

Leukemia

Definition: Leukemia is a cancer of the bone marrow and blood.¹ It is characterized by uncontrolled accumulation of blood cells that are usually non-functioning.¹

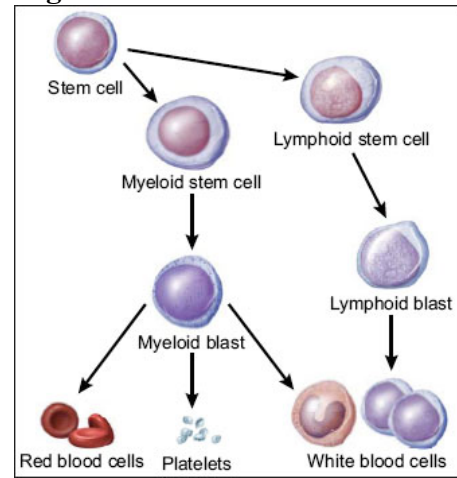
Background: From 2002 to 2006, there was a yearly average of approximately **1,338** newly diagnosed cases of leukemia in Ohio.² During this same time period, Ohio experienced approximately **943** deaths each year due to leukemia.²

Leukemia consists of four categories:¹
 Acute Myelogenous Leukemia (AML)
 Acute Lymphocytic Leukemia (ALL)
 Chronic Myelogenous Leukemia (CML)
 Chronic Lymphocytic Leukemia (CLL)

Acute leukemias progress very rapidly, while chronic leukemias progress at a slower rate.³ Acute leukemia cells cannot mature properly and they continue to reproduce and build up in the blood and bone marrow.³

Chronic leukemia cells can mature partly, but not completely, and survive longer causing a build up and crowding out of normal cells.³ These cells are unable to function normally and fight infection.³

Figure 12



Cuyahoga County Data:

- The average annual number of newly diagnosed leukemia cases from 2002-2006 was **188**, with an age-adjusted incidence rate of **11.8** per 100,000 people.
- This is **higher** than the **11.1** incidence rate for Ohio and **lower** than the **12.2** incidence rate for the Nation.
- The average annual number of leukemia deaths from 2002-2006 was **127**, with an age-adjusted mortality rate of **7.7** per 100,000 people.
- This is **the same as** the **7.7** mortality rate for Ohio and **higher** than the **7.3** mortality rate for the Nation.

Table 12a Leukemia

Average Annual Number of Cancer Cases and Age-Adjusted Incidence Rates* for 2002-2006

Incidence	Male		Female		Total	
	Cases	Rate	Cases	Rate	Cases	Rate
Cuyahoga County	103	15.9	84	9.2	188	11.8
Ohio	735	14.0	604	8.9	1,338	11.1
National SEER		15.8		9.5		12.2

*Rate is calculated per 100,000 people.

Table 12b Leukemia

Average Annual Number of Cancer Deaths and Age-adjusted Mortality Rates* for 2002-2006

Mortality	Male		Female		Total	
	Cases	Rate	Cases	Rate	Cases	Rate
Cuyahoga County	69	10.8	58	5.8	127	7.7
Ohio	517	10.3	426	5.9	943	7.7
National SEER		9.8		5.5		7.3

* Rate is calculated per 100,000 people.

