2010 PHILIPPINE CANCER FACTS AND ESTIMATES
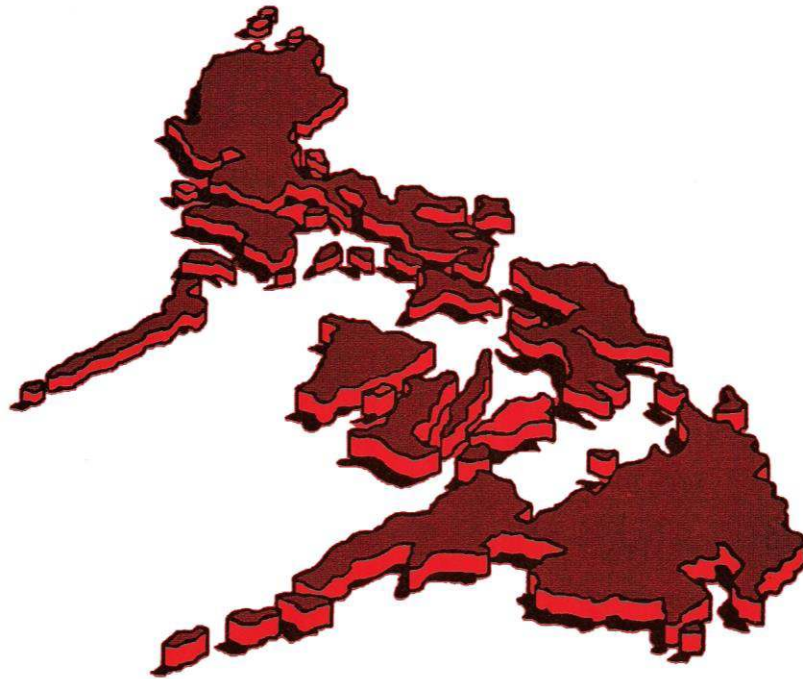
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PHILIPPINE CANCER SOCIETY
MANILA CANCER REGISTRY

DEPARTMENT OF
HEALTH
RIZAL
CANCER REGISTRY

UNIVERSITY OF THE PHILIPPINES MANILA
SURGERY RESEARCH UNIT

Finnish
Cancer registry

PHILIPPINE CANCER SOCIETY
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PHILIPPINE CANCER FACTS AND ESTIMATES

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PHILIPPINE CANCER SOCIETY-MANILA CANCER REGISTRY
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with the cooperation of the

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FINNISH CANCER REGISTRY

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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 tell us if we are successful, or unsuccessful, in cancer prevention. 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 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 IX (1998-2002).

The Philippine Cancer Society has also published data from the two registries in the series **Cancer in the Philippines.** Volume 4 Part 1 contains 1998-2002 incidence, and Part 2 contains 1980-2002 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 were done by the authors. The 2005 incidence and mortality estimates were derived from GLOBOCAN 2000 Cancer Incidence, Mortality and Prevalence Worldwide Version 1.00, produced by the Descriptive Epidemiology Group of the International Agency for Research on Cancer (IARC). The **2010** incidence and mortality estimates are based on **GLOBOCAN 2008.** GLOBOCAN has greatly facilitated national estimation of cancer incidence every 5 years and comparisons between countries. The IARC also helps to develop and sustain population-based cancer registries worldwide and has been assisting the two Philippine registries from the very start.

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. Thus, 2005 Philippine Cancer Facts and Estimates was most probably overestimated, while the 2010 estimates on cancer incidence could be closer to the real situation.

In this issue, GLOBOCAN 2008 was used to estimate **number of new cases** in **2010** and **age-standardized incidence rates, age-standardized mortality rates, cumulative incidence rates (%), and cumulative mortality rates (%)** in **2008** for the Philippines and selected countries.

This issue also contains 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.

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 defense 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 a HEALTHY DIET, PHYSICAL FITNESS and possibly also 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, OVERWEIGHT/OBESITY, HORMONES, VIRUSES and IONISING RADIATION.

The numerous battles in the deadly war between cancer initiating/promoting mechanisms and the body's cancer protecting defenses 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 defeats 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 defenses by maintaining healthy lifestyles from childhood, they will win.

Table 1. Estimated New Cancer Cases in 2002 by Age-Groups, All sites, Philippines (GLOBOCAN 2002)

Age-Group	Males		Females	
	Rate per 100,000	No. of Cases	Rate per 100,000	No. of Cases
0-14	12.8	1,884	10.4	1,454
15-44	34.7	6,486	62.6	11,465
45-54	222.2	6,734	352.4	10,844
55-64	605.1	11,006	590.3	11,246
65+	1,415.0	17,962	937.1	15,047
All Ages	112.0	44,072	129.0	50,056

Table 2. Estimated New Cancer Deaths in 2002 by Age-Groups, All sites, Philippines (GLOBOCAN 2002)

Age-Group	Males		Females	
	Rate per 100,000	No. of Cases	Rate per 100,000	No. of Cases
0-14	8.7	1,277	6.9	963
15-44	23.2	4,343	36.8	6,740
45-54	176.0	5,333	215.1	6,620
55-64	475.0	8,639	404.4	7,705
65+	1,155.0	14,660	710.1	11,402
All Ages	87.0	34,252	86.0	33,430

As a general rule, the incidence (risk) of cancer increases with increasing age. Table 1 shows that in **2002 Childhood Cancer** (0-14 years) comprised only **3.5%** of all cancer cases, and a tenth of the cases that occurred among persons 65 years and older. The age-specific rate among children is about **1%** of the rate among persons of age 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.

According to the rates in 2008, 13 out of 100 males and 12 out of 100 females in the Philippines would have had some form of cancer if they would have lived up to age 75. Ten 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 ARE PREVENTABLE

CANCER PROTECTING mechanisms prevent cancer. A healthy lifestyle that is started in childhood, particularly eating a **HEALTHY DIET**, maintaining **PHYSICAL FITNESS** and **MINIMIZING AND PROPERLY COPING WITH STRESS** will decrease the risk of not only cancer but also many chronic diseases such as coronary artery disease, hypertension, stroke and diabetes.

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

Physical fitness is achieved through a **lifelong** active lifestyle. Physically fit individuals are not overweight, are quite productive in their jobs, have a high self esteem, and are more able to successfully cope with stress. Exercise need not be performed in expensive fitness clubs or in difficult sports, and does not need elaborate equipment. 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 not only lung cancer and cancers of the mouth, pharynx, larynx and esophagus, they also increase the risk of many other cancers, acute and chronic lung disease and other 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-quid 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 and HBV infant 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 have long been 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 44% 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 because they can be detected early and for which curative treatment is currently 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.

The following common cancers can be detected early and when treated properly can be cured - BREAST, CERVIX, COLON, RECTUM, ORAL, THYROID, PROSTATE.

These comprise 35% of all cancers, 18% of cancers in males, and 49% 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 paramount.

The goal of palliative care is the achievement of the best quality of life for patients and their families.

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
- 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
- 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, as in a **3-STEP ANALGESIC LADDER** to keep the patient continuously pain-free.

The right drug in the right dose given at the right time will relieve cancer pain.

By using oral medications, particularly morphine tablets and other oral formulations of strong opioids, 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.**

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.

However, 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.**

THE CURRENT SITUATION 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.

There had been a steady decline in the consumption of fruits and vegetables. The 7th National Nutrition and Health Survey (NNHeS 2008) of the Food and Nutrition Research Institute (FNRI) reported that overweight/obesity had increased from 24% in 2003 to 26.6% in 2008. 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 ≥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 but funding had been inconsistent. A proposed law mandating funding for a national HBV vaccination program had been consistently thwarted by an objecting Senator. Nevertheless, 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 and appear to be gaining in acceptance among those who can afford it. The former Secretary of Health, alarmed by the rapid rise in new cases of HIV/AIDS, had 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. While residents in affluent cities elsewhere in the world habitually walk long distances everyday to and from bus stops and railway stations, and improve their fitness doing so, our public utility vehicles are loaded and unloaded at will. Our commuters loathe walking to designated bus stops or even falling in line in these designated areas, unmindful that this unhealthy luxury contributes not only to environmental degradation, fuel wastage and woeful productivity, but to the fact that this anarchy is a major source of severe communal

stress among residents. The economic losses incurred result in decreased family incomes, and one of the first to suffer is a healthy diet.

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/TREATMENT

In the Philippines, in spite 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. This has led to the perception that the population is difficult to educate, particularly the poorer segments, and more effort and expense should be devoted to such campaigns. It is also notable that the content of these activities often seek to duplicate what is being promoted in High-Income Countries, such as screening. Screening, which aims to detect cancer among asymptomatic persons, does work in countries rich enough to afford the enormous expense which ought to also include treatment and in which a large segment of the population is compliant.

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 enrollment of indigent families, but a large portion of indigent families and the self-employed are still either uninsured or underinsured.

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 excessive regulations on the prescription of morphine and other strong opioids constitute the major barriers to the effective treatment of severe pain either caused by cancer, following major operations, or many other very painful conditions. These regulations are not in keeping with the principle of **BALANCE** that the World Health Organization and the International Narcotics Control Board have been advocating globally. These organizations have been trying to persuade countries to change their regulations which are too focused on fighting the illicit drug menace to the point that the suffering patients are deprived of the necessary medicines. Worldwide evidence has consistently demonstrated that strong opioids used for relieving pain rarely cause addiction. The strong opioid formulations available in the country do not seem to be popular with the addicts as the occasional diversion of these medicines is minuscule compared to the large volumes of illicit traffic in marijuana, shabu and other popular substances. Diversion of medicinal preparations of morphine is virtually unheard of, yet the legislative and executive branches of government insist on maintaining the current tedious regulations on its prescribing and distribution. These **unbalanced regulations** will not contribute anything significant in the war against illegal drugs, and hundreds of thousands of Filipinos will continue to suffer from unrelieved pain.

The Comprehensive Dangerous Drugs Act of 2002 clearly stated in The Declaration of Policy that "The government shall however aim to achieve a **balance** in the national drug control program so that people with legitimate medical needs are not prevented from being treated with adequate amounts of appropriate medications, which include the use of dangerous drugs." The Dangerous Drugs Board "shall develop and adopt a comprehensive, integrated, unified and **balanced** national drug abuse prevention and control strategy." The DDB shall also "Establish a regular and continuing consultation with concerned government agencies and medical professional organizations **if balance exists** in policies, procedures, rules and regulations on dangerous drugs and to provide recommendations on how the lawful use of dangerous drugs **can be improved and facilitated."** The section on special prescription pads was to have been removed, as this was one of the major barriers to the achievement of balance.

Unfortunately, unseen elements managed to have the requirement of exclusive prescription forms on a special kind of paper retained in the Act, **effectively contradicting itself on the policy of balance.** Today, it is even more difficult for physicians to prescribe strong

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opioids – they still must have a Narcotics (S2) License which now requires a drug test, and use special triplicate yellow prescription pads. **The imbalance has gotten worse. Thousands continue to suffer daily from severe pain.**

DEPARTMENT OF HEALTH INITIATIVES

Under a new President of the Republic, President Benigno Aquino III, and Dr. Enrique Ona, the new Secretary of the Department of Health (DOH), a paradigm shift may be in the making. These are the recent developments:

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 will strengthen an Integrated Program for the prevention of Non-Communicable Diseases, started in 2008 by former Secretary of Health Francisco Duque III, promoting a healthy lifestyle and integrating this at the community level with the local government units (LGUs), and professional and civic organizations. This will 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.

Acute Lymphocytic Leukemia in Children: The DOH will continue and improve the systems and methods of a medicines access program for children afflicted with **acute lymphocytic leukemia,** the most common type of leukemia in children and highly curable with chemotherapy. Started in 2009, the program has benefitted around 300 children in 14 government hospitals.

Pilot Project on Integrated Breast Cancer Detection and Treatment in Metro Manila: The medicines access program will be extended to **breast cancer**, starting with a pilot project involving the four largest government hospitals in Metro Manila. The project will try out 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 will be 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.

NEW CANCER CASES AND DEATHS IN 2010

Table 3 shows that in **2010,** the predicted number of **new cases** will be about 82,468 new cases (**both sexes**), 39,012 among **males** and 43,456 among **females**. There will be about 51,808 cancer **deaths (both sexes**), 27,991 in **males** and 23,817 in **females**.

Table. 3 Estimated New Cancer Cases and Deaths in 2010 by Site and Sex, Philippines (GLOBOCAN 2008)

Cancer Sites	New Cases			Deaths		
	Male	Female	Both Sexes	Male	Female	Both Sexes
Oral Cavity	833	594	1427	509	403	912
Nasopharynx	638	281	919	428	184	612
Other pharynx	1145	705	1850	804	522	1326
Esophagus	567	301	868	421	227	648
Stomach	1920	1209	3129	1340	934	2274
Colon/Rectum	3208	2579	5787	1690	1370	3060
Liver	5522	1809	7331	5102	1717	6819
Pancreas	716	618	1334	609	535	1144
Larynx	577	209	786	385	119	504
Lung	8772	2686	11458	6987	2197	9184
Skin Melanoma	181	242	423	93	119	212
Breast		12262	12262		4371	4371
Cervix Uteri		4812	4812		1984	1984
Corpus Uteri		1760	1760		796	796
Ovary		2165	2165		1016	1016
Prostate	2712		2712	1410		1410
Testis	224		224	45		45
Bladder	570	239	809	226	95	321
Kidney	848	458	1306	389	222	611
Brain/ Nervous System	1236	1000	2236	1069	786	1855
Thyroid	406	1474	1880	234	450	684
Non-Hodgkin Lymphoma	982	682	1664	598	369	967
Hodgkin's Disease	369	147	516	94	45	139
Multiple Myeloma	76	56	132	52	39	91
Leukemia	1669	1484	3153	1381	1228	2609
All Sites but skin	39012	43456	82468	27991	23817	51808

Table 4 shows the number of **new cases (both sexes**) per cancer site in **2010**, ranked according to decreasing number of new cases, and Figure 1 illustrates the **top 10** leading sites (breast, lung, liver, colon/rectum, cervix uteri, leukemia, stomach, prostate, brain/nervous system, ovary). The 10 leading sites comprise **68%** of all new cases.

