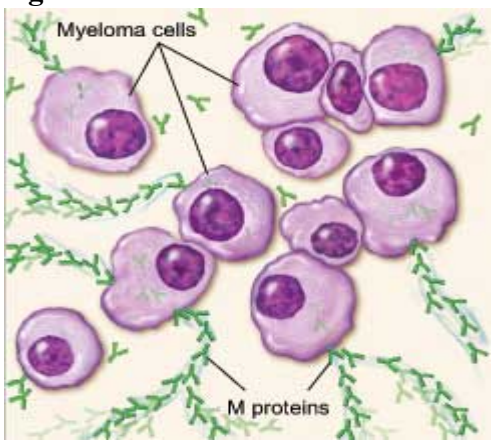
Multiple Myeloma

Figure 16



Definition: Multiple myeloma forms in plasma cells that are normally found in the bone marrow.[1] The plasma cells grow out of control and form tumors (plasmacytoma) or crowd out normal blood-forming cells causing anemia.[1]

Background: From 2002 to 2006, there was a yearly average of approximately **626** newly diagnosed cases of multiple myeloma in Ohio.[2] During this same time period, Ohio experienced approximately **483** deaths each year due to multiple myeloma.[2]

Multiple myeloma is generally an uncommon cancer; with a 1 in 159 lifetime risk of development.[1] The 5-year survival rate is around 40%, with survival being higher in younger people and lower in the elderly.[1]

Cuyahoga County Data:

- The average annual number of newly diagnosed multiple myeloma cancer cases from 2002-2006 was **97,** with an age-adjusted incidence rate of **6.0** per 100,000 people.
- This is **higher** than the **5.1** incidence rate for Ohio and **higher** than the **5.6** incidence rate for the Nation.
- The average annual number of multiple myeloma cancer deaths from 2002-2006 was **74**, with an age-adjusted mortality rate of **4.4** per 100,000 people.
- This is **higher** than the **3.9** mortality rate for Ohio and **higher** than the **3.6** mortality rate for the Nation.

Table 16a Multiple Myeloma

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	50	7.6	47	5.1	97	6.0
Ohio	333	6.3	293	4.2	626	5.1
National SEER		7.1		4.6		5.6

* Rate is calculated per 100,000 people.

Table 16b Multiple Myeloma

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	37	5.7	37	3.7	74	4.4
Ohio	240	4.7	242	3.3	483	3.9
National SEER		4.5		3.0		3.6

* Rate is calculated per 100,000 people.

