thyroid	824	2464	3288	305	673	978
Non-Hodgkin Lymphoma	1395	1160	2555	896	687	1583
Hodgkin's Disease	113	116	229	52	54	106
Multiple Myeloma	183	212	395	121	145	266
Leukemia	2166	2104	4270	1706	1680	3386
All Sites but skin	48138	61142	109280	34391	31760	66151

Table 4 shows the number of **new cases (both sexes)** per cancer site in **2015**, ranked according to decreasing number of new cases, and Figure 1 illustrates the **top 10** leading sites (breast, lung, colon/rectum, liver, cervix uteri, prostate, leukemia, thyroid, stomach, ovary). The 10 leading sites comprise **73%** of all new cases.

Table 4. Estimated Leading New Cancer Cases, Both Sexes, 2015

Cancer Sites	Number	Percentage
Breast	20267	19
Lung	13679	13
Colon/Rectum	9625	9
Liver	8649	8
Cervix Uteri	7289	7
Prostate	5526	5
Leukemia	4270	4
Thyroid	3288	3
Stomach	2715	3
Ovary	2657	2
Oral Cavity	2653	2
Non-Hodgkin Lymphoma	2555	2
Corpus Uteri	2451	2
Brain/ Nervous System	2203	2
Nasopharynx	1906	2
Pancreas	1895	2
Larynx	1575	1
Other pharynx	1363	1
Kidney	1116	1
Bladder	1109	1
Esophagus	809	1
Skin Melanoma	330	1
Hodgkin's Disease	229	1
All Sites but skin	109280	100

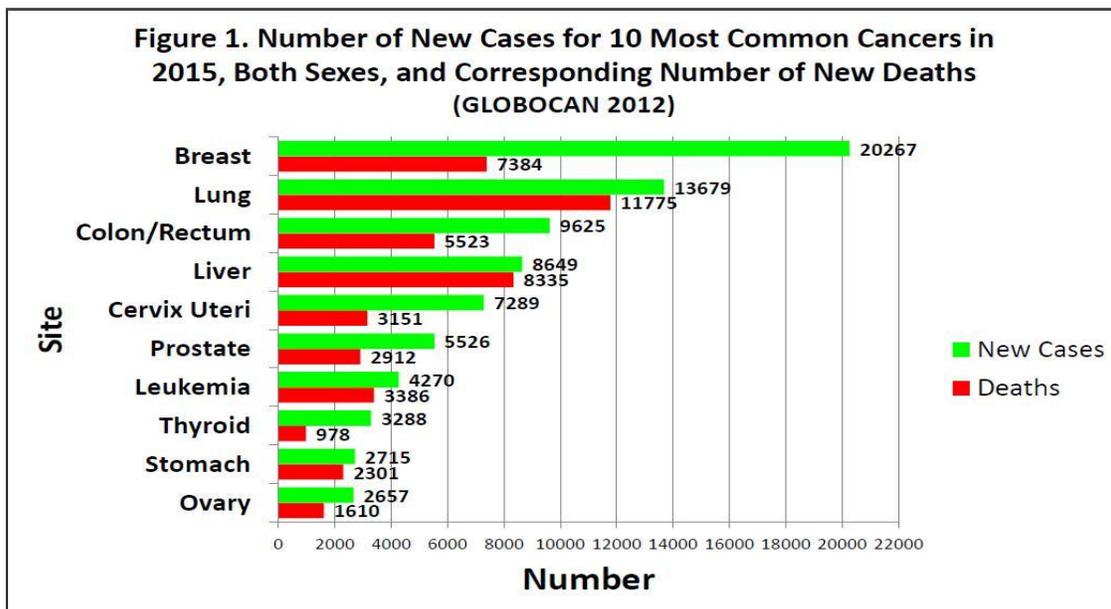


Table 5 shows the number of **new cases** in **2015** among **men** per cancer site, ranked according to decreasing number of new cases, and Figure 2 illustrates the **top 10** leading sites. The 10 leading sites among men (lung, liver, prostate, colon/rectum, leukemia, stomach, oral cavity, Non-Hodgkins lymphoma, nasopharynx, larynx) comprise **77%** of all new cases.

Table 5. Estimated Leading New Cancer Cases, Males, 2015

Cancer Sites	Male	Percentage
Lung	9995	21
Liver	6070	13
Prostate	5526	12
Colon/Rectum	5250	11
Leukemia	2166	5
Stomach	1582	3
Oral Cavity	1406	3
Non-Hodgkin Lymphoma	1395	3
Nasopharynx	1315	3
Larynx	1251	3
Brain/ Nervous System	1186	3
Pancreas	936	2
Other pharynx	898	2
Thyroid	824	2
Bladder	761	2
Kidney	710	2
Esophagus	586	1
Testis	217	1
Hodgkin's Disease	113	1
All Sites but skin	48138	100

Figure 2. Number of New Cases for 10 Most Common Cancers in 2015, Males, and Corresponding Number of New Deaths (GLOBOCAN 2012)

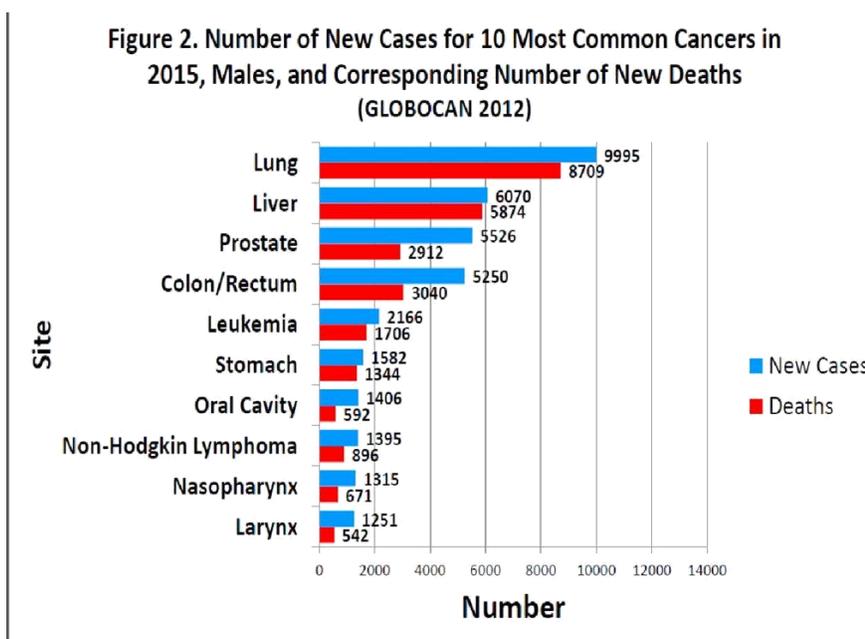


Table 6 shows the number of **new cases** in **2015** among **women** per cancer site, ranked according to decreasing number of new cases, and Figure 3 illustrates the **top 10** leading sites. The 10 leading sites among women (breast, cervix uteri, colon/rectum, lung, ovary, liver, thyroid, corpus uteri, leukemia, oral cavity) comprise **79%** of all new cases.

Table 6. Estimated Leading New Cancer Cases, Females, 2015

Cancer Sites	Female	Percentage
Breast	20267	33
Cervix Uteri	7289	12
Colon/Rectum	4375	7
Lung	3684	6
Ovary	2657	4
Liver	2579	4
Thyroid	2464	4
Corpus Uteri	2451	4
Leukemia	2104	3
Oral Cavity	1247	2
Non-Hodgkin Lymphoma	1160	2
Stomach	1133	2
Brain/ Nervous System	1017	2
Pancreas	959	2
Nasopharynx	591	1
Other pharynx	465	1
Kidney	406	1
Bladder	348	1
Esophagus	223	1
Skin Melanoma	155	1
All Sites but skin	61142	100

Table 7 shows the number of new **deaths (both sexes)** per cancer site in **2015**, ranked according to decreasing number of deaths with the **10 leading sites** (lung, liver, breast, colon/rectum, leukemia, cervix uteri, prostate, stomach, pancreas, ovary) comprising **73%** of all cases. Figure 1 show the number of new deaths associated with the new cases of the top 10 cancer sites. The 2015 estimates were calculated using the GLOBOCAN software version 2012.

Table 7. Estimated Leading New Cancer Deaths, Both Sexes, 2015

Cancer Sites	Number	Percentage
Lung	11775	18
Liver	8335	13
Breast	7384	11
Colon/Rectum	5523	8
Leukemia	3386	5
Cervix Uteri	3151	5
Prostate	2912	4
Stomach	2301	4
Pancreas	1666	3
Ovary	1610	2
Non-Hodgkin Lymphoma	1583	2
Brain/ Nervous System	1577	2
Other Pharynx	1153	2
Oral Cavity	1104	2
Thyroid	978	2
Nasopharynx	973	2
Esophagus	705	1
Larynx	694	1
Kidney	669	1
Corpus Uteri	565	1
Bladder	485	1
All Sites but skin	66151	100

Table 8 shows the number of new **deaths** in **2015** among **men** per cancer site, ranked according to decreasing number of deaths with the **10 leading sites** (lung, liver, colon/rectum, prostate, leukemia, stomach, Non-Hodgkins lymphoma, brain/nervous system, pancreas, other pharynx) comprising **79%** of all cases. Figure 2 shows the number of new deaths associated with the new cases of the top 10 cancer sites.

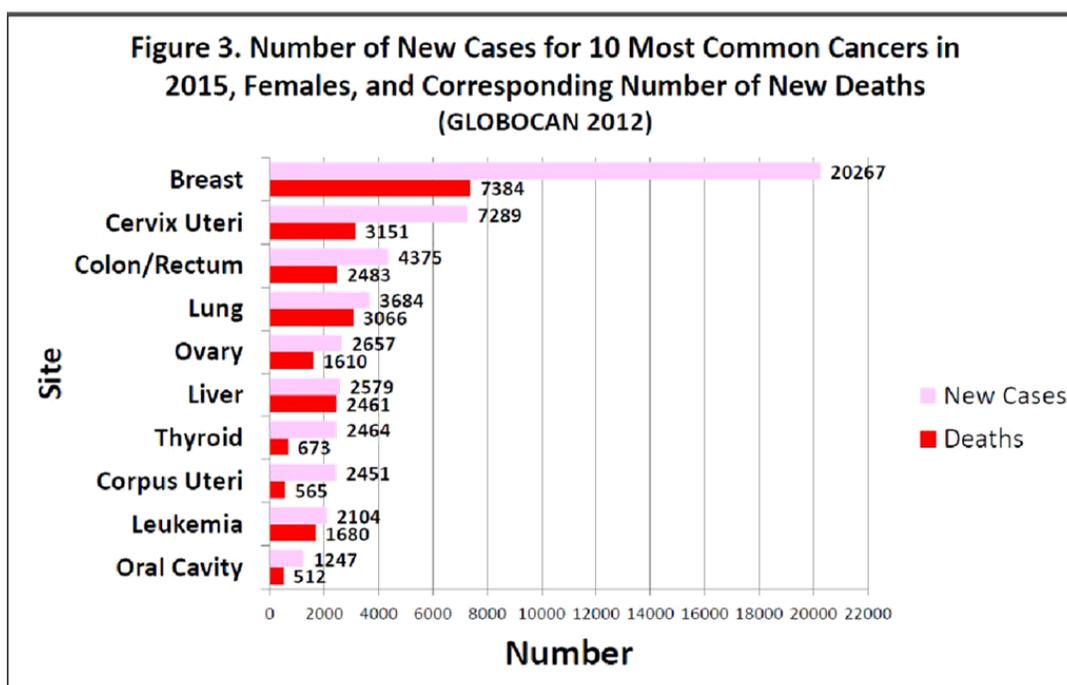
Table 8. Estimated Leading New Cancer Deaths, Males, 2015

Cancer Sites	Male	Percentage
Lung	8709	25
Liver	5874	17
Colon/Rectum	3040	9
Prostate	2912	9
Leukemia	1706	5
Stomach	1344	4
Non-Hodgkin Lymphoma	896	3
Brain/ Nervous System	853	3
Pancreas	825	2
Other Pharynx	744	2
Nasopharynx	671	2
Oral Cavity	592	2
Larynx	542	2
Esophagus	508	2
Kidney	423	1
Bladder	330	1
Thyroid	305	1
All Sites but skin	34391	100

Table 9 shows the number of new **deaths** in **2015** among **women** per cancer site, ranked according to decreasing number of deaths with the **10 leading sites** (breast, cervix uteri, lung, colon/rectum, liver, leukemia, ovary, stomach, pancreas, brain/nervous system) comprising **77%** of all cases. Figure 3 shows the number of new deaths associated with the new cases of the top 10 cancer sites.

Table 9. Estimated Leading New Cancer Deaths, Females, 2015

Cancer Sites	Female	Percentage
Breast	7384	23
Cervix Uteri	3151	10
Lung	3066	10
Colon/Rectum	2483	8
Liver	2461	8
Leukemia	1680	5
Ovary	1610	5
Stomach	957	3
Pancreas	841	3
Brain/ Nervous System	724	2
Non-Hodgkin Lymphoma	687	2
Thyroid	673	2
Corpus Uteri	565	2
Oral Cavity	512	2
Other pharynx	409	1
Nasopharynx	302	1
Kidney	246	1
Esophagus	197	1
Larynx	152	1
Skin Melanoma	71	1
All Sites but skin	31760	100



Figures 1, 2 and 3 show that in some cancer sites, such as lung and liver, for which there are no effective early detection methods, the number of deaths is very close to the number of new cases. Thus, for these cancers efforts should focus on primary prevention. On the other hand, in some cancer sites such as breast, cervix and colon/rectum the number of deaths is much smaller than the number of new cases because these cancers can be detected and treated early. Another way to present the ratio of the number of new cases to the number of new deaths is using the **incidence rate to mortality rate ratio** which will be used in the succeeding sections on specific cancer sites when comparing estimated Philippine rates to those estimated for other countries/regions.

MAJOR CANCER SITES

Breast Cancer

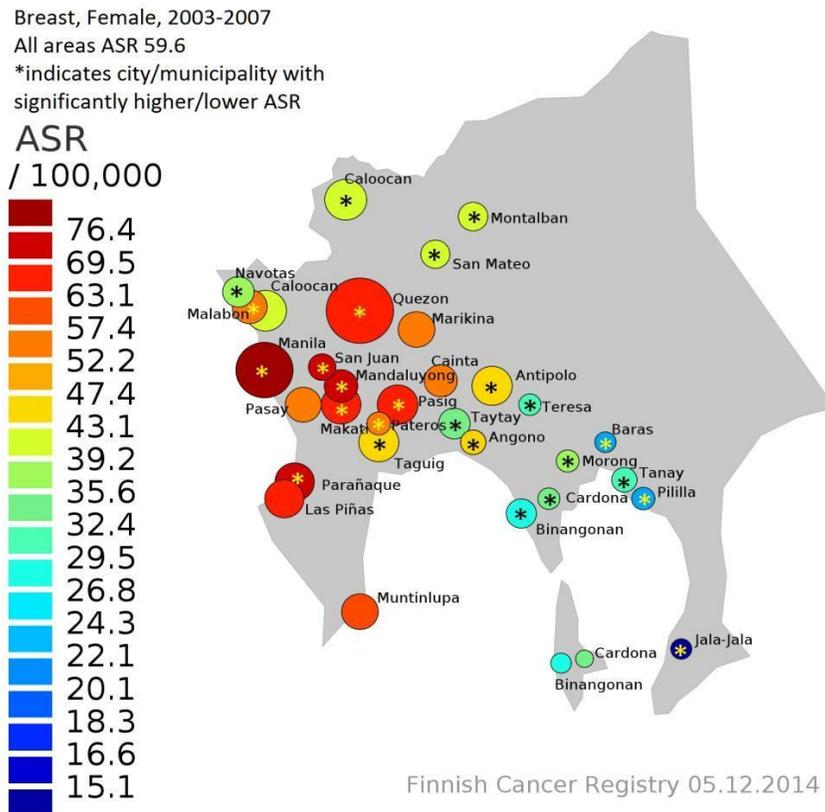
Incidence, Mortality and Survival

Breast cancer is the **leading site** for **both sexes** combined (**19%**) in **2015** and ranks **1st** among **women (33%)**. An estimated 20,267 new cases is estimated to occur among women.

The **incidence** rate starts rising steeply at age 30. The incidence rate has been steadily rising since **1980**, with an average annual percentage change of **1.2%**.

Figure 4 shows that in Metro Manila, the significantly highest incidence rates of breast cancer during **2003-2007** (ASR 64-79 per 100,000) were in the cities of Manila, Paranaque, San Juan, Mandaluyong, Quezon City, Makati, and Pasig, wherein large scale housing development had occurred starting in the 1950s. This had resulted in internal migration of middle and high-income families from all over the country, and could have led to more rapid “Westernization” including changes in **reproductive behavior**. Adjoining cities/municipalities which were not included in this housing boom had lower breast cancer incidence. These adjoining areas had breast cancer ASRs of **39-57** per 100,000 women.

Figure 4. Metro Manila and Rizal Province age-standardized incidence rates, Breast cancer, females, 2003-2007.

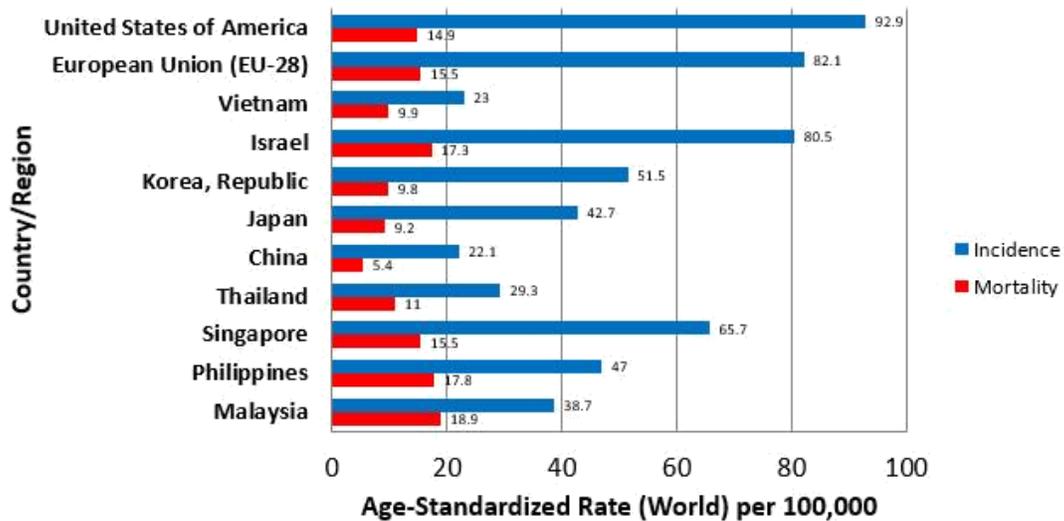


In **2012**, five (4.7) out of 100 women would have had a likelihood of getting breast cancer before age 75. The estimated national age-standardized mortality rate was 17.8 per 100,000 women. One (1.7) out of 100 women would have died from breast cancer before age 75.

In **2015**, there is an estimated 7,384 deaths from breast cancer, the 3rd leading cause of cancer deaths among both sexes (11%), and the highest among women (23%).

Figure 5 shows that in **2012** the **incidence/mortality ratio** of breast cancer in the Philippines was lower compared to developed countries/regions and some Asian countries, around 5:1 in the United States, the European Union and in Israel, and around 3:1 in the Philippines. In 2012, for every 5 new cases of breast cancer in these developing countries there was one death due to breast cancer. In the Philippines, for every 3 new cases of breast cancer there was one death due to breast cancer.