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Table 4. Estimated Leading New Cancer Cases in 2010, Both Sexes, Philippines (GLOBOCAN 2008)

Cancer Sites	Number	Percentage
Breast	12262	15
Lung	11458	14
Liver	7331	9
Colon/Rectum	5787	7
Cervix Uteri	4812	6
Leukemia	3153	4
Stomach	3129	4
Prostate	2712	3
Brain/ Nervous System	2236	3
Ovary	2165	3
Thyroid	1880	2
Other pharynx	1850	2
Corpus Uteri	1760	2
Non-Hodgkin Lymphoma	1664	2
Oral Cavity	1427	2
Pancreas	1334	2
Kidney	1306	2
Nasopharynx	919	1
Esophagus	868	1
Bladder	809	1
Larynx	786	1
Hodgkin's Disease	516	1
Skin Melanoma	423	1
All Sites but skin	82468	100

Table 5 shows the number of **new cases** in **2010** 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, colon/rectum, prostate, stomach, leukemia, brain/nervous system, other pharynx, non-Hodgkin lymphoma, kidney) comprise **71%** of all new cases.

Table 5. Estimated Leading New Cancer Cases in 2010, Males, Philippines (GLOBOCAN 2008)

Cancer Sites	Male	Percentage
Lung	8772	22
Liver	5522	14
Colon/Rectum	3208	8
Prostate	2712	7
Stomach	1920	5
Leukemia	1669	4
Brain/ Nervous System	1236	3
Other pharynx	1145	3
Non-Hodgkin Lymphoma	982	3
Kidney	848	2
Oral Cavity	833	2
Pancreas	716	2
Nasopharynx	638	2
Larynx	577	1
Bladder	570	1
Esophagus	567	1
Thyroid	406	1
Hodgkin's Disease	369	1
Testis	224	1
All Sites but skin	39012	100

Table 6 shows the number of **new cases** in **2010** 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, lung, colon/rectum, ovary, liver, corpus uteri, leukemia, thyroid, stomach) comprise **73%** of all new cases.

Table 6. Estimated Leading New Cancer Cases in 2010, Females, Philippines (GLOBOCAN 2008)

Cancer Sites	Female	Percentage

Breast	12262	28
Cervix Uteri	4812	11
Lung	2686	6
Colon/Rectum	2579	6
Ovary	2165	5
Liver	1809	4
Corpus Uteri	1760	4
Leukemia	1484	3
Thyroid	1474	3
Stomach	1209	3
Brain/ Nervous System	1000	2
Other pharynx	705	2
Non-Hodgkin Lymphoma	682	2
Pancreas	618	1
Oral Cavity	594	1
Kidney	458	1
Esophagus	301	1
Nasopharynx	281	1
Skin Melanoma	242	1
Bladder	239	1
All Sites but skin	43456	100

Table 7 shows the number of new **deaths** (**both sexes**) per cancer site in **2010**, ranked according to decreasing number of deaths with the **10 leading sites** (lung, liver, breast, colon/rectum, leukemia, stomach, cervix uteri, brain/nervous system, prostate, other pharynx) comprising **68%** of all cases. Figure 1 show the number of new deaths associated with the new cases of the top 10 cancer sites.

Table 7. Estimated Leading New Cancer Deaths in 2010, Both Sexes, Philippines (GLOBOCAN 2008)

Cancer Sites	Number	Percentage

Lung	9184	18
Liver	6819	13
Breast	4371	8
Colon/Rectum	3060	6
Leukemia	2609	5
Stomach	2274	4
Cervix Uteri	1984	4
Brain/ Nervous System	1855	4
Prostate	1410	3
Other Pharynx	1326	3
Pancreas	1144	2
Ovary	1016	2
Non-Hodgkin Lymphoma	967	2
Oral Cavity	912	2
Corpus Uteri	796	2
Thyroid	684	1
Esopahgus	648	1
Nasopharynx	612	1
Kidney	611	1
Larynx	504	1
Bladder	321	1
All Sites but skin	51808	100

Table 8 shows the number of new **deaths** in **2010** among **men** per cancer site, ranked according to decreasing number of deaths with the **10 leading sites** (lung, liver, colon/rectum, prostate, leukemia, stomach, brain/nervous system, other pharynx, pancreas, non-Hodgkin lymphoma) comprising **75%** 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 in 2010, Males, Philippines (GLOBOCAN 2008)

Cancer Sites	Male	Percentage
Lung	6987	25
Liver	5102	18

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Colon/Rectum	1690	6
Prostate	1410	5
Leukemia	1381	5
Stomach	1340	5
Brain/ Nervous System	1069	4
Other Pharynx	804	3
Pancreas	609	2
Non-Hodgkin Lymphoma	598	2
Oral Cavity	509	2
Nasopharynx	428	2
Esophagus	421	2
Kidney	389	1
Larynx	385	1
Thyroid	234	1
Bladder	226	1
All Sites but skin	27991	100

Table 9 shows the number of new **deaths** in **2010** among **women** per cancer site, ranked according to decreasing number of deaths with the **10 leading sites** (breast, lung, cervix uteri, liver, colon/rectum, leukemia, ovary, stomach, corpus uteri, brain/nervous system) comprising **67%** 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 in 2010, Females, Philippines (GLOBOCAN 2008)

Cancer Sites	Female	Percentage
Breast	4371	18
Lung	2197	9

Cervix Uteri	1984	8
Liver	1717	7
Colon/Rectum	1370	6
Leukemia	1228	5
Ovary	1016	4
Stomach	934	4
Corpus Uteri	796	3
Brain/ Nervous System	786	3
Pancreas	535	2
Other pharynx	522	2
Thyroid	450	2
Oral Cavity	403	2
Non-Hodgkin Lymphoma	369	2
Esophagus	227	1
Kidney	222	1
Nasopharynx	184	1
Larynx	119	1
Skin Melanoma	119	1
All Sites but skin	23817	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.

Figure 1. Number of New Cases for 10 Most Common Cancers in 2010, Both Sexes, and Corresponding Number of New Deaths (GLOBOCAN 2008)
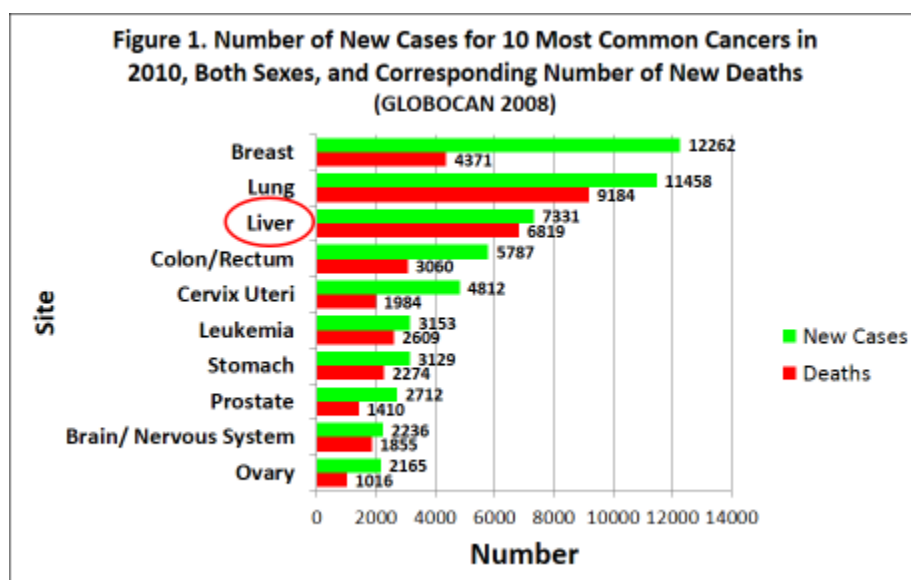
Figure 2. Number of New Cases for 10 Most Common Cancers in 2010, Males, and Corresponding Number of New Deaths (GLOBOCAN 2008)
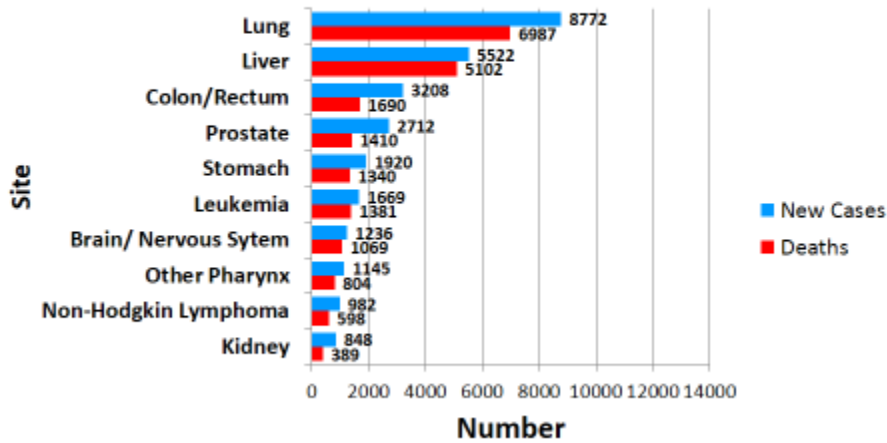
Figure 3. Number of New Cases for 10 Most Common Cancers in 2010, Females, and Corresponding Number of New Deaths (GLOBOCAN 2008)
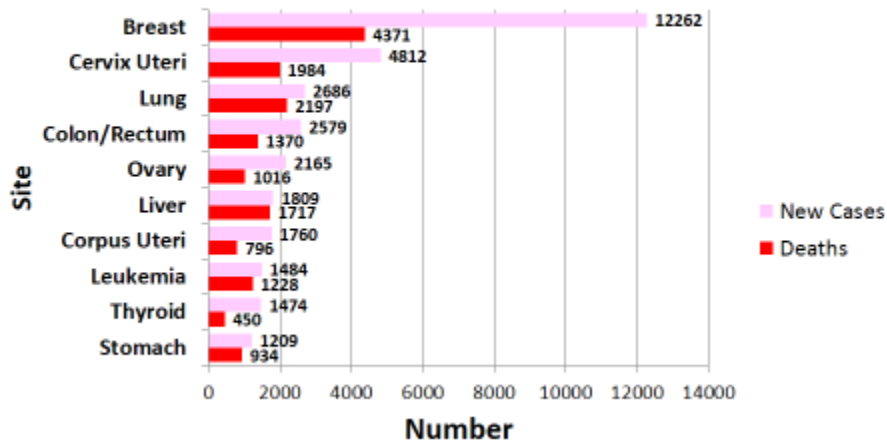
MAJOR CANCER SITES

"CANCER" is a generic term used to refer to a large number of conditions with marked differences in causation and behavior, and with widely varying

probabilities of prevention, early detection and curative treatment, quite similar to the generic term "INFECTIOUS DISEASES". Fortunately, the words "infections" and "infectious diseases" no longer bring about the stigma, dread and feelings of hopelessness and impending doom that the term "cancer" still elicits. The general public, and particularly media, have learned to refer to specific infectious diseases such as measles, pulmonary tuberculosis, dengue, viral hepatitis and HIV/AIDS when referring to disease outbreaks and causes of deaths of prominent individuals. It would help immensely in improving the public's perception and attitudes on cancer if public discourse and news is consciously focused on specific types of cancer.

The word "cancer" has traditionally been considered almost as a synonym of "death". Even in Finland where the survival rates of cancer patients are among the best in the world and the 5-year relative survival rate for the cancer patients diagnosed today are close to 70%, a survey in 2006 showed that a fourth of the Finnish population still considered cancer as an extremely frightening disease. This fraction was smallest among people with high education. Access to correct facts about cancer diminishes the fear.

BREAST CANCER

Incidence, Mortality and Survival

Breast cancer will be the **leading site** for **both sexes** combined (**15%**) in **2010** and ranks **1st** among **women** (**28%**). In **2010**, an estimated 12,262 new cases will 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 **0.9%.**

Figure 4 shows that in Metro Manila, the significantly highest incidence rates of breast cancer during **1998-2002** (ASR **56-76** per 100,000) were in the cities of Manila, Quezon, San Juan, Mandaluyong, Makati, Parañaque 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

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cities/municipalities which were not included in this housing boom had lower breast cancer incidence. These adjoining areas had breast cancer ASRs of **28-35** per 100,000 women, similar to the **2008** estimated standardized national incidence rate (**31.9**).

Fig. 4
METRO MANILA and RIZAL PROVINCE
Age-standardized Incidence Rates
BREAST CANCER, FEMALES, 1998-2002
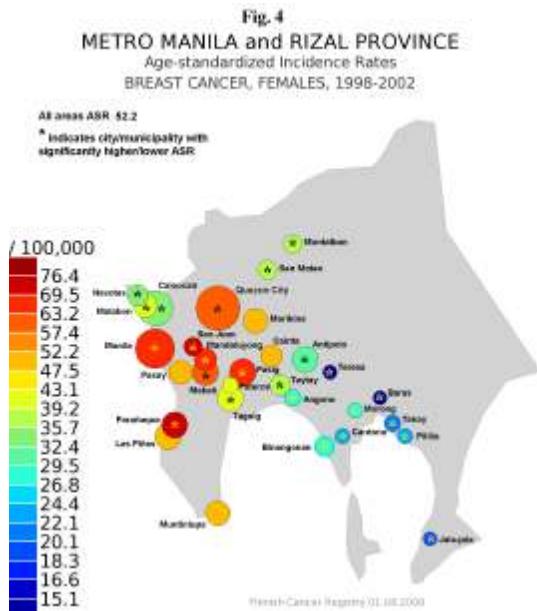
In 2008, three (3.3) out of 100 women would have had a likelihood of getting breast cancer before age 75.

In **2010**, there will be 4,371 **deaths** from breast cancer, the **3rd** leading cause of cancer deaths among **both sexes** (**8%**), and the highest among **women** (**18%**).

