The SAGE Encyclopedia of Cancer and Society

Mexico

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The United Mexican States is a democratic republic encompassing 31 states and a Federal District. Mexico is the world's fifth-largest country by area and the third largest in the Americas. The Mexican Consejo Nacional de Población (National Census Bureau of Mexico) estimates Mexico's population at 119,713,203 people, ranking the country as the 11th-most populous in the world. The International Union Against Cancer reports that cancer is the third-leading cause of death in the country. Because Mexico is known for its traditional and nontraditional approaches to cancer prevention and treatment, the country is of relevance to the oncological community worldwide.

History

In the Mexican culture, the treatment of conditions consistent with the symptomatology of cancer (e.g., abscesses, hard swellings, polyps, tumors, and warts) dates back to the Mayan period, but historic records from the Mexican Society of Oncology trace the contemporary treatment of cancer to the first decade of the 20th century. This is when the Federal District of Mexico acquired the country's first order of radium. The records report that, in the 1920s, Mexico's General Hospital was the first medical institution to acquire equipment for the administration of deep radiotherapy treatments. By the 1930s, both radiotherapy and Wertheim-style hysterectomies were used for the routine treatments of uterine carcinomas. Wertheim surgeries required the removal of cervical cancer through abdominal incisions. During the same period, Mexican physicians began to treat malign neoplastic diseases—masses of tissues that experience abnormal growth.

In 1940, Mexico's General Hospital acquired the first radon plant in Latin America. This technological addition, together with the appointments of several Mexican physicians and surgeons trained abroad, marked Mexico's General Hospital as the birthplace of Mexican oncology. An institute for cancer studies was soon established in 1946 to serve oncology patients, most of whom were affected by gynecologic tumors. Soon, the institute was overrun with patients and struggled to meet patient demand. Due to this rapid growth and the need for specialized medical care, the government established the *Instituto Nacional de Cancerología* (the National Institute of Cancerology). The institute later housed the first cobalt therapy unit in Mexico and the third in Latin America.

Cobalt-60 allowed Mexican oncologists to use gamma rays for cancer treatment. Today, Mexico is recognized as a Latin American leader in cancer prevention and treatment, and the country collaborates with various international research institutions, including the United States–Latin American Research Network (US-LA CRN) and the Union for International Cancer Control (UICC).

Cancer Incidence and Mortality

Mexico has experienced demographic transitions accompanied by changes in its epidemiological profile. The country's health concerns, for example, have shifted from communicable to noncommunicable diseases. Cardiovascular disease, diabetes, and cancer currently are the three leading causes of death in the nation. The World Health Organization reports that approximately 57,000 people die of cancer every year, accounting for 13 percent of all deaths due to noncommunicable diseases in the country. Furthermore, statistics by Mexico's *Sistema Nacional de Información de Salud* (The National System of Health Information) show that prostate; lung, bronchial, and larynx; and stomach and gastric cancers cause the highest mortality rates for males; while breast, cervical, and liver cancer comprise the highest mortality rates for Mexican females; and leukemia, lymphoma, and sarcoma are the most common forms of cancer in children and adolescents.

Prostate cancer incidence in Mexico is largely attributed to age, with the majority of males affected by the disease being 50 years of age or older. The *Instituto Nacional de Estadisticas y Geographia/INEG* (The National Institute of Statistics and Geography) reports that prostate cancer mortality rates vary greatly by federal districts, with Quintana Roo having a death rate of 9.4 percent and Nayarit a death rate of 33.2 percent.

The high prevalence of lung cancer in Mexico has been linked to various factors, including second-hand smoke, the exposure of mine workers to radon, and the increase in teenage smokers. INECT statistics indicate that 12.3 percent (i.e., 1.7 million) of adolescents in Mexico are active smokers. These statistics place adolescents at higher risk of developing lung cancer, given that many begin smoking at 14 years of age.