Figure 16a

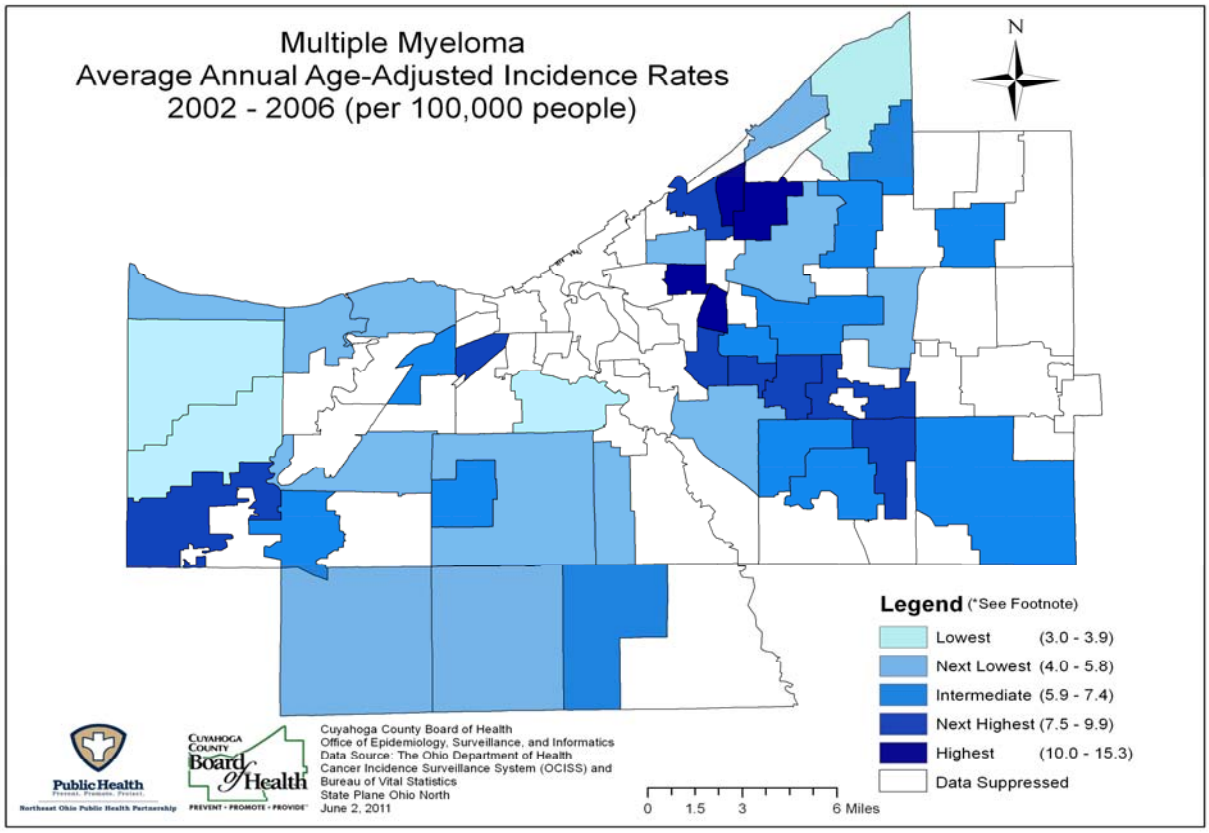