In **2008**, the estimated national age-standardized mortality rate was **11.9** per 100,000 **women**.

In 2008, one (1.2) out of 100 women would have died from breast cancer before age 75.

5-year relative survival (%) of 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

Using country-specific abridged life tables, 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.

For breast cancers diagnosed between **1993-2002** and using population-specific life tables, 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.

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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 **hormone receptor status** of the tumor, determined through an estrogen receptor assay and/or a progesterone receptor assay. 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.

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

Figure 5 shows that in **2008** 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 **2008**, 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 2008
(GLOBOCAN 2008)
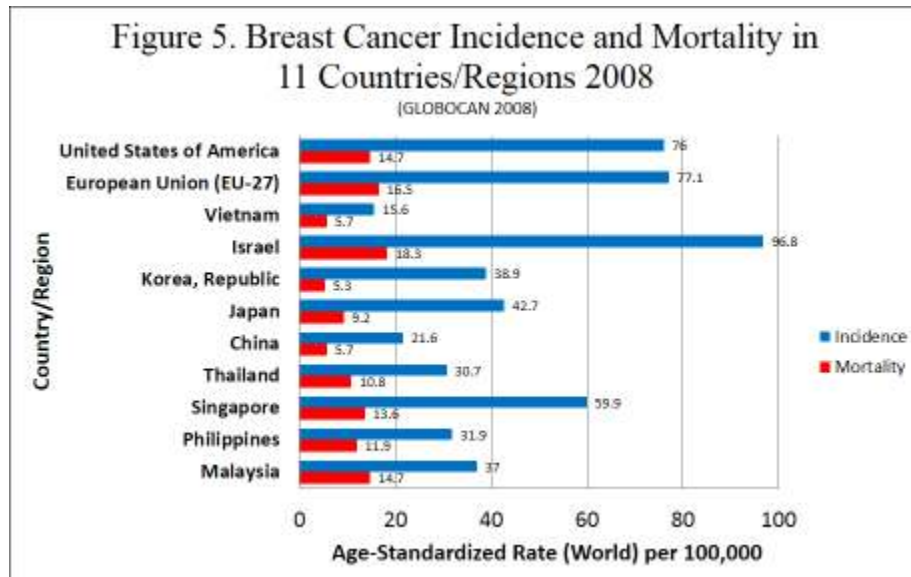
Many women with **advanced breast cancer** can still survive for many comfortable and productive years. Again, hormonal therapy for women with hormone receptor-positive cancer is generally the first-line treatment and accompanied by judicious and cost-effective **palliative care**.

LUNG CANCER

Incidence, Mortality and Survival
Lung cancer will be the **2ⁿᵈ** leading cancer site for **both sexes** combined (**14%**) in **2010**. It is the leading site in **males** (**22%**) and the **3ʳᵈ** leading site among **females** (**6%**). An estimated 11,458 new cases **in both sexes**, 8,772 in **males** and 2,686 in **females,** will occur in **2010**.

The **incidence** rates begin to rise at age 40 among **males**, and at age 45 among **females**. Among **males**, incidence rates had decreased from **1980 to 2002**, with an annual change of **-0.2%.** In **females**, there had been an annual decrease of **-0.5%.**

Figure 6 shows that in **1998-2002**, 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 2008 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 2008 national average (ASR **7.7** per 100,000).

Fig. 6
METRO MANILA and RIZAL PROVINCE
Age-standardized Incidence Rates
LUNG CANCER, MALES, 1998-2002

Fig. 7
METRO MANILA and RIZAL PROVINCE
Age-standardized Incidence Rates
LUNG CANCER, FEMALES, 1998-2002
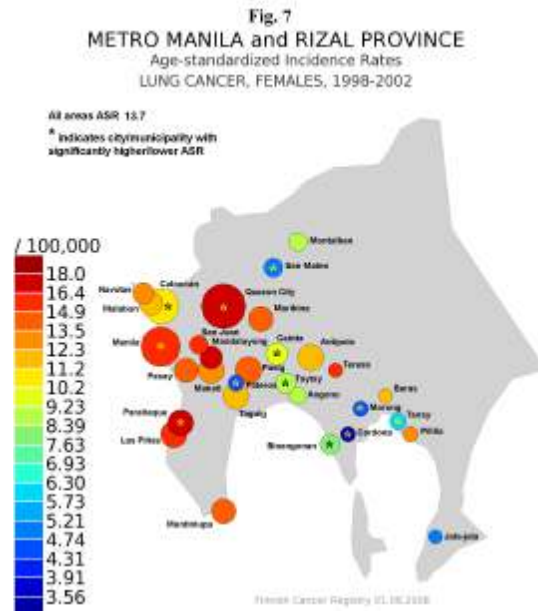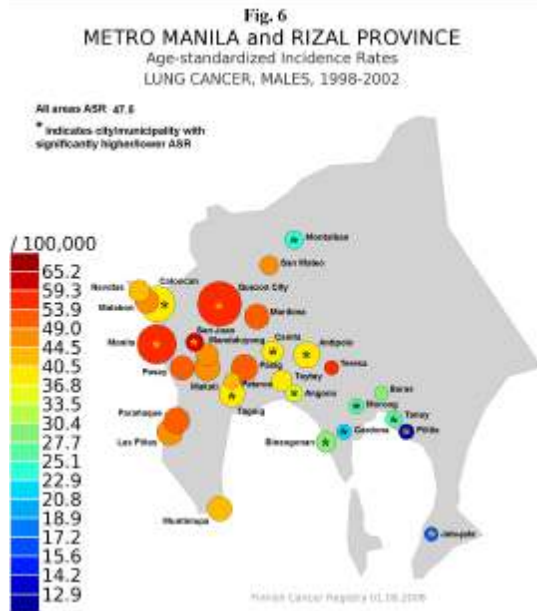
In **2008**, the estimated age-standardized national incidence rates were **17.4** per 100,000 in **both sexes**, **27.9** among **males**, and **7.7** among **females**.

In 2008, four (3.5) out of 100 men and 1 (0.9) out of 100 women would have had a likelihood of getting lung cancer before age 75.

In **2010, deaths** from lung cancer is the leading cause of cancer deaths, 9,184 among **both sexes**, and 6,987 among **males** and 2,197 in **females**. In **2008**, the estimated national standardized mortality rates were **14.2** per 100,000 in **both sexes**, **22.8** among **males**, and **6.4** among **females**.

In 2008, three (2.8) out of 100 men, and 1 (0.7) out of 100 women would have died from lung cancer before age 75.

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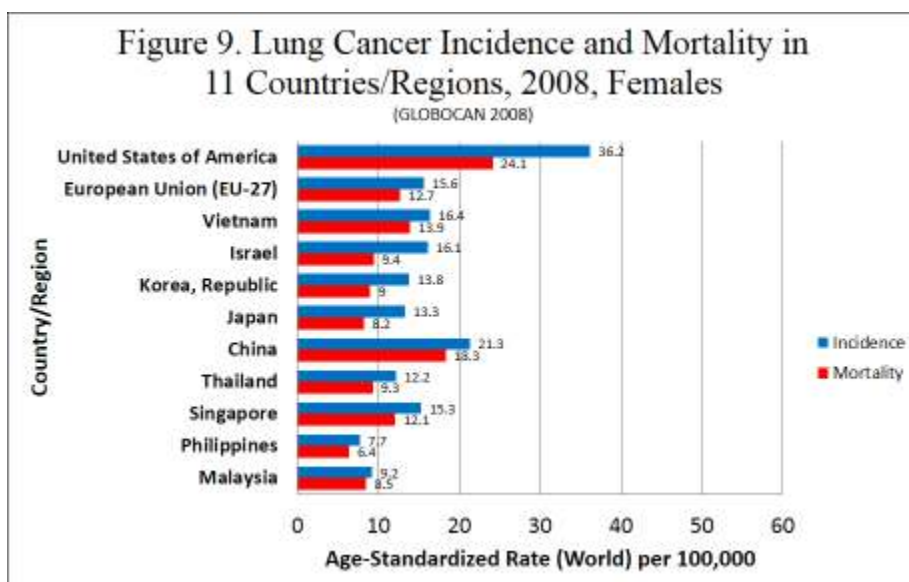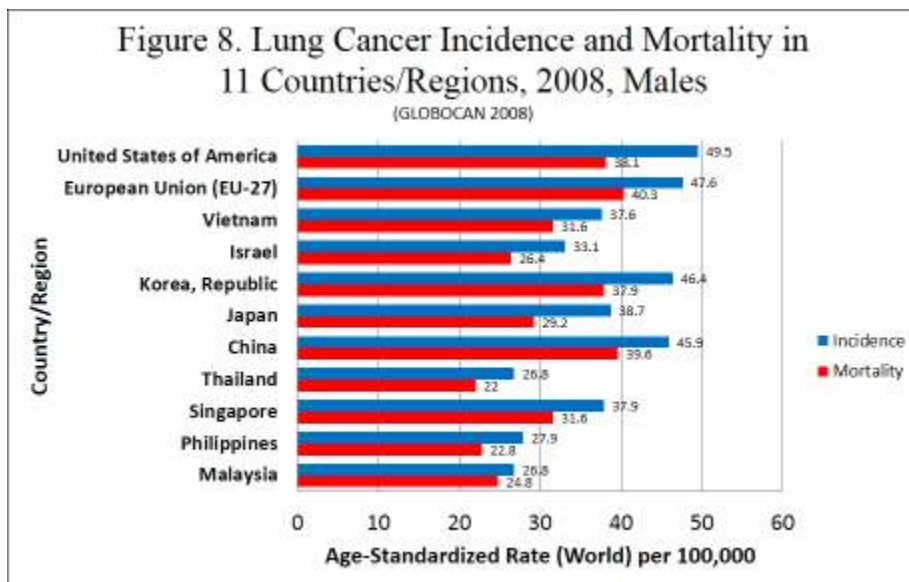
Early Detection
There is still no effective early detection method for lung cancer. As a consequence, majority of patients with lung cancer are diagnosed at an incurable stage.

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

Figures 8 and 9 show that in **2008**, 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, 2008, Males
(GLOBOCAN 2008)

Figure 9. Lung Cancer Incidence and Mortality in 11 Countries/Regions, 2008, Females
(GLOBOCAN 2008)

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

Liver cancer will be the **3th** leading site for **both sexes** combined (**9%**) in **2010**. It ranks **2nd** among **males** (**14%**) and **6th** among **females** (**4%**). In **2010**, there will be an estimated 7,331 new cases among **both sexes**, 5,522 cases among **men** and 1,809 cases among **women**.

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 2002**, with an annual change of **-1.2%** among **males**, and **-0.8** among **females**.

Figure 10 shows that among **males** the highest incidence rate in **1998-2002** was in the city of Manila (**25.5**) 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 Parañaque (**8-11**), and also no wide variations between the other cities and municipalities.

Fig. 10
METRO MANILA and RIZAL PROVINCE
Age-standardized Incidence Rates
LIVER CANCER, MALES, 1998-2002

Fig. 11
METRO MANILA and RIZAL PROVINCE
Age-standardized Incidence Rates
LIVER CANCER, FEMALES, 1998-2002
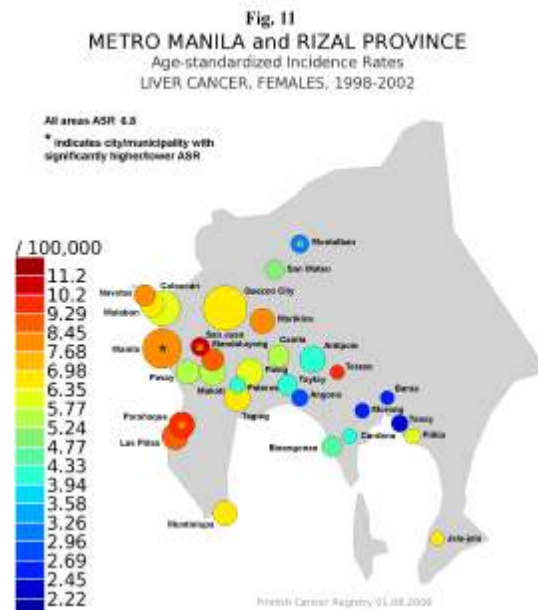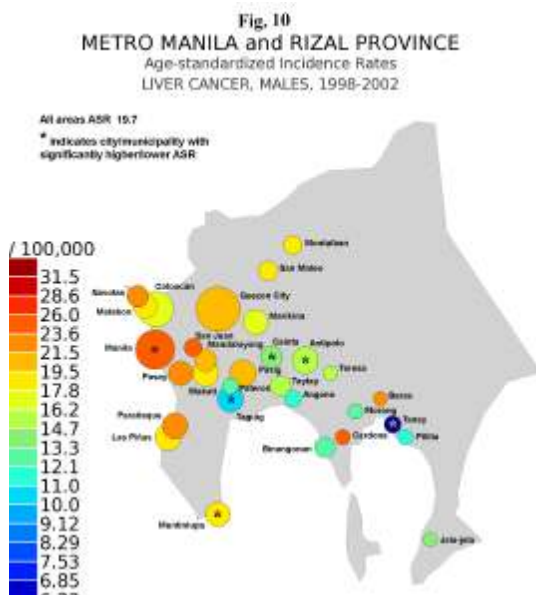
In **2008**, the estimated age-standardized national incidence rates were **10.6** per 100,000 in **both sexes**, **16.5** among **males**, and **5.1** among **females**.

In 2008, two (1.9) out of 100 men and one (0.6) out of 100 women would have had a likelihood of getting liver cancer before age 75.

In **2010**, there will be 6,819 **deaths** in **both sexes**, 5,102 in **men** and 1,717 in **women**. In **2008,** the estimated national standardized mortality rates were **10** per 100,000 in **both sexes**, **15.4** among **males**, and **4.9** among **females**.

In 2008, two (1.8) out of 100 men, and one (0.5) out of 100 women would have died from liver cancer before age 75.

