

## IN FOCUS

# The Global State of Blood Cancers: An Ongoing Challenge



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**Summary:** The state of the blood cancer field and its toll on patient mortality and morbidity, adapted from the 15th edition of the annual AACR *Cancer Progress Report* (<https://cancerprogressreport.aacr.org/progress/>), is presented to the US Congress and the public.

Over the past few decades, research discoveries and technological advances have fueled tremendous progress against blood cancers, leading to significantly decreased blood cancer-related deaths, improved survival rates, and enhanced quality of life for survivors. For example, mortality rates for non-Hodgkin lymphoma (NHL)—the most common type of blood cancer in the United States (Table 1)—have declined by 47% between 1997 and 2023 (1), largely because of advances in precision therapies driven by research. As of January 1, 2025, 879,290 individuals with an NHL diagnosis are living in the United States (2).

Despite major advances, blood cancers pose a significant public health challenge, both in the United States and around the globe. In 2025 in the United States, blood cancers will account for about 9% of all cancer cases and deaths. Globally, blood cancers accounted for 6.6% of total cancer cases and 7.2% of total cancer-related deaths in 2022, the most recent year for which such data are available (2). In addition, certain populations within the United States, as well as certain regions around the globe, experience disproportionate burden of blood cancers, primarily due to access to breakthrough treatments and lack of infrastructure to implement them. In this study, we will discuss the overall state of the field of blood cancers, including ongoing challenges, and strategies to support survivors, as specified in the 15th edition of the annual AACR *Cancer Progress Report*.

## THE STATE OF BLOOD CANCERS IN 2025

### Leukemias

According to the 2025 estimates, 66,890 new cases of leukemia and 23,540 deaths from the disease will occur in the United States (Table 1). Leukemia is the most common cancer in children (ages 0–14) and adolescents (ages 15–19; ref. 3).

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Both acute myeloid leukemia (AML) and chronic myeloid leukemia (CML) affect the myeloid lineage of blood cells. AML is the second most common leukemia among adults 20 years and older, accounting for 31% of all leukemia cases in this age group. Overall, leukemia mortality rates across age groups have declined by 1.9% to 2.8% every year from 2013 to 2022 (3); however, the 5-year survival for AML specifically remains roughly 33%, as of 2022 (1).

CML is a slow-growing cancer that begins when a stem cell in the bone marrow acquires a chromosomal abnormality called the Philadelphia chromosome, in which pieces of chromosomes 9 and 22 break off and trade places with each other, producing the abnormal BCR-ABL1 protein that drives uncontrolled growth. CML usually occurs in older adults and rarely occurs in children. In 2025, nearly 10,000 new cases of CML are estimated to be diagnosed in the United States (Table 1). Although the overall CML incidence has increased slowly since the early 2000s, the mortality from the disease has halved (1), with 70% of patients with CML, ages 20 and older, living 5 years or more following their diagnosis (3). The incredible progress against the disease has been made possible by decades of research that led to understanding the biological underpinning of the disease as well as the FDA approval of several molecularly targeted therapies, significantly expanding treatment options for patients with CML.

Acute lymphocytic leukemia (ALL) and chronic lymphocytic leukemia (CLL) are derived from the lymphoid lineage of blood cells. ALL is characterized by the rapid accumulation—mostly in the bone marrow but sometimes in the chest or brain—of immature lymphocytes. ALL is the most common type of leukemia in children and adolescents (ages 0–19; ref. 3), and research-driven advances in understanding of the disease and the development of effective treatments have increased the 5-year relative survival rate to 90% in this age group (3).