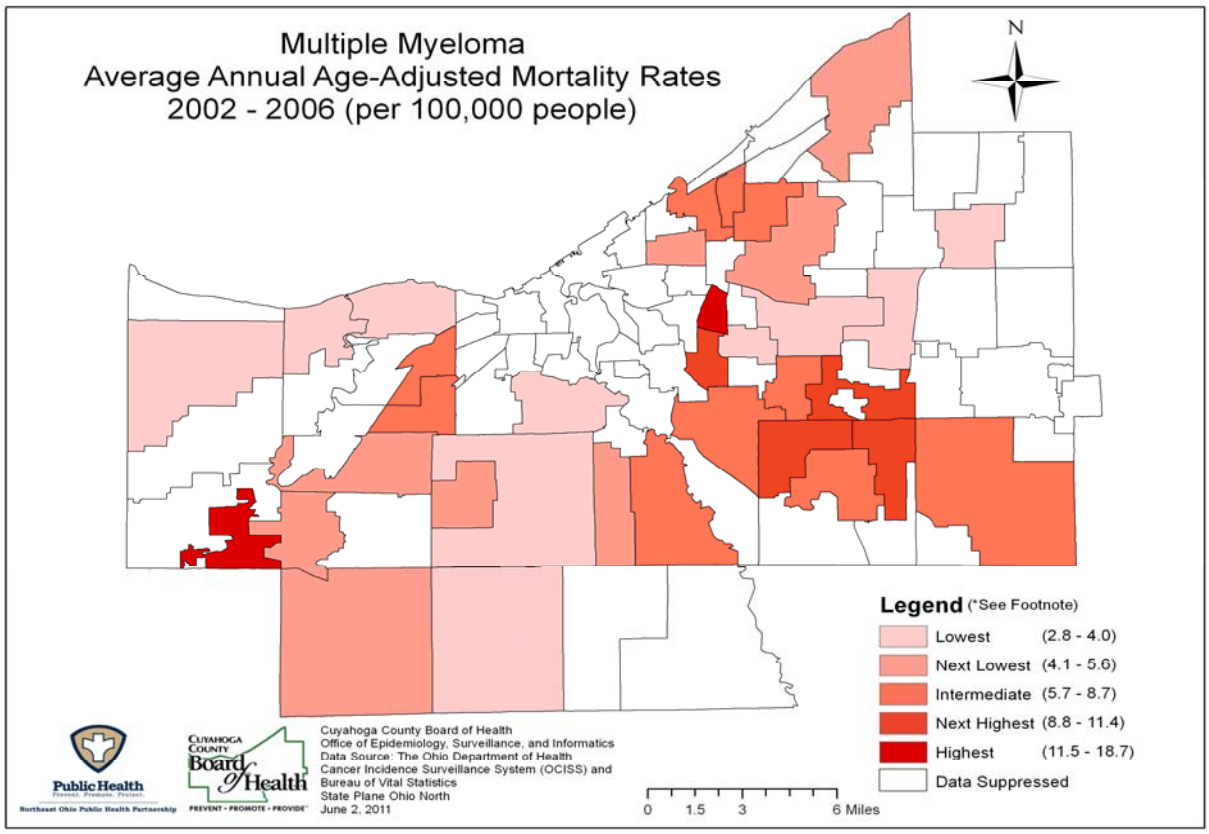