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.

Figures 12 and 13 illustrate the low **incidence/mortality** ratios observed globally in **2008**, **1.1** in the Philippines and many other countries.

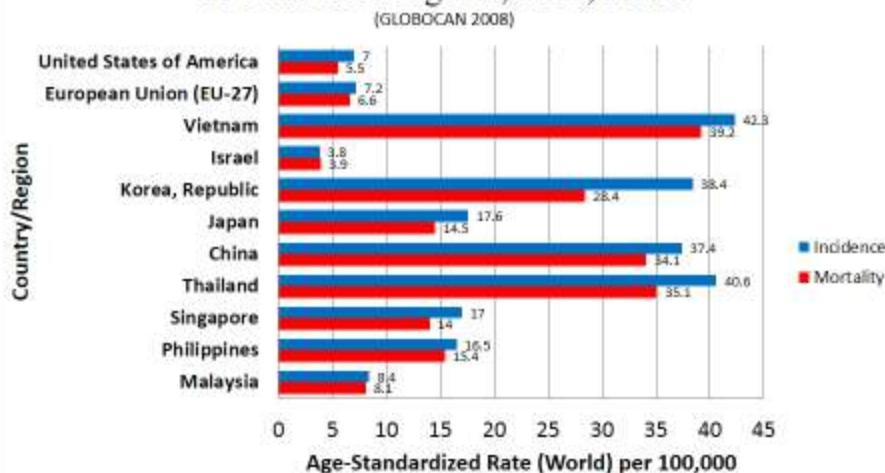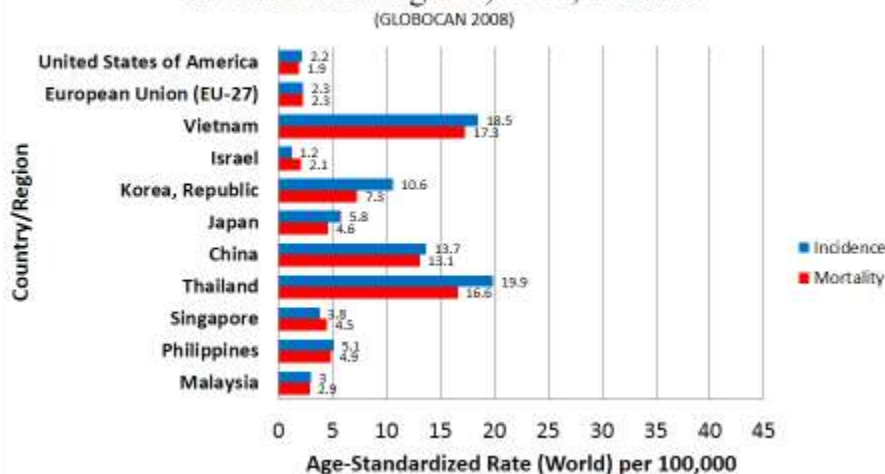Figure 12. Liver Cancer Incidence and Mortality in 11 Countries/Regions, 2008, Males
(GLOBOCAN 2008)

Figure 13. Liver Cancer Incidence and Mortality in 11 Countries/Regions, 2008, Females
(GLOBOCAN 2008)

COLON CANCER AND RECTUM CANCER

Incidence, Mortality and Survival

In **2010** cancers of the colon and rectum combined will rank **4th** for **both sexes** (**7%**), **3rd** among **males** (**8**%) and **4th** among **females** (**6%**). In **2010**, there will be 5,787 new cases in **both sexes**, 3,208 in **males** and 2,579 in **females**.

The **incidence** rates begin to rise steeply at age 50 years in both males and females. The incidence rates rose steadily from **1980 to 2002**, with an annual change of **3%** and **3.7%** in **males** and **females** respectively.

Figure 14 shows that in <u>colon</u> cancer among **males** the highest incidence rates in **1998-2002** were in the cities of Mandaluyong, Parañaque, Manila and Quezon City (**16.0-21.7**), while the rest of Metro Manila (**8-13**) and Rizal province (**3-5**) had lower incidence rates.

Fig. 14
METRO MANILA and RIZAL PROVINCE
Age-standardized Incidence Rates
COLON CANCER, MALES, 1998-2002

Fig. 15
METRO MANILA and RIZAL PROVINCE
Age-standardized Incidence Rates
COLON CANCER, FEMALES, 1998-2002
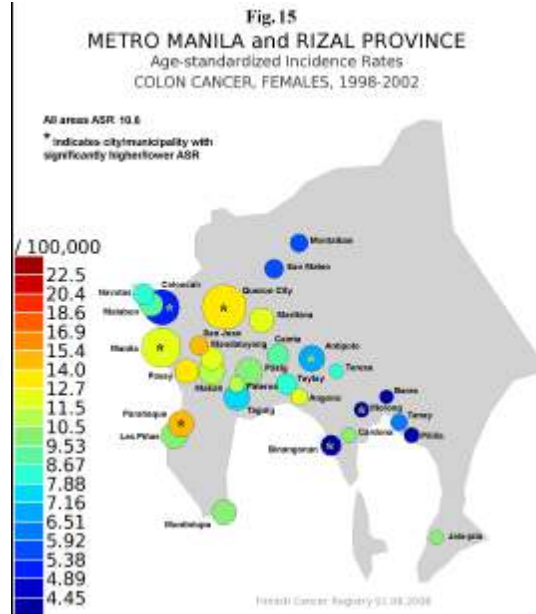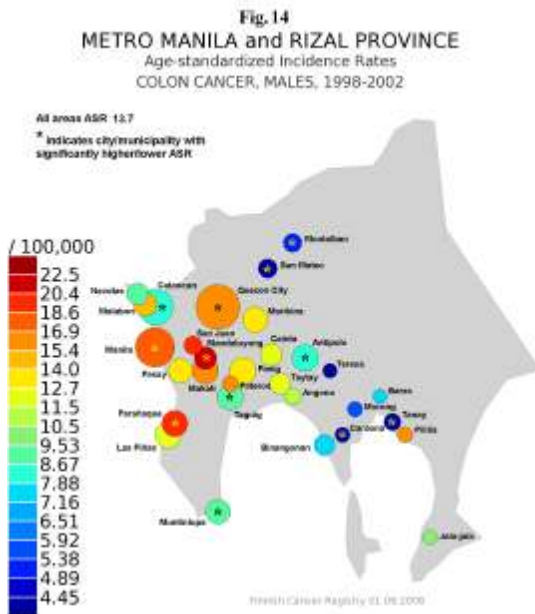
Figure 15 shows that among **females** the highest incidence rates were in the cities of Parañaque, Quezon and Manila (**13-15**), and also decreasing incidence rates eastward to Rizal province.

Figure 16 shows that in **rectum** cancer among **males** the highest incidence rates in **1998-2002** were in Manila, Quezon, and Parañaque (**10-12**), and Figure 17 shows that in **females** the highest incidence rates were in Manila, Pasig and Quezon (**8**).

Fig. 16
METRO MANILA and RIZAL PROVINCE
Age-standardized Incidence Rates
RECTUM CANCER, MALES, 1998-2002

Fig. 17
METRO MANILA and RIZAL PROVINCE
Age-standardized Incidence Rates
RECTUM CANCER, FEMALES, 1998-2002
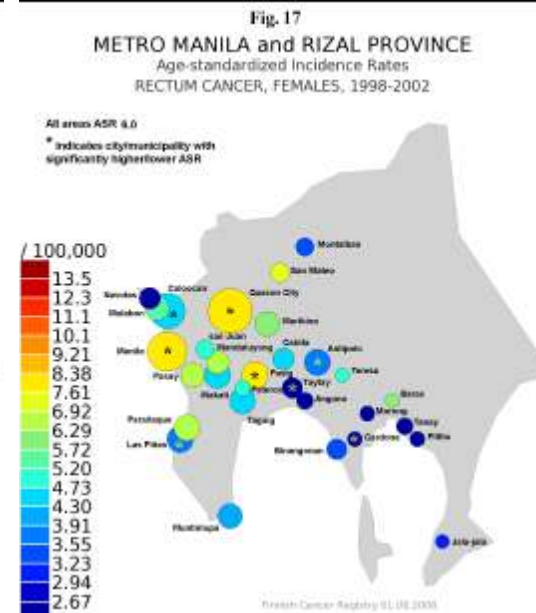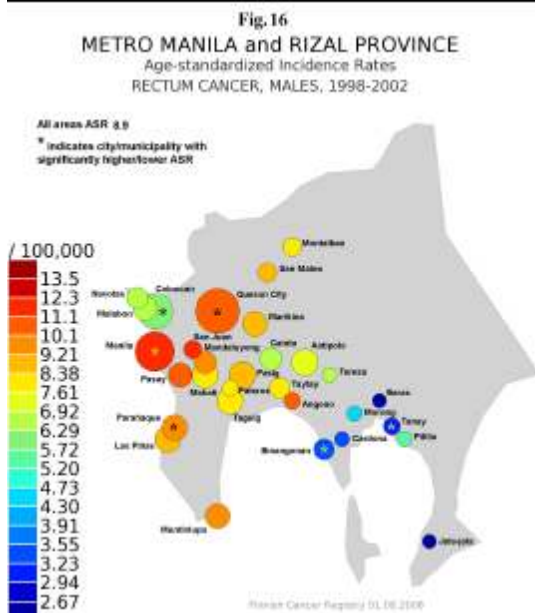
In **2008**, the estimated age-standardized national incidence rates for colon and rectum cancers were **8.6** per 100,000 in **both sexes**, **10.0** among **males**, and **7.3** among **females**.

In 2008, one (1.2) out of 100 men and one (0.8) out of 100 women would have had a likelihood of getting colorectal cancer before age 75.

There will be 3,060 **deaths** in **both sexes**, 1,690 in **males** and 1,370 among **females**, in **2010**. In **2008**, the estimated national standardized mortality rates were **4.7** per 100,000 in **both sexes**, **5.5** among **males**, and **3.9** among **females**.

In 2008, one (0.6) out of 100 men and less than one (0.4) out of 100 women would have died from colorectal cancer before age 75.

5-year relative survival (%) of 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

Using country-specific abridged life tables, 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.

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.

Figures 18 and 19 show that in **2008** 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, 2008, Males
(GLOBOCAN 2008)

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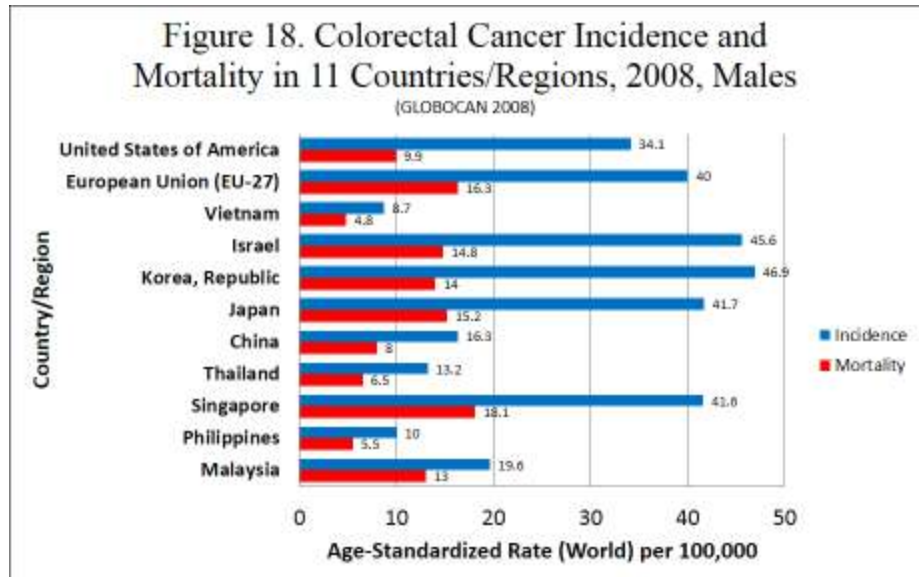
Figure 19. Colorectal Cancer Incidence and Mortality in 11 Countries/Regions, 2008, Females
(GLOBOCAN 2008)
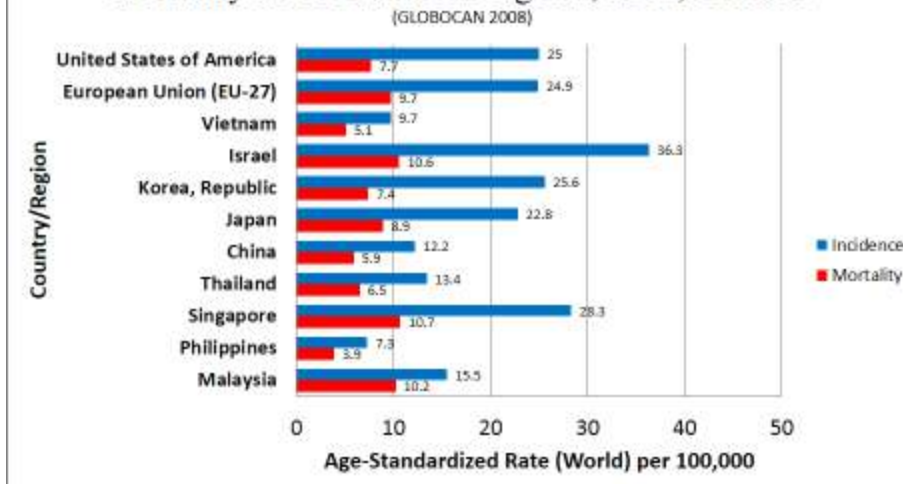
For **advanced** cases, judicious and cost-effective **palliative care** can offer an acceptable quality of life.

UTERINE CERVIX CANCER

Incidence, Mortality and Survival
In **2010** cervix cancer will be the **5th** leading site for **both sexes** combined (**6%**), and the **2nd** among **women** (**11%**). In **2010**, an estimated 4,812 new cases will occur.