Figure 5. Breast Cancer Incidence and Mortality in 11 Countries/Regions 2012
(GLOBOCAN 2012)



Using country-specific abridged life tables (Table 10), the 5-year relative **survival** rates (RSR) among Metro Manila and Rizal Province residents with cancer diagnosed in the mid 1990s (47%) were lower compared to those of China, Saudi Arabia, Singapore, South Korea, Thailand, Turkey and Costa Rica.

Table 10. 5-year relative survival (%), Breast cancer patients (cancer diagnosed in the mid 1990s) in selected populations

MM + Rizal	China	India	Saudi Arabia	Singapore	South Korea	Thailand	Turkey	Costa Rica
47	82	52	64	76	79	63	77	70

For breast cancers diagnosed between 1993-2002 and using population-specific life tables (Table 10), the 5-year relative **survival rate** of Metro Manila residents (59%) was lower compared to Filipino-Americans (90%) and Caucasians (88%) in the United States. For breast cancers diagnosed between 1995-1999 and also using population-specific life tables, survival of Metro Manila women (57%) was also lower compared to European women (79%) in the Eurocare-4 study.

Risk Factors and Prevention

Estrogen increases risk of breast cancer. The more prolonged and sustained the exposure of breast tissue to estrogen the higher the risk becomes. Women with early menarche and/or late menopause, those who never had children, and those whose first pregnancy occurred after age 30 years are at higher risk. As pregnancy and lactation interrupts the continuous production of estrogen, women who have had children and particularly those who breast-fed have a lower risk. The risk of Filipino women who have never been pregnant is 5 times that of women with ≥ 5 pregnancies. Those whose age at first

birth was ≥ 30 years had a 3.3 times higher risk compared to women whose age at first birth was < 20 years. Women who went to college had almost twice the risk than those with minimal education.

Removal of the ovaries before menopause also decreases the risk. Anti-estrogen drugs such as tamoxifen may prevent breast cancer, particularly among women at high risk. Contraceptive pills do not cause breast cancer. On the other hand, postmenopausal

Estrogen hormone replacement therapy (HRT) increases risk, especially when used in combination with continuous progestin. Symptomatic postmenopausal women should be informed of the potential risks and benefits of HRT.

Mutations in BRCA1 and BRCA2 tumor suppressor genes were present in 5% of Filipino women with breast cancer, similar to what has been reported in other populations.

As economic development has consistently been associated with a fall in birth rates it is expected that breast cancer incidence will continue to rise. Women in the Philippines, including those who have a family history of breast cancer, should endeavor to lower their individual risk by starting a healthy lifestyle early and maintaining it throughout life.

Warning Signals

Any **breast lump**, particularly among women 30 years and older, should be medically attended to. Breast changes that persist such as a lump, thickening, swelling or dimpling are the most common presentation. Breast cancer is generally painless.

Early Detection

Breast cancer, compared to other cancers, is relatively easier to detect because in most cases breast masses are palpated by the patient herself. Monthly **self-breast-examination** (SBE) and annual **health worker-breast-examination** (HWBE) remain the mainstays of early detection particularly in developing nations. These should be a habit by the age of 30. All suspicious masses should be biopsied, preferably using needle aspiration biopsy.

Needle aspiration biopsy is an accurate, safe and economical procedure that saves the patient from an open biopsy operation. When hormone receptor assay is available, a **core needle biopsy** (CNB) is preferable to a fine needle aspiration biopsy (FNAB). Specimens obtained from a CNB are sufficient for hormone receptor assays which will give information that is important to treatment options and decisions.

A screening procedure, mammography, may discover cancers that are too small to be felt even by the most experienced examiner. It had been shown in High Income Countries that mammographic screening, combined with physician breast examination, increased survival among women 50 years and older. However, the WHO does not recommend mammography as a population-screening method in developing countries because of the prohibitive cost. Nevertheless, women 50 years and older are encouraged to undergo annual mammography on their own.

In the Philippines, lack of awareness may not be the major reason why majority of breast cancers are not diagnosed early. Inability of most patients to afford the direct and indirect costs of diagnosis and treatment, as well as related socioeconomic impediments, may well be the major barriers that have to be overcome. Current “National Breast Cancer Awareness” campaigns which do not include the provision of diagnosis and treatment are outdated and ineffective. The efforts should instead be directed at the local level, with each province/city/municipality/district/barangay fashioning, implementing and monitoring their own uniquely relevant schemes. These efforts will require the sustained involvement of local government officials, insurance providers, NGOs and civic minded individuals and organizations, health workers and medical specialty societies.

Treatment

Early breast cancer is curable. Early breast cancer is defined as that wherein the primary lesion in the breast and the spread in the axillary lymph nodes can be completely removed by surgery, and there is no indication that there could be spread beyond these areas. In the Philippines, women with localized breast cancer diagnosed in 1987 had a 5-year survival rate of 76%, and a 10-year survival rate of 57%. The usual curative operation is called a *modified radical mastectomy* in which the entire breast is removed. For small cancers, a *breast conservation procedure* can be performed wherein only the lesion and axillary lymph nodes are removed followed by radiotherapy to the breast. This however increases the cost and requires daily trips for treatment so that many eligible women opt for mastectomy.

Community-based programs on early detection and treatment should be primarily concerned with getting women with breast cancer to undergo mastectomy as early as possible. Program planning, particularly concerning fiscal matters, accessibility and sustainability should have mastectomy as the primary endpoint. Mastectomy can be performed throughout the country. The 10-year survival of cases that did not have any spread to the axillary lymph nodes and who underwent mastectomy alone is around **70%** in developed countries where most cases are detected and treated early.

The most important prognostic factor in early breast cancer is the presence or absence of spread to the **axillary lymph nodes**. Spread to the lymph nodes significantly shortens survival. Survival following primary treatment for early breast cancer has been shown to be increased if **adjuvant treatment** is given, particularly if there is already spread to the axillary lymph nodes. The most important information to consider in deciding what kind of adjuvant treatment is most appropriate for a particular patient is the **ER/PR-HER2neu status** of the tumor. In general, women with hormone receptor- positive cancers, comprising around 70% of all cases, are treated with adjuvant hormonal therapy, and those with hormone receptor-negative cancer are given adjuvant chemotherapy. Those with HER2neu positive tumors are given anti-HER2neu biological agents such as trastuzumab.

Accurate hormone-HER2neu receptor assay for breast cancer should be encouraged and developed nationwide.

Many women with **advanced breast cancer** can still survive for many comfortable and productive years. Again, hormonal therapy for women with hormone receptor-positive cancer is generally the first-line treatment and accompanied by judicious and cost-effective **palliative care**.

Lung Cancer

Incidence, Mortality, Survival.

The **incidence** rates begin to rise at age 40 among males, and at age 45 among females. Among males, incidence rates had slightly increased from **1980 to 2007**, with an annual change of 0.1%. In females, there had been an annual increase of 0.3%.

Figure 6 shows that in **2003-2007**, the highest incidence rates among men occurred in some cities of Metro Manila (ASR 58-63 per 100,000), while some municipalities in Rizal province had incidence rates similar to the estimated 2012 national average (ASR 27.9 per 100,000). Figure 7 shows a similar incidence pattern among women although the rates were lower compared to men. Highest incidence rates were also seen in some cities in Metro Manila (ASR 15-17 per 100,000), while some municipalities in Rizal province had incidence rates similar to the estimated 2012 national average (ASR 7.7 per 100,000).

Figure 6. Metro Manila and Rizal Province age-standardized incidence rates, Lung cancer, males, 2003-2007.

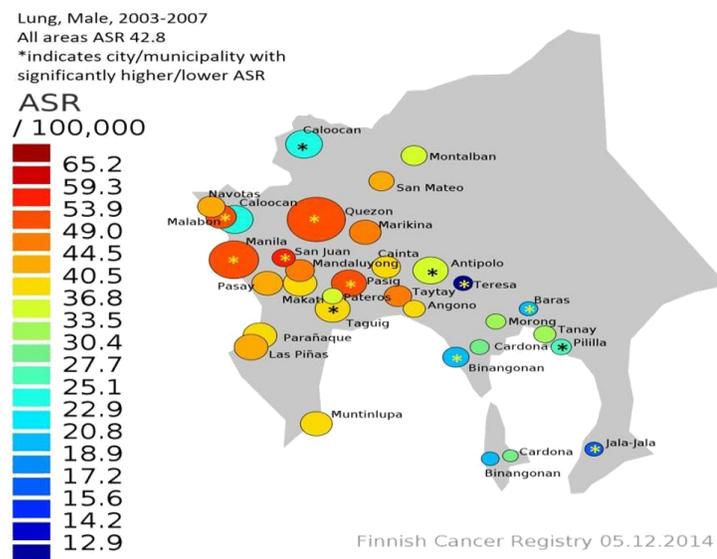
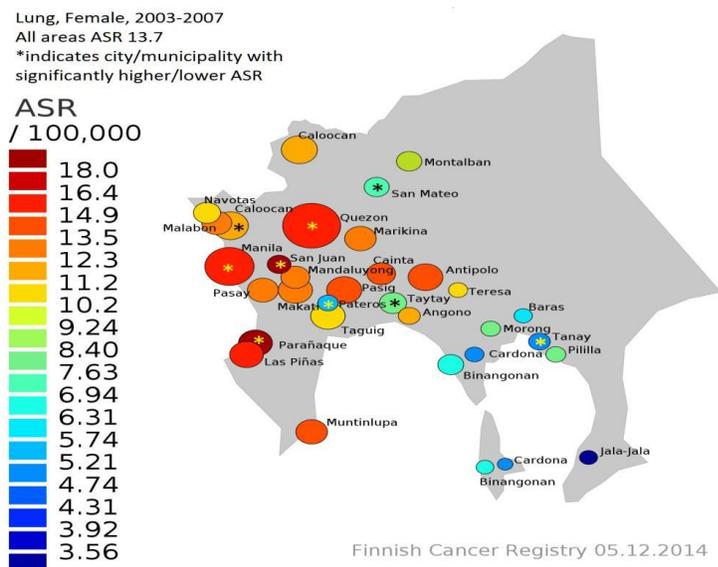


Figure 7. Metro Manila and Rizal Province age-standardized incidence rates, Lung cancer, females, 2003-2007.



In **2012**, the estimated age-standardized national incidence rates were 20.4 per 100,000 in both sexes, 31.3 among males, and 9.5 among females in the Philippines. Three (3) out of 100 men and 1 out of 100 women would have had a likelihood of getting lung cancer before age 75. The estimated national standardized mortality rates were 18.1 per 100,000 in both sexes, 28.2 among males, and 8.0 among females.

Lung cancer was estimated to be the **2nd** leading cancer site for both sexes combined (13%) in **2015**. It is the estimated leading site in males (21%) and the 4th leading site among females (6%). An estimated 13,679 new cases in both sexes, 9,995 in males and 3,685 in females. Death from lung cancer was estimated to be the leading cause of cancer deaths, 11,775 among both sexes, and 8,709 among males and 3,066 in females.

Figures 8 and 9 show that in **2012** in both sexes and in all countries/regions represented, the **incidence/mortality ratio** of lung cancer was quite low, almost approaching a ratio of **1:1**. Many patients with lung cancer do not survive for a year following diagnosis.

Figure 8. Lung Cancer Incidence and Mortality in 11 Countries/Regions, 2012, Males (GLOBOCAN 2012)

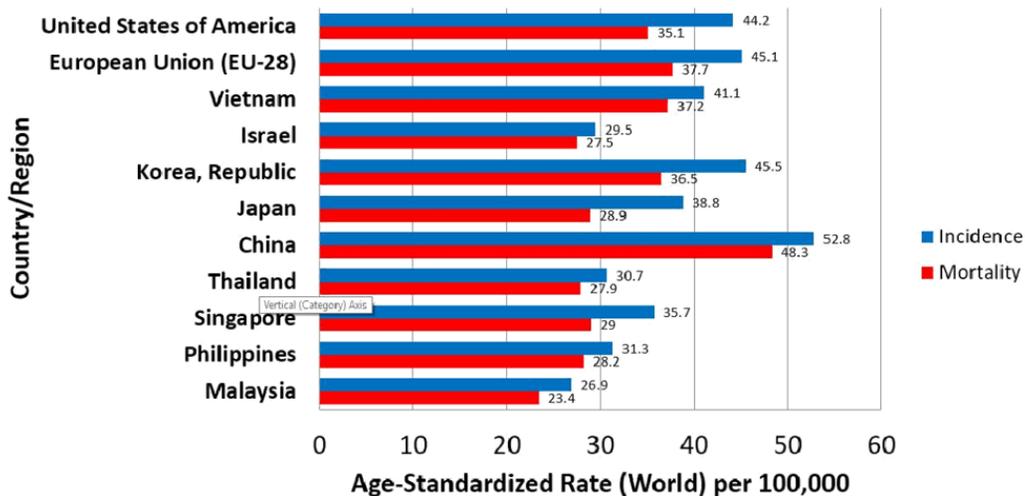
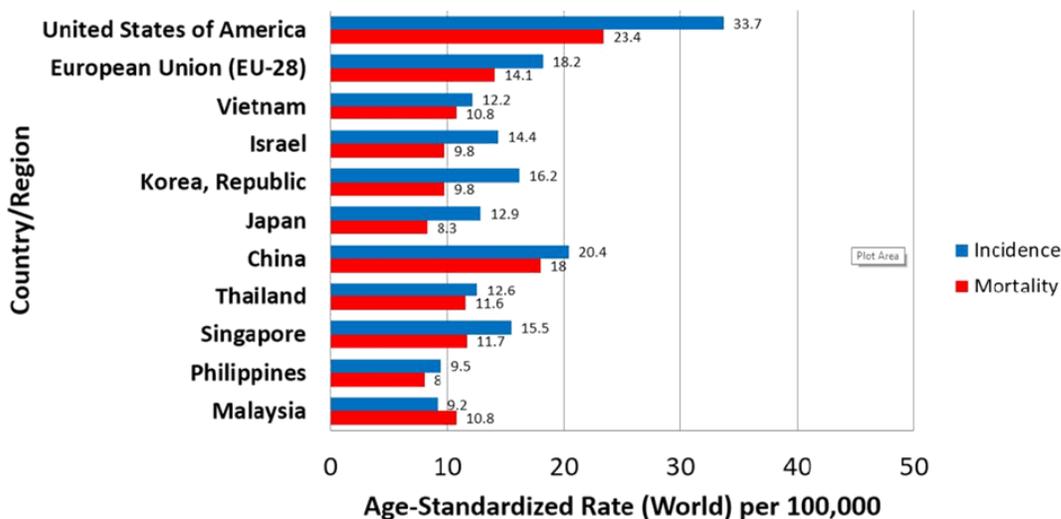


Figure 9. Lung Cancer Incidence and Mortality in 11 Countries/Regions, 2012, Females (GLOBOCAN 2012)



As early detection and treatment is still difficult to achieve, even in High Income Countries, **survival** remains poor. For lung cancers (both sexes) diagnosed between 1993-2002 and using population-specific life tables, the 5-year relative survival rate of Metro Manila residents (12%) was slightly lower compared to Filipino-Americans (18%) and Caucasians (17%) in the United States. For lung cancers (both sexes) diagnosed between 1995-1999 and also using population-specific life tables, survival of Metro Manila residents (9%) was also slightly lower compared to European residents (12%) in the Eurocare-4 study.

Risk Factors and Prevention

Cigarette smoking causes lung cancer. Non-smokers who are continuously exposed to tobacco smoke, especially in enclosed spaces, also have a higher risk of lung cancer. The best way to fight lung cancer is to stop smoking, and to prevent non-smokers from inhaling tobacco smoke. The relative increase in the prevalence of smoking among women is worrisome, as marketing of cigarettes has increasingly been targeting women.

Warning Signals

A persistent cough, blood streaked sputum, chest pain, recurrent episodes of pneumonia or bronchitis, hoarseness, arm or shoulder pain, weakness and weight loss.

Early Detection

There is still no effective early detection method for lung cancer. As a consequence, majority of patients with lung cancer are diagnosed at an incurable stage.

Treatment

For the occasional patient seen in an early stage, surgery is the preferred curative treatment.

For the majority of cases, who are usually seen in an **incurable** stage, judicious and cost-effective **palliative care** can offer an acceptable quality of life.

Liver Cancer

Incidence, Mortality and Survival

The **incidence** rates begin to rise at age 35 among males, and age 50 among females. There was a slight decrease in incidence rates from **1980 to 2007**, with an annual change of -0.5% among males, and -0.5% among females.

Figure 10 shows that among males the highest incidence rate in **2003-2007** was in the city of Manila (24.6) and no wide variations between most of the other cities/municipalities. Figure 11 shows that among females the highest incidence rates were in the cities of Manila, San Juan and Pasay (7.9-8.8), and also no wide variations between the other cities and municipalities.

Figure 10. Metro Manila and Rizal Province age-standardized incidence rates, Liver cancer, males, 2003-2007.

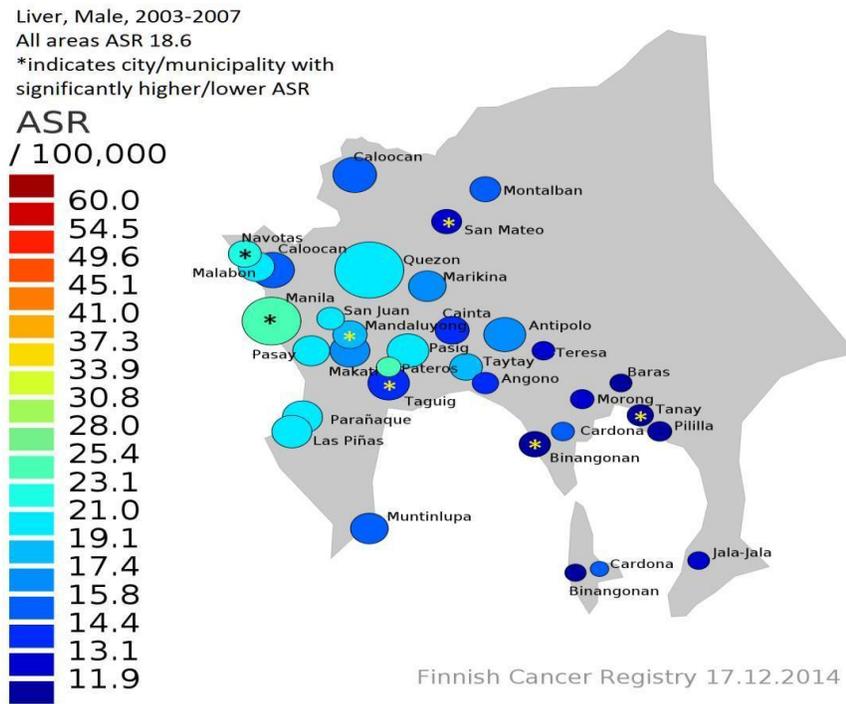
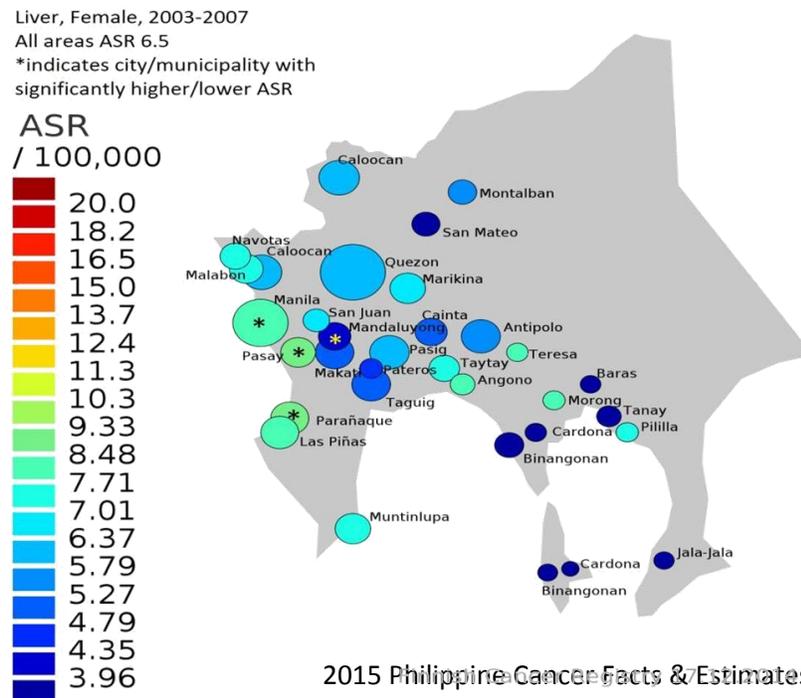


Figure 11. Metro Manila and Rizal Province age-standardized incidence rates, Liver cancer, females, 2003-2007.



