maladies have higher incidence rates of leukemia. Some recent studies suggest that obesity may also be associated with an increased risk of leukemia. Family history is one of the strongest risk factors for CLL. Cigarette smoking and exposure to certain chemicals such as benzene, a component in gasoline and cigarette smoke, are risk factors for myeloid leukemia. Infection with human T-cell leukemia virus type I (HTLV-I) can cause a rare type of CLL called adult T-cell leukemia/lymphoma. The prevalence of HTLV-I infection is geographically localized and is most common in southern Japan and the Caribbean; infected individuals in the US tend to be descendants or immigrants from endemic regions.

**Early detection:** Leukemia can be difficult to diagnose early because symptoms often resemble those of other, less serious conditions. When a physician does suspect leukemia, diagnosis can be made using blood tests and a bone marrow biopsy.

**Treatment:** Chemotherapy is the most effective method of treating leukemia. Various anticancer drugs are used, either in combination or as single agents. Imatinib (Gleevec) is a highly specific drug used for the treatment of chronic myeloid (or myelogenous) leukemia (CML), which will be diagnosed in about 4,870 people in 2010. Two related drugs, nilotinib (Tasigna) and dasatinib (Sprycel), are often effective if imatinib stops working. Imatinib is also sometimes used to treat ALL. Gemtuzumab ozogamicin (Mylotarg) is a targeted drug approved for treatment in older AML patients whose cancer has relapsed or who are not able to receive other chemotherapy. Recent clinical trials have shown that adults with AML who are treated with twice the conventional dose of daunorubicin experience higher and more rapid rates of remission. Ofatumumab (Arzerra) was recently approved for the treatment of CLL patients if other chemotherapeutic agents can no longer control the cancer. Antibiotics and transfusions of blood components are used as supportive treatments. Under appropriate conditions, stem cell transplantation may be useful in treating certain types of leukemia.

**Survival:** Survival in leukemia varies by type, ranging from a 5-year relative survival of 23% for people with AML to 79% for people with CLL. Advances in treatment have resulted in a dramatic improvement in survival for most types of leukemia. The 5-year relative survival rate increased for ALL, from 42% in 1975-1977 to 66% in 1999-2005, and for AML, from 7% in 1975-1977 to 23% in 1999-2005. Survival rates for children with ALL have increased from 58% to 89% over the same time period. In large part due to the discovery of the targeted cancer drug Gleevec, survival rates for CML have more than doubled since 1975-1977, from 24% to 53% today.