The **incidence** rate starts rising steeply at age 30. There was a slight decrease in incidence rate from **1980 to 2002**, with an annual change of **-0.3%.**

Figure 20 shows that the highest incidence rates in **1998-2002** were observed in the cities of Manila, Makati, Pasay, Pasig and Taguig (**17-25**), and the lowest ASRs were in Rizal province.

In **2008**, the estimated age-standardized national incidence rate was **11.7** per 100,000.

In 2008, one (1.1) out of 100 women would have had a likelihood of getting cervix cancer before age 75.

There will be 1,984 **deaths** in **2010**. In **2008**, the estimated national standardized mortality rate was **5.3** per 100,000.

In 2008, one (0.6) out of 100 women would have died from cervix cancer before age 75.

5-year relative survival (%) of 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

Using country-specific abridged life tables, 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.

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.

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.

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

Early Detection

A highly effective screening method for the early detection of cervix cancer is the **Papanicolau 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. Alternative approaches to curative treatment will have to be considered, such as the traditional radical hysterectomy.

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.

Figure 21 shows a lower **incidence/mortality ratio** in the Philippines (**2:1**) compared to high income countries/regions in **2008**. 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 2008 (GLOBOCAN 2008)
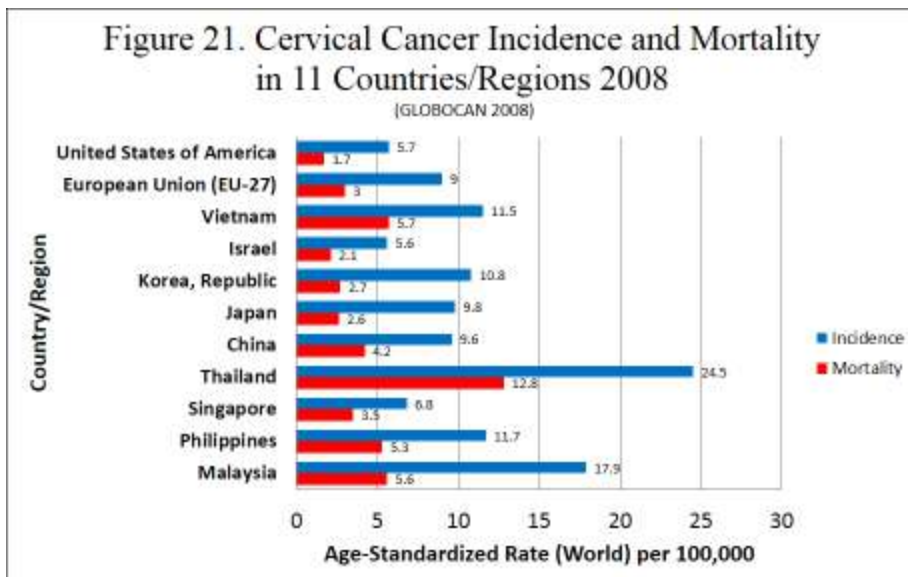
Advanced cervix cancer requires judicious and cost-effective **palliative care**.

LEUKEMIAS

Incidence, Mortality and Survival

In **2010** leukemias will rank **6th** in **both sexes** (**4%**), **6th** in **males** (**4%**) and **8th** among **females** (**3%**). In **2010**, there will be an estimated 3,153 new cases in **both sexes**, 1,669 in **males** and 1,484 in **females**.

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.

In **2008**, the estimated age-standardized national incidence rates of leukemias were **3.8** per 100,000 in **both sexes**, **4.1** among **males**, and **3.6** among **females**.

In 2008, less than one (0.4) out of 100 males and less than one (0.3) out of 100 females would have had a likelihood of getting leukemia before age 75.

There will be 2,609 **deaths** in **both sexes**, 1,381 in **men** and 1,228 among **women** in **2010**. In **2008**, the estimated national standardized mortality rates were **3.2** per 100,000 in **both sexes**, **3.4** among **males**, and **2.9** among **females**.

In 2008, less than one (0.3) out of 100 men and less than one (0.3) out of 100 women would have died from leukemia before age 75.

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.

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.

Figures 22 and 23 show that in **2008** 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.

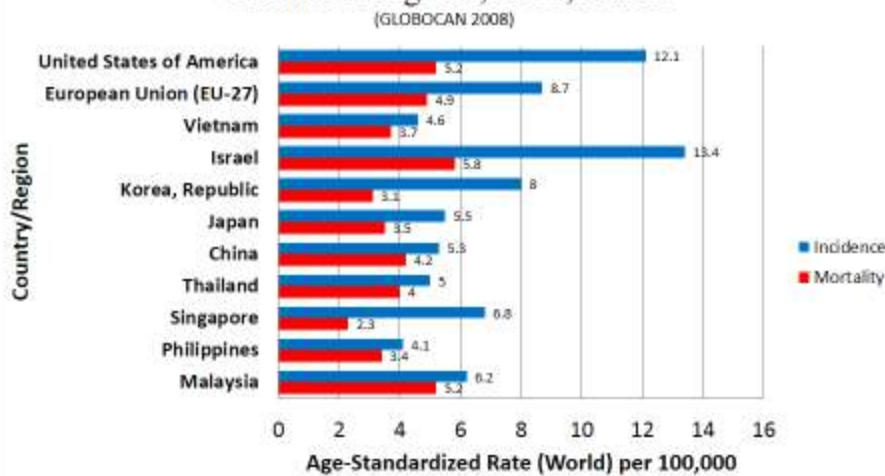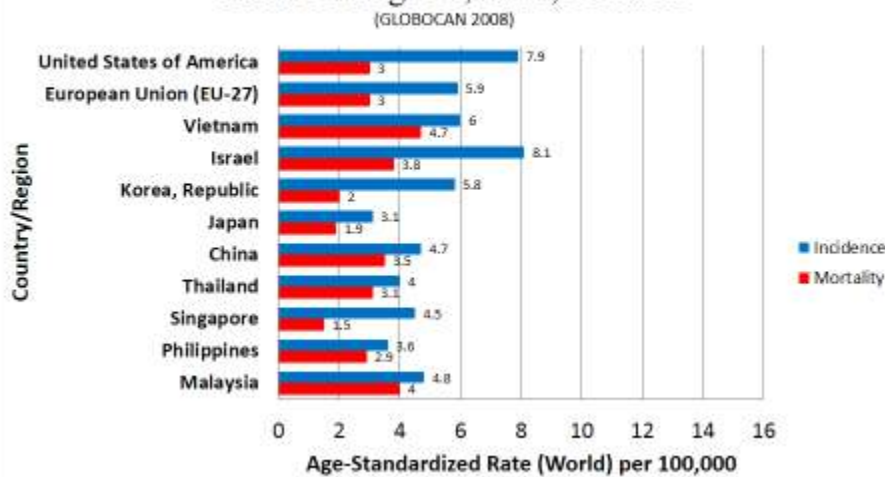Figure 22. Leukemia Incidence and Mortality in 11 Countries/Regions, 2008, Males
(GLOBOCAN 2008)

Figure 23. Leukemia Incidence and Mortality in 11 Countries/Regions, 2008, Females
(GLOBOCAN 2008)

Patients with a**dvanced** leukemia require judicious and cost-effective **palliative care.**
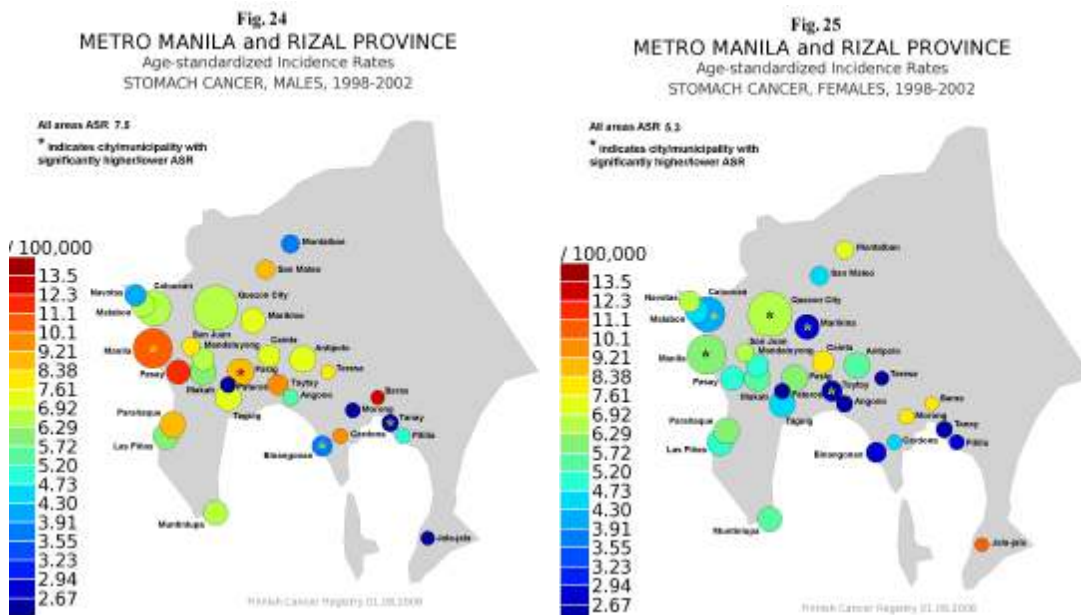
STOMACH CANCER

Incidence, Mortality and Survival

In **2010** stomach cancer will be the **7th** leading site for **both sexes** combined (**4%**), **5th** among **males** (**5%**) and the **10th** among **females** (**3%**). In **2010**, there will be a total of 3,129 new cases in **both sexes**, 1,920 in **men** and 1,209 in **women.**

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 2002**, with an annual change of -**2.3%** in **males** and **-2.7%** in **females**.

41

Figure 24 shows that the highest incidence rates among males in **1998-2002** were in the cities of Manila and Pasig (**9-11**). ASRs in the rest of Metro Manila (**7.0**) and in Rizal province (**6.5**) were significantly lower. Figure 25 shows that the incidence rates were lower among females, with the highest incidence observed in the cities of Quezon and Manila (**6**).

Fig. 24
METRO MANILA and RIZAL PROVINCE
Age-standardized Incidence Rates
STOMACH CANCER, MALES, 1998-2002

Fig. 25
METRO MANILA and RIZAL PROVINCE
Age-standardized Incidence Rates
STOMACH CANCER, FEMALES, 1998-2002

In **2008,** the estimated age-standardized national incidence rates were **4.7** per 100,000 in **both sexes**, **6.1** among **males**, and **3.5** among **females**.

In 2008, one (0.7) out of 100 men and less than one (0.4) out of 100 women would have had a likelihood of getting stomach cancer before age 75.

In **2010,** there will be 2,274 **deaths** in **both sexes**, 1,340 among **males** and 934 in **females.** In **2008**, the estimated national standardized mortality rates were **3.5** per 100,000 in **both sexes**, **4.4** among **males**, and **2.7** among **females**.

In 2008, one (0.5) out of 100 men and less than one (0.3) out of 100 women would have died from stomach cancer before age 75.

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**.

Figures 26 and 27 show that in **2008** 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, 2008, Males
(GLOBOCAN 2008)

Figure 27. Stomach Cancer Incidence and Mortality in 11 Countries/Regions, 2008, Females
(GLOBOCAN 2008)
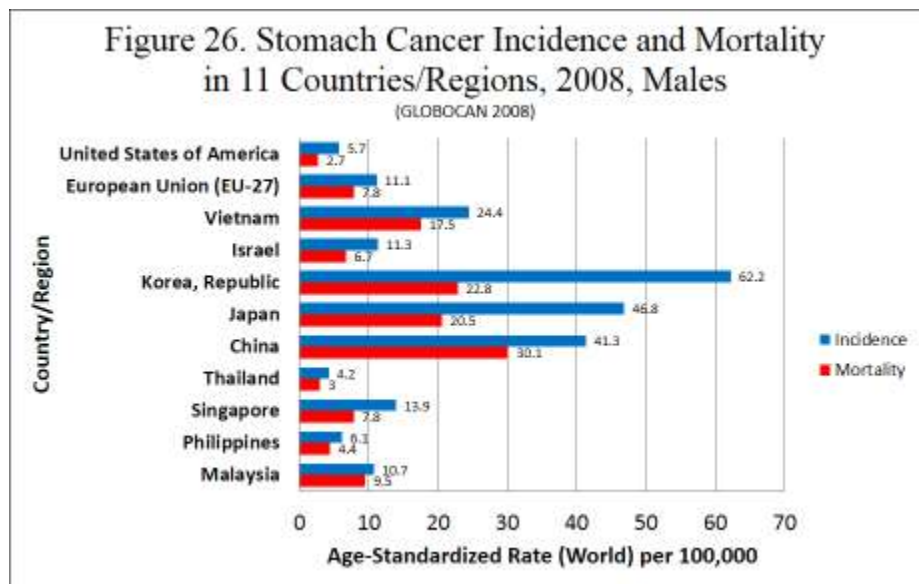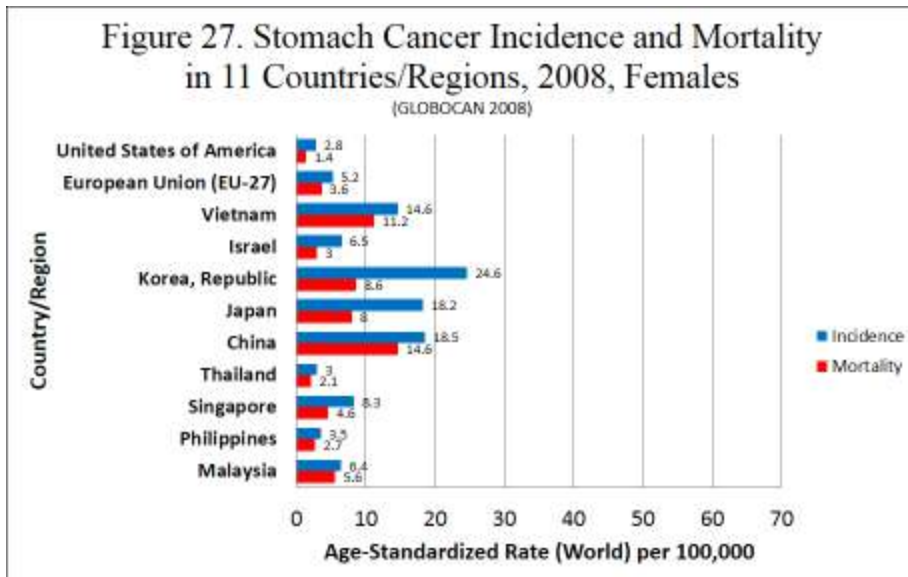
For many patients with **advanced** cancer, palliative surgery can improve the quality of life. For inoperable cases, judicious and cost-effective **palliative care** can still improve quality of life.
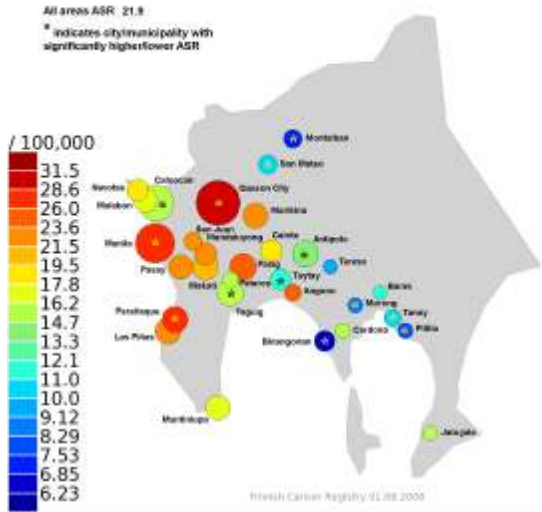
PROSTATE CANCER

Incidence, Mortality and Survival

In **2010,** cancer of the prostate will be the **8th** most common in **both sexes** (**3%**), and **4th** among **males** (**7%**). In **2010**, there will be 2,712 new cases.