CLL is a slow-growing cancer that affects more mature antibody-producing B cells that accumulate in blood, bone marrow, and lymph nodes. In modern classification of leukemias, CLL and small lymphocytic lymphoma (SLL), a type of NHL, are essentially the same disease with the primary difference being the location of the cancer cells. CLL cells are mostly found in the blood and bone marrow, whereas SLL cells are mainly found in the lymph nodes and lymphatic tissues. CLL/SLL is the most common leukemia among

**Table 1. Most common blood cancers: estimated number of new cases and deaths in the United States and globally in 2025.**

	United States		World	
	New cases	Deaths	New cases	Deaths
Leukemia	66,890	23,540	515,000	324,000
AML	22,010	11,090	—	—
CML	9,560	1,290	—	—
ALL	6,100	1,400	—	—
CLL	23,690	4,460	—	—
Other leukemias	5,530	5,300	—	—
Lymphoma	89,070	20,540	676,600	291,000
Hodgkin lymphoma	8,720	1,150	86,600	24,000
NHL	80,530	19,390	590,000	267,000
Myeloma	36,110	12,030	202,000	130,000

Source: American Cancer Society. <http://globocan.iarc.fr/>, accessed June 30, 2025; ref. 3.

adults, ages 20 and older, in the United States, accounting for about 38% of leukemia cases in this age group (Table 1). Strikingly, among patients with CLL/SLL diagnosed in 2017, roughly 90% remained alive in 2022, the most recent year of available 5-year survival data. This may have been influenced by the ever-changing landscape of approved targeted therapeutics, such as ibrutinib (1).

### Lymphomas

Lymphomas are the most common type of blood cancers in the United States, with an estimated 89,070 new cases and 20,540 deaths from the disease in 2025 (Table 1). Lymphomas are broadly grouped into Hodgkin lymphoma and NHL, based on tumor histology and what mutations drive them. From 2012 to 2021, the overall incidence of both types of lymphoma has steadily declined, with the Hodgkin lymphoma incidence rate decreasing by an average of 1% per year and 0.6% per year for NHL (3).

Hodgkin lymphoma is marked by the presence of Reed-Sternberg or Hodgkin cells, which are large, abnormal lymphocytes that may contain more than one nucleus and accumulate as the disease progresses. Hodgkin lymphoma more commonly affects young adults and will account for about 10% of all lymphoma cases diagnosed in 2025 (Table 1). Between 2013 and 2022, the Hodgkin lymphoma death rate declined by 2.5% every year. For those diagnosed in 2017, the overall 5-year survival rate is more than 98% for children (ages 0–14) and adolescents (ages 15–19; ref. 1). As of January 1, 2025, there are 235,110 individuals with a Hodgkin lymphoma diagnosis living in the United States (2).

NHL is a more diverse group of more than 80 distinct cancers, some slow-growing and others very aggressive. NHL is the most common type of blood cancer in the United States and globally (Table 1). NHL can occur at any age and can be formed from either B cells, such as diffuse large B-cell lymphoma, or T cells, such as anaplastic large cell lymphoma. Unlike Hodgkin lymphoma, for which the overall risk peaks during adolescence and early adulthood,

the overall risk of developing NHL increases with age. The 5-year survival rate for those diagnosed with NHL between 2015 and 2021 is 74% (1).

### Multiple Myeloma

Multiple myeloma is a cancer of plasma cells, which are responsible for producing antibodies. In this disease, cancerous plasma cells crowd the bone marrow and produce abnormally high levels of mAb (M protein) that can damage the kidneys, weaken bones, and cause anemia and high calcium levels.

According to the most recent estimates, multiple myeloma will account for 18% of all blood cancer cases and 20% of all deaths from blood cancers in the United States in 2025 (Table 1). The 5-year relative survival rate is 64% for all stages but varies significantly based on the stage at which the cancer is detected. As of 2022, the most recent year for which such data are available, an estimated 192,000 people in the United States were living with multiple myeloma (1).

## BLOOD CANCERS: AN ONGOING CHALLENGE

Incidence and mortality rates for all blood cancers combined have been steadily declining in recent years, with an annual decline in mortality between 2014 and 2023 of 2.4%, 1.8%, 2.3%, and 2.2% for Hodgkin lymphoma, leukemia, myeloma, and NHL, respectively (1). However, trends in both incidence and mortality vary by age, sex, race, and blood cancer subtype. As one example, the overall incidence of Hodgkin lymphoma decreased by 1.4% every year between 2013 and 2022, but the incidence of CML increased by 1% annually during the same time frame.