Figure 12a

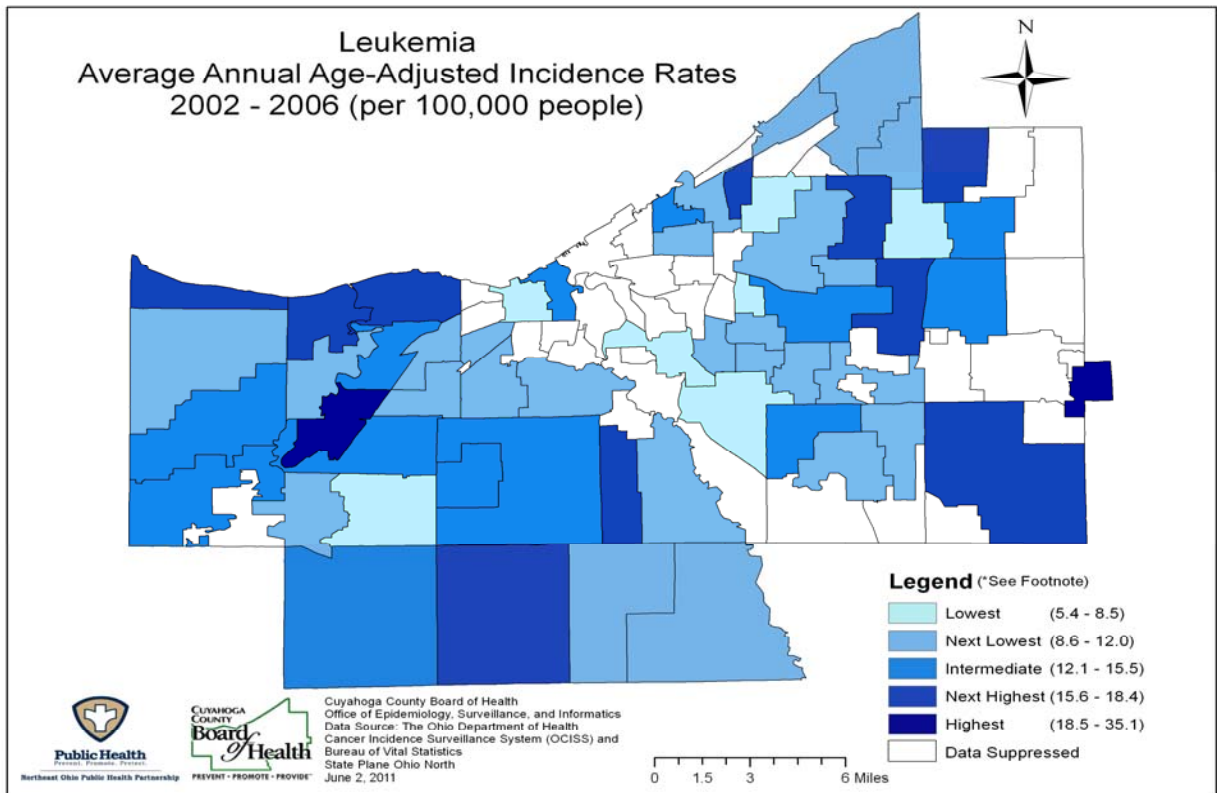
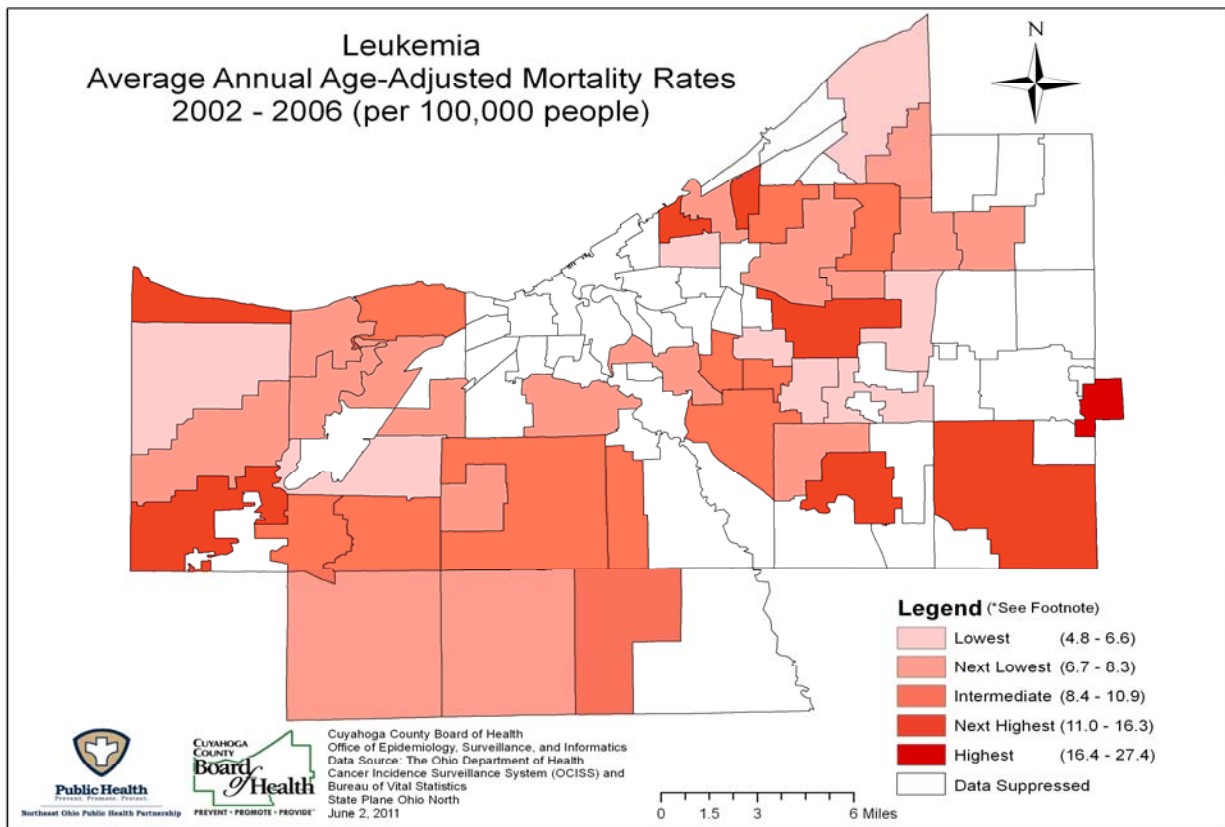