A diet high in salted, dried meats, such as chorizo (pictured above) and other sausages, is associated with stomach and gastric cancer, which is the third-most frequent cancer in Mexican men. The disease is also associated with a high intake of fresh meats, dairy products, fresh fish, chili peppers, and chili powder. (Flickr)

The third-most frequent cancer in Mexican men, stomach and gastric cancer, has been associated with dietary patterns. Research studies have linked stomach cancer in Mexico with a diet high in salted, dried meats, such as chorizo and other sausages, as well as a high intake of fresh meats, dairy products, and fresh fish. In addition, studies have associated the disease with the consumption of chili peppers and chili powder.

Research studies associate the incidence of breast cancer in Mexico with an underutilization of early detection techniques, such as self-exam and mammography. Underutilization has been attributed in part to cultural beliefs about the causes and treatments of the disease. In addition, the breast cancer rate has been associated with an increase in alcohol intake and a folate and vitamin B12 deficiency.

Although cervical cancer is responsible for 3,900 deaths a year in Mexico, the incidence and mortality have decreased during the past decade. Scientists attribute the improved incidence and mortality rates to Pap smear screenings and lower birthrates. Nonetheless, Mexican women are still at risk, especially those living in the central and southern parts of Mexico.

Statistics from a Mexico Cancer Profile issued by the Pan American Health Organization indicate that liver cancer killed approximately 2,500 Mexican males and approximately 2,700 Mexican females per year during the past decade. Hepatocellular carcinoma is the most common form of liver cancer, with higher mortality rates found in individuals 60 years of age or older. Alcohol consumption and hepatitis C virus (HCV) infections are linked to the incidence of the disease in the country.

Cancer Institute and Research

The Secretaría de Salud de México (Mexico's Health Ministry) is the government institution in charge of social assistance programs, medical services, and public health issues. The ministry supports initiatives for cancer prevention, treatment, and care, and most of them are coordinated through the National Center of Cancerology. The center is dedicated to provide specialized medical care to cancer patients and oversees 25 cancer centers around the nation. The administration works on developing common national programs and strategic plans that focus on cancer prevention, detection, and treatment. **[p. 769 ↓]** The national programs center on five main topics: early detection and prevention, development of health education materials concerning the 10 most-common forms of cancer in the country, palliative care, medical infrastructure, and tobacco control. To disseminate information about the disease, the institute launched InfoCancer, a resource available online and on the phone to cancer patients and their families, friends, and caretakers.

In addition to providing information and services to cancer patients, Mexico also works with the scientific community to support cancer research. The *Consejo Nacional de Ciencia y Tecnología* (National Council of Sciences and Technology), for example, oversees the promotion of scientific and technological agency. The organization also works with other institutes and academic institutions and offers a wide range of grants to support scientific research. In addition, the National Council offers a wide range of opportunities for postgraduate studies at home and abroad.

Nontraditional Treatment

In addition to the traditional medical approach, Mexico is known for its alternative approaches to cancer treatment. Cancer patients from around the world visit the country, seeking to ingress in its many facilities centering on holistic methods. Alternative cancer treatment facilities are more common along the U.S.–Mexico border, where dozens of clinics have opened to serve patients from the United States. Alternative methods offered at the border clinics can be divided into two main groups:

metabolic therapy and antitumor treatments. Metabolic therapy focuses on improving body function rather than on specific ways to treat the disease. The metabolic approach includes chelation, colon therapy, nutritional therapy, and immune system support. Antitumor treatments are designed to specifically target the cancer. Some of these treatments offered at the Mexican clinics include oxygen therapy, electromagnetic therapy, hydrotherapy, hyperthermia, antineoplaston therapy, and cell therapy. The use of these alternative methods is not regulated, but the Mexican government investigates and closes clinics operating illegally in the country.

The scientific community in Mexico is actively engaged in national and international efforts to prevent, detect, diagnose, and treat cancer in the country and abroad. Their efforts and initiatives provide the oncological community with material for further inquiry into the disease and its impact around the globe.

See Also: Alternative Therapy: Diet and Nutrition; Breast Cancer; Cervical Cancer; Drugs; Exercise; Liver Cancer, Adult (Primary); Lung Cancer, Non–Small Cell; Prostate Cancer; Stomach (Gastric) Cancer.

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Further Readings

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