Another example of varying trends is the multiple myeloma incidence rates by sex. Between 2013 and 2022, the multiple myeloma incidence increased at more than twice the rate among females (3.2% every year) compared with males (1.4% every year; ref. 1). Similarly, although 5-year relative survival has increased across subtypes of blood cancer

since 2000 (1), survival gains greatly differ among different subtypes of blood cancers. As one example, the 5-year relative survival rate of Hodgkin lymphoma has changed from 85% for patients diagnosed in 2000 to roughly 89% for those diagnosed in 2017, whereas these rates for AML are roughly 18% and 33%, respectively (1).

## Global Burden of Blood Cancers

Over the past three decades, the global burden of hematologic malignancies has evolved considerably, with both encouraging progress and persistent challenges. Overall, leukemia (including AML, ALL, CML, CLL, and other subgroups) continues to be the leading cause of mortality from hematologic malignancies; in 2022, leukemia was the 13th most frequently diagnosed and 10th leading cause of cancer deaths globally. However, there are encouraging long-term trends. From 1990 to 2019, leukemia mortality rates declined across countries with all income levels, with the steepest decreases seen in regions with high sociodemographic index (SDI)—a composite measure of a country's development, based on income per capita, educational attainment, and fertility rate (4). Among leukemia subtypes, CML has seen the largest mortality declines, especially in high- and middle-SDI countries (4). In contrast, low-SDI regions, particularly in Sub-Saharan Africa and Southeast Asia, bear a disproportionate mortality burden despite lower incidence (4).

In 2022, NHL was the most common hematologic malignancy and the 10th most diagnosed and 11th leading cause of cancer deaths globally (5). Rates of mortality and disability-adjusted life years—a measure of overall disease burden that combines years of life lost due to premature death and years lived with disability—for NHL declined from 1999 to 2021, particularly in high-SDI regions (such as North America; ref. 6). Hodgkin lymphoma has also shown global declines in both incidence and mortality, with the most progress observed in high-SDI regions (6).

Multiple myeloma contributed to about 1% of all cancer diagnoses and cancer-related deaths globally in 2022 (5). During the period from 1990 to 2019, the incidence of multiple myeloma increased across all five SDI regions, with the largest estimated annual change of 0.8% in middle-SDI regions (4).

## Disparities in the Burden of Blood Cancer

Despite tremendous progress in recent years, disparities in the burden of blood cancers continue to span the entire cancer research and care continuum. As one example, in 2023, the most recent year for which data are available, the Hodgkin lymphoma incidence rate was the same among Black and White individuals older than 50 years. However, from 2019 to 2023, Hodgkin lymphoma mortality in this age group declined at nearly four times the rate among White individuals (9.8% every year) compared with Black individuals (2.6% every year; ref. 1). In addition, despite major advances in the treatment of blood cancers, access to breakthrough therapies such as molecularly targeted therapies, immunotherapeutics, such as CAR T-cell therapy, and hematopoietic stem cell transplants remains highly uneven across the globe.

Disparities exist at many levels and are influenced by biology, lived experience, healthcare systems, and broader social drivers of health (Sidebar 44; <https://cancerprogressreport.aacr.org/progress/>; accessed October 14, 2025). These lead to outcome gaps persisting along racial, ethnic, socioeconomic, and geographic lines. For example, patients of African ancestry were more than twice as likely to present with a high-risk subtype of T-ALL compared with those of European ancestry (7).

Biological differences, such as genetic variants linked to ancestral background, are often compounded by structural barriers. People from medically underserved communities are more likely to live in areas with poor healthcare access, face higher rates of comorbidities, and be diagnosed at more advanced stages. In many cases, they also face mistrust in the medical system, lower enrollment in clinical trials, and longer delays to treatment ([https://cancerprogressreport.aacr.org/wp-content/uploads/sites/2/2024/05/AACR\\_CDPR\\_\\_2024.pdf](https://cancerprogressreport.aacr.org/wp-content/uploads/sites/2/2024/05/AACR_CDPR__2024.pdf); accessed June 14, 2025). New policies and national initiatives must be coupled with sustained investment in community trust, culturally tailored care, and workforce diversity if we are to have a meaningful impact (8).