Figure 12b



*Data were suppressed to help maintain confidentiality and /or due to concerns over unstable numbers. See methods/limitations section for additional details.

Chart 12a

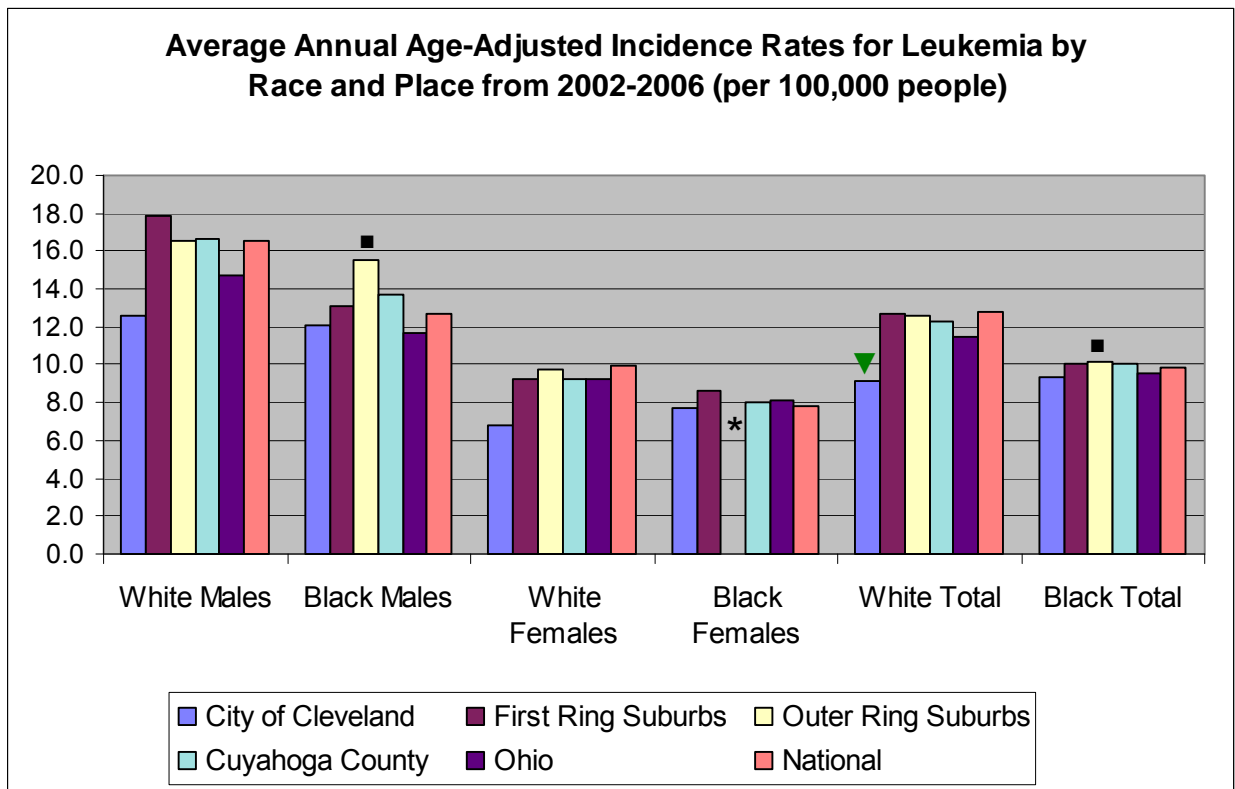
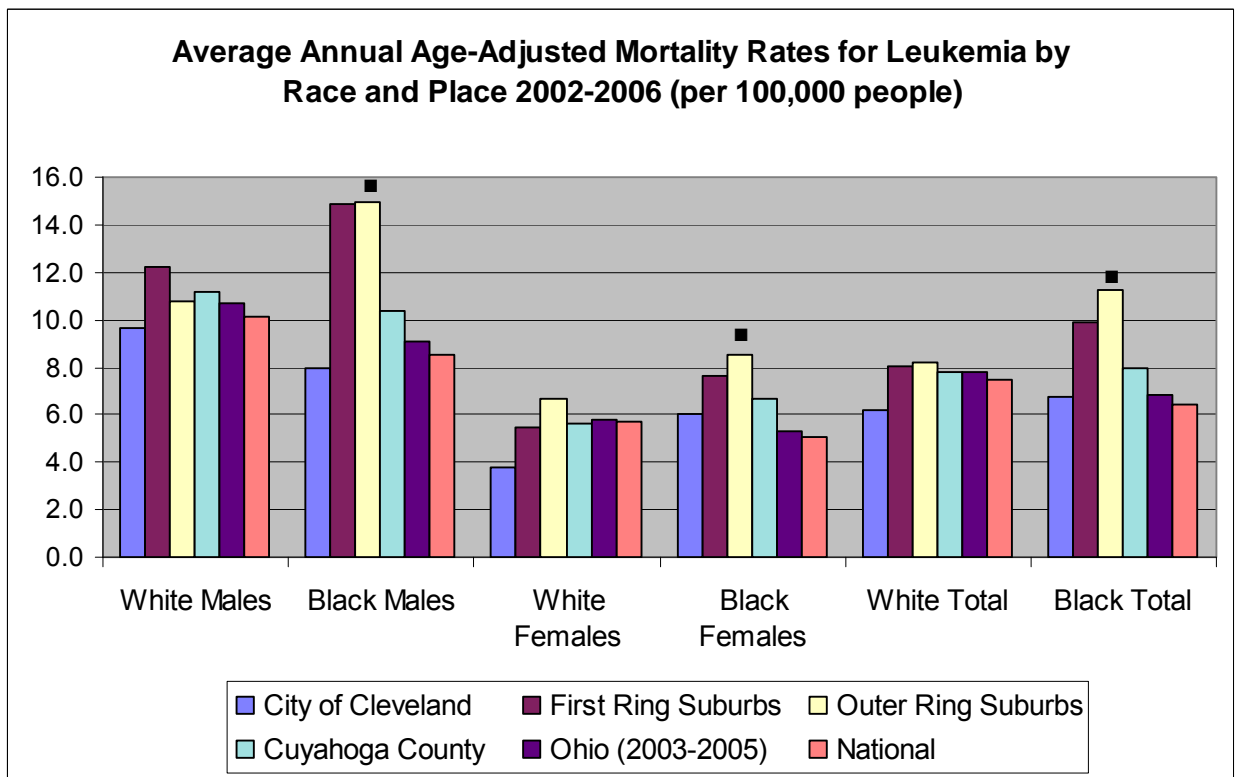


Chart 12b



▲ Rates are statistically significantly higher when compared to Cuyahoga County.

