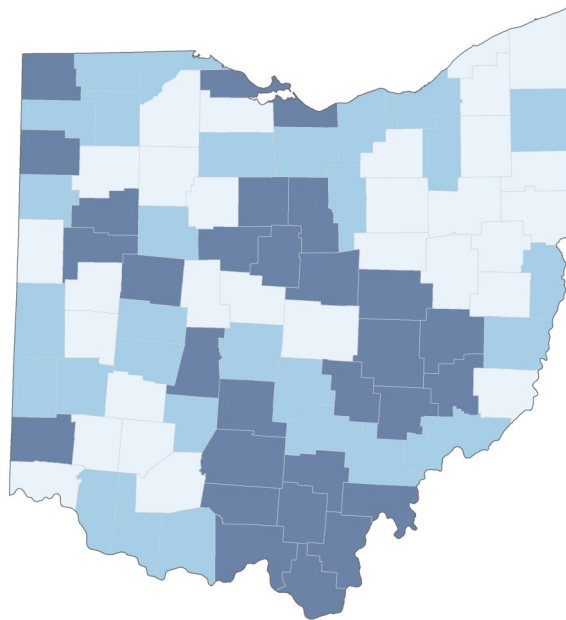


Stage at Diagnosis

for Selected Cancer Sites

in Ohio



March 2012

Ohio Cancer Incidence Surveillance System

Ohio Department of Health

The Ohio State University Comprehensive Cancer Center —

James Cancer Hospital and Solove Research Institute



Cover image:

Proportion of Cases (%) Diagnosed at Late (Regional or Distant) Stage by County of Residence, Ohio, 2004-2008 for the Cancer Sites Included in this Report (Cervix, Colon and Rectum, Female Breast, Lung and Bronchus, Melanoma of the Skin, Oral Cavity and Pharynx, Prostate and Testis)

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Ohio Cancer Incidence Surveillance System

Ohio Department of Health

Theodore Wymyslo, M.D., Director

**The Ohio State University Comprehensive Cancer Center —
James Cancer Hospital and Solove Research Institute**

Michael A. Caligiuri, M.D., Director, Comprehensive Cancer Center;
CEO, James Cancer Hospital and Solove Research Institute



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Contact Information

Ohio Cancer Incidence Surveillance System
Ohio Department of Health
246 North High Street
Columbus, Ohio 43215

Telephone: (614) 752-2689

FAX: (614) 644-8028

E-Mail: ociss@odh.ohio.gov

Web site: http://www.odh.ohio.gov/healthstats/ocisshs/ci_surv1.aspx

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This report is public information. Reproduction and copying of this report for cancer prevention and control, education and program planning are greatly encouraged. Citation of the source, however, is appreciated.

The completion, printing, and distribution of this report partially fulfills GOAL 1: "Enhance the Quality and Reporting of Cancer Incidence Data and Increase the Dissemination and Use of Data for Cancer Prevention and Control" of the Ohio Comprehensive Cancer Control Plan 2011-2014, Ohio Partners for Cancer Control, 2011.

Cancer incidence data used in these analyses were obtained in part from the Ohio Cancer Incidence Surveillance System (OCISS), Ohio Department of Health (ODH), a cancer registry supported in part by the State of Ohio and the National Program of Cancer Registries at the Centers for Disease Control and Prevention (CDC) through Cooperative Agreement # 5U58DP000795-05. Use of these data does not imply that CDC agrees or disagrees with the analyses, interpretations or conclusions in this report.

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Stage at Diagnosis

for Selected Cancer Sites

in Ohio

March 2012

Stage at Diagnosis of Cancer in Ohio

The stage of a cancer case refers to the degree to which the cancer has spread. Stage at diagnosis of cancer is an important determinant of survival, with the earliest stages often leading to better prognoses. Early detection through screening is useful in determining the most beneficial treatment and is a good predictor of long-term survival. The purpose of this report is to provide information to help prioritize areas and populations for early detection, referral and treatment programs, and to assist in the evaluation of these programs.