Growing evidence indicates that access to health care plays an important role in reducing the burden of the disease across population groups. As one example, when Black and White patients with multiple myeloma received comparable treatment and had similar socioeconomic status, overall health, and the stage at which the disease was diagnosed, disparities in survival were effectively eliminated (9). In fact, Black patients had a 4.6% higher 5-year survival rate compared with White patients within the matched cohort (9). Findings of this study reaffirm an increasingly evident view that differences in health outcomes for patients with cancer are largely attributable to differences in access and delivery of care ([https://cancerprogressreport.aacr.org/wp-content/uploads/sites/2/2024/05/AACR\\_CDPR\\_\\_2024.pdf](https://cancerprogressreport.aacr.org/wp-content/uploads/sites/2/2024/05/AACR_CDPR__2024.pdf); accessed June 14, 2025). Many low- and middle-income countries face critical shortages in infrastructure to support precision diagnostic trained specialists to provide the needed care and supportive care for patients and their caregivers the help they need, further exacerbating disparities in outcomes (8).

Addressing disparities requires a reimagining of how care is delivered, who identifies and shapes research priorities, and how social determinants—such as income inequality and educational access—are integrated into cancer control and care strategies. In addition, addressing global inequities will require sustained investment in workforce training, technology transfer, and regionally adapted care delivery models.

## SUPPORTING SURVIVORSHIP

Thanks to the rapid pace of progress in precision early detection, prevention, diagnostics, and medicine, there are 1,673,060 survivors with a diagnosis of blood cancer living in the United States as of January 2025 (2). Specifically, there are an estimated 558,660 leukemia and 1,114,400 lymphoma survivors as of January 1, 2025, and 192,144 multiple myeloma survivors as of January 1, 2022, in the United States (1, 2).

A person can be diagnosed with blood cancer at any age depending on the type of blood cancer, as well as a multitude of genetic, environmental, and behavioral factors that can increase the risk of developing blood cancer. Consequently, survivors of blood cancers face many of the same challenges faced by survivors of any cancer. In addition, survivors of blood cancers also experience a uniquely complex set of long-term health challenges, many of which stem from the immunologic and physiologic toll of their treatments. This can include a persistently weakened immune system (10) and potential complications from stem cell transplantation, such as chronic graft-versus-host disease, which can have effects that persist for years after treatment ends and significantly erode quality of life (11).

Moreover, the financial toll of survivorship is also substantial for patients with blood cancers and caregivers. Continuous surveillance, immunotherapies, and supportive care contribute to significant out-of-pocket burdens, whereas persistent physical and cognitive deficits can delay or prevent a return to work, further compounding economic strain (12–14).

To address these multifaceted challenges, multidisciplinary clinics that bring together hematologists, infectious disease experts, pulmonologists, endocrinologists, rehabilitation specialists, mental healthcare providers, and patient navigators offer a coordinated approach to managing chronic complications and improve quality of life (15). As one example, one study that implemented financial navigators for patients with hematologic cancer and their caregivers found that the program secured an average of \$2,500 in financial benefits for each participant (16).

## CONCLUSIONS

Although substantial progress has been made against blood cancers, these diseases continue to be an enormous public health challenge in the United States and around the world. Advances across basic, clinical, translational, and population sciences, along with technological innovations such as artificial intelligence, will be necessary to fuel new strategies for blood cancer prevention, early detection, diagnosis, treatment, and survivorship care.

Recent funding cuts and proposed budget reductions will stall progress, disrupt the research enterprise, and jeopardize future discoveries. Without strong federal support for medical research, the United States risks falling behind in scientific innovation and losing momentum in efforts to prevent, treat, and ultimately cure cancer. Continued federal investments in the NIH, NCI, FDA, and Centers for Disease Control are essential to preserve US leadership in medical research, support the next generation of cancer researchers, and ensure that future breakthroughs translate into longer, healthier lives for everyone.

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## Note

Supplementary data for this article are available at Blood Cancer Discovery Online (<https://bloodcancerdiscov.aacrjournals.org/>).

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