In **2012**, the estimated age-standardized national incidence rates were 11.8 per 100,000 in both sexes, 17.1 among males, and 6.5 among females in the Philippines. Two (1.7) out of 100 men and one (0.6) out of 100 women would have had a likelihood of getting liver cancer before age 75. The estimated national standardized mortality rates were 11.8 per 100,000 in both sexes, 17.4 among males, and 6.3 among females. Two (1.7) out of 100 men, and one (0.6) out of 100 women would have died from liver cancer before age 75.

Liver cancer was estimated to be the 4th leading site for both sexes combined (8%) in **2015**. It ranked 2nd among males (13%) and 6th among females (4%). There was an estimated 8,649 new cases among both sexes, 6,070 cases among men and 2,579 cases among women. In 2015, there was an estimated 8,335 deaths in both sexes, 5,874 in men and 2,461 in women.

For liver cancers (both sexes) diagnosed between **1993-2002** and using population-specific life tables, the 5-year relative **survival rate** of Metro Manila residents (8.5%) was slightly lower compared to Filipino-Americans (11.7%) and Caucasians (12.3%) in the United States. For liver cancers (both sexes) diagnosed between 1995-1999 and also using population-specific life tables, survival of Metro Manila residents (5.3%) was also lower compared to European residents (9.1%) in the Eurocare-4 study.

Risk Factors and Prevention

Viral infections that cause chronic active hepatitis, such as Hepatitis B and Hepatitis C viruses, are responsible for most cases of primary liver cancer in the Philippines. **Hepatitis B virus (HBV)** infection is still the most prevalent. Infants and young children who get the infection and become carriers are at highest risk of liver cancer. Other factors implicated are heavy alcohol consumption, prolonged intake of foodstuffs containing large amounts of aflatoxin and other chemical carcinogens.

Most liver cancer cases in the country can be prevented through HBV infant vaccination and improved sanitation nationwide. The decrease in incidence by 2002 may be partly attributed to increasing vaccination that started in the 1980s in both private and public sectors.

Warning Signs

Abdominal pain, weight loss, weakness and loss of appetite, particularly in someone who has been diagnosed as having cirrhosis of the liver or is a known HBV carrier.

Early Detection

There is still no efficient early detection method for liver cancer.

Treatment

For the occasional patient whose liver cancer is still small, surgery can be curative. For the majority of cases, who are usually seen in an incurable stage, judicious and cost-effective **palliative care** can provide an acceptable quality of life.

Colon-Rectum Cancer

Incidence, Mortality and Survival

The **incidence** rates begin to rise steeply at age 50 years in both males and females. The incidence rates rose steadily from **1980 to 2007**, with an annual change of 1.3% for both males and females.

Figure 14 shows that in **colon** cancer among males the highest incidence rates in **2003-2007** were in the cities of Pasay, Manila and Quezon City (16.4-19.9), while the rest of Metro Manila (5-13) and Rizal province (2.6-5) had lower incidence rates. Figure 15 shows that among females the highest incidence rates were in the cities of Pasay, Quezon and Manila (11-16), and also decreasing incidence rates eastward to Rizal province.

In **2015** cancers of the colon and rectum combined were estimated to rank 3rd for both sexes (9%), 4th among males (11%) and 3rd among females (7%). There will be 9,625 new cases in both sexes, 5,250 in males and 4,375 in females.

Figure 14. Metro Manila and Rizal Province age-standardized incidence rates, Colon cancer, males, 2003-2007.

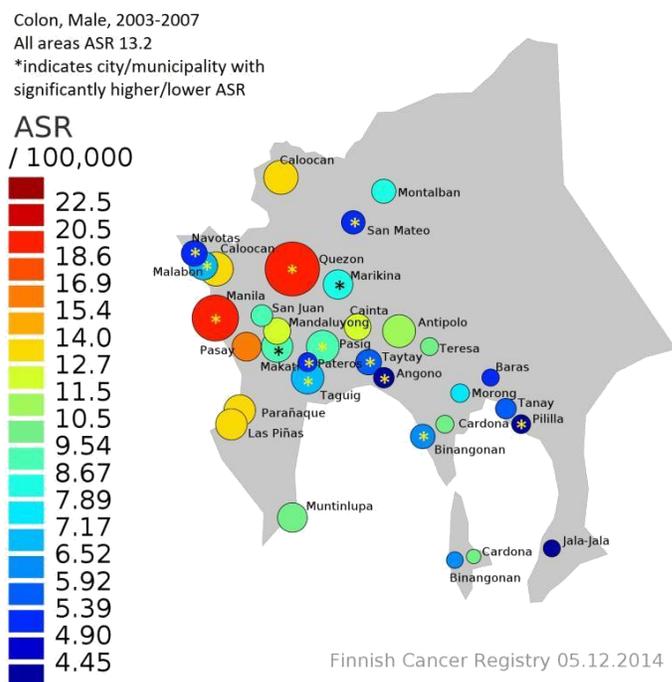


Figure 15. Metro Manila and Rizal Province age-standardized incidence rates, Colon cancer, females, 2003-2007.

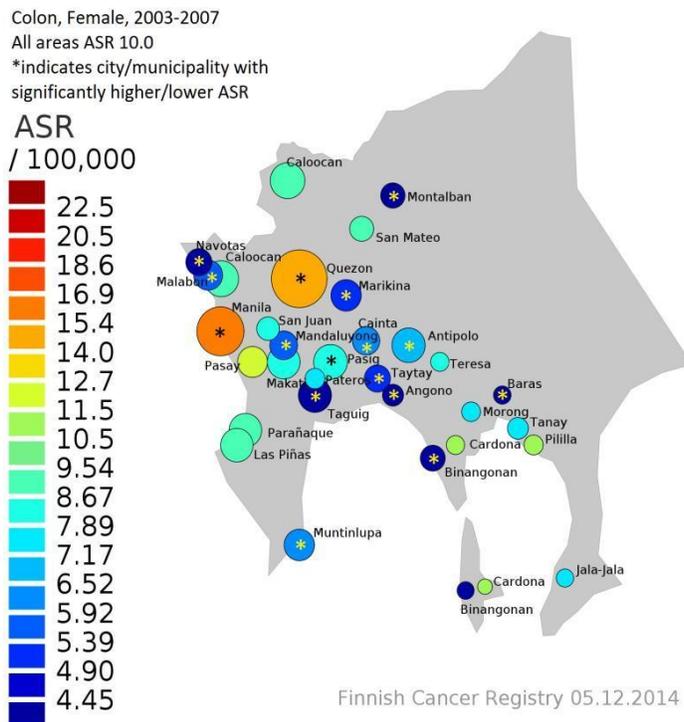


Figure 16 shows that in **rectum** cancer among males the highest incidence rates in 2003-2007 were in Manila, Mandaluyong, San Juan, and Parañaque (12.3-19.4), and Figure 17 shows that in females the highest incidence rates were in Manila, San Juan and Parañaque (8.1-9.2).

Figure 16. Metro Manila and Rizal Province age-standardized incidence rates, Rectum cancer, males, 2003-2007.

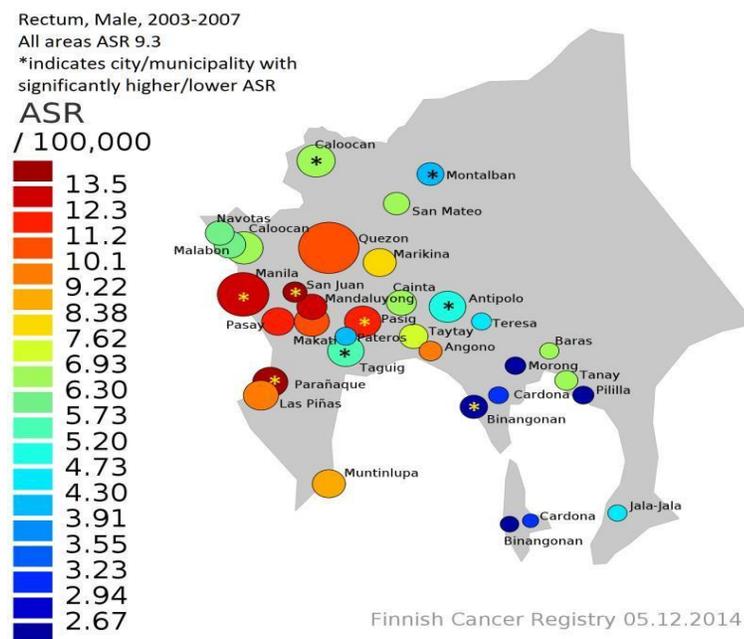
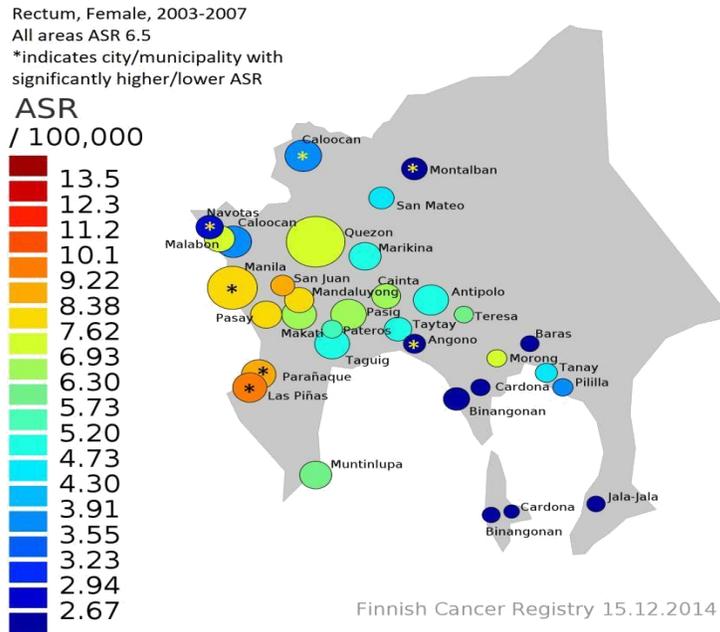


Figure 17. Metro Manila and Rizal Province age-standardized incidence rates, Rectum cancer, females, 2003-2007



Figures 18 and 19 show that in **2012** the **incidence/mortality ratios** in China, Thailand, Vietnam, Malaysia and the Philippines were lower compared to those in the United States, European Union, Israel, Japan and the Republic of Korea.

Figure 18. Colorectal Cancer Incidence and Mortality in 11 Countries/Regions, 2012, Males
 (GLOBOCAN 2012)

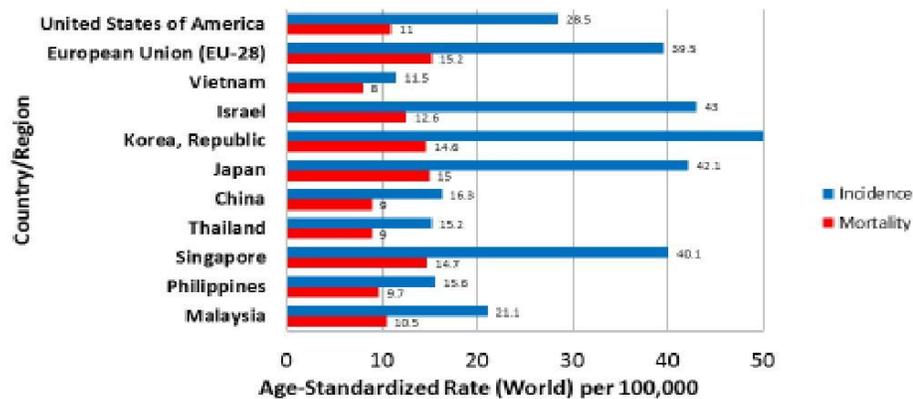
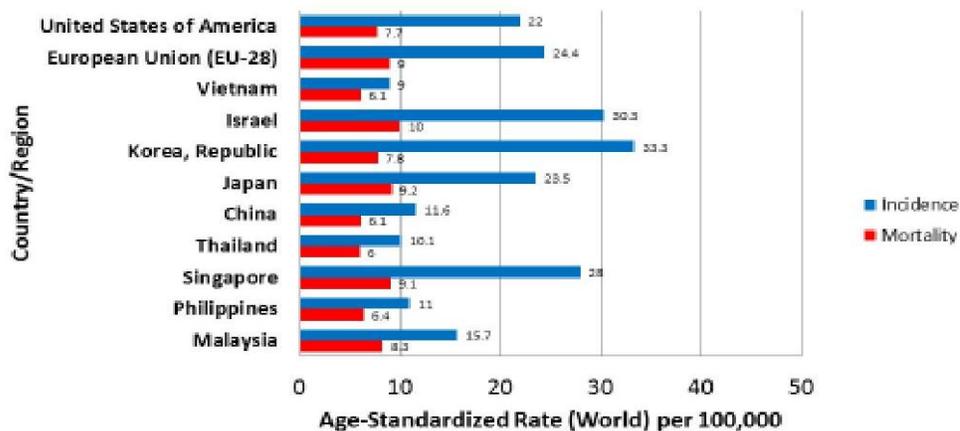


Figure 19. Colorectal Cancer Incidence and Mortality in 11 Countries/Regions, 2012, Females
(GLOBOCAN 2012)



In **2012**, the estimated age-standardized national incidence rates for colon and rectum cancers in the Philippines, were 13.3 per 100,000 in both sexes, 15.6 among males, and 11 among females. One (1.3) out of 100 men and one (1.1) out of 100 women would have had a likelihood of getting colorectal cancer before age 75. In **2012**, the estimated national standardized mortality rates were 8 per 100,000 in both sexes, 9.7 among males, and 6.4 among females. One (0.9) out of 100 men and one (0.6) out of 100 women would have died from colorectal cancer before age 75.

In **2015** cancers of the colon and rectum combined was estimated to rank 3rd for both sexes (9%), 4th among males (11%) and 3rd among females (7%). There is an estimated 9,625 new cases in both sexes, 5,250 in males and 4,375 in females. There is an estimated 5,523 deaths in both sexes, 3,040 in males and 2,483 among females.

Using country-specific abridged life tables (Table 11), the 5-year relative **survival** rates (RSR) among Metro Manila and Rizal Province residents with cancer diagnosed in the mid **1990s** (40%) were lower compared to those of Singapore, South Korea, and Turkey.

Table 11. 5-year relative survival (%), colorectal cancer patients (cancer diagnosed in the mid 1990s) in selected populations

MM + Rizal	China	India	Uganda	Singapore	South Korea	Thailand	Turkey
40	44	28	8	52	60	35	52

For colorectal cancers (both sexes) diagnosed between **1993-2002** and using population-specific life tables, the 5-year relative **survival rate** of Metro Manila residents (40.2%) was lower compared to Filipino-Americans (62.3%) and Caucasians (64%) in the United States. For colorectal cancers (both sexes) diagnosed between 1995-1999 and also using population-specific life tables, survival of Metro Manila residents (37.8%) was also lower compared to European residents (54%) in the Eurocare-4 study.

Risk Factors and Prevention

Reported major risk factors are personal or family history of colon or rectum cancer, polyps in the colon or rectum, and inflammatory bowel disease. Lifestyle factors, particularly diet, alcohol consumption and physical inactivity, may account for the global differences in incidence. Evidence suggests that a diet high in fat and deficient in whole grains, fruits and vegetables increase the risk.

Maintaining a **healthy lifestyle**, particularly a healthy diet, physical activity and decreased alcohol consumption will decrease a person's risk. While in some Western countries the large scale detection and removal of polyps had contributed to a decrease in incidence, practically all colorectal cancer in Philippine residents are not associated with polyps.

Warning Signals

A change in bowel habits such as recurrent diarrhea and/or constipation, particularly when accompanied by abdominal discomfort, weight loss, unexplained anemia, blood in the stool.

Early Detection

Early colon and rectum cancers are asymptomatic, and there is still no efficient method for population-screening particularly in developing countries wherein majority of cancers are not associated with polyps. **The aim would be earlier diagnosis of symptomatic patients** who complain of changes in bowel habits, vague abdominal pains, and unexplained weight loss and/or anemia, particularly among patients who are 50 years old and older, by means of rectal digital examination, proctoscopy, proctosigmoidoscopy, barium enema and colonoscopy.

Public information and education is important, but **physician education** is equally vital. The mistaken obsession of our physicians with amoebiasis, other forms of infectious bowel diseases, and hemorrhoids, still is a major factor that has for decades delayed diagnosis of colon and rectum cancer. The wide availability of antidiarrheals, antibiotics, and amoebicides results in their protracted and sometimes dangerous use. Too many physicians still insist on prescribing vitamin preparations and hematinics for chronic unexplained weight loss and anemia without endeavoring to look for the cause.

Treatment

Early cancers of the colon and rectum are curable by surgery. For small rectal lesions, radiotherapy is just as effective. In certain instances, the adjuvant use of certain drugs and/or radiotherapy can increase survival

For **advanced** cases, judicious and cost-effective **palliative care** can offer an acceptable quality of life.

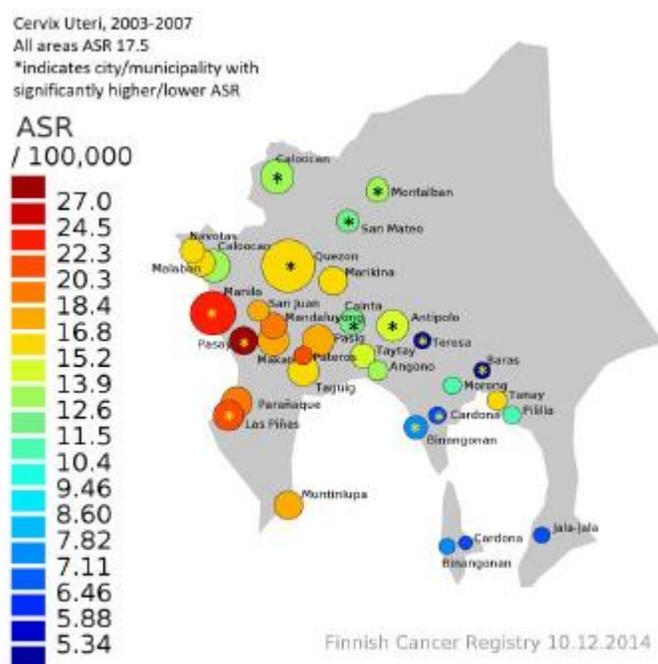
Uterine Cervix Cancer

Incidence, Mortality and Survival

The **incidence** rate of cervix cancer starts rising steeply at age 30 in the Philippines. There was a slight decrease in incidence rate from **1980 to 2007**, with an annual change of -0.5%.

Figure 20 shows that the highest incidence rates in **2003-2007** were observed in the cities of Manila, Pasay, Pateros and Las Piñas (21-42), and the lowest ASRs were in Rizal province.