The five stages at which cancer is diagnosed that are presented in this report are defined as follows:

***in situ*:** A tumor that has not invaded or penetrated surrounding tissue

Localized: An invasive malignant tumor that is confined to the organ in which it originated

Regional: An invasive malignant tumor that has spread by direct extension to adjacent organs or tissues and/or has spread to regional lymph nodes

Distant: An invasive malignant tumor that has spread by direct extension beyond adjacent organs or tissues and/or metastasized to distant lymph nodes or tissues

Unstaged/Unknown: Insufficient information is available to determine the stage of cancer at the time of diagnosis, or the case was reported with missing stage data

For some of the figures shown in this report, stages are divided into early and late stages to more easily identify patterns and trends. *in situ* and localized stages are combined to create early stage, and regional and distant stages are combined to create late stage.

Selected Cancer Sites

In an effort to identify cancer at an early stage, screening methods have been developed for many sites of cancer. This report focuses on eight cancer sites for which screening tests are available: cervix; colon and rectum; female breast; lung and bronchus; melanoma of the skin; oral cavity and pharynx; prostate; and testis. Methods of screening vary by cancer site, but may include self-examination, physical examination by a health professional, X-rays and/or laboratory tests.

Screening Guidelines

A comprehensive listing of American Cancer Society (ACS) and U.S. Preventive Services Task Force (USPSTF) recommendations for the early detection of cancer in average risk, asymptomatic people, by sex and age group, are presented in Appendix I and II, respectively. Recommendations from these organizations are not in agreement. For information about how ACS and USPSTF recommendations were generated, refer to the ACS website at:

<http://www.cancer.org/Healthy/FindCancerEarly/CancerScreeningGuidelines/american-cancer-society-guidelines-for-the-early-detection-of-cancer> and the USPSTF website at:

<http://www.uspreventiveservicestaskforce.org/index.html>

Interpretation of Maps

County maps presenting the average annual number and proportion of cases diagnosed late stage are displayed for each cancer site. These maps are intended to highlight counties/areas with relatively high proportions of late stage diagnoses for the allocation of geographically targeted resources. Counties are classified and shaded according to tertiles by each respective site and proportion of late stage. **Caution should be exercised when interpreting the proportion of late stage by county for those counties that also exhibit a high proportion of unstaged/unknown stage cases (found in the table adjacent to the map).**

Cancer Data

Cancer incidence and stage at diagnosis data presented in this report are from the Ohio Cancer Incidence Surveillance System (OCISS), the central cancer registry for the state of Ohio. Cancer cases are coded according to the International Classification of Diseases for Oncology, Third Edition (ICD-O-3). U.S. stage at diagnosis data and survival probabilities are from the Surveillance, Epidemiology and End Results Program at the National Cancer Institute. Cancer mortality data are from the Vital Statistics program at the Ohio Department of Health and are coded according to the International Statistical Classification of Diseases and Related Health Problems, 10th Edition (ICD-10). Cancer screening data are from the Ohio Behavioral Risk Factor Surveillance System, Ohio Department of Health.

Most of the stage at diagnosis data presented in this report are for the years 2004-2008, as these years represent the most recent, complete data available at the time of analysis. Trends in cancer incidence rates, mortality rates and late stage at diagnosis are presented for the years 1996-2008. Five-year survival probabilities by stage at diagnosis are presented for the time period 2001-2007. Trends and prevalence of cancer screening are shown for the years 1990-2010.

The age groups selected for figures of cancer stage at diagnosis by age were selected based on ACS screening guidelines.

Key Findings

Cervical Cancer

- Age-adjusted incidence and mortality rates for cervical cancer in Ohio declined for both white and black females from 1996 to 2008; however, the proportion diagnosed at late stage increased for both whites and blacks during the time period.
- Females who were uninsured or had Medicare or Medicaid as their primary insurance payer at the time of diagnosis had the highest proportion of late stage cervical cancers.

Colon and Rectum Cancer

- In 2004-2008, the proportion of colon and rectum cancer cases diagnosed at late stage was higher among those who were age 0-49 at diagnosis, compared to those age 50-64 and 65 years and older.
- From 1996 to 2008, Ohio males and females experienced similar declines in colon and rectum cancer incidence and mortality rates, as well as the proportion of cases diagnosed at late stage.
- The proportion of colon and rectum cancers diagnosed at late stage in 2004-2008 was highest among those who were uninsured at diagnosis, followed by those with Medicaid as their primary insurance payer.