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 2002**, with an annual change of **2.5%**.

Figure 28 shows that the highest incidence rates in **1998-2002** were observed in the cities of Quezon, Parañaque and Manila (**27-29**), and the lowest incidence were in Rizal province (**12.4**).

Fig. 28
METRO MANILA and RIZAL PROVINCE
Age-standardized Incidence Rates
PROSTATE CANCER, 1998-2002

In **2008**, the estimated age-standardized national incidence rate was **10.1** per 100,000.
In 2008, one (1.1) out of 100 males would have had a likelihood of getting prostate cancer before age 75.

There will be 1,410 **deaths** in **2010**. In **2008**, the estimated national standardized mortality rate was **5.3** per 100,000.

In 2008, one (0.5) out of 100 males would have died from prostate cancer before age 75.

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 left to the individual.

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.

Figure 29 shows that in **2008** 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 2008
(GLOBOCAN 2008)
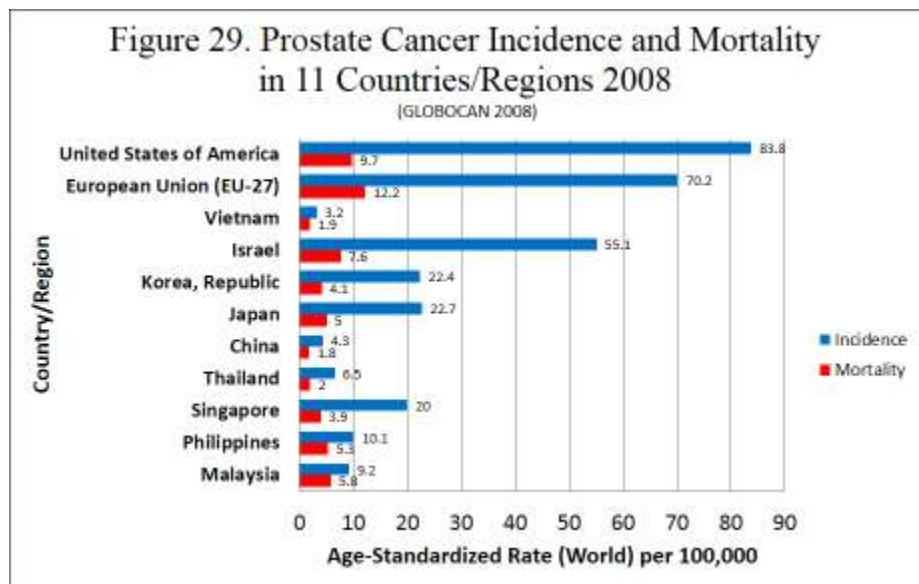
For **advanced** cases, judicious and cost-effective **palliative care** can improve the quality of life.

OVARY CANCER

Incidence, Mortality and Survival
In **2010,** cancer of the ovary will be the **10th** leading site for both sexes combined (**3%**), and the **5th** among women (**5%**). In **2010**, there will be 2,165 new cases.

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

In **2008**, the estimated age-standardized national incidence rate was **5.7** per 100,000.

In 2008, one (0.6) out of 100 women would have had a likelihood of getting ovarian cancer before age 75.

In **2010**, there will be 1,016 **deaths.** In **2008**, the estimated national standardized mortality rate was **2.8** per 100,000.

In 2008, less than one (0.3) out of 100 women would have died from ovarian cancer before age 75.

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.

Figure 30 shows that in **2008** there were no marked differences in the **incidence/mortality ratios.**

Figure 30. Ovarian Cancer Incidence and Mortality in 11 Countries/Regions 2008 (GLOBOCAN 2008)
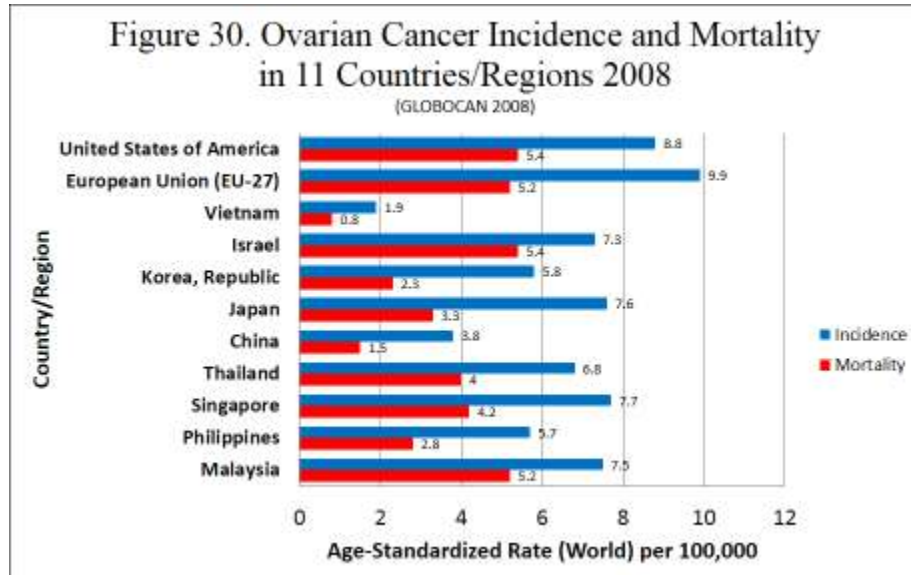
Advanced ovarian cancer requires judicious and cost-effective **palliative care.**

THYROID CANCER

Incidence, Mortality and Survival
In **2010,** thyroid cancer will be the **11th** most common for **both sexes** combined (**2%**), the **17th** leading site in **men** (**1%**) and the **9th** among **females** (**3%**). In **2010**, there will be an estimated 1,880 new cases in **both sexes**, 406 in **males** and 1,474 in **females**.

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 2002**, with an annual change of **0.4%** in males, and **1.6%** among females.

Figure 31 shows that in **1998-2002** the highest incidence rate among **males** was in the city of Manila (**3.6**). Figure 32 shows that among **females** the highest incidence rates were in the cities of Manila, Quezon and Pasig (**12-13**), 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.

Fig.31
METRO MANILA and RIZAL PROVINCE
Age-standardized Incidence Rates
THYROID CANCER, MALES, 1998-2002

Fig. 32
METRO MANILA and RIZAL PROVINCE
Age-standardized Incidence Rates
THYROID CANCER, FEMALES, 1998-2002
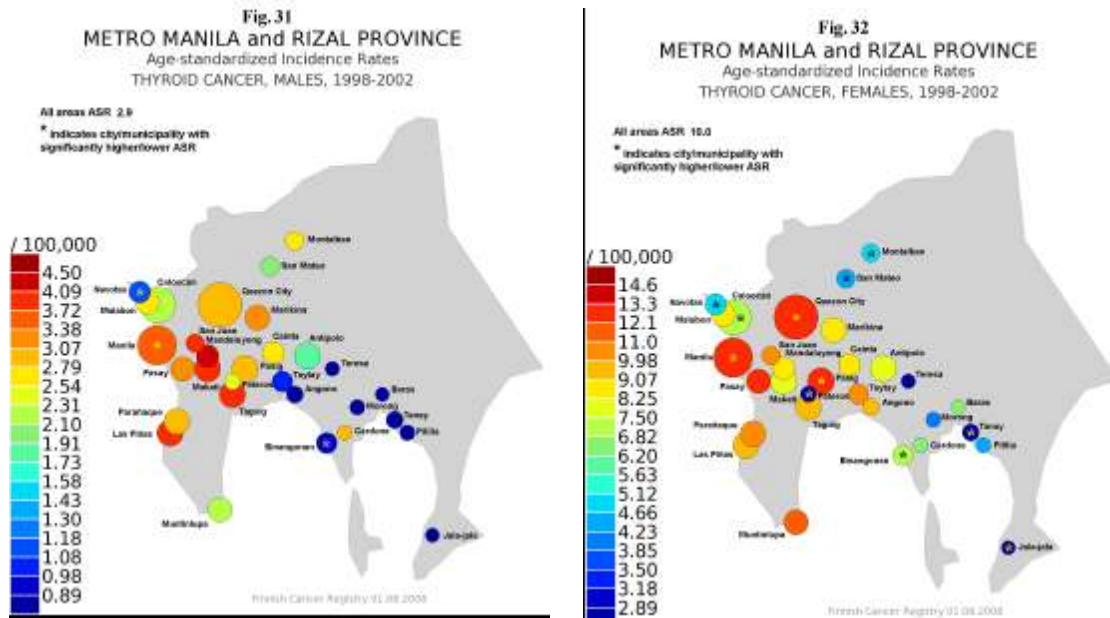
In **2008**, the estimated age-standardized national incidence rates were **2.5** per 100,000 in **both sexes**, **1.1** among **males**, and **3.8** among **females**.

 In 2008, less than one (0.1) 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.

In **2010**, there will be 684 **deaths** in **both sexes**, 234 in **males** and 450 in **females**. In **2008**, the estimated national standardized mortality rates were **1.1** per 100,000 in **both sexes**, **0.8** among **males**, and **1.3** among **females**.

In 2008, 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.

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

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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.

Figures 33 and 34 show that in **2008** 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, 2008, Males
(GLOBOCAN 2008)

Figure 34. Thyroid Cancer Incidence and Mortality in 11 Countries/Regions, 2008, Females (GLOBOCAN 2008)
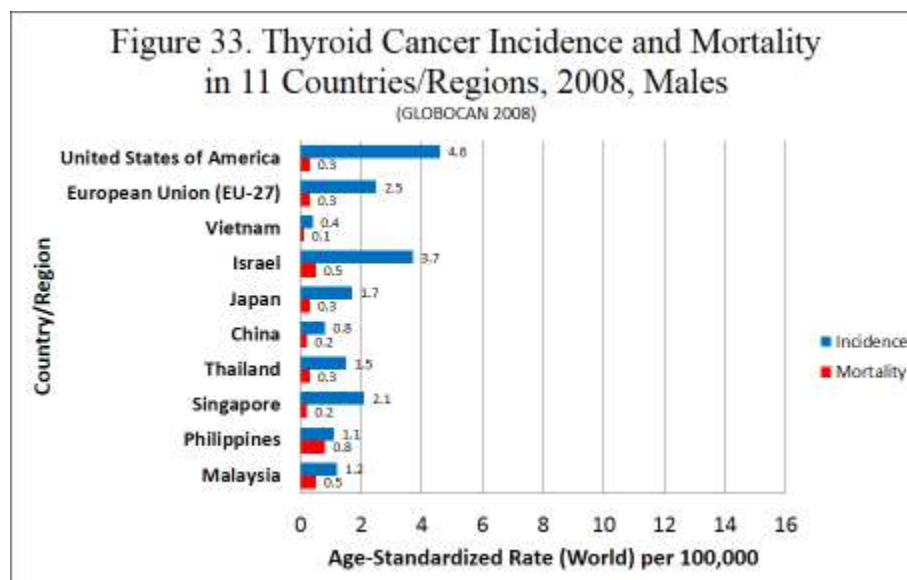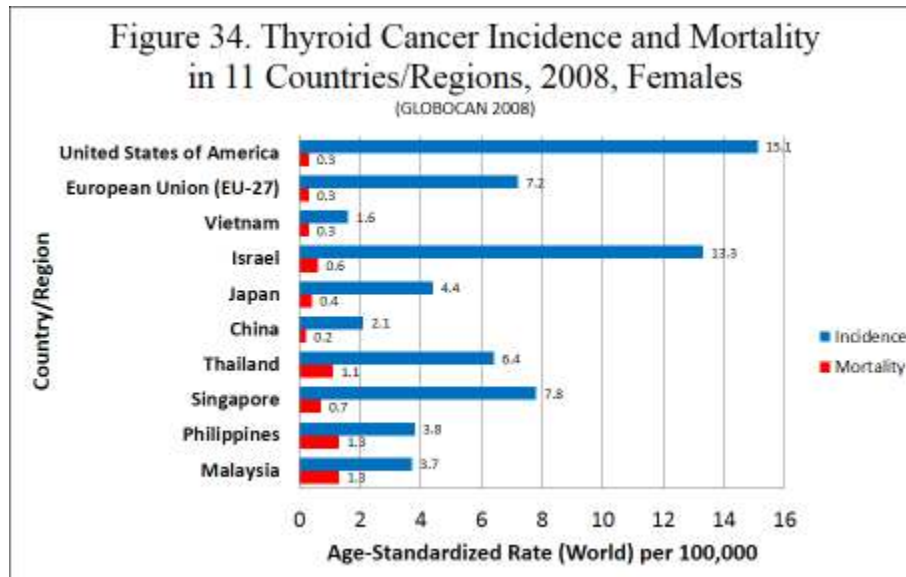
Advanced cancer requires judicious and cost-effective **palliative care.**

CORPUS UTERI CANCER

Incidence and Mortality
In **2010,** cancer of the body of the uterus will be the **13th** most common in **both sexes** (**2%**), and the **7th** leading site among **women** (**4%**). In **2010**, there will be 1,760 new cases.

