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2 Clarke Drive Suite 100  
Cranbury, NJ 08512 • (609) 716-7777

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# Gastric Cancer: Local and Global Burden

*Lynne Lederman, PhD*

## Introduction and Epidemiology

Cancer is a leading cause of death worldwide in both developed and developing countries. In 2012, 14.1 million new cases of cancer were diagnosed and 8.2 million deaths were estimated to have occurred worldwide.<sup>1</sup> In the United States alone, 1,688,780 new cases of cancer and 600,920 deaths are estimated for 2017.<sup>2</sup> As populations grow and age, the burden of cancer will increase, particularly for less developed countries.<sup>1</sup>

Here, we will look at the changing burden of gastric cancer worldwide and in the United States. The incidence of some types of cancers, including gastric cancer, is different in developed versus developing countries; rates also vary between men and women and by ethnicity.<sup>1</sup> Gastric cancer occurs about twice as frequently in men than in women, and it leads to more deaths in men.<sup>1,2</sup> It is the third leading cause of cancer deaths in men worldwide, after lung cancer and liver cancer. In women, it is the fifth leading cause of cancer deaths, after breast, lung, colorectal, and cervical cancer.<sup>1</sup>

The estimated numbers of new cases, by sex, of gastric cancer and of gastric cancer deaths worldwide, in developed versus developing countries, and in the United States, are summarized in the [TABLE](#).<sup>1,2</sup>

The occurrence of gastric cancer is highest in Eastern Asia, especially in Korea, Mongolia, Japan, and China, as well as in Central and Eastern Europe, and South America. The lowest incidence is in North America and most of Africa.<sup>1</sup>

In the United States, the incidence of gastric cancer is highest in non-Hispanic blacks, individuals of Asian and Pacific Island descent, and Hispanic and Latino individuals; in these populations, the incidence is nearly twice that of non-Hispanic white individuals, who have the lowest incidence. Native American and Alaskan populations have an incidence of gastric cancer higher than that of non-Hispanic whites, but lower than that of other ethnic populations. Although death rates related to gastric cancer are similar among all ethnic populations, among non-Hispanic whites, rates of death related to gastric cancer occur at approximately half the rate observed in other ethnic populations.<sup>2</sup>

In general, staging of cancer is based on the size and location of the primary tumor, whether the tumor has spread locally or invaded adjacent structures, if local lymph nodes are involved, or if the tumor has spread distantly (ie, metastasized). Clinical staging is based on the results of physical examinations, imaging tests, and biopsies. The pathologic or surgical stage can be determined if surgery is performed to remove the tumor and/or lymph nodes, or to take a biopsy. When the clinical and pathologic stages differ, the pathologic stage is more accurate for determining treatment options and prognosis.<sup>3</sup>

Expected survival is related to the stage at diagnosis. The 5-year relative survival rates for all stages of gastric cancer at diagnosis were 30% over the last decade in the United States. For gastric cancer diagnosed as local (con-