Figure 16b



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

Chart 16a

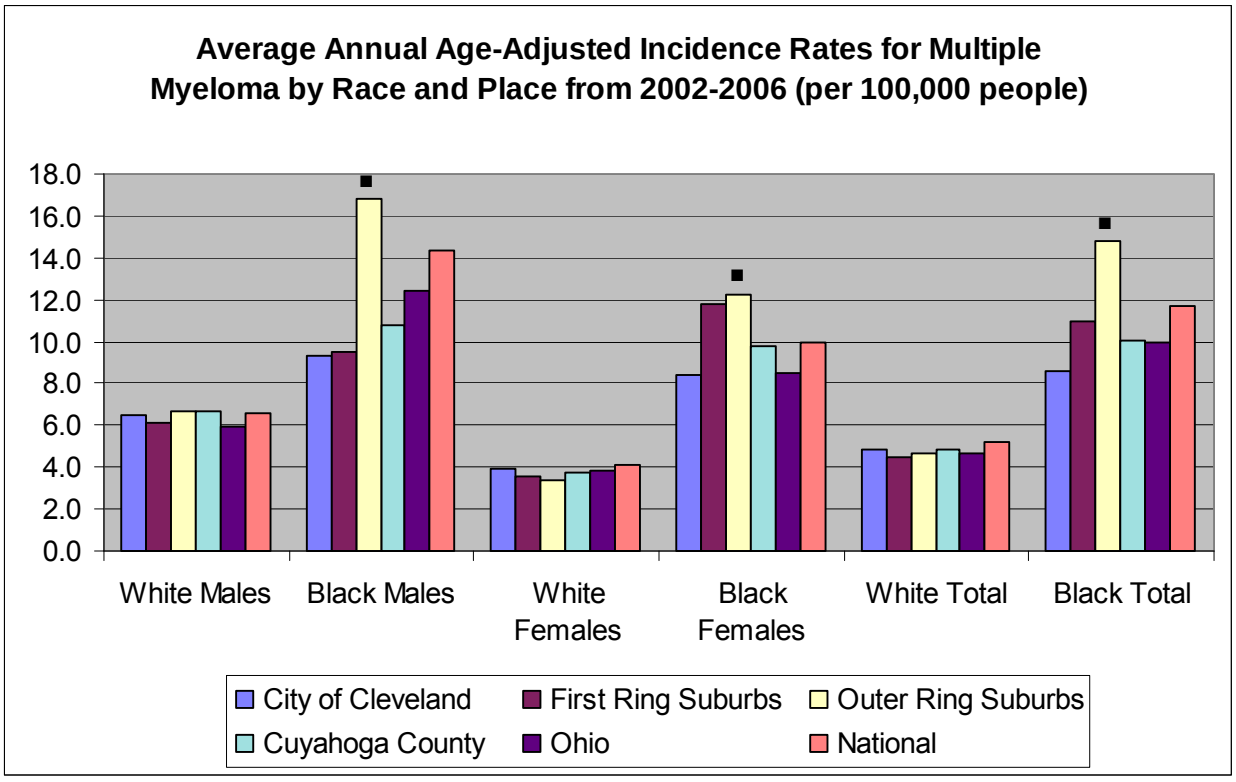
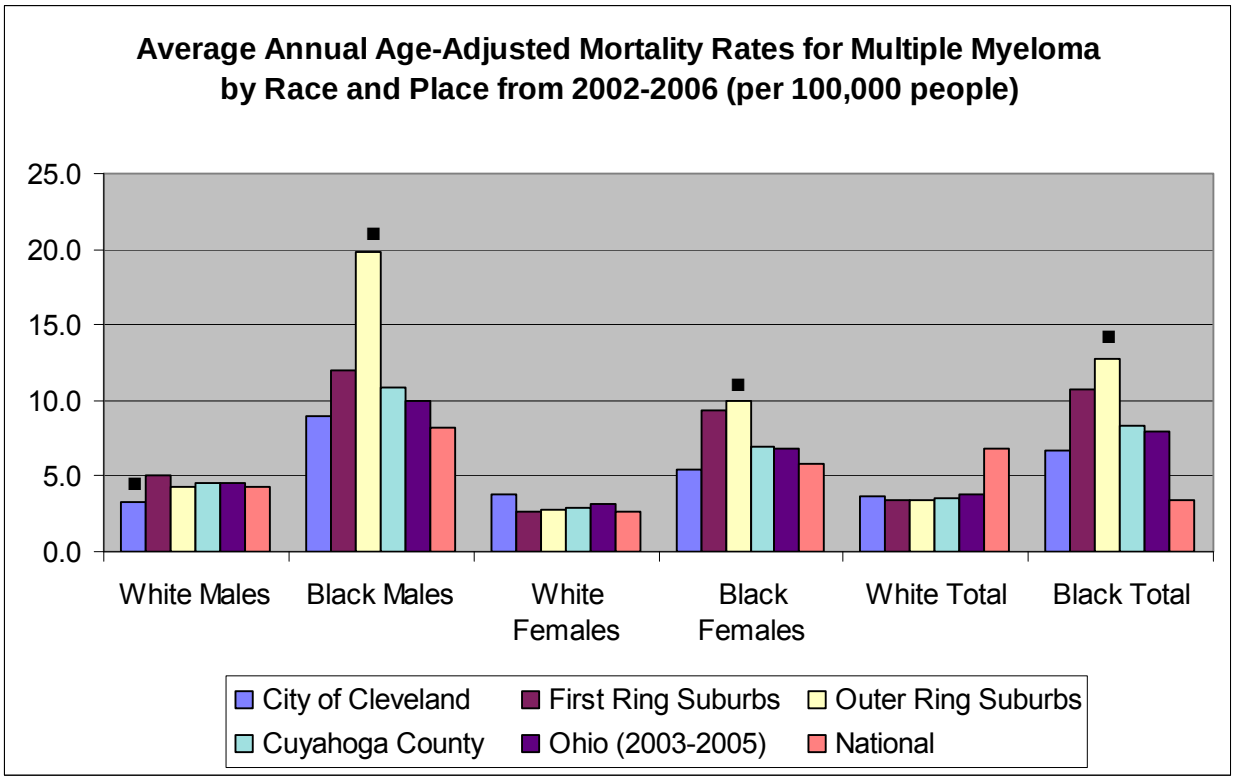