Female Breast Cancer

- From 1996 to 2008, the breast cancer mortality rate among Ohio females decreased 20 percent among blacks and 25 percent among whites; however, the proportion of cases diagnosed at late stage increased among black females during the same time period.
- In Ohio in 2004-2008, females age 0-39 had the highest proportion of regional and distant stage breast cancer, compared to females age 40-49 and 50 and older.
- The percentage of late stage female breast cancers was highest among those who were uninsured or had Medicaid as their primary insurance payer at diagnosis.

Lung and Bronchus Cancer

- In 2004-2008, the percentage of distant stage lung and bronchus cancers was 15 percent lower in Ohio, compared to the United States; however, this may be due to a higher percentage of lung and bronchus cancers reported unstaged or with an unknown stage in Ohio.
- Although the proportion of lung and bronchus cancers diagnosed at distant stage increased dramatically from 1996 to 2008, the proportion of unstaged/unknown stage lung and bronchus cancers decreased over the time period, which may explain this trend.

Key Findings

Melanoma of the Skin

- A higher proportion of regional and distant stage melanomas of the skin were seen among blacks in Ohio in 2004-2008, compared to whites and additional races.
- From 1996 to 2008, there was an increase in melanoma of the skin incidence rates and percent late stage at diagnosis among both males and females, and an increase in mortality rates among males.

Oral Cavity and Pharynx Cancer

- In 2004-2008, blacks in Ohio had higher percentages of regional and distant stage oral cavity and pharynx cancers, compared to both whites and additional races.
- The percentage of late stage oral cavity and pharynx cancers increased from 1996 to 2008 for both males and females.

Prostate Cancer

- From 1996 to 2008, the percentage of late stage prostate cancers decreased for both white and black males in Ohio.
- The five-year survival probability for prostate cancer is 100 percent for males diagnosed at localized and regional stages, but is only 29 percent for males diagnosed at distant stage. In Ohio, 3 percent of prostate cancers are diagnosed at the distant stage.

Testicular Cancer

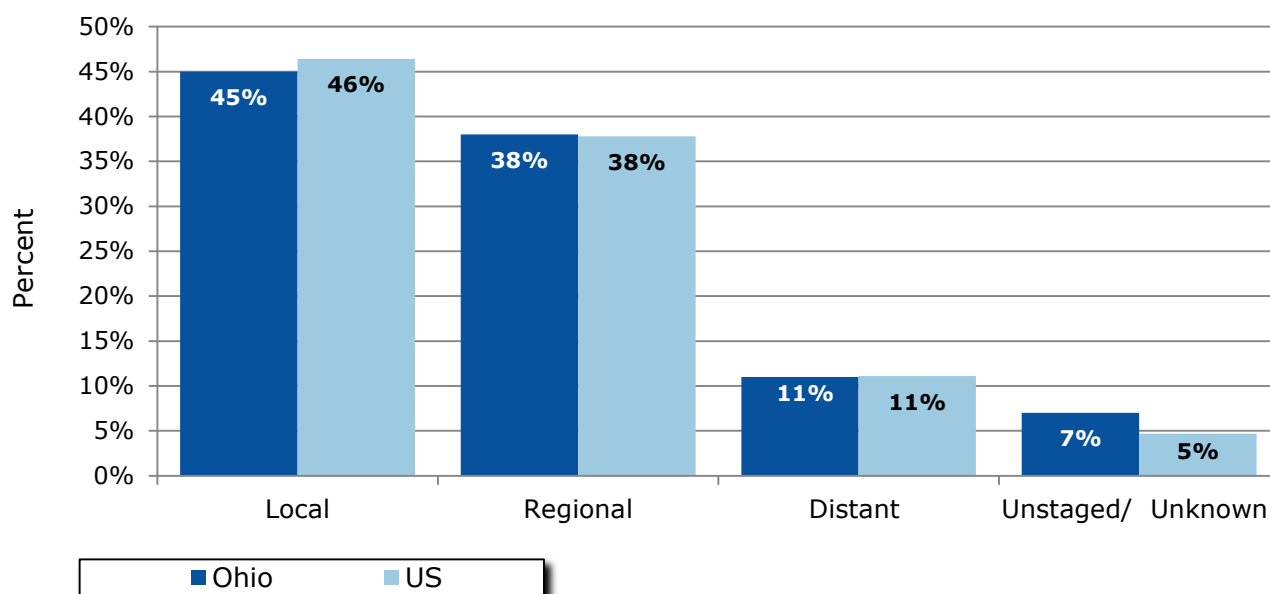
- In 2004-2008, males age 0-29 in Ohio were more likely to be diagnosed with regional or distant stage testicular cancer, compared to males age 30-44 and 45 years and older.
- The percentage of late stage testicular cancers was highest among those with Medicaid as their primary insurance payer at diagnosis, followed by those who were uninsured.