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

In **2008**, the estimated age-standardized national incidence rate was **4.6** per 100,000.

In 2008, one (0.5) out of 100 women would have had a likelihood of getting corpus uteri cancer before age 75.

In **2010**, there will be 796 **deaths**. In **2008**, the estimated national standardized mortality rate was **2.2** per 100,000.

In 2008, less than one (0.2) out of 100 women would have died from corpus uteri cancer before age 75.

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.

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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.

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. Bleeding in women on adjuvant tamoxifen should promptly undergo uterine biopsy rather than having an initial pelvic ultrasonography.

Treatment
Early cancer of the corpus uteri is curable by surgery.

Figure 35 shows that in **2008** 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 2008 (GLOBOCAN 2008)
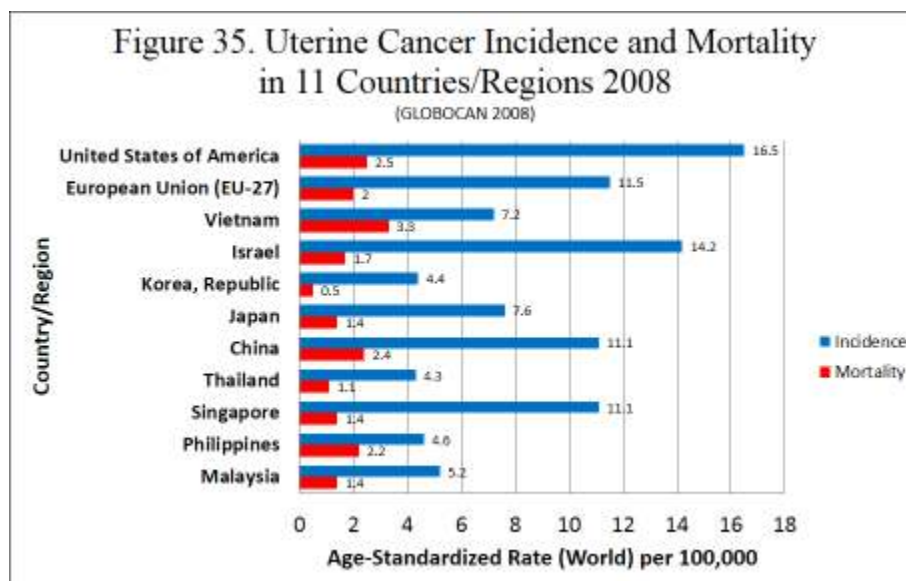
For **advanced** cases, judicious and cost-effective **palliative care** can help attain an acceptable quality of life.

NON-HODGKIN LYMPHOMA

Incidence and Mortality

In **2010,** Non-Hodgkin lymphoma (NHL) will be the **14th** leading site in **both sexes** (**2%**), the **9th** among **males** (**3%**), and the **13th** among **females** (**2%**). In **2010**, an estimated 1,664 new cases will occur in **both sexes**, 982 cases in **men** and 682 in **women**.

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

In **2008**, the estimated age-standardized national incidence rates were **2.3** per 100,000 in **both sexes**, **2.7** among **males**, and **1.8** among **females**.

In 2008, 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.

In **2010,** there will be 967 **deaths** in **both sexes**, 598 among **males** and 369 in **females**. In **2008,** the estimated national standardized mortality rates were **1.3** per 100,000 in **both sexes**, **1.7** among **males**, and **1.0** among **females**.

In 2008, 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.

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.

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.

Figures 36 and 37 show that in **2008** 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.

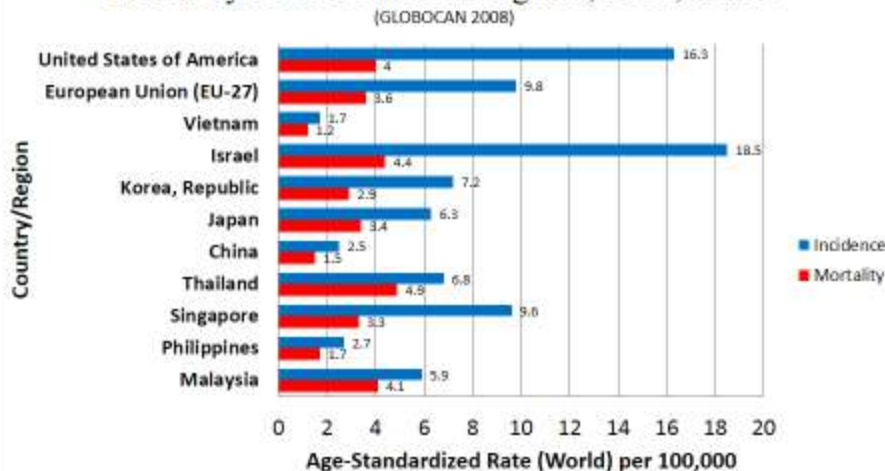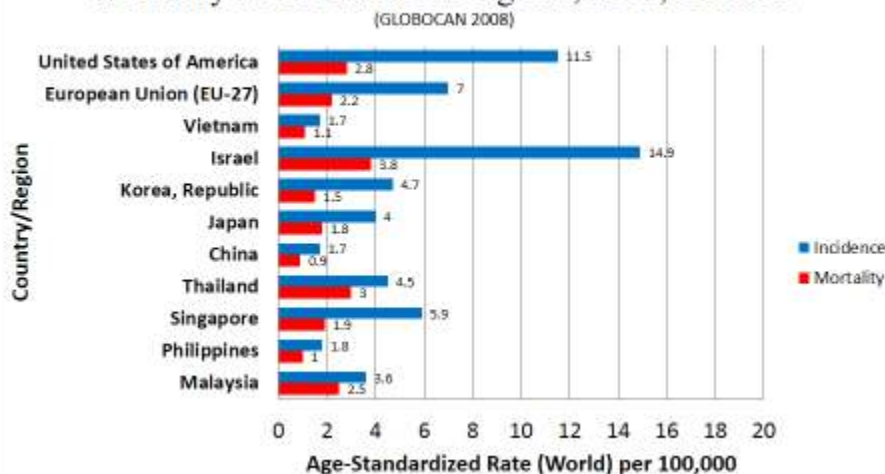Figure 36. Non-Hodgkin Lymphoma Incidence and Mortality in 11 Countries/Regions, 2008, Males

Figure 37. Non-Hodgkin Lymphoma Incidence and Mortality in 11 Countries/Regions, 2008, Females

**Advanced** cases can benefit from judicious **palliative care**.

ORAL CAVITY CANCER

Incidence, Mortality and Survival

In **2010,** cancer of the mouth will be the **15th** most common site when **both sexes** are combined (**2%**), the **11th** among **men** (**2%**), and the **15th** among **women** (**1%**). In **2010**, there will be 1,427 new cases in **both sexes**, 833 cases in **males** and 594 cases among **females**. 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 **1980-2002**, with an annual decline of **-3.3%** in **males** and **-4.1%** in **females**.

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Figures 38 and 39 show that in **1998-2002**, and in both sexes, there does not seem to be great differences in incidence rates between cities/municipalities, unlike in many other cancer sites.
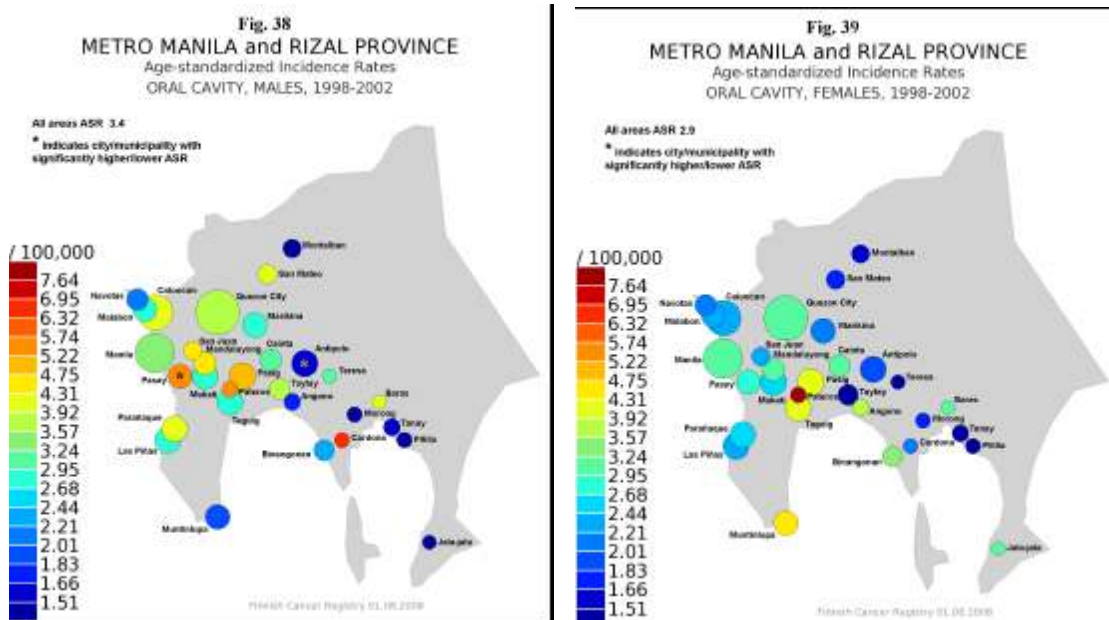
In **2008**, the estimated age-standardized national incidence rates were **2.1** per 100,000 in **both sexes**, **2.6** among **males**, and **1.7** among **females**.

In 2008, less than one (0.3) out of 100 men and less than one (0.2) out of 100 women would have had a likelihood of getting oral cavity cancer before age 75.

There will be 912 **deaths** in **both sexes**, 509 **males** and 403 **females** in **2010**. In **2008**, the estimated national standardized mortality rates were **1.4** per 100,000 in **both sexes**, **1.7** among **males**, and **1.2** among **females**.

In 2008, 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 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

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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.
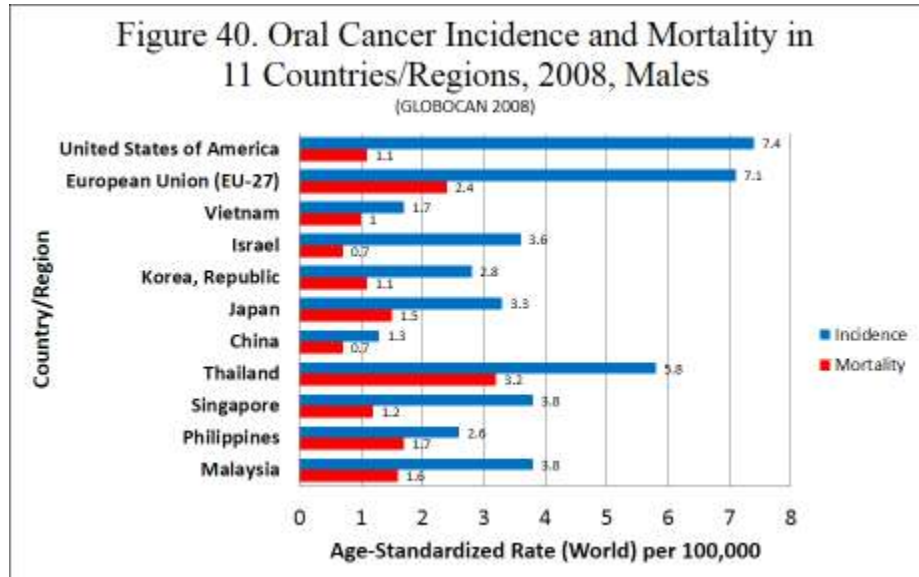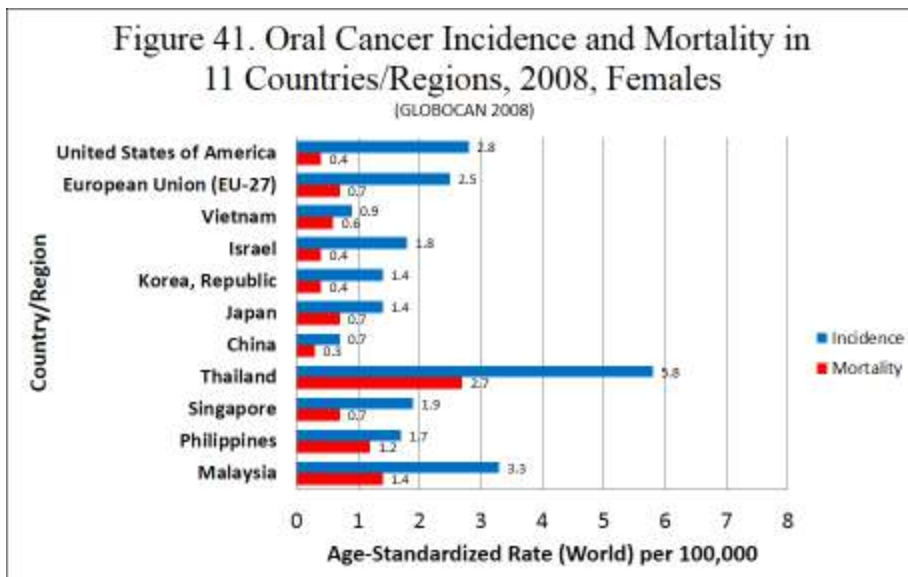
Early Detection

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.