▼ Rates are statistically significantly lower when compared to Cuyahoga County.

■ Rates are not compared to Cuyahoga County when there are <20 cases total for 2002-2006 due to instability.

*Data were suppressed to help maintain confidentiality and /or due to concerns over unstable numbers. See methods/limitations section for additional details.

Risk Factors

Males: In the United States, 1 in 66 males will develop leukemia and 1 in 100 males will die from leukemia.⁴

Females: In the United States, 1 in 91 females will develop leukemia and 1 in 141 females will die from leukemia.⁴

Several risk factors may contribute to the development of leukemia. They include:⁵

- **Radiation**
- **Smoking**
- **Chemical exposure**
 - Benzene
- **Chemotherapy**
- **Down syndrome**
- **Myelodysplastic syndrome**
- **Human T-cell leukemia virus type I (HTLV-I)**
- **Family history of leukemia**

Symptoms⁵

- Swollen lymph nodes that are usually not painful
- Fevers or night sweats
- Frequent infections
- Feeling weak or tired
- Bleeding and bruising easily
- Swelling or discomfort in the abdomen
- Weight loss for no known reason
- Pain in the bones or joints

Screening, Prevention and Early Detection³

Screening:

There are no recommend screening tests for leukemia. Any symptoms should be discussed with a physician to determine the cause.

Chronic lymphocytic leukemia and chronic myelocytic leukemia may occasionally be found during a routine blood test, but is not currently used as a screening method for these leukemias.

Prevention:

There is currently no well-documented way to prevent most cases of leukemia.

Table 12c

5-year Relative Survival* for Leukemia in the United States for 1999-2006, All Races, Both Sexes⁶	
Race/Gender	5-year Relative Survival (%)
White Males	54.6
White Females	54.2
Black Males	46.8
Black Females	46.2
Overall Survival Rate	54.1

*Relative survival compares observed survival for those with cancer to the expected survival for those without cancer.

More Information

National Cancer Institute <http://www.cancer.gov/>

American Cancer Society <http://www.cancer.org>

Ohio Department of Health <http://www.odh.ohio.gov/>

Resources

1. The Leukemia and Lymphoma Society. Leukemia. http://www.leukemia-lymphoma.org/all_page?item_id=7026. (Accessed January 3, 2011).
2. *Cancer Incidence and Mortality among Ohio Residents, 2002-2006*. Ohio Cancer Incidence Surveillance System, Ohio Department of Health and The Ohio State University, Columbus, Ohio, December 2009. http://www.odh.ohio.gov/ASSETS/79F9E92E210F477D885F8EAC864E2F27/0206Monograph_Final.pdf.
3. The American Cancer Society. Leukemia- Acute Lymphocytic Detailed Guide. <http://www.cancer.org/Cancer/Leukemia-AcuteLymphocyticALLinAdults/DetailedGuide/index>. (Accessed January 3, 2011).
4. The American Cancer Society. Lifetime Risk of Developing or Dying From Cancer. <http://www.cancer.org/Cancer/CancerBasics/lifetime-probability-of-developing-or-dying-from-cancer>. (Accessed January 3, 2011).
5. National Cancer Institute. What you need to know about leukemia. <http://www.cancer.gov/cancertopics/wyntk/leukemia>. (Accessed January 3, 2011).
6. Surveillance Epidemiology and End Results. SEER Stat Fact Sheets: Leukemia. <http://seer.cancer.gov/statfacts/html/leuks.html>. (Accessed January 3, 2011).
7. National Cancer Institute. What you need to know about leukemia. Leukemia images from <http://www.cancer.gov/cancertopics/wyntk/leukemia/page2>. (Accessed January 3, 2011).

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