Cervical Cancer

Figure 1.1 shows that, in Ohio, compared to the United States, there were similar percentages of cervical cancer cases diagnosed at each stage.

Note that *in situ* cervical cancers are not required to be reported in Ohio.

Figure 1.1: Cervical Cancer: Proportion of Cases (%) by Stage at Diagnosis in Ohio, with Comparison to the U.S. (SEER), 2004-2008 (Average Annual N=483)



Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011; and the Surveillance Epidemiology and End Results Program, SEER*Stat Database: Incidence, Nov 2010 submission, National Cancer Institute, 2011.

Figure 1.2 shows that, compared to whites, in Ohio:

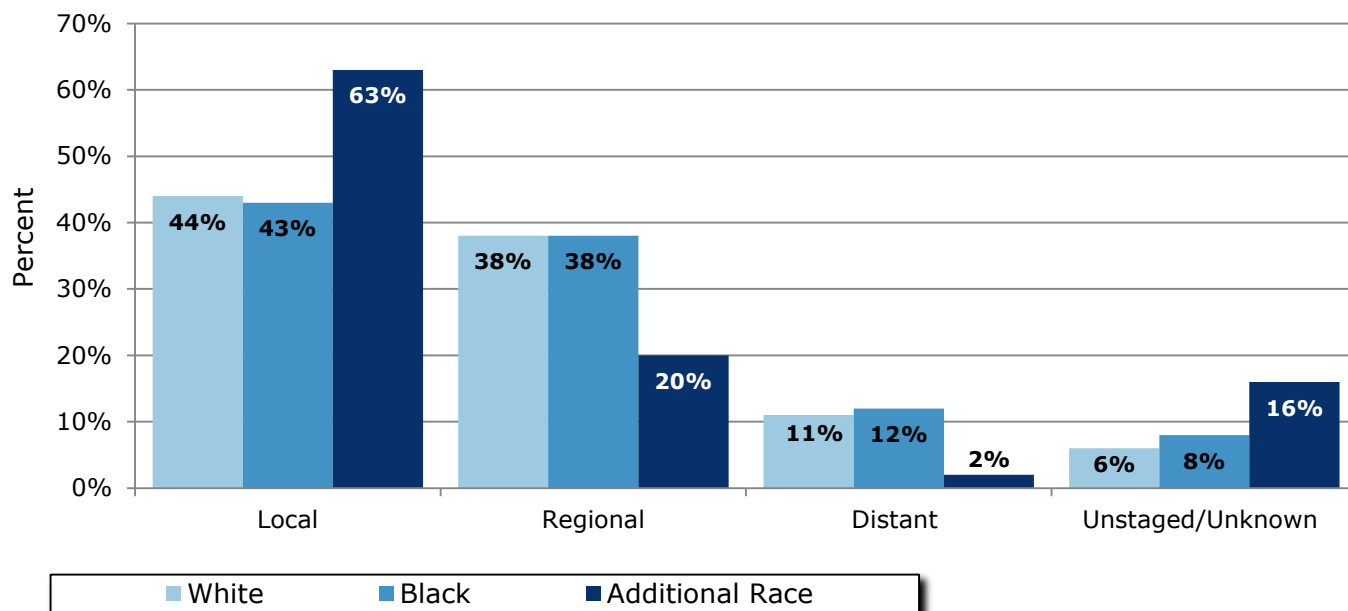
- There were similar percentages of cervical cancers among blacks diagnosed at each stage.
- There were higher percentages of cervical cancers among additional races diagnosed at localized stage and with an unstaged/unknown stage, and lower percentages of cervical cancers diagnosed at regional and distant stages.