Figures 40 and 41 show that in **2008** 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, 2008, Males
(GLOBOCAN 2008)

Figure 41. Oral Cancer Incidence and Mortality in 11 Countries/Regions, 2008, Females
(GLOBOCAN 2008)

Advanced cases require judicious and cost-effective **palliative care.**

PANCREAS CANCER

Incidence and Mortality

In **2010,** cancer of the pancreas will be the **16th** leading site for **both sexes** combined (**2%**), the **12th** in **men** (**2%**) and **14th** in **women** (**1%**). In **2010**, there will be an estimated 1,334 new cases in **both sexes**, 716 in **males** and 618 in **females.**

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

In **2008**, the estimated age-standardized national incidence rates were **2.0** per 100,000 in **both sexes**, **2.3** among **males**, and **1.8** among **females**.

In 2008, 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.

In **2010**, there will be 1,144 **deaths** in **both sexes**, 609 among **men** and 535 among **women**. In **2008**, the estimated national standardized mortality rates were **1.8** per 100,000 in **both sexes**, **2.0** among **males**, and **1.6** among **females**.

In 2008, 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.

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.

Figure 42 and 43 shows that in **2008** 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.
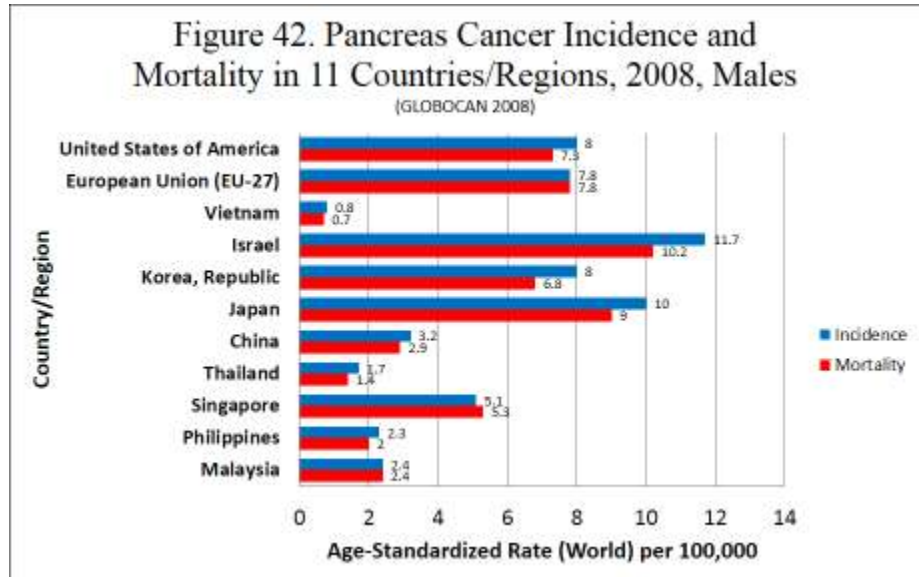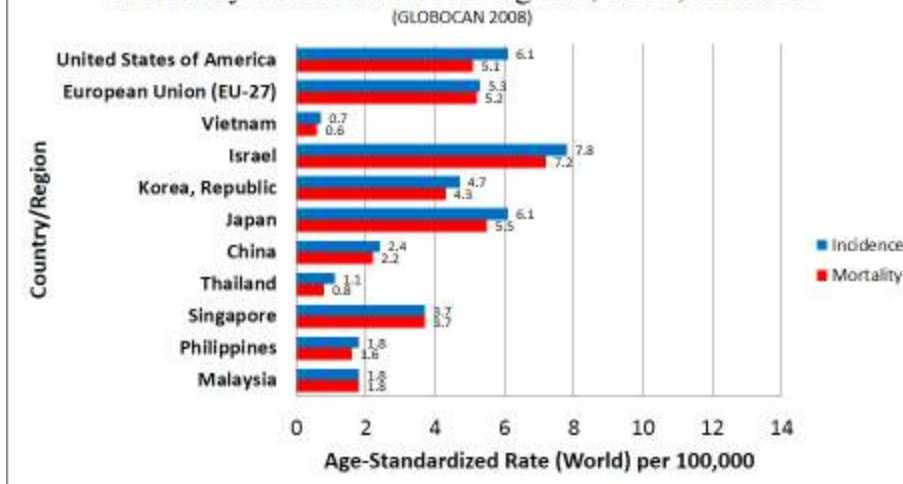

Figure 42. Pancreas Cancer Incidence and Mortality in 11 Countries/Regions, 2008, Males

Figure 43. Pancreas Cancer Incidence and Mortality in 11 Countries/Regions, 2008, Females

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.

NASOPHARYNX CANCER

Incidence and Mortality
In **2010,** cancer of the nasopharynx will be the **18th** leading site in **both sexes** (**1%**), the **13th** in **men** (**2%**) and the **18th** among **women** (**0.7%**). In **2010,** an estimated 919 new cases in **both sexes** will be seen, 638 in **men**, and 281 in **women**.

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

In **2008**, the estimated age-standardized national incidence rates were **1.2** per 100,000 in **both sexes**, **1.7** among **males**, and **0.7** among **females**.

In 2008, less than one (0.2) 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.

In **2010**, there will be 612 deaths in **both sexes**, 428 in **males** and 184 in **females**. In **2008**, the estimated national standardized mortality rates were **0.9** per 100,000 in **both sexes**, **1.2** among **males**, and **0.5** among **females**.

In 2008, 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.

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.
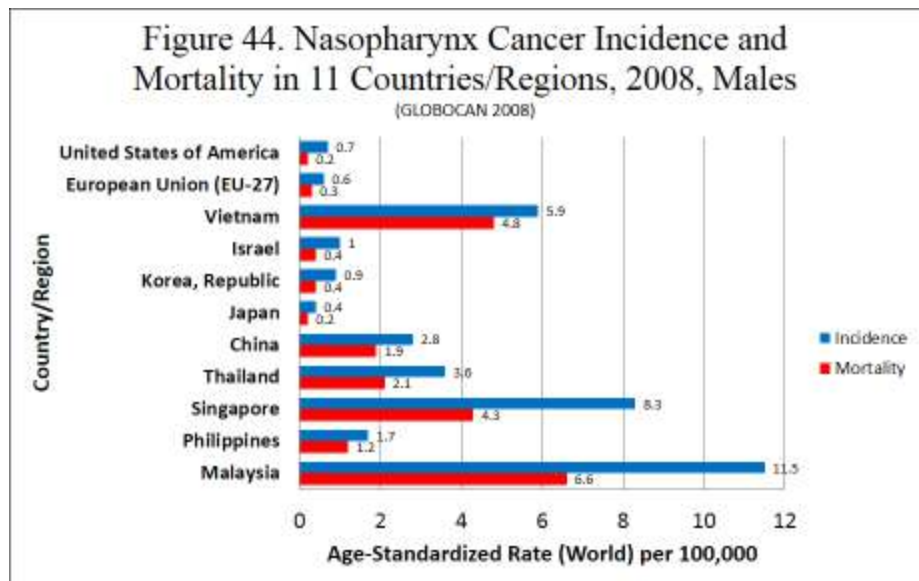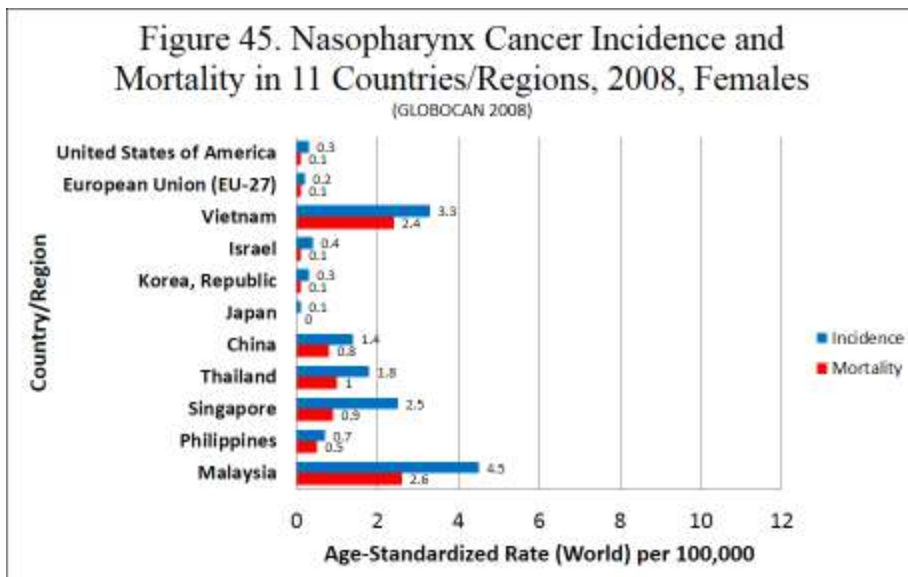
Early Detection

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

Radiotherapy is the principal treatment of nasopharynx cancer.

Figures 44 and 45 show that in **2008** 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, 2008, Males
(GLOBOCAN 2008)

Figure 45. Nasopharynx Cancer Incidence and Mortality in 11 Countries/Regions, 2008, Females
(GLOBOCAN 2008)

Advanced cases could benefit from judicious **palliative care**.

LARYNX CANCER

Incidence and Mortality

In **2010,** cancer of the larynx will be the **21ˢᵗ** most common for **both sexes** combined (**1%**), the **14ᵗʰ** most common among **men** (**1%**), and the **21ˢᵗ** among **women** (**0.5%**). In **2010**, there will be an estimated 786 new cases in **both sexes**, 577 **males** and 209 **females**.

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

In **2008**, the estimated age-standardized national incidence rates were **1.2** per 100,000 in **both sexes**, **1.9** among **males**, and **0.6** among **females**.

In 2008, less than one (0.2) 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.

In **2010**, there will be 504 **deaths** in **both sexes**, 385 among **men** and 119 among **women**. In **2008**, the estimated national standardized mortality rates were **0.8** per 100,000 in **both sexes**, **1.3** among **males**, and **0.4** among **females**.

In 2008, 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.

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.
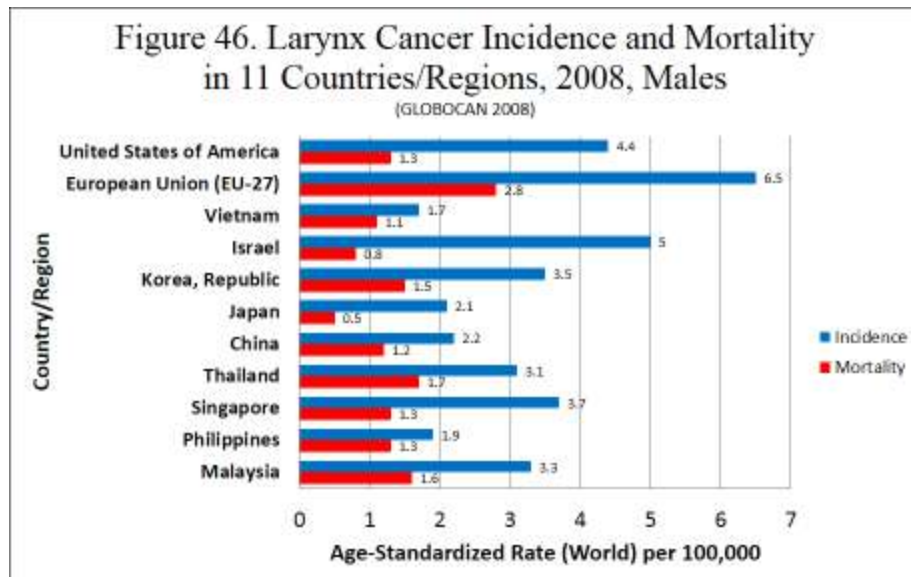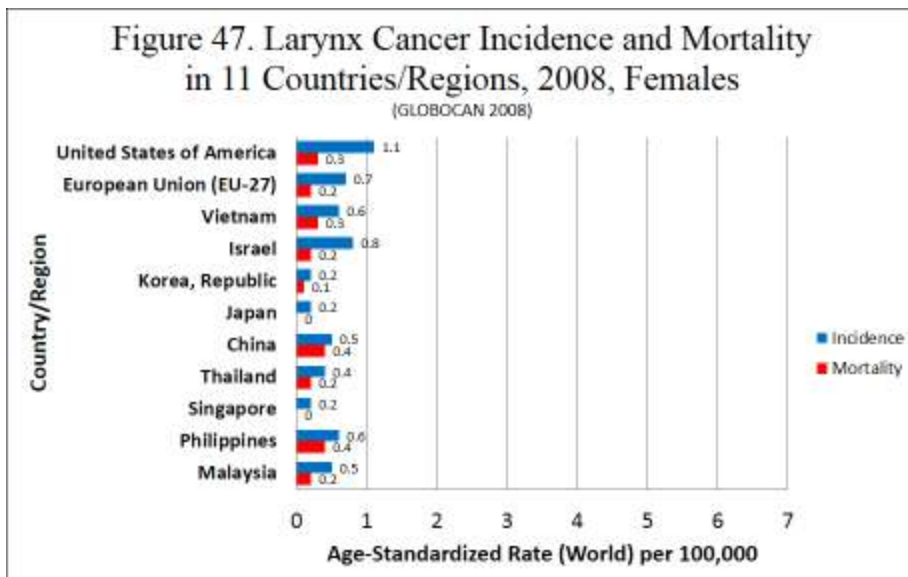
Early Detection

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.

Figure 46 shows that in **2008** 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, 2008, Males
(GLOBOCAN 2008)

Figure 47. Larynx Cancer Incidence and Mortality in 11 Countries/Regions, 2008, Females
(GLOBOCAN 2008)

For **advanced** cases, there should be a vigorous effort to improve quality of life through judicious and cost-effective **palliative care**.

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