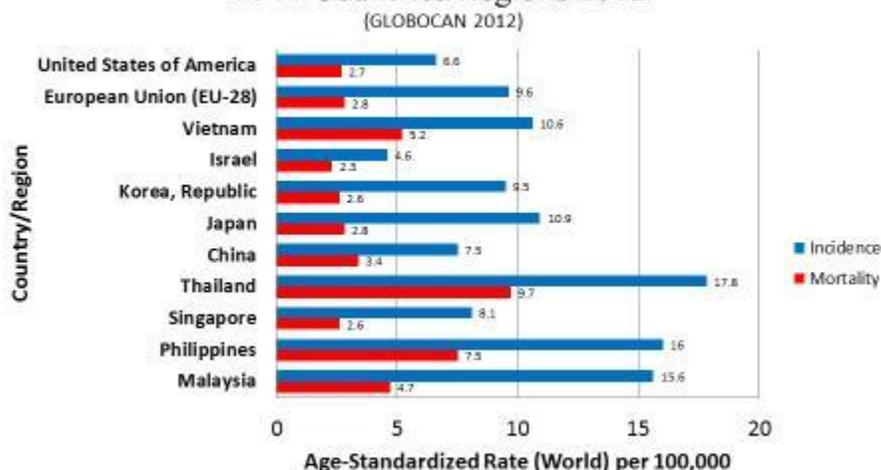
Figure 20. Metro Manila and Rizal Province age-standardized incidence rates, Cervix cancer, 2003-2007



In **2012**, the estimated age-standardized national incidence rate was 16 per 100,000. Two (1.6) out of 100 women would have had a likelihood of getting cervix cancer before age 75. In 2012, the estimated national standardized mortality rate was 7.5 per 100,000. One (0.7) out of 100 women would have died from cervix cancer before age 75.

Figure 21 shows a lower **incidence/mortality ratio** in the Philippines (2:1) compared to high income countries/regions in **2012**. The high incidence/mortality ratios observed in the Republic of Korea (4:1) and in Malaysia (3:1) show that cervical cancer control programs are feasible among Asian populations.

Figure 21. Cervical Cancer Incidence and Mortality in 11 Countries/Regions 2012



Using country-specific abridged life tables (Table 12), the 5-year relative **survival rate** (RSR) among Metro Manila and Rizal Province residents with cancer diagnosed in the mid 1990s (37%) were lower compared to those of China, India, Singapore, South Korea, Thailand, Turkey and Costa Rica.

Table 12. 5-year relative survival (%), cervix cancer patients (cancer diagnosed in the mid 1990s) in selected populations

MM + Rizal	China	India	Uganda	Singapore	South Korea	Thailand	Turkey	Costa Rica
37	67	46	13	66	79	61	63	53

For cervix cancers diagnosed between 1993-2002 and using population-specific life tables, the 5-year relative **survival rate** of Metro Manila residents (45.4%) was lower compared to Filipino-Americans (67.2%) and Caucasians (67.4%) in the United States. For cervix cancers diagnosed between 1995-1999 and also using population-specific life tables, survival of Metro Manila residents (38.8%) was also lower compared to European residents (62.6%) in the Eurocare-4 study.

Risk Factors and Prevention

Cancer of the cervix is highly preventable. Viral infections that cause chronic infections of the cervix, particularly **human papilloma virus (HPV)** cause cancer of the uterine cervix. The virus is transmitted through sexual intercourse, and the more numerous the sexual partners of the woman, or the woman's male partner, the greater the risk of being exposed to the virus. The prevalence of all HPV types is around 90% of both squamous cell carcinomas and adenocarcinomas. HPV 16 and 18 are the most common types.

Safe sex, including the use of barrier protective devices such as condoms, offers the best prevention of sexually transmitted diseases. Unfortunately, unprotected sexual behavior is still practiced by the great majority of individuals. While the World Health Organization is strongly recommending condom use as an effective method of preventing HIV/AIDS, the Catholic Church in the Philippines has been consistently and vigorously opposing condom use. There needs to be a sustained national effort to raise awareness that safe sex protects against HIV/AIDS, other sexually transmitted diseases and cervix cancer. Due to the increasing number of HIV/AIDS cases, the Department of Health is currently increasing the efforts to make condoms widely available.

HPV vaccines are now available in the Philippines and peri-adolescent vaccination could be gaining ground among families that can afford.

Warning Signals

Irregular painless bleeding not associated with menstruation – intermenstrual, postcoital, post-douching, or postmenopausal. Unusual vaginal discharge is also common.

Early Detection

The development of cervix cancer usually occurs in a stepwise fashion, with the cells looking progressively worse. Dysplasia, the last change in appearance before frank cancer occurs, almost invariably leads to frank cancer. If areas with dysplasia are discovered and removed, cervix cancer can be prevented. In countries with long standing cervix cancer screening programs, the incidence of cervix cancer had gone down, and a substantial portion of the decrease in incidence had been attributed to screening.

A highly effective screening method for the early detection of cervix cancer is the **Papanicolaou smear (Pap smear)**. This is essentially a microscopic examination of cells from the cervix and body of the uterus. The presence of abnormal cells necessitates the need of a diagnostic procedure, such as colposcopy, and biopsy of the suspicious areas.

It is recommended that for the average risk female, a Pap smear should be done every 5 years after an initial negative test starting at age 30. High risk women may be tested more frequently. Unfortunately, a national Pap smear screening program is not inexpensive to establish and sustain, particularly if the required quality control measures are included. Visual inspection with acetic acid wash (VIA) could be more appropriate, particularly in primary and secondary health care facilities.

Since treatment costs are beyond the reach of majority of women, screening activities ought to assure adequate financial support for treatment as well as other socioeconomic factors that have traditionally been a barrier to earlier detection. A national program may not be practical and instead targeted at cities with high incidence likelihood. Local government units, the private sector and healthcare organizations will have to get involved.

Treatment

With the use of the Pap smear or VIA, lesions that eventually lead to cancer can be detected. These can then be diagnosed and removed thereby preventing full blown cervix cancer. For early cervix cancer, either surgery or radiotherapy can be curative.

The current suggested treatment is concurrent chemoradiation which could be difficult for most women in the Philippines. Radiotherapy is available in only 21 facilities, 13 of which are in Metro Manila, although there are 104 members of the Philippine Radiation Oncology Society. There are also additional problems such as inappropriate dosimetry on account of inadequate facilities, protracted treatment and poor follow up of indigent patients. Chemotherapy costs are beyond the reach of most patients.

The ideal cervix cancer control program includes widespread practice of safe sex, peri-adolescent HPV vaccination, screening and earlier detection with appropriate treatment. In the real world however, countries or even individual cities should plan to achieve what is affordable, feasible and sustainable. The choice of which screening modality to use requires the ability to do high quality screening, the provision of reliable follow up of women with abnormal results, prompt and adequate treatment, and an acceptable coverage in women 30 years and older. Decision analytic models could be used to provide necessary information as to what strategies are likely to be cost-effective and affordable.

Advanced cervix cancer requires judicious and cost-effective palliative care.

Leukemia

Incidence, Mortality and Survival

In **2010** leukemias will rank 7th in both sexes (4%), 5th in males (5%) and 9th among females (3%).

In **2012**, the estimated age-standardized national incidence rates of leukemias were 4.5 per 100,000 in both sexes, 4.8 among males, and 4.5 among females. Less than one (0.4) out of 100 males and less than one (0.4) out of 100 females would have had a likelihood of getting leukemia before age 75. The estimated national standardized mortality rates were 3.9 per 100,000 in both sexes, 4.1 among males, and 3.7 among females. Less than one (0.4) out of 100 men and less than one (0.3) out of 100 women would have died from leukemia before age 75.

In **2015**, there will be an estimated 4,270 new cases in both sexes, 2,166 in males and 2,104 in females. There will be 3,386 deaths in both sexes, 1,706 in men and 1,680 among women

The incidence rate of **Myeloid Leukemias** is slightly higher than that of Lymphoid Leukemia. Age-specific incidence rates of **Lymphoid Leukemia** are highest among children and people 70 years and older. Age-specific incidence rates of Myeloid Leukemia rise from age 50 years.

For adult **leukemia** cancers (both sexes) diagnosed between 1993-2002 and using population-specific life tables, the 5-year relative survival rate of Metro Manila residents (5.2%)

was lower compared to Filipino-Americans (37.8%) and Caucasians (48.4%) in the United States. For leukemia cancers (both sexes) diagnosed between 1995-1999 and also using population-specific life tables, survival of adult Metro Manila residents (2.7%) was also lower compared to European residents (42.4%) in the Eurocare-4 study. Accessibility to proper treatment could have been a key factor.

In Metro Manila acute lymphoid leukemia (ALL) comprised 65% of all leukemias among **children** (0-14 years), and 79% of childhood ALL occurred between the ages 1-9 years. The 5-year relative survival rate of Metro Manila children with ALL was lower (34%) compared to Asian American (87%) and Caucasian children (86%) in the United States. This is also mainly due to poor access to treatment.

Figures 22 and 23 show that in 2012 the **incidence/mortality ratios** of leukemia in both sexes were higher in developed countries compared to those of Vietnam, China, Thailand, Malaysia and the Philippines. A major factor is the high cure rates in childhood leukemia achieved in developed countries, particularly in ALL.

Figure 22. Leukemia Incidence and Mortality in 11 Countries/Regions, 2012, Males
(GLOBOCAN 2012)

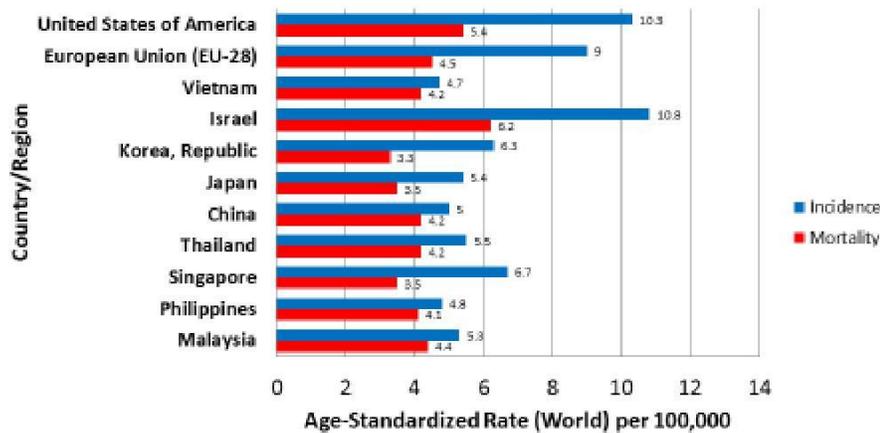
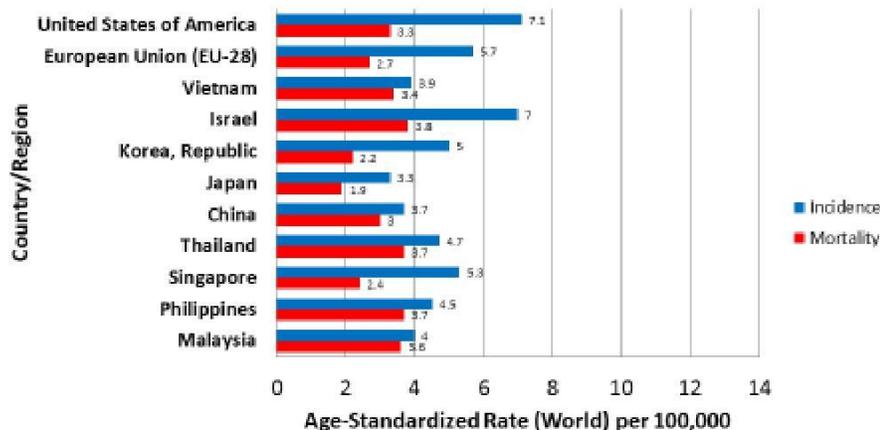


Figure 23. Leukemia Incidence and Mortality in 11 Countries/Regions, 2012, Females
(GLOBOCAN 2012)



Risk Factors and Prevention

Exposure to high doses of radiation and continuous and prolonged exposure to certain chemicals have been blamed for increasing the risk of leukemia. Avoiding such exposure, particularly among children, would be prudent.

Warning Signals

Easy fatigability, pallor, weight loss, easy bruising, frequent nosebleed, or repeated infections, especially among children. Symptoms of acute leukemia appear suddenly. Chronic leukemia may progress slowly with few symptoms.

Early Detection

There is no practical screening method for leukemia. Early detection of symptomatic patients, particularly children, should be aimed for. Peripheral blood smears and bone marrow examination confirm the diagnosis in suspicious cases.

Treatment

Some forms of leukemia, particularly acute lymphocytic leukemia in children, are highly curable by chemotherapy. The public sector ought to allocate more resources for the management of curable leukemias in indigent children. Patients with advanced leukemia require judicious and cost-effective palliative care.

Stomach Cancer

Incidence, Mortality and Survival

The **incidence** rates of stomach cancer begin to increase steeply starting at age 50 among males and at age 55 among females.

The **incidence** rates had decreased from **1980 to 2007**, with an annual change of -2.5% in males and -2.3% in females.

Figure 24 shows that the highest incidence rates among males in **2003-2007** were in the cities of Manila, Malabon and Pasig (9-10). ASRs in the rest of Metro Manila (8.0) and in Rizal province (4.2) were significantly lower. Figure 25 shows that the incidence rates were lower among females, with the highest incidence observed in the cities of Pasay and Manila (6).

Figure 24. Metro Manila and Rizal Province age-standardized incidence rates, Stomach cancer, males, 2003-2007.

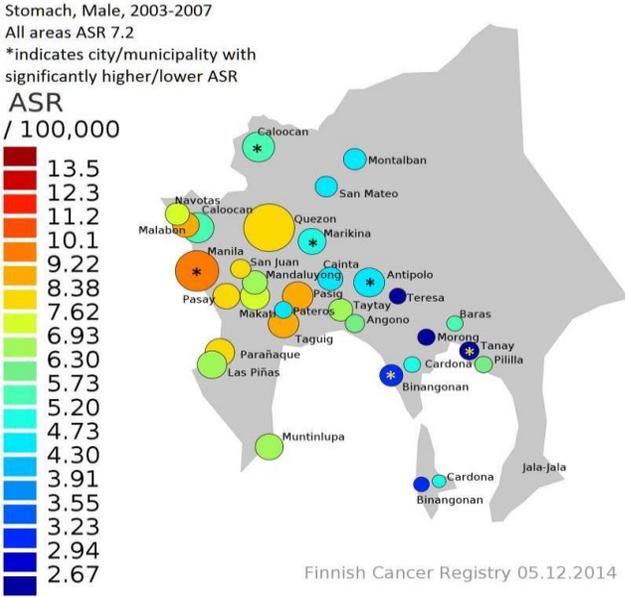
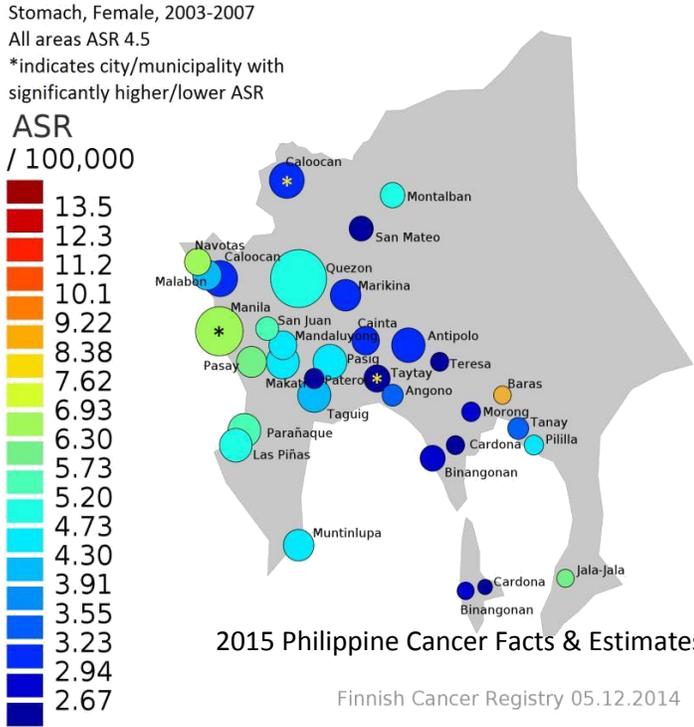


Figure 25. Metro Manila and Rizal Province age-standardized incidence rates, Stomach cancer, females, 2003-2007.



In **2010** stomach cancer will be the 9th leading site for both sexes combined (3%), 6th among males (3%) and the 12th among females (2%).

In **2012**, the estimated age-standardized national incidence rates were 3.8 per 100,000 in both sexes, 4.8 among males, and 2.9 among females. Less than one (0.4) out of 100 men and less than one (0.3) out of 100 women would have had a likelihood of getting stomach cancer before age 75. The estimated national standardized mortality rates were 3.4 per 100,000 in both sexes, 4.3 among males, and 2.5 among females. Less than one (0.4) out of 100 men and less than one (0.2) out of 100 women would have died from stomach cancer before age 75.

In **2015**, there will be a total of 2,715 new cases in both sexes, 1,582 in men and 1,133 in women. There will be 2,301 deaths in both sexes, 1,344 among males and 957 in females.

Figures 26 and 27 show that in **2012** the highest incidence rates of stomach cancer in both sexes occurred in Korea and Japan and owing to established screening programs also had the lowest **incidence/mortality ratios**. Incidence/mortality ratios in other countries/regions were quite high, even in developed areas.

Figure 26. Stomach Cancer Incidence and Mortality in 11 Countries/Regions, 2012, Males

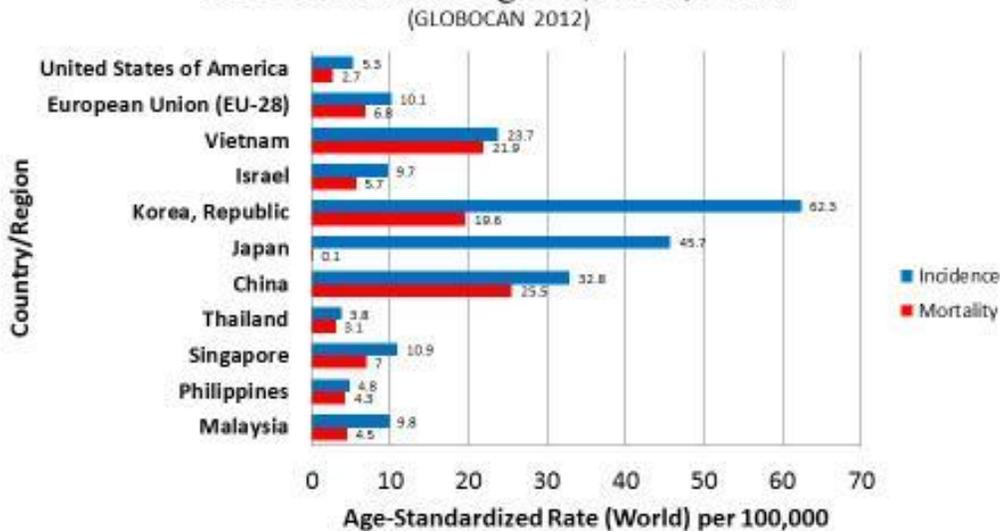
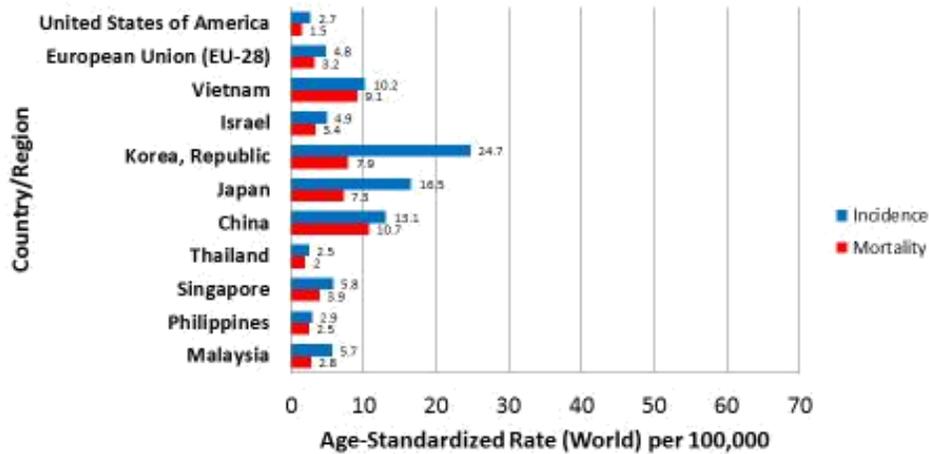


Figure 27. Stomach Cancer Incidence and Mortality in 11 Countries/Regions, 2012, Females (GLOBOCAN 2012)



For stomach cancers (both sexes) diagnosed between 1993-2002 and using population-specific life tables, the 5-year relative **survival rate** of Metro Manila residents (27.3%) was almost similar compared to Filipino-Americans (30.7%) and Caucasians (23.2%) in the United States. For stomach cancers (both sexes) diagnosed between 1995-1999 and also using population-specific life tables, survival of Metro Manila residents (22.5%) was also similar compared to European residents (24.5%) in the Eurocare-4 study.

