Chapter 13
Global Health Network
Supercourse and Cancer Epidemiology:
Free Cancer Epidemiology Resources on the Internet

Faina Linkov
University of Pittsburgh Cancer Institute, USA

Elizabeth Radke
University of Pittsburgh Graduate School of Public Health, USA

Mita Lovalekar
University of Pittsburgh Graduate School of Public Health, USA

Ronald LaPorte
University of Pittsburgh Graduate School of Public Health, USA

“A teacher effects eternity. One can never tell where his influence stops.” - A. Lincoln

CANCER BURDEN IN DEVELOPED AND DEVELOPING COUNTRIES: THE NEED FOR E-HEALTH APPROACHES

Cancer is a potent cause of death in both the developed and the developing world. The number of global cancer deaths is projected to increase 45% from 2007 to 2030 (from 7.9 million to 11.5 million deaths), influenced in part by an increasing and aging global population (WHO 2008). A recent report from WHO also reveals that cancer has emerged as a major public health problem in developing countries, matching its effect in industrialized nations (Sener 2005). Cancer is the second leading cause of death in the U.S. and in many different parts of the world. With significant improvement in treatment and prevention of cardiovascular diseases, cancer has or will soon become the number one killer in many parts of the world. As elderly people are most susceptible to cancer and population aging continues in many countries, cancer will remain a major health problem around the globe (Ma 2006). Although age is the single greatest risk factor for most cancers, preventable causes of cancer including tobacco use, poor diet and lack of exercise, and infectious

DOI: 10.4018/978-1-61692-010-4.ch013

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agents contribute significantly to global cancer trends (Sener 2005).

In addition to this cancer epidemic, we are currently witnessing important technological advancements, including rapid development of Internet-based learning technologies. The Internet is rapidly penetrating hospitals, schools, universities, and homes in the US and around the world. It can therefore be harnessed to reduce the global burden of cancer.

For example, of the 190,000 deaths from cervical cancer that occur annually worldwide, the majority take place in developing countries. Recent advances in our understanding of the causes and natural history of cervical neoplasia and, in particular, the establishment of the central role of human papilloma virus (HPV) infection have created opportunities for the primary and secondary prevention of cervical cancer (Rohan 2003). Sadly, despite recent advances in cervical cancer screening and prevention, many women around the world are needlessly dying of this disease. Given that one of the main predictors of nonattendance for Pap smears is lack of knowledge about the purpose and benefits of screening (Eaker 2004), this situation can potentially be at least partly corrected with better integration of prevention education into the curricula of various schools around the world. Obviously, lack of resources to obtain preventive tools such as the HPV vaccine is also an obstacle.

Clearly, cancer is a menace to all countries. The most common cancers (such as lung cancer) are potentially preventable with appropriate sharing and utilization of prevention information. Cancer prevention is likely the only cost-effective means to reduce the cancer burden in both developing and developed countries. Few studies have examined the science of translation and implementation of prevention information (Ma 2006). There have been even fewer scientific studies examining the translation of prevention research into the classroom. In order to improve global cancer education, global cancer educators need access to good educational lectures and existing data in the area of cancer morbidity and mortality. This chapter will concentrate on describing several resources of cancer information available on the Internet: the Supercourse, SEER, CANCERMondiale, and Cancer Atlas.

Using Existing Electronic Resources for Obtaining Data

Cancer prevention is not possible without access to reliable cancer data. Two core statistics are the cancer incidence rate and the cancer mortality rate, which provide estimates of the average risk of acquiring and of dying from the disease, respectively. About 16% of the world’s population is covered by registration systems that produce cancer incidence statistics, while mortality data are available for about 29% (Parkin 2006). Despite the fact that only a small proportion of the world’s population is covered by registries, these registries are providing unique epidemiologic information on cancer burden in the U.S. and around the world. This chapter will describe three very important sources of cancer data available on the Internet: SEER, CANCERMondiale, and Cancer Atlas

SEER

The Surveillance, Epidemiology, and End Results (SEER) Program of the National Cancer Institute (NCI) (Figure 1) is an authoritative source of information on cancer incidence and survival in the United States. SEER currently collects and publishes cancer incidence and survival data from population-based cancer registries covering approximately 26% of the US population. SEER coverage includes 23 percent of African Americans, 40 percent of Hispanics, 42 percent of American Indians and Alaska Natives, 53 percent of Asians, and 70 percent of Hawaiian/Pacific Islanders. The SEER Program is the only comprehensive source of population-based information in the United