Figure 1.3 shows that, in Ohio:

- Percentages of cervical cancers diagnosed at localized stage decreased with increasing age group, while percentages diagnosed at regional and distant stages and with an unstaged/unknown stage generally increased with increasing age group.

Cervical Cancer

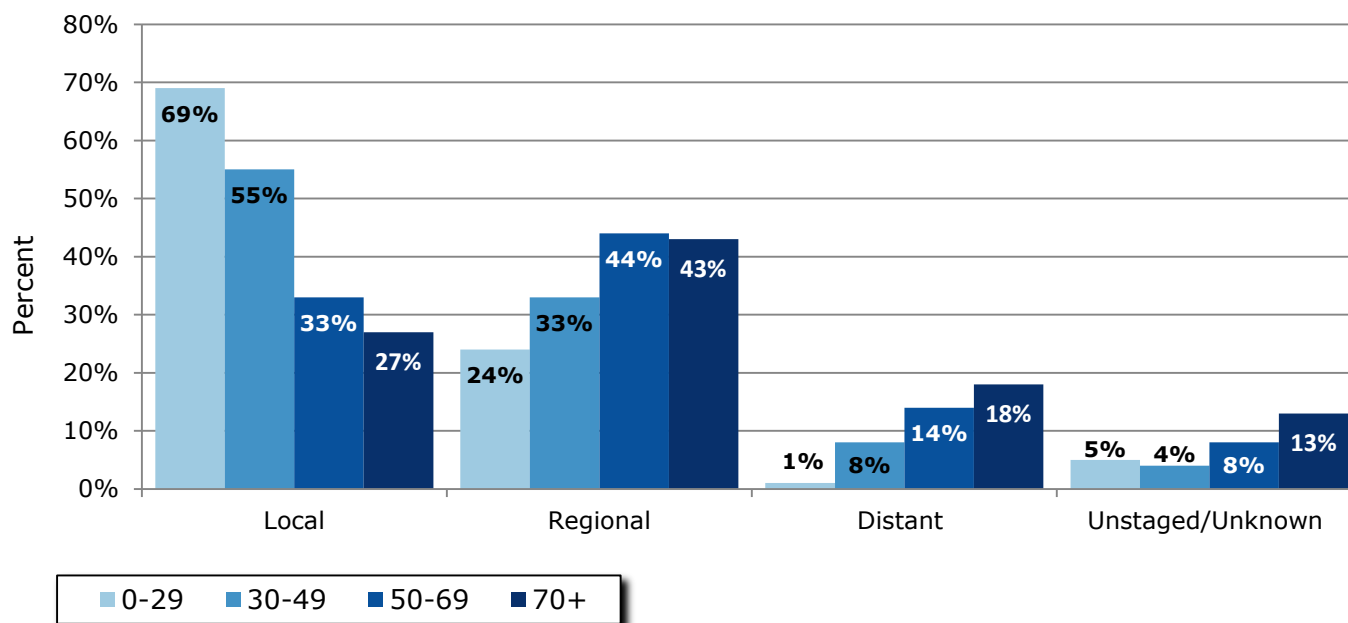
Figure 1.2: Cervical Cancer: Proportion of Cases (%) by Stage at Diagnosis and Race¹ in Ohio, 2004-2008 (Average Annual N=483)



Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

¹Additional Race includes Asian/Pacific Islander, American Indian/Alaskan Native, Other and Unknown races.

Figure 1.3: Cervical Cancer: Proportion of Cases (%) by Stage at Diagnosis and Age Group in Ohio, 2004-2008 (Average Annual N=483)