Risk Factors and Prevention

Pernicious anemia and atrophic gastritis had been associated with an increased risk. Some evidence suggests that stomach cancer may be linked to diet, particularly to the prolonged high consumption of foodstuffs preserved or cured using salt, smoke, and certain chemicals. A decrease in the consumption of such foods as a result of the increased use of refrigeration is believed to be a major factor. A diet that is low in fruits and vegetables resulting in a deficiency of some micronutrients has also been shown to increase risk. There is also evidence that a chronic gastritis caused by *Helicobacter pylori* may increase risk and the widespread practice of aggressive treatment for *H. pylori* may be a contributory factor to the decrease in incidence.

While there is no known specific preventive measure for stomach cancer, maintaining a healthy diet which is rich in fruits and vegetables, and minimizing the intake of preserved or cured foodstuffs, is expected to decrease risk.

Warning Signals

Stomach cancer generally progresses silently to an advanced stage before symptoms alert a patient or a physician. Symptoms include indigestion, dyspepsia, loss of appetite, weakness and anemia. Weight loss, difficulty in swallowing, vomiting and a palpable upper abdominal mass suggest an advanced stage.

Early Detection

Screening had been practiced in Japan and Korea, justified by the very high incidence in these two countries, and had improved survival and decreased mortality. Unfortunately, mass screening may not be cost-effective in other countries. In order to increase survival, earlier diagnosis and effective treatment of symptomatic patients should be the goal. Patients 50 years and older who present with nonspecific upper digestive tract symptoms, particularly if accompanied by loss of appetite, anemia, weakness or weight loss, should undergo endoscopic studies and/or upper gastrointestinal radiologic procedures.

Treatment

The patients who are diagnosed with early stomach cancer are curable by surgery. For many patients with advanced cancer, palliative surgery can improve the quality of life. For inoperable cases, judicious and cost-effective palliative care can still improve quality of life.

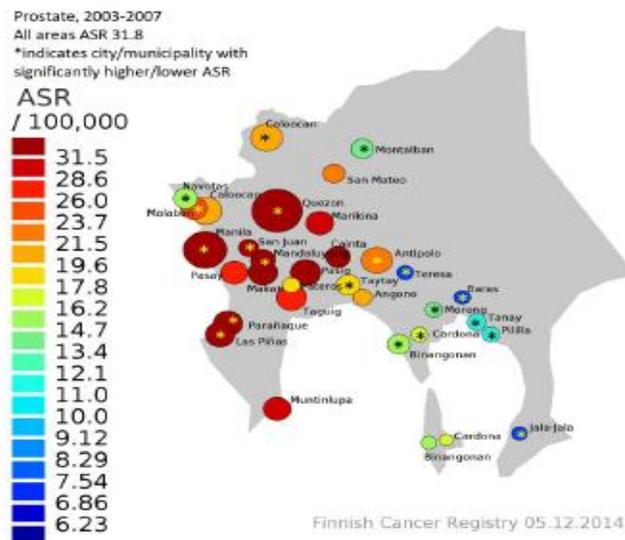
Prostate Cancer

Incidence, Mortality and Survival

The **incidence** rate starts rising sharply at age 55 years and continues to rise with increasing age. The incidence rate had increased from **1980 to 2007**, with an annual change of 2.1%.

Figure 28 shows that the highest incidence rates in **2003-2007** were observed in the cities of San Juan, Mandaluyong and Las Piñas (40-52), and the lowest incidence were in Rizal province (19.4).

Figure 28. Metro Manila and Rizal Province age-standardized incidence rates, Prostate cancer, males, 2003-2007.

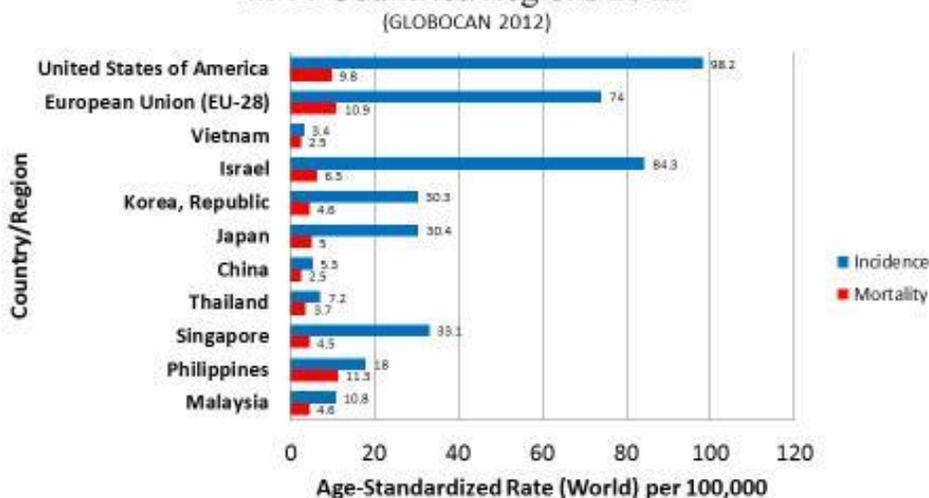


In **2012**, the estimated age-standardized national incidence rate was 18 per 100,000. Two (1.8) out of 100 males would have had a likelihood of getting prostate cancer before age 75. The estimated national standardized mortality rate was 11.3 per 100,000. One (1.1) out of 100 males would have died from prostate cancer before age 75.

In **2015**, cancer of the prostate will be the 6th most common in both sexes (5%), and 3rd among males (7%). There will be 5,526 new cases. There will be 2,912 deaths.

Figure 29 shows that in **2012** the incidence rates were extremely high in the United States, Europe and Israel, where widespread PSA testing had partly contributed to the increasing incidence, and a very low **incidence/mortality ratio**. The incidence/mortality ratio was also high in Korea, Japan, and Singapore and lower in the Philippines, China, Thailand and Malaysia.

Figure 29. Prostate Cancer Incidence and Mortality in 11 Countries/Regions 2012



In the Philippines, a report described a median **survival** of 52 months, a 43% 5-year survival rate and a 31% 10-year survival rate.

Risk Factors and Prevention

Increasing age is the most important risk factor and the increasing numbers of Filipino males who are 55 years and older is the main reason for the significant increase and expected continuing increase in the number of cases. The evidence for the association between prostate cancer and unhealthy lifestyles is not as clear compared to certain cancers such as lung, breast, colon and rectum, cervix and oral cavity cancers. Nevertheless, males who start a healthy lifestyle early in life and are able to sustain the healthy habits throughout life may lower their individual risk of prostate cancer.

Warning Signals

Early prostate cancer is usually asymptomatic. When symptoms occur, these are usually difficulty in urination and increased frequency of urination particularly at night. These symptoms are similar to those seen in men with **benign prostatic hypertrophy** (BPH), a noncancerous enlargement of the prostate gland. BPH is much more common than prostate cancer and occurs in the same age-group. Sometimes, the initial presentation of prostate cancer is that of bone pain due to spread of the cancer to the bones.

Early Detection

A test to assay **prostatic specific antigen (PSA)** is accurate enough to be used to detect prostate cancer, either as a screening method in asymptomatic men or in symptomatic individuals. If positive, a diagnostic biopsy is performed. If the PSA test is not available, biopsy of suspicious areas in the enlarged prostate, detected by rectal digital examination and/or transrectal ultrasound, is done on symptomatic individuals. Annual transrectal digital rectal examination on asymptomatic men who are 50 years or older may detect early prostate and rectum cancer.

A substantial number of prostate cancers are very slow growing and will have no clinical impact. They are discovered as incidental findings during autopsy. Unfortunately, it is still not possible to distinguish this “benign” type of prostate cancer from the more aggressive variety among asymptomatic PSA-positive men. This could lead to overdiagnosis and overtreatment, and curative treatment modalities do have complications. The European Randomized Study of Screening for Prostate Cancer showed that PSA-based screening had reduced mortality by 20% but was associated with a high risk of overdiagnosis. The matter of population-based PSA screening is still being discussed in many high income countries, and not feasible in most developing countries.

For men who are interested to have a PSA test, the current thinking is that there should be a thorough discussion with a physician on the benefits and possible harmful sequelae, and the decision mutually met.

Treatment

Early prostate cancer is curable. For cancers incidentally discovered during prostatectomy, nothing more is usually done. For those with capsular invasion or distant spread, hormonal manipulation, such as orchiectomy, is the usual first-line treatment. In certain situations radiotherapy can be beneficial. For advanced cases, judicious and cost-effective palliative care can improve the quality of life.

Ovarian Cancer

Incidence, Mortality and Survival

The **incidence** rate rises steeply starting at age 40 and continues to increase with age.

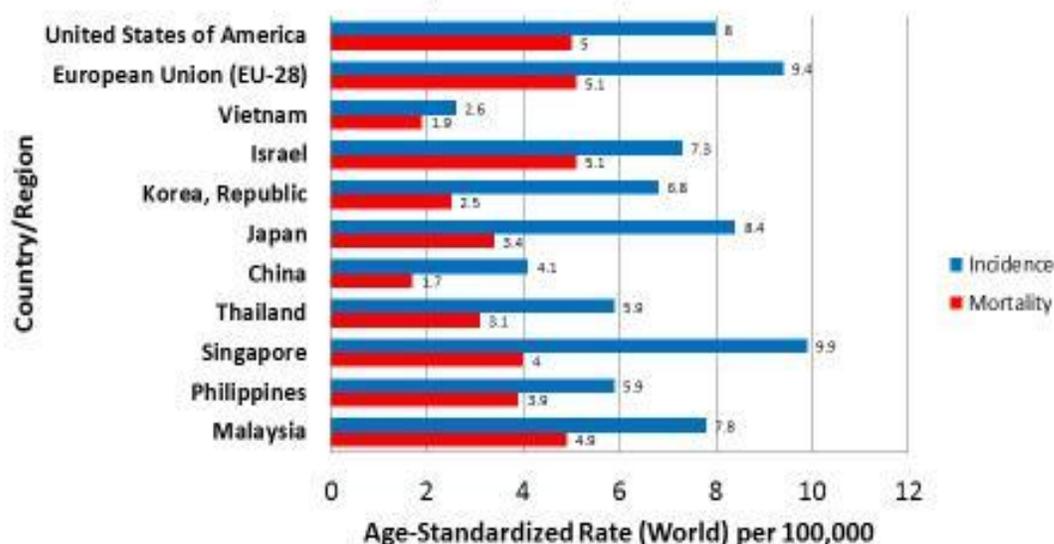
In **2012**, the estimated age-standardized national incidence rate was 5.9 per 100,000 in the Philippines. One (0.6) out of 100 women would have had a likelihood of getting ovarian cancer before age 75. The estimated national standardized mortality rate was 3.9 per 100,000. Less than one (0.4) out of 100 women would have died from ovarian cancer before age 75.

In **2015**, cancer of the ovary will be the 10th leading site for both sexes combined (2%), and the 5th among women (4%) in the Philippines. There will be 2,657 new cases. In 2015, there will be 1,610 deaths.

Figure 30 shows that in **2012** there were no marked differences in the incidence/mortality ratios among selected countries including the Philippines.

Figure 30. Ovarian Cancer Incidence and Mortality
in 11 Countries/Regions 2012

(GLOBOCAN 2012)



For ovarian cancers diagnosed between **1993-2002** and using population-specific life tables, the 5-year relative **survival rate** of Metro Manila residents (49.5%) was lower compared to Filipino-Americans (56.1%) and Caucasians (50.2%) in the United States. For ovarian cancers diagnosed between 1995-1999 and also using population-specific life tables, survival of Metro Manila residents (44.2%) was however higher compared to European residents (36.5%) in the Eurocare-4 study.

Risk Factors

Evidence is lacking to pinpoint the specific cause or causes of cancer of the ovary. Some factors are suspected of increasing the risk: nulliparity, menstrual irregularities, history of breast cancer or endometrial cancer. There could also be a hereditary predisposition in some women. Pregnancy and oral contraceptives could be protective. The role of exogenous hormones as protective agents is being studied.

Warning Signals

Ovarian cancers are usually asymptomatic at the outset and many cases are detected late. It is usually detected as an abdominal mass, or a mass felt during a pelvic examination.

Early Detection

Thorough annual pelvic examination starting at age 40 may detect some early cancer of the ovary.

Treatment

In early cancer of the ovary, surgery is curative. For clear cell carcinoma, appropriate surgery followed by adjuvant chemotherapy prolongs survival in all stages. Advanced ovarian cancer requires judicious and cost-effective palliative care.

Thyroid Cancer

Incidence, Mortality and Survival

Thyroid cancer is the most common cancer of women at ages 15-24 years. Among women, the incidence rate rises at age 30 years and continues to rise with increasing age. Among men, the incidence rate begins to increase much later, starting at 60 years.

The **incidence** rates had increased from **1980 to 2007**, with an annual change of **1.1%** in males, and **2.7%** among females.

Figure 31 shows that in **2003-2007**, the highest incidence rate among **males** was in the city of Parañaque (**4.7**). Figure 32 shows that among **females** the highest incidence rates were in the cities of San Juan, Parañaque and Manila (14-16), one of the highest in the world and higher than the **2008** world average incidence rate (**4.7**). For both sexes, incidence rates appeared to be higher in Metro Manila compared to Rizal province.

Figure 31. Metro Manila and Rizal Province age-standardized incidence rates, Thyroid cancer, males, 2003-2007.

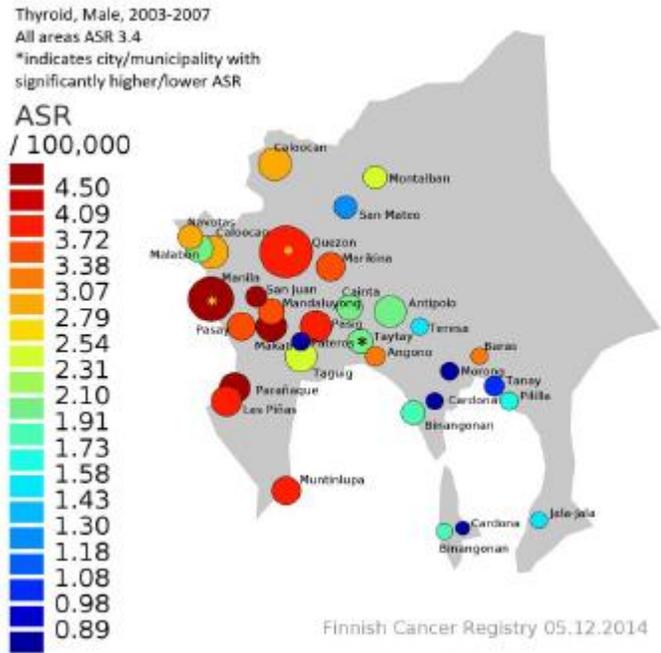
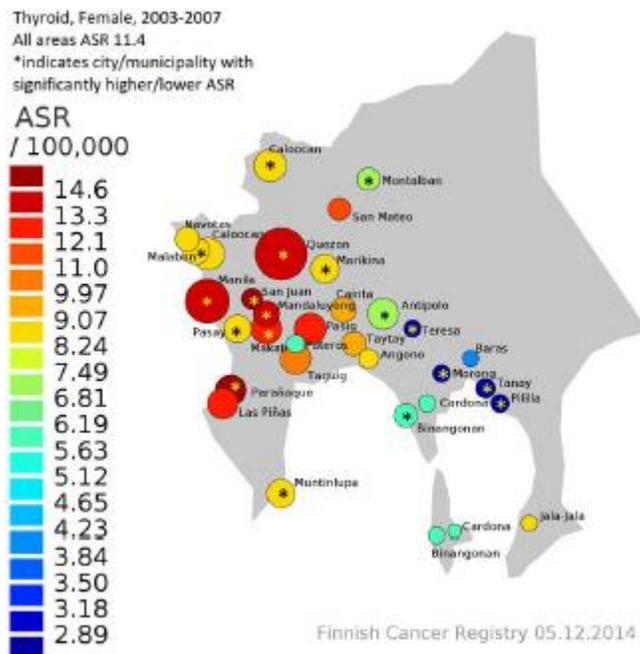


Figure 32. Metro Manila and Rizal Province age-standardized incidence rates, Thyroid cancer, females, 2003-2007.



In **2008**, the estimated national standardized mortality rates were 1.1 per 100,000 in both sexes, 1 among males, and 1.7 among females.

In **2010**, there were an estimated 3,288 new cases in both sexes, 824 in males and in 2,464 females.

In **2012**, the estimated age-standardized national incidence rates were 3.5 per 100,000 in both sexes, 1.8 among males, and 5.3 among females. Less than one (0.2) out of 100 men and less than one (0.4) out of 100 women would have had a likelihood of getting thyroid cancer before age 75. Less than one (0.1) out of 100 men and less than one (0.2) out of 100 women would have died from stomach cancer before age 75.

In **2015**, thyroid cancer was estimated to be the 8th most common for both sexes combined (2%), the 17th leading site in men (1%) and the 9th among females (3%). There is an estimated 978 deaths in both sexes, 305 in males and 673 in females

Figures 33 and 34 show that in **2012** the **incidence/mortality ratios** in both sexes were observed to be lower in the Philippines, probably because of better accessibility to adequate treatment in the other countries/regions, particularly radioactive iodine therapy for metastatic lesions.