Chart 16b



▲ 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.

Risk Factors

Males: In the United States, 1 in 137 males will develop multiple myeloma and 1 in 217 males will die from multiple myeloma.[3]

Females: In the United States, 1 in 179 females will develop multiple myeloma and 1 in 263 females will die from multiple myeloma.[3]

Several risk factors may contribute to the development of multiple myeloma. They include:[1]

- **Age-** Most people diagnosed with multiple myeloma are over 65 years old.
- **Gender-** Men have a slightly higher risk of developing multiple myeloma than women.
- **Race-** African Americans are two times more likely to develop multiple myeloma than white Americans.
- **Radiation exposure**
- **Family history**
- **Workplace exposures**
- **Obesity**
- **Other plasma cell diseases**

Symptoms[4]

- Bone pain, usually in the back and ribs
- Broken bones, usually in the spine
- Fatigue and weakness
- Feeling very thirsty
- Frequent infections and fevers
- Weight loss
- Nausea or constipation
- Frequent urination

Screening, Prevention and Early Detection[1]

Screening and Prevention:

There are no recommended screening tests available to detect multiple myeloma, and no known way to prevent most cases. Knowing signs and symptoms of multiple myeloma and discussing them with a physician may be the best way to detect these cancers at an early stage.

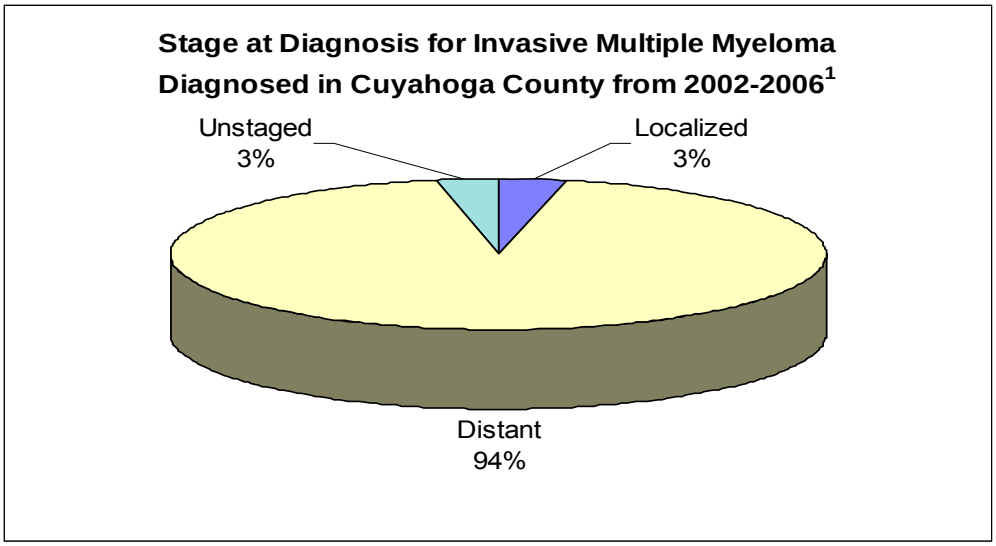
Staging

Stage at Diagnosis describes the severity of a person's cancer and the extent to which it has or has not spread throughout the body.[5] Cancer staging is important in helping physicians plan appropriate treatment, as well as to estimate a patient's prognosis.[5] Cancer diagnosed in the *in situ* and localized stages are generally referred to as early-stage tumors, whereas regional and distant tumors are referred to as late-stage tumors.[2] Detecting cancers at an early stage may increase long-term survival and can lead to a reduction in mortality.[2]

The National Cancer Institute groups staging into five main categories:[5]

- ***In situ***: Abnormal cells are present only in the layer of cells in which they developed. In this report, *in situ* cases are only included for bladder cancer.
- **Localized**: Cancer is limited to the organ in which it began, without evidence of spread.
- **Regional**: Cancer has spread beyond the primary site to nearby lymph nodes or organs and tissues.
- **Distant**: Cancer has spread from the primary site to distant organs or distant lymph nodes.
- **Unstaged/Unknown**: There is not enough information to determine the stage.

Chart 16c



[1]Cuyahoga County staging percentages for multiple myeloma are consistent with national percentages. SEER (Surveillance Epidemiology and End Results) reports that 95% of cases of multiple myeloma diagnosed between 1999-2006 were detected in the distant stage.[6]

Table 16c

5-year Relative Survival* by Stage at Diagnosis for Multiple Myeloma in the United States for 1999-2006, All Races, Both Sexes[6]

Stage at Diagnosis	5-year Relative Survival (%)
Localized (confined to primary site)	70.6
Regional (spread to regional lymph nodes)	0.0 (Note: Stage Distribution was 0%)
Distant (cancer has metastasized)	36.4
Unknown/Unstaged	0.0 (Note: Stage Distribution was 0%)

*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 American Cancer Society. Multiple Myeloma Detailed Guide. http://www.cancer.org/Cancer/MultipleMyeloma/DetailedGuide/index. (Accessed December 19, 2010).
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. Lifetime Risk of Developing or Dying From Cancer. http://www.cancer.org/Cancer/CancerBasics/lifetime-probability-of-developing-or-dying-from-cancer. (Accessed January 10, 2011).
4. National Cancer Institute. What you need to know about multiple myeloma. http://www.cancer.gov/cancertopics/wyntk/myeloma/page4. (Accessed December 19, 2010).
5. National Cancer Institute. Cancer Staging. http://www.cancer.gov/cancertopics/factsheet/Detection/staging. (Accessed December 23, 2010).
6. Surveillance Epidemiology and End Results. SEER Stat Fact Sheets: Myeloma. http://seer.cancer.gov/statfacts/html/mulmy.html. (Accessed December 19, 2010).
7. National Cancer Institute. What you need to know about multiple myeloma. Myeloma image from http://www.cancer.gov/cancertopics/wyntk/myeloma/page2. (Accessed December 19, 2010).