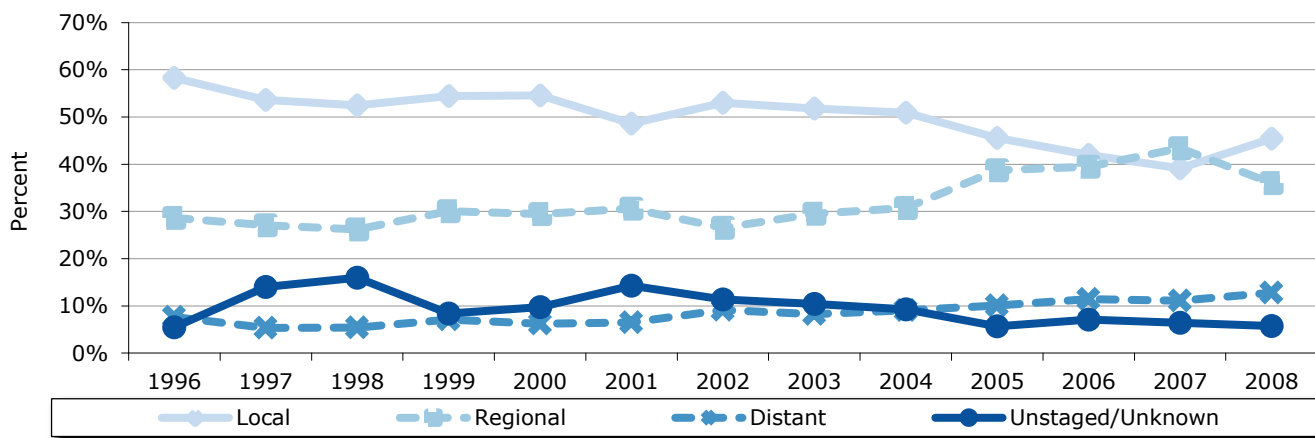


Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

Cervical Cancer

Figure 1.4 shows that the proportion of cervical cancer cases diagnosed at the localized stage has generally decreased from 1996 to 2008, while the proportions diagnosed at both regional and distant stages have generally increased over this time period. Some of these changes over time may be explained by changes in the proportion of cervical cancer cases reported unstaged/unknown stage, which varied throughout the time period.

**Figure 1.4: Cervical Cancer:
Trends in the Proportion of Cases (%) by Stage at Diagnosis in Ohio, 1996-2008**



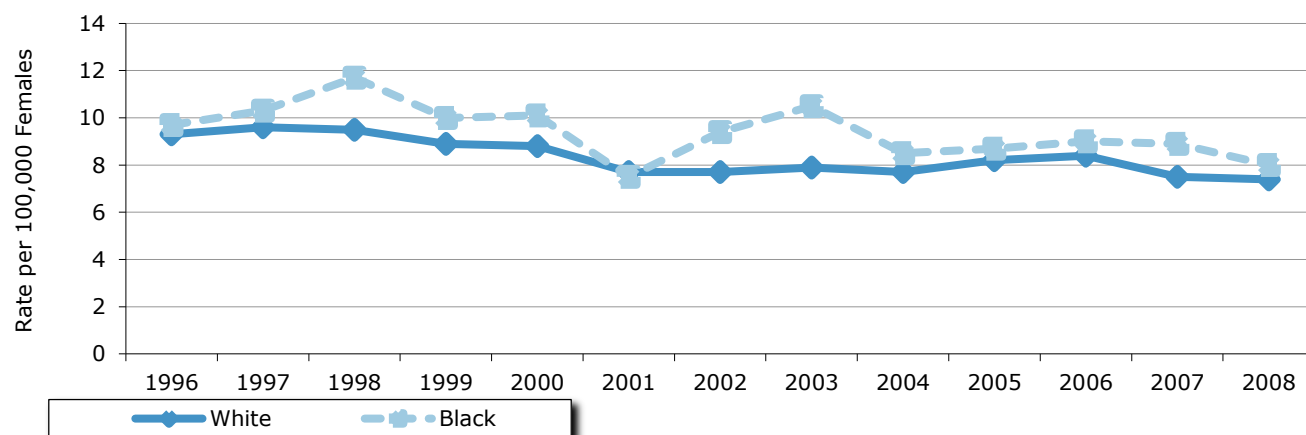
Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

- Cervical cancer incidence (Figure 1.5) and mortality (Figure 1.6) rates decreased among whites and blacks in Ohio from 1996 to 2008.
- For both whites and blacks, from 1996 to 2008, there was an increase in the percentage of cervical cancer cases diagnosed late stage (Figure 1.7).

Did You Know?