Figure 33. Thyroid Cancer Incidence and Mortality in 11 Countries/Regions, 2012, Males (GLOBOCAN 2012)

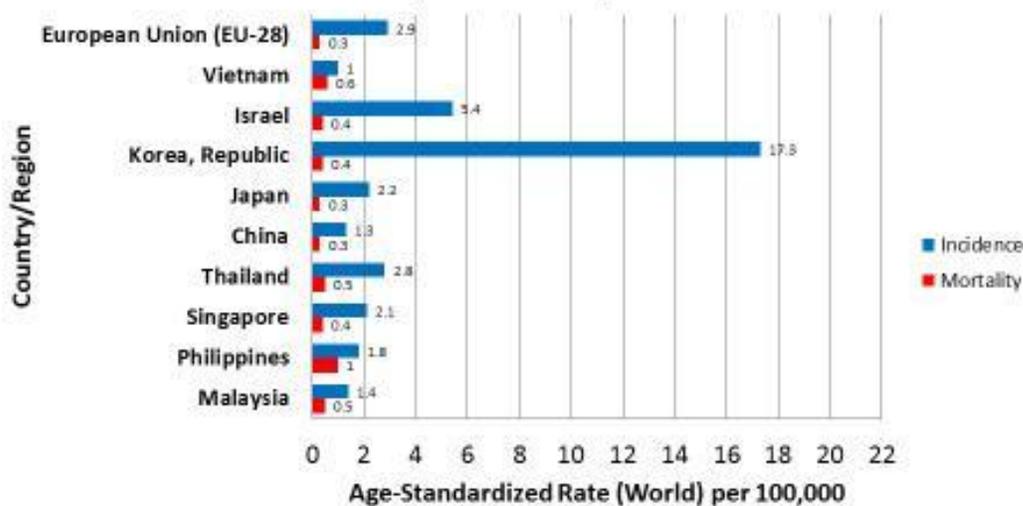
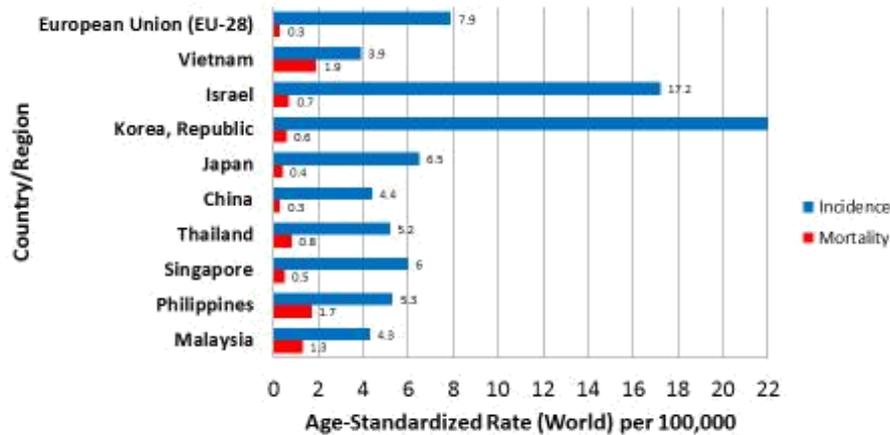


Figure 34. Thyroid Cancer Incidence and Mortality
in 11 Countries/Regions, 2012, Females
(GLOBOCAN 2012)



More than 90% of thyroid cancers are well-differentiated cancers and decades of **survival** are expected following appropriate treatment. For thyroid cancers (both sexes) diagnosed between 1993-2002 and using population-specific life tables, the 5-year relative survival rate of Metro Manila residents (82%) was lower compared to Filipino-Americans (91.3%) and Caucasians (92.3%) in the United States. For thyroid cancers (both sexes) diagnosed between 1995-1999 and also using population-specific life tables, survival of Metro Manila residents (72%) was also lower compared to European residents (82.9%) in the Eurocare-4 study.

Risk Factors

A history of neck radiation during childhood is an established cause. The observations that Filipino females residing in the Philippines, as well as females of Filipino descent who are residents of Hawaii and the West Coast of the United States have some of the world's highest incidence of thyroid cancer strongly suggest that hereditary factors and/or unique ethnic lifestyles are involved.

Some investigators had considered a history of nodular goiter, as well as iodine deficiency, as possible risk factors. In spite of a Law on Salt Iodization promulgated in 1995, a recent report revealed that 63% of nodular goiter cases at the Philippine General Hospital had iodine deficiency, and 56% of patients with thyroid cancer were also iodine deficient.

Warning Signals

A hard mass in the anterior neck, nodules of the thyroid in men, rapid enlargement of a long-standing goiter in older patients, enlargement of lymph nodes in the neck, hoarseness, difficulty of swallowing, and difficulty of breathing associated with a goiter.

Early Detection

Benign enlargement of the thyroid gland (goiter) is still very prevalent among Filipinos. In the following situations, needle aspiration of a thyroid nodule is recommended: hard consistency; a solitary nodule when the rest of the thyroid gland is not enlarged; a rapidly growing nodule in benign multinodular goiter.

Treatment

Almost 90% of thyroid cancers in the Philippines are well-differentiated carcinomas and are highly curable by appropriate surgery alone. Radioactive iodine is the main mode of treatment for the occasional metastasis to other organs. Survival of well differentiated cancers (papillary carcinoma and follicular carcinoma) appear better among patients younger than 45 years, mainly because of better response of distant metastases to radioactive iodine treatment, compared to older patients. Advanced cancer requires judicious and cost-effective palliative care.

Corpus Uterine Cancer

Incidence and Mortality

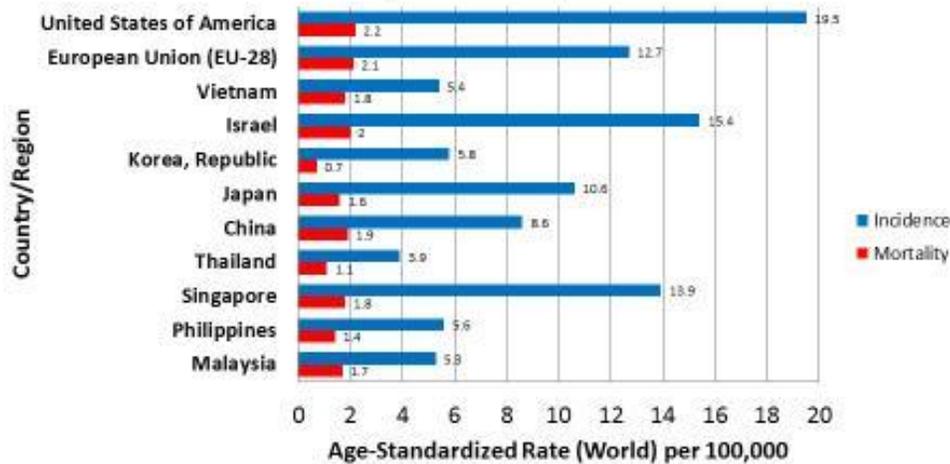
The **incidence** rate starts rising steeply at age 40 and continues to increase with increasing age.

In **2012**, the estimated age-standardized national incidence rate was 5.6 per 100,000. One (0.5) out of 100 women would have had a likelihood of getting corpus uteri cancer before age 75. The estimated national standardized mortality rate was 1.4 per 100,000. Less than one (0.1) out of 100 women would have died from corpus uteri cancer before age 75.

In **2015**, cancer of the body of the uterus was estimated to be the 13th most common in both sexes (2%), and the 8th leading site among women (4%). In **2015**, there will be 2,451 new cases. There was an estimated 565 deaths.

Figure 35 shows that in **2012** the highest incidence rates occurred in the United States, Europe, Israel, China and Singapore, with high **incidence/mortality ratios**. The incidence/mortality ratio in the Philippines and some other Asian countries can still be increased with earlier detection and treatment of symptomatic cases.

Figure 35. Uterine Cancer Incidence and Mortality in 11 Countries/Regions 2012 (GLOBOCAN 2012)



Risk Factors and Prevention

The major risk factor, like cancer of the breast, is **estrogen**. Nulliparity, infertility, and long term use of estrogen all increase risk. Other factors that could increase risk include obesity, hypertension, history of breast cancer, and diabetes mellitus.

Indiscriminate use of estrogen hormone replacement therapy should be avoided. Women who are taking adjuvant tamoxifen for breast cancer also have an increased risk of endometrial cancer and should be vigilant about warning signals.

Women who start a healthy lifestyle early in life, including a healthy diet and maintaining a normal weight, and sustain this throughout life decrease their personal risk of cancer of the body of the uterus.

Warning Signals

Postmenopausal, intermenstrual or excessive menstrual bleeding.

Early Detection

There is no efficient screening method for asymptomatic women. An abnormal Pap smear may lead to the incidental discovery in asymptomatic women. An annual gynecologic examination and a high index of suspicion in cases of **bleeding** can lead to more women diagnosed at an early stage.

Treatment

Early cancer of the corpus uteri is curable by surgery. For advanced cases, judicious and cost-effective palliative care can help attain an acceptable quality of life.

Non-Hodgkin's Lymphoma

Incidence and Mortality

Among adults, incidence rates rise steeply starting at age 50 among males and at age 55 among females.

In **2008**, the estimated national standardized mortality rates were 2.1 per 100,000 in both sexes, 2.5 among males, and 1.7 among females.

In **2012**, the estimated age-standardized national incidence rates were 3.1 per 100,000 in both sexes, 3.6 among males, and 2.7 among females. Less than one (0.3) of 100 men and less than one (0.2) out of 100 women would have had a likelihood of getting Non-Hodgkin lymphoma before age 75. Less than one (0.2) out of 100 men and less than one (0.1) out of 100 women would have died from Non-Hodgkin lymphoma before age 75.

In **2015**, NHL is estimated to be the 12th leading site in both sexes (2%), the 8th among males (3%), and the 11th among females (2%). An estimated 2,555 new cases will occur in both sexes, 1,395 cases in men and 1,160 in women. There is an estimated 1,583 deaths in both sexes, 896 among males and 687 in females.

Among Metro Manila **children** (0-14 years) NHL comprised 50% of lymphomas, and 40% of childhood lymphomas occurred at age 10-14 years. The 5-year relative survival rate of Metro Manila children with NHL was lower (50%) compared to Asian American (85%) and Caucasian children (81%) in the United States.

Figures 36 and 37 show that in **2012** and in both sexes, the highest incidence rates occurred in the United States and Israel, which also had the highest **incidence/mortality ratios**. The lowest ratios were observed in the Philippines and other Southeast Asian populations.

Figure 36. Non-Hodgkin Lymphoma Incidence and Mortality in 11 Countries/Regions, 2012, Males
(GLOBOCAN 2012)

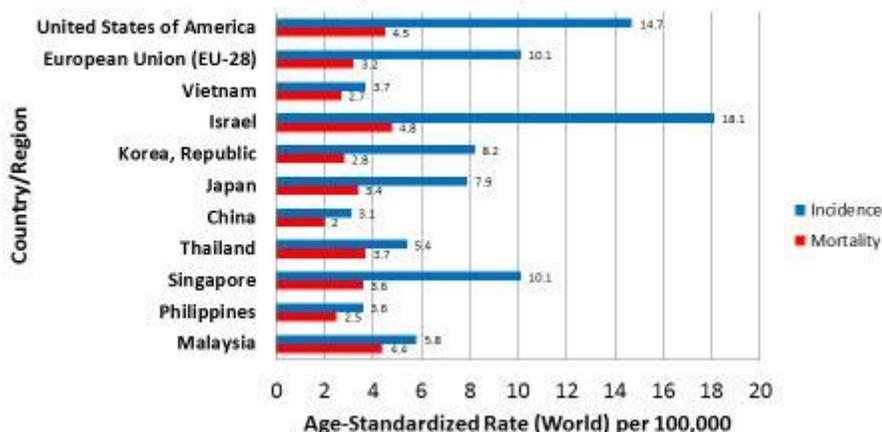
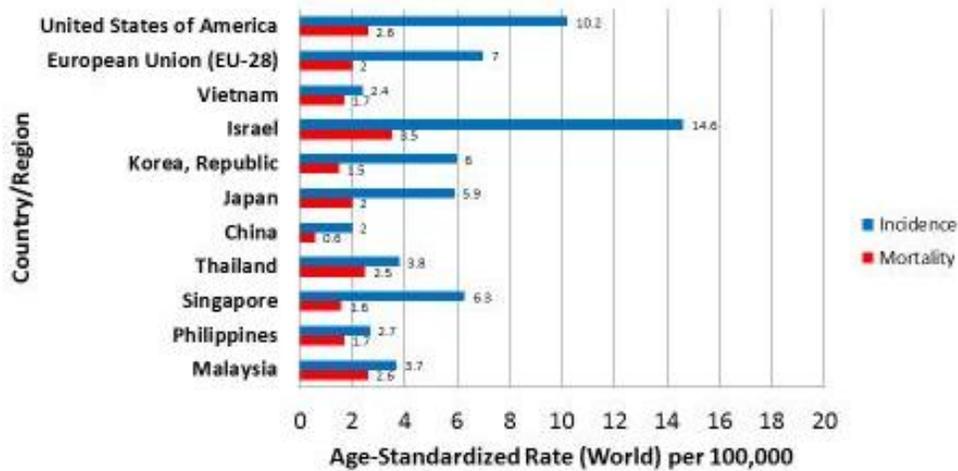


Figure 37. Non-Hodgkin Lymphoma Incidence and Mortality in 11 Countries/Regions, 2012, Females
(GLOBOCAN 2012)



Risk Factors

The cause of lymphomas is still unclear. Viruses may be involved in the causation of some lymphomas.

Warning Signals

Usual presentation is that of painless, enlarged lymph nodes which may be associated with fever, night sweats, itching or weight loss. Occasionally, other organs are involved like the skin and digestive tract, and the presenting symptoms mimic those of other diseases.

Early Detection

Lymph node enlargement that cannot be explained by prevalent causes, their persistence and progressive enlargement should elicit concern. Suspicious lymph nodes should be biopsied.

Treatment

Chemotherapy is the primary curative treatment. Adjuvant radiotherapy may be beneficial in some cases. Advanced cases can benefit from judicious palliative care

Oral Cavity Cancer

Incidence, Mortality and Survival

Cancer can occur in any part of the oral cavity. The **incidence** rates rise steeply starting at age 55 among males, and at age 60 among females. Declining incidence rates had been observed in both sexes from 1980-2007, with an annual decline of -2.9% in males and -4.3% in females.

Figures 38 and 39 show that in **2003-2007**, and in both sexes, there does not seem to be great differences in incidence rates between cities/municipalities, unlike in many other cancer sites.

Figure 38. Metro Manila and Rizal Province age-standardized incidence rates, Oral cavity, males, 2003-2007.

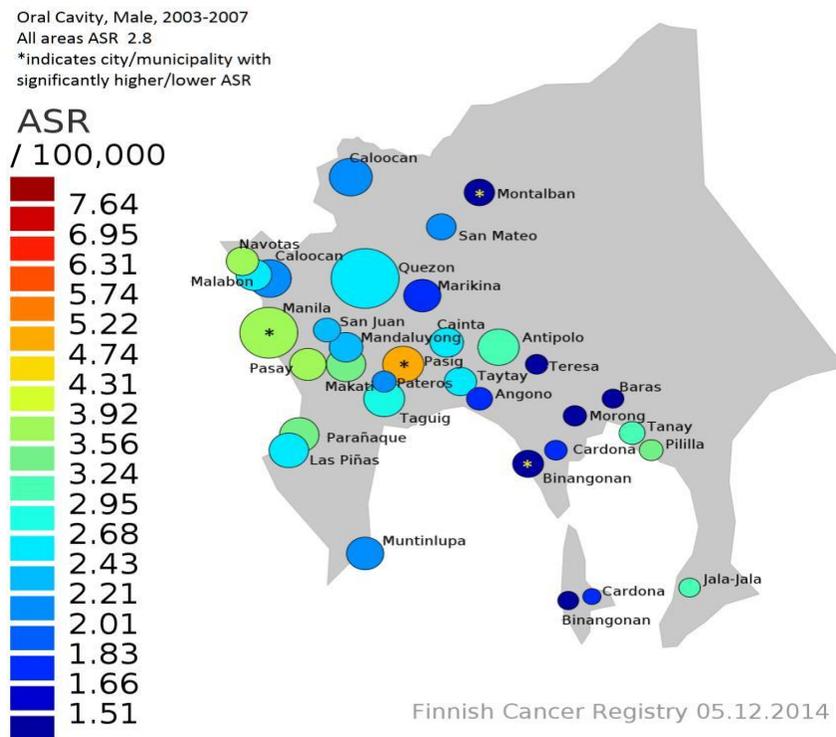
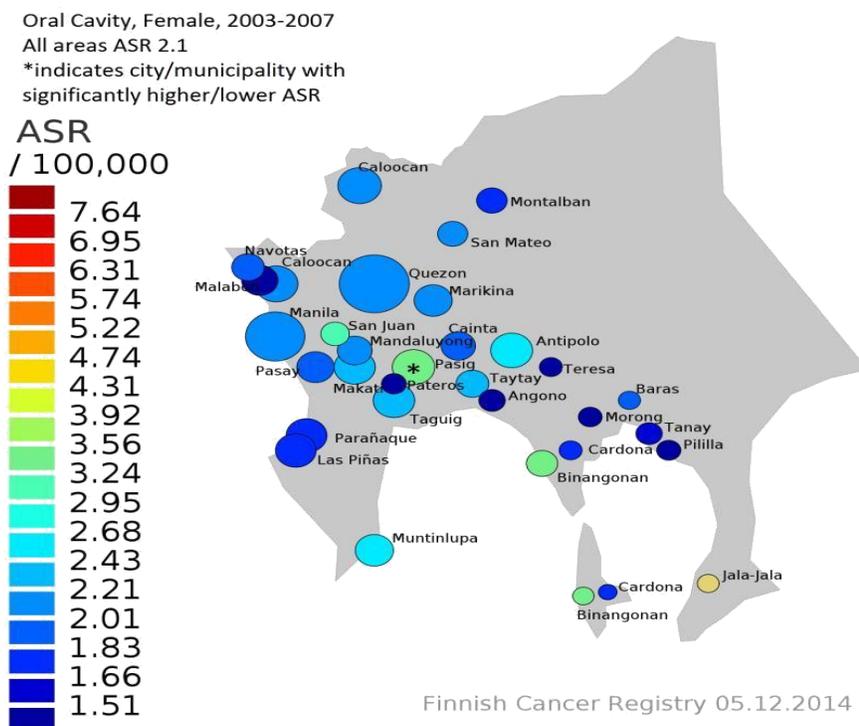


Figure 39. Metro Manila and Rizal Province age-standardized incidence rates, Oral cavity, females, 2003-2007.



In **2008**, the estimated national standardized mortality rates were 1.6 per 100,000 in both sexes, 1.9 among males, and 1.4 among females.

In **2012**, the estimated age-standardized national incidence rates were 3.6 per 100,000 in both sexes, 4.1 among males, and 3.2 among females. Less than one (0.4) out of 100 men and less than one (0.3) out of 100 women would have had a likelihood of getting oral cavity cancer before age 75. Less than one (0.2) out of 100 men and less than one (0.1) out of 100 women would have died from oral cavity cancer before age 75.

In **2015**, cancer of the mouth is estimated to be the 11th most common site when both sexes are combined (2%), the 7th among men (3%), and the 10th among women (2%). There is an estimated 2,653 new cases in both sexes, 1,406 cases in males and 1,247 cases among females. There is an estimated 1,104 deaths in both sexes, 592 males and 512 females.

Figures 40 and 41 show that in **2012** the **incidence/mortality ratios** were the highest in the United States, Europe, Israel and Singapore.

Figure 40. Oral Cancer Incidence and Mortality in 11 Countries/Regions, 2012, Males
(GLOBOCAN 2012)

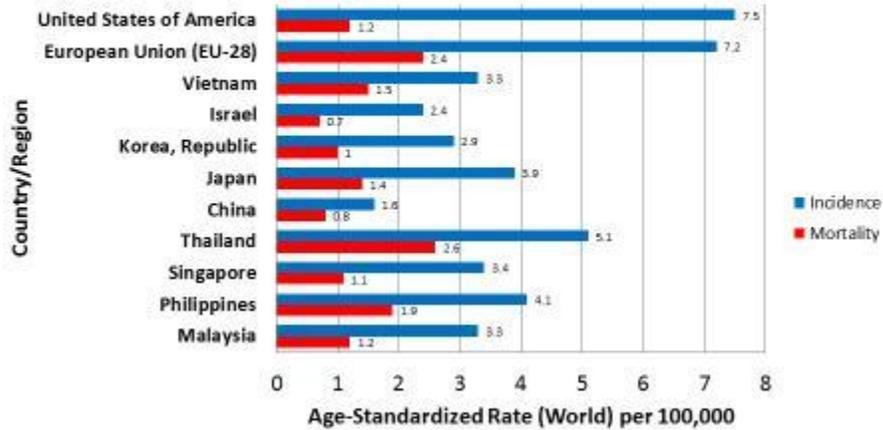
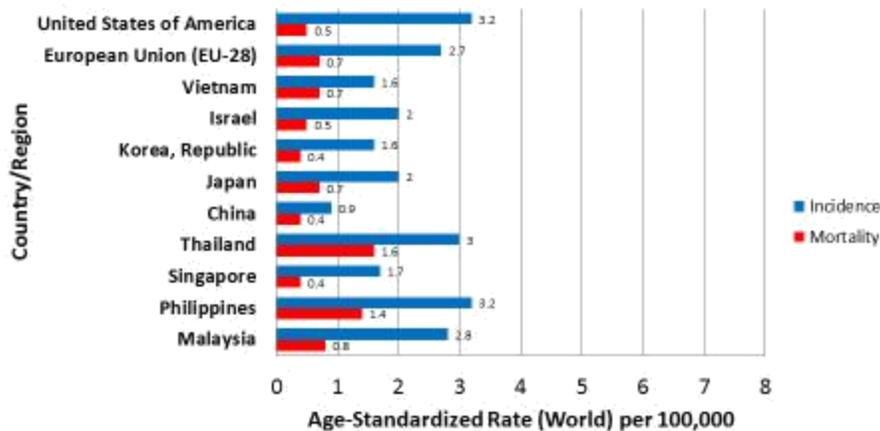


Figure 41. Oral Cancer Incidence and Mortality in 11 Countries/Regions, 2012, Females
(GLOBOCAN 2012)



In the Philippines, median **survival** was reported to be 19 months, survival rate was 27% at 5 years and 17% at 10 years.

Risk Factors and Prevention

Oral cavity cancer is highly preventable. Cigarette smoking causes cancer of the oral cavity, and so does betel nut (*buyo*) chewing. Chewing tobacco, excessive alcohol consumption and inverted cigarette smoking also increase the risk. A diet lacking in fruits and vegetables

further increases risk. Avoidance and/or cessation of these unhealthy habits, and maintaining a healthy diet, will prevent oral cancer.

Warning Signals

A sore that does not heal or bleeds easily; a lump or thickening; a reddish or whitish patch that persists. Difficulty in chewing, swallowing, or moving the tongue or jaw are late manifestations.

Early Detection

Physicians and dentists have the opportunity, through oral examination, to see abnormal tissue changes and to detect oral cancer at an early stage. Annual oral examination starting at age 50 is recommended.

Treatment

Early cancer of the oral cavity is curable. Surgery is the most accessible curative treatment. Small lesions will also be cured by radiotherapy. Advanced cases require judicious and cost-effective palliative care.

Pancreas Cancer

Incidence and Mortality

The **incidence** rate starts rising steeply at age 55 and continues to rise with increasing age.

In **2008**, the estimated national standardized mortality rates were 2.4 per 100,000 in both sexes, 2.6 among males, and 2.2 among females.

In **2012**, the estimated age-standardized national incidence rates were 2.6 per 100,000 in both sexes, 2.8 among males, and 2.5 among females. Less than one (0.3) out of 100 males and less than one (0.2) out of 100 females would have had a likelihood of getting pancreas cancer before age 75. Less than one (0.2) out of 100 men and less than one (0.2) out of 100 women would have died from pancreas cancer before age 75.

In **2015**, cancer of the pancreas is estimated to be the 16th leading site for both sexes combined (2%), the 12th in men (2%) and 14th in women (2%). There is an estimated 1,895 new cases in both sexes, 936 in males and 959 in females. There is an estimated 1,666 deaths in both sexes, 825 among men and 841 among women.

Figure 42 and 43 shows that in **2012** the **incidence/mortality ratios** in both sexes and in all populations still approximated 1:1 in both sexes since most cases were still detected in an advanced stage.

Figure 42. Pancreas Cancer Incidence and Mortality in 11 Countries/Regions, 2012, Males
(GLOBOCAN 2012)

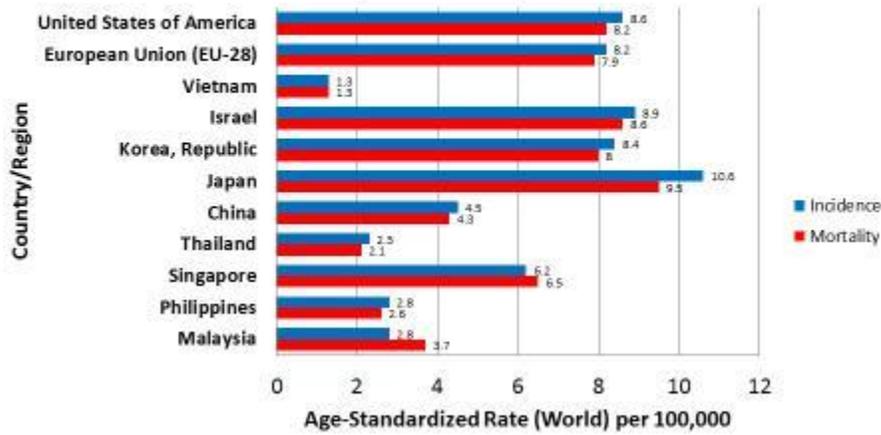
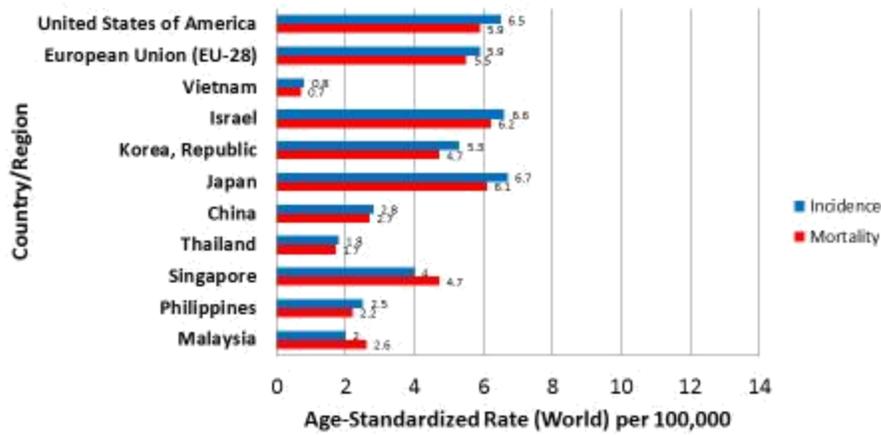


Figure 43. Pancreas Cancer Incidence and Mortality in 11 Countries/Regions, 2012, Females
(GLOBOCAN 2012)



Risk Factors

The exact cause of cancer of the pancreas is still unclear. Among factors that could increase risk are: exposure to certain chemicals, cigarette smoke, a history of *diabetes mellitus*, and excessive alcohol intake.

Warning Signals

There are no specific signs and symptoms in most cases. Persistent upper abdominal pain, painless jaundice or unexplained weight loss in middle aged or older persons should elicit suspicion.

Early Detection

There is no efficient mass screening method. Sometimes, cancer of the pancreas is diagnosed early among persons with jaundice which is not associated with pain, and often accompanied by severe generalized itching as well as a dilated gallbladder. Persistent and progressive moderate to severe upper abdominal pain, particularly if accompanied by weight loss, should be highly suspicious and cancer of the pancreas should be a main consideration.

Treatment

Early cancer of the pancreas is curable by surgery. Advanced cancer is often very painful but satisfactory pain relief is possible in most cases. Jaundice can be relieved by surgery. Judicious and cost-effective palliative care can lead to an acceptable quality of life.

Nasopharyngeal Cancer

Incidence and Mortality

The **incidence** rates begin to rise steeply at age 45 among males and at age 50 among women.

In **2012**, the estimated age-standardized national incidence rates were 2.2 per 100,000 in both sexes, 3.2 among males, and 1.3 among females. Less than one (0.3) out of 100 men and less than one (0.1) out of 100 women would have had a likelihood of getting nasopharyngeal cancer before age 75. The estimated national standardized mortality rates were 1.3 per 100,000 in both sexes, 1.9 among males, and 0.7 among females. Less than one (0.1) out of 100 men and less than one (0.1) out of 100 women would have died from nasopharyngeal cancer before age 75.

In **2015**, cancer of the nasopharynx was estimated to be the 15th leading site in both sexes (2%), the 9th in men (3%) and the 15th among women (1%). An estimated 1,906 new cases in both sexes will be seen, 1,315 in men, and 591 in women. There was an estimated 973 deaths in both sexes, 671 in males and 302 in females.

Figures 44 and 45 show that in **2012** the highest incidence rates among the selected countries/region in both sexes were observed in Malaysia, Singapore and Vietnam. High **incidence/mortality ratios** of around 2:1 were observed in Singapore and Malaysia. The Philippine ratio was lower.

Figure 44. Nasopharynx Cancer Incidence and Mortality in 11 Countries/Regions, 2012, Males
(GLOBOCAN 2012)

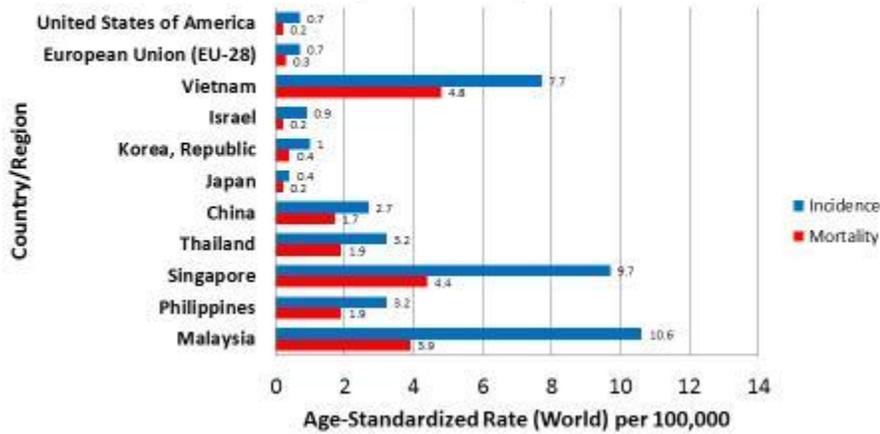
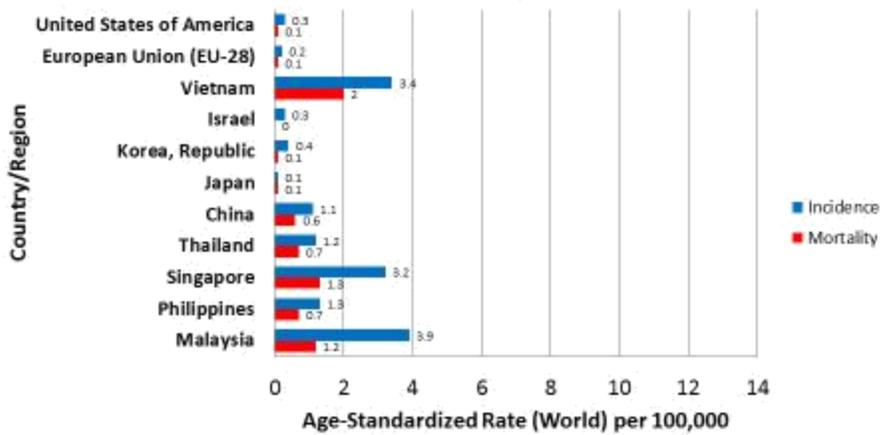


Figure 45. Nasopharynx Cancer Incidence and Mortality in 11 Countries/Regions, 2012, Females
(GLOBOCAN 2012)



Risk Factors

The cause of nasopharynx cancer is still unclear. Since the highest incidence had been observed among residents in certain areas in Southern China, and migrants coming from these areas, hereditary factors and/or unique ethnic lifestyles could be involved. A previous infection with Epstein-Barr virus has also been implicated.

Warning Signals

Bloody nasal or postnasal discharge, nasal obstruction, ear pain, fullness of the ear, or a unilateral recurrent otitis media. Frequently, the first presentation is that of enlarged lymph nodes at the upper part of the neck below the ear. More advanced disease will have neurological or ocular manifestations such as headache, bulging of one eye, double vision, hoarseness or difficulty in swallowing.

Early Detection

Since there is no efficient screening method for detecting asymptomatic cancer of the nasopharynx, earlier diagnosis and appropriate treatment of symptomatic cases should be the goal. Middle-aged persons with the aforementioned complaints should undergo nasopharyngoscopy and biopsy of suspicious areas.

Treatment

Chemo-Radiotherapy is the principal treatment of nasopharynx cancer. Advanced cases could benefit from judicious palliative care.

Laryngeal Cancer

Incidence and Mortality

The **incidence** rates rise steeply starting at age 50 among men and at age 70 among women.

In **2012**, the estimated age-standardized national incidence rates were 2.2 per 100,000 in both sexes, 3.7 among males, and 0.8 among females. Less than one (0.3) out of 100 men and less than one (0.1) out of 100 women would have had a likelihood of getting larynx cancer before age 75. The estimated national standardized mortality rates were 1 per 100,000 in both sexes, 1.7 among males, and 0.4 among females. Less than one (0.2) out of 100 men and less than one (0.04) out of 100 women would have died from larynx cancer before age 75.

In **2015**, cancer of the larynx is estimated to be the 17th most common for both sexes combined (1%), the 10th most common among men (3%), and the 21st among women (0.5%). There is an estimated 1,575 new cases in both sexes, 1,251 males and 324 females. There is an estimated 694 deaths in both sexes, 542 among men and 152 among women.

Figure 46 shows that in **2012** the highest incidence rates among males were observed in Europe, Israel and the United States which had **incidence/mortality ratios** of around 3-5:1.

Figure 47 shows that the incidence rates among women were lower but with similar ratios. The Philippine ratios were the lowest among the selected populations.

Figure 46. Larynx Cancer Incidence and Mortality in 11 Countries/Regions, 2012, Males

(GLOBOCAN 2012)

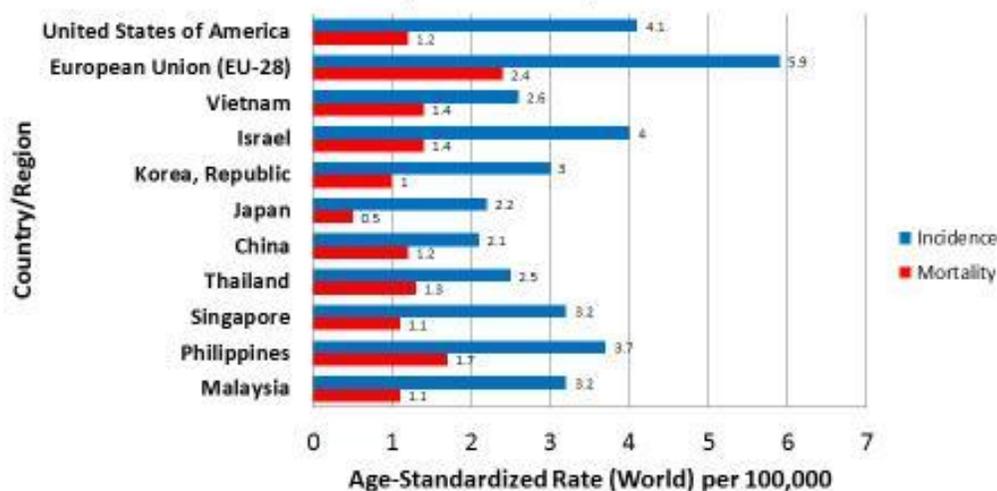
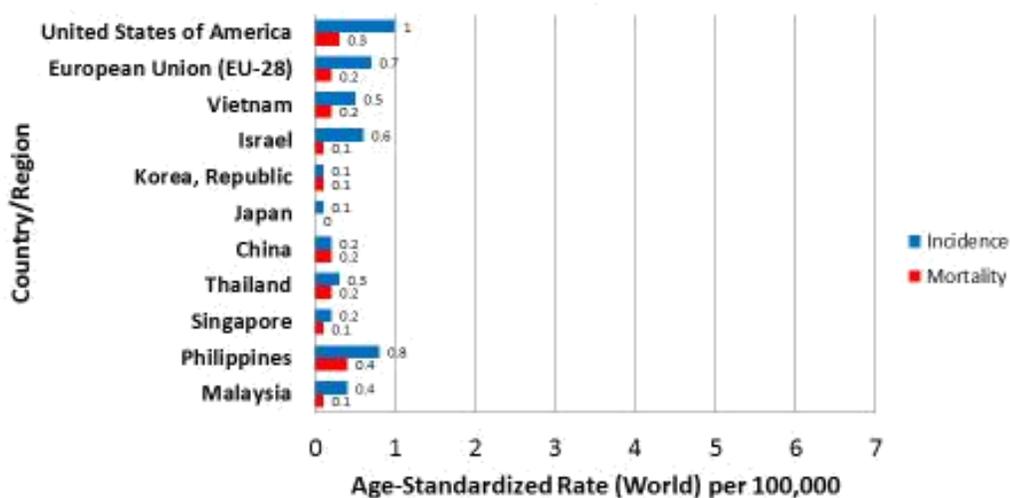


Figure 47. Larynx Cancer Incidence and Mortality in 11 Countries/Regions, 2012, Females

(GLOBOCAN 2012)



Risk Factors

Cigarette smoking causes cancer of the larynx.

Warning Signals

Hoarseness is the most common early symptom. Advanced cancer causes difficulty of swallowing or even breathing problems. Sometimes the initial presentation is enlarged lymph nodes in the lower part of the neck.

Early Detection

Persistent or recurrent **hoarseness** in adults that cannot be explained as being due to prevalent conditions, particularly among heavy smokers, should be suspect. Direct laryngoscopy and biopsy of suspicious areas can detect early cancer of the larynx.

Treatment

Early cancer of the larynx is curable. For small lesions radiotherapy can be curative and the voice can be preserved. Larger lesions are still curable by surgery, but the voice is lost. In many cases, speech can be used with training in the use of various devices. For advanced cases, there should be a vigorous effort to improve quality of life through judicious and cost-effective palliative care.