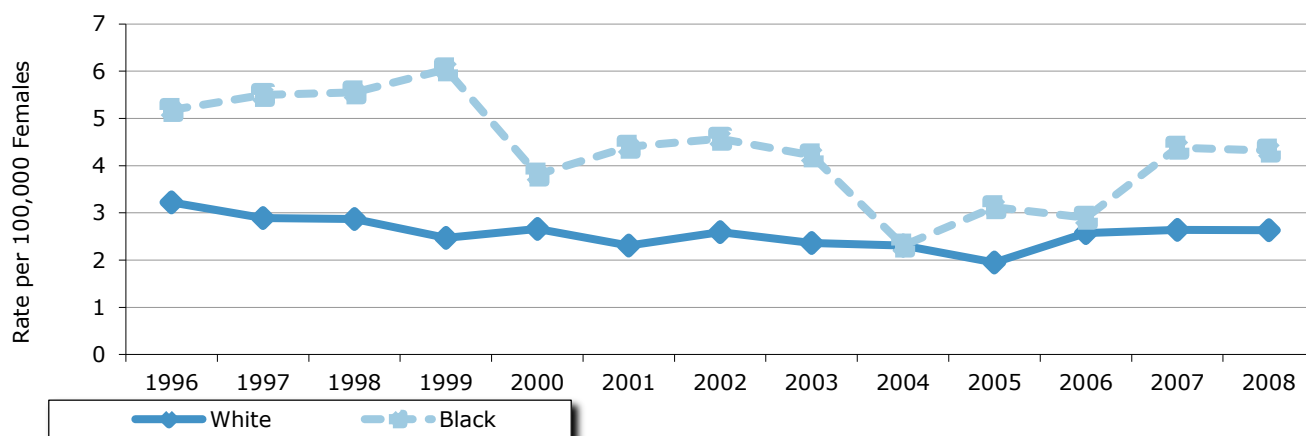
Since the introduction of the Pap test, deaths caused by cervical cancer have been reduced by up to 99 percent in most regularly screened populations. Regular pap smear screening, with appropriate follow-up, can reduce cervical cancer incidence by up to 80 percent.

Figure 1.5: Cervical Cancer: Trends in Average Annual Age-adjusted Incidence Rates per 100,000 Females by Race in Ohio, 1996-2008



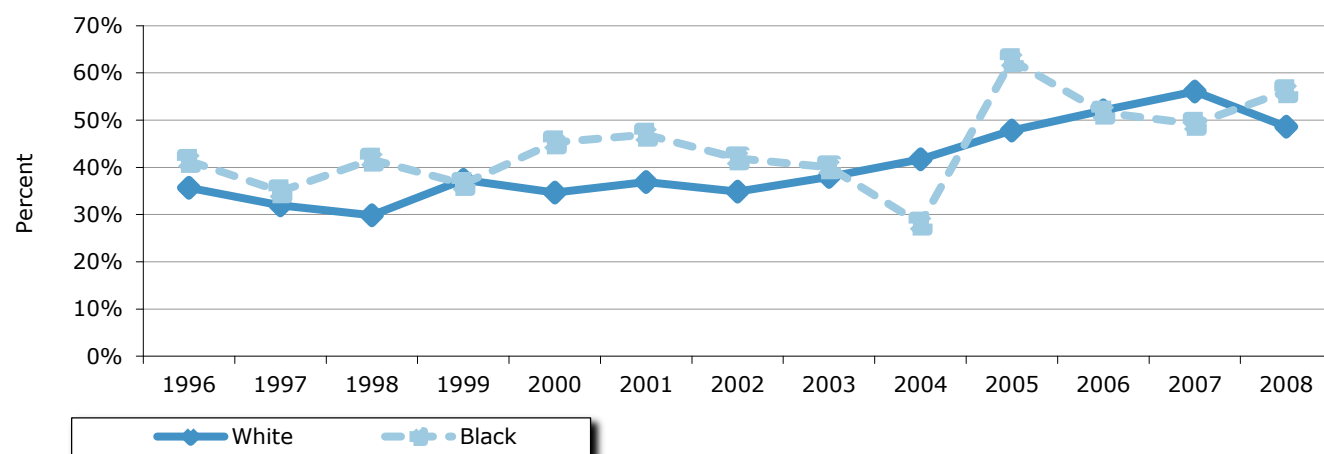
Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

Figure 1.6: Cervical Cancer: Trends in Average Annual Age-adjusted Mortality Rates per 100,000 Females by Race in Ohio, 1996-2008



Source: Ohio Vital Statistics Program, Ohio Department of Health, 2010.