**5-YEAR POPULATION-BASED CANCER DATA
(PCS-MANILA & DOH-RIZAL TUMOR REGISTRIES, 2008-2012)**

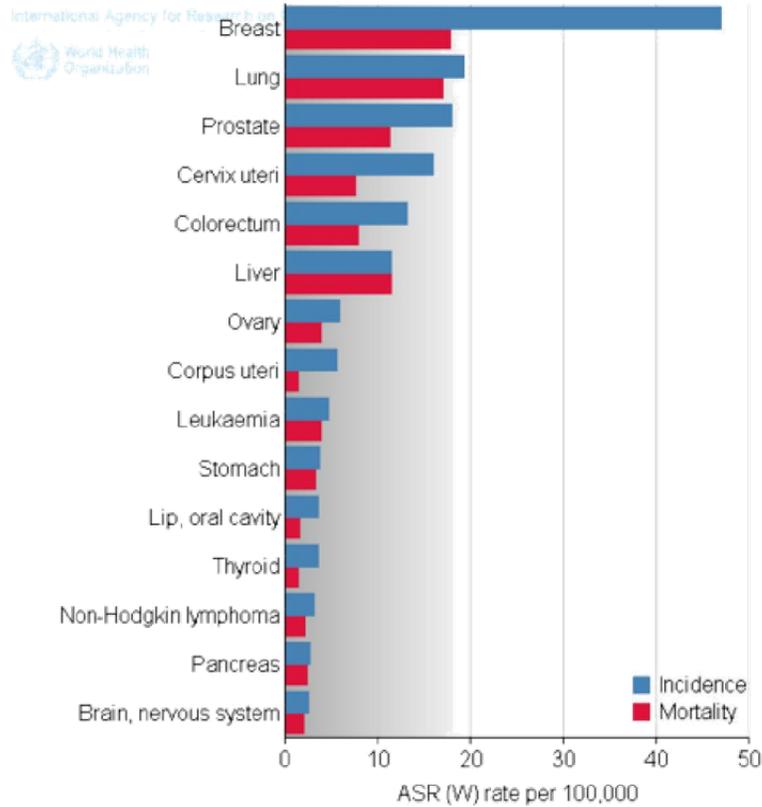
Both Sexes

Estimated incidence, mortality and 5-year prevalence: both sexes

Cancer	Incidence			Mortality			5-year prevalence		
	Number	(%)	ASR (W)	Number	(%)	ASR (W)	Number	(%)	Prop.
Lip, oral cavity	2363	2.4	3.6	978	1.7	1.6	5137	2.4	8.1
Nasopharynx	1738	1.8	2.2	873	1.5	1.3	4558	2.1	7.2
Other pharynx	1213	1.2	1.9	1020	1.7	1.7	2824	1.3	4.5
Oesophagus	715	0.7	1.1	623	1.1	1.0	701	0.3	1.1
Stomach	2415	2.5	3.8	2043	3.5	3.3	3230	1.5	5.1
Colorectum	8553	8.7	13.1	4901	8.3	7.8	18791	8.8	29.8
Liver	7734	7.9	11.4	7434	12.6	11.4	4696	2.2	7.4
Gallbladder	342	0.3	0.5	256	0.4	0.4	392	0.2	0.6
Pancreas	1682	1.7	2.6	1476	2.5	2.4	1209	0.6	1.9
Larynx	1399	1.4	2.1	615	1.0	1.0	3691	1.7	5.8
Lung	12074	12.3	19.3	10369	17.6	17.0	10592	4.9	16.8
Melanoma of skin	298	0.3	0.4	136	0.2	0.2	847	0.4	1.3
Kaposi sarcoma	16	0.0	0.0	10	0.0	0.0	35	0.0	0.1
Breast	18327	18.7	47.0	6621	11.2	17.8	64046	29.9	201.5
Cervix uteri	6670	6.8	16.0	2832	4.8	7.5	20587	9.6	64.8
Corpus uteri	2222	2.3	5.6	502	0.9	1.4	8559	4.0	26.9
Ovary	2425	2.5	5.9	1442	2.4	3.9	6015	2.8	18.9
Prostate	4858	4.9	18.0	2580	4.4	11.3	12220	5.7	39.1
Testis	204	0.2	0.5	94	0.2	0.3	622	0.3	2.0
Kidney	1008	1.0	1.4	600	1.0	0.9	2186	1.0	3.5
Bladder	989	1.0	1.5	430	0.7	0.7	2674	1.2	4.2
Brain, nervous system	2017	2.1	2.6	1430	2.4	2.0	2630	1.2	4.2
Thyroid	3024	3.1	3.6	865	1.5	1.4	11280	5.3	17.9
Hodgkin lymphoma	214	0.2	0.2	98	0.2	0.1	595	0.3	0.9
Non-Hodgkin lymphoma	2317	2.4	3.1	1423	2.4	2.1	3684	1.7	5.8
Multiple myeloma	350	0.4	0.5	236	0.4	0.4	543	0.3	0.9
Leukaemia	3977	4.0	4.7	3133	5.3	3.9	3471	1.6	5.5
All cancers excl. non-melanoma skin cancer	98249	100.0	140.0	59012	100.0	90.7	214475	100.0	340.2

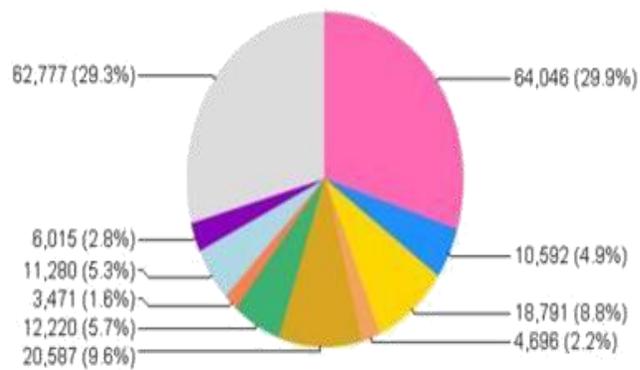
*Incidence and mortality data for all ages. 5-year prevalence for adult population only.
ASR (W) and proportions per 100,000.*

Estimated age-standardised incidence and mortality rates: both sexes

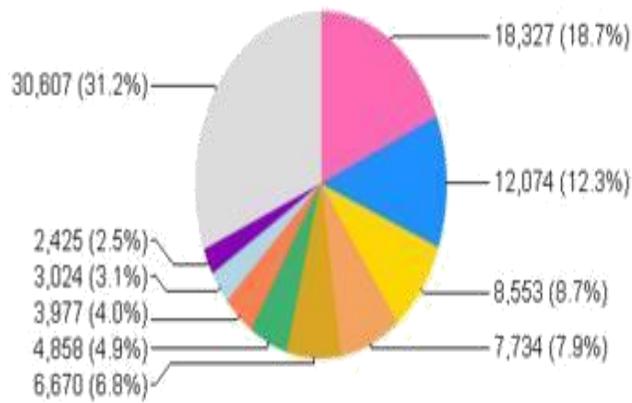


International Agency for Research on Cancer
World Health Organization

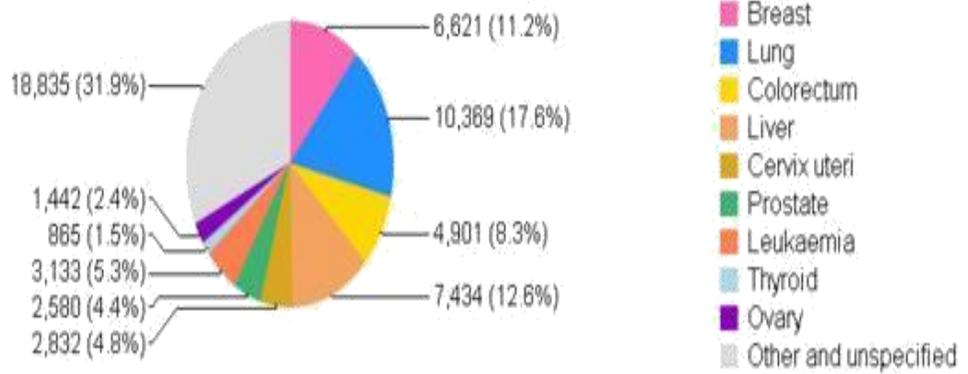
5-year prevalence



Incidence



Mortality



- Breast
- Lung
- Colorectum
- Liver
- Cervix uteri
- Prostate
- Leukaemia
- Thyroid
- Ovary
- Other and unspecified

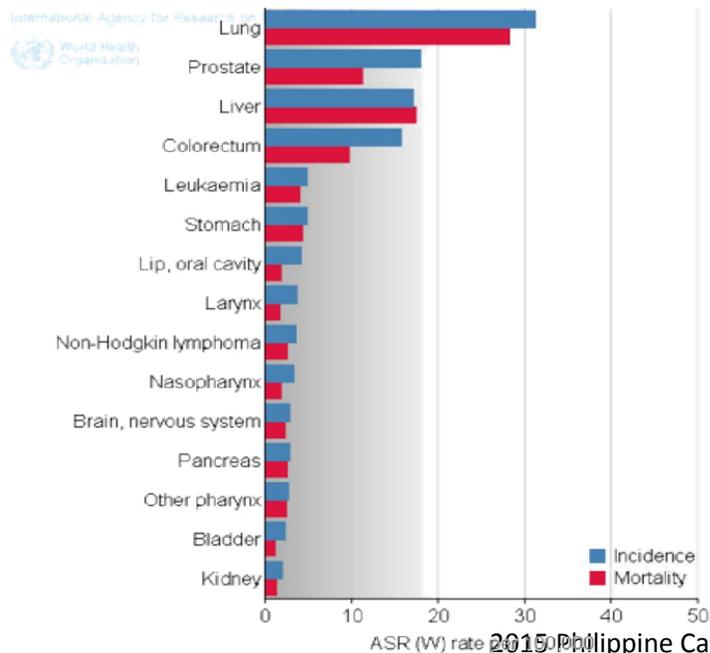
Men

Estimated incidence, mortality and 5-year prevalence: men

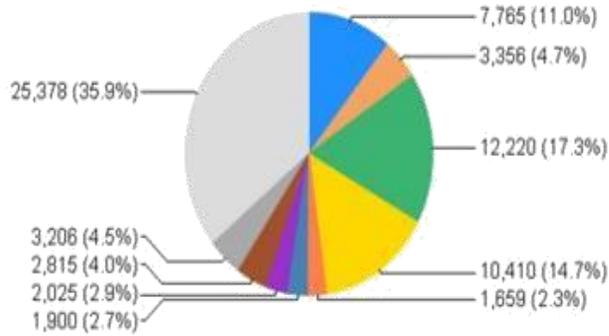
Cancer	Incidence			Mortality			5-year prevalence		
	Number	(%)	ASR (W)	Number	(%)	ASR (W)	Number	(%)	Prop.
Lip, oral cavity	1258	2.9	4.1	527	1.7	1.9	2815	4.0	9.0
Nasopharynx	1199	2.8	3.2	601	2.0	1.9	3206	4.5	10.3
Other pharynx	800	1.9	2.6	660	2.2	2.4	1874	2.6	6.0
Oesophagus	519	1.2	1.8	449	1.5	1.7	518	0.7	1.7
Stomach	1408	3.3	4.8	1195	3.9	4.3	1900	2.7	6.1
Colorectum	4675	10.9	15.7	2703	8.8	9.7	10410	14.7	33.3
Liver	5441	12.6	17.1	5252	17.1	17.4	3356	4.7	10.7
Gallbladder	154	0.4	0.5	117	0.4	0.4	184	0.3	0.6
Pancreas	834	1.9	2.8	734	2.4	2.6	606	0.9	1.9
Larynx	1111	2.6	3.7	479	1.6	1.7	2950	4.2	9.4
Lung	8822	20.5	31.3	7667	25.0	28.2	7765	11.0	24.8
Melanoma of skin	157	0.4	0.5	73	0.2	0.3	432	0.6	1.4
Kaposi sarcoma	6	0.0	0.0	4	0.0	0.0	13	0.0	0.0
Prostate	4858	11.3	18.0	2580	8.4	11.3	12220	17.3	39.1
Testis	204	0.5	0.5	94	0.3	0.3	622	0.9	2.0
Kidney	641	1.5	2.0	379	1.2	1.3	1415	2.0	4.5
Bladder	679	1.6	2.3	292	1.0	1.1	1834	2.6	5.9
Brain, nervous system	1090	2.5	2.9	776	2.5	2.2	1456	2.1	4.7
Thyroid	758	1.8	1.9	270	0.9	1.0	2853	4.0	9.1
Hodgkin lymphoma	105	0.2	0.2	49	0.2	0.1	301	0.4	1.0
Non-Hodgkin lymphoma	1270	2.9	3.6	808	2.6	2.5	2025	2.9	6.5
Multiple myeloma	162	0.4	0.5	108	0.4	0.4	252	0.4	0.8
Leukaemia	2027	4.7	4.8	1585	5.2	4.1	1659	2.3	5.3
All cancers excl. non-melanoma skin cancer	43058	100.0	139.9	30651	100.0	107.4	70734	100.0	226.3

*Incidence and mortality data for all ages. 5-year prevalence for adult population only.
ASR (W) and proportions per 100,000.*

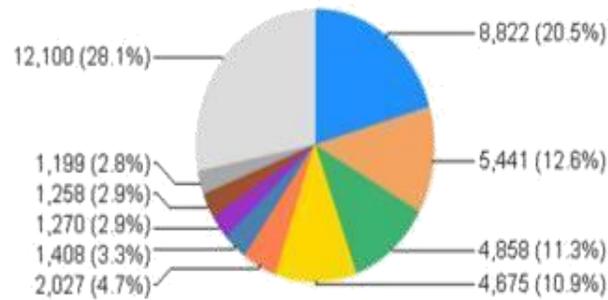
Estimated age-standardised incidence and mortality rates: men



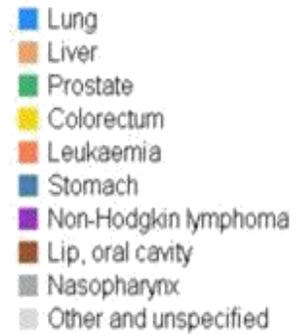
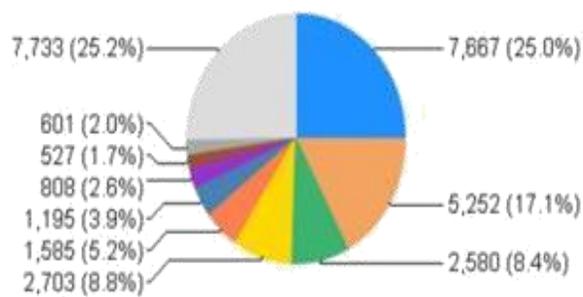
5-year prevalence



Incidence



Mortality



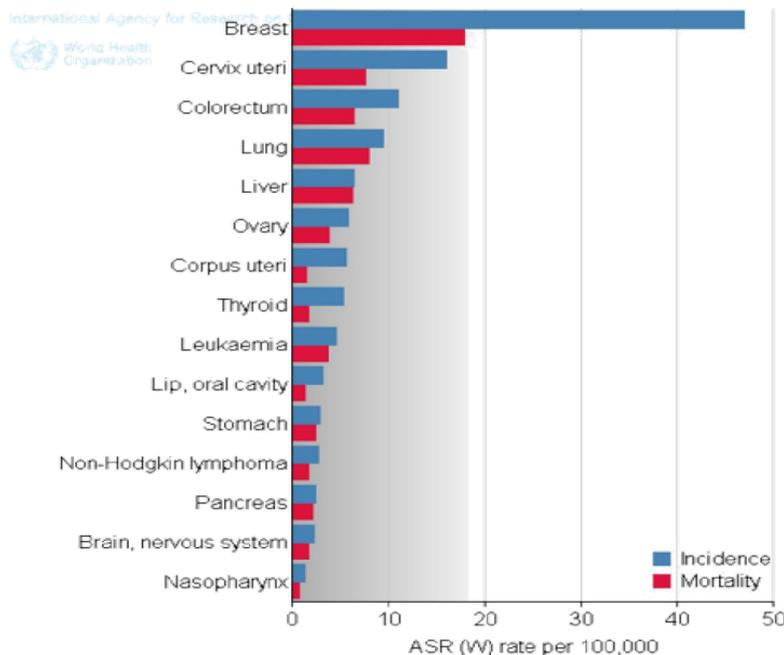
Women

Estimated incidence, mortality and 5-year prevalence: women

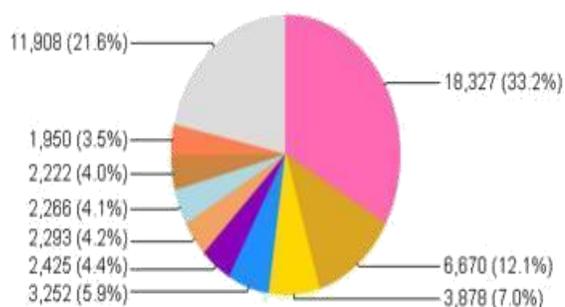
Cancer	Incidence			Mortality			5-year prevalence		
	Number	(%)	ASR (W)	Number	(%)	ASR (W)	Number	(%)	Prop.
Lip, oral cavity	1105	2.0	3.2	451	1.6	1.4	2322	1.6	7.3
Nasopharynx	539	1.0	1.3	272	1.0	0.7	1352	0.9	4.3
Other pharynx	413	0.7	1.2	360	1.3	1.1	950	0.7	3.0
Oesophagus	196	0.4	0.6	174	0.6	0.5	183	0.1	0.6
Stomach	1007	1.8	2.9	848	3.0	2.5	1330	0.9	4.2
Colorectum	3878	7.0	11.1	2198	7.8	6.4	8381	5.8	26.4
Liver	2293	4.2	6.5	2182	7.7	6.3	1340	0.9	4.2
Gallbladder	188	0.3	0.5	139	0.5	0.4	208	0.1	0.6
Pancreas	848	1.5	2.5	742	2.6	2.2	603	0.4	1.9
Larynx	288	0.5	0.8	136	0.5	0.4	741	0.5	2.3
Lung	3252	5.9	9.5	2702	9.5	8.0	2827	2.0	8.9
Melanoma of skin	141	0.3	0.4	63	0.2	0.2	415	0.3	1.3
Kaposi sarcoma	10	0.0	0.0	6	0.0	0.0	22	0.0	0.1
Breast	18327	33.2	47.0	6621	23.3	17.8	64046	44.6	201.5
Cervix uteri	6670	12.1	16.0	2832	10.0	7.5	20587	14.3	64.8
Corpus uteri	2222	4.0	5.6	502	1.8	1.4	8559	6.0	26.9
Ovary	2425	4.4	5.9	1442	5.1	3.9	6015	4.2	18.9
Kidney	367	0.7	1.0	221	0.8	0.6	771	0.5	2.4
Bladder	310	0.6	0.9	138	0.5	0.4	840	0.6	2.6
Brain, nervous system	927	1.7	2.3	654	2.3	1.7	1174	0.8	3.7
Thyroid	2266	4.1	5.3	595	2.1	1.7	8427	5.9	26.5
Hodgkin lymphoma	109	0.2	0.2	49	0.2	0.1	294	0.2	0.9
Non-Hodgkin lymphoma	1047	1.9	2.7	615	2.2	1.7	1659	1.2	5.2
Multiple myeloma	188	0.3	0.5	128	0.5	0.4	291	0.2	0.9
Leukaemia	1950	3.5	4.5	1548	5.5	3.7	1812	1.3	5.7
All cancers excl. non-melanoma skin cancer	55191	100.0	143.4	28361	100.0	78.6	143741	100.0	452.1

Incidence and mortality data for all ages. 5-year prevalence for adult population only. ASR (W) and proportions per 100,000.

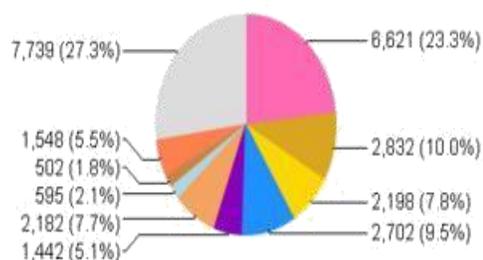
Estimated age-standardised incidence and mortality rates: women



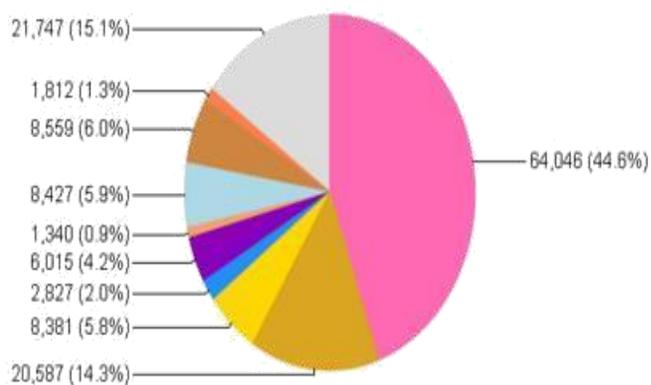
Incidence



Mortality



5-year prevalence



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