Figure 1.7: Cervical Cancer: Trends in the Proportion of Cases (%) Diagnosed at Late (Regional or Distant) Stage by Race in Ohio, 1996-2008



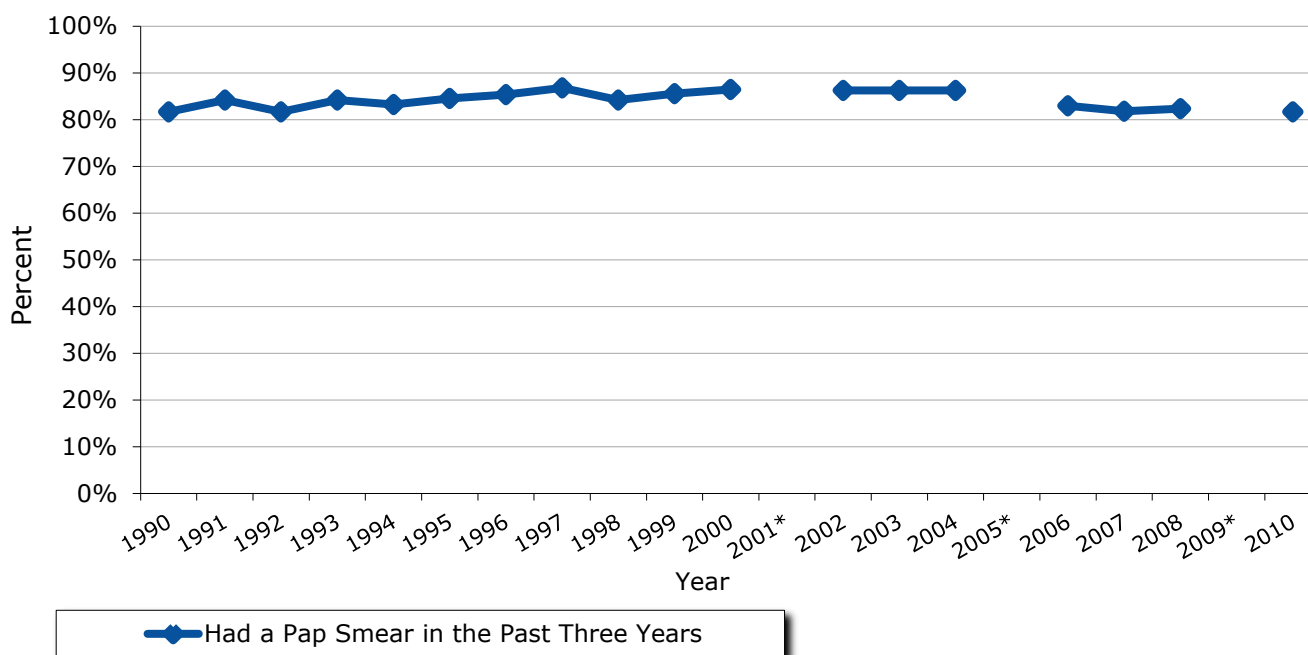
Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

Cervical Cancer

The primary cause of cervical cancer is infection with certain types of human papillomavirus (HPV), especially types 16 and 18. HPV infection can lead to abnormal changes of the cervix. The Pap test is a simple procedure in which a small sample of cells is collected from the cervix and examined under a microscope for the presence of these changes.

- Figure 1.8 shows that the prevalence of women 18 and older who reported having had a Pap test in the past 3 years in Ohio has remained relatively stable between 80 and 90 percent from 1990 to 2010.
- Table 1.1 shows that cervical cancer five-year survival probability decreases with advancing stages. For each stage, survival probability is greater among whites, compared to blacks.

Figure 1.8: Trend in Prevalence of Women 18 and Older Who Reported Having Had a Pap Test in the Past Three Years in Ohio, 1990-2010



Source: Ohio Behavioral Risk Factor Surveillance System, Ohio Department of Health, 2011.

The weighted percentages were adjusted to: 1) probability of selection, *i.e.*, the number of different phone numbers that reach the household, the number of adults in each household, and the number of completed interviews in each cluster; and 2) demographic distribution, *i.e.*, age and sex.

"Don't Know" and "Refused" were excluded from the denominator. This can cause an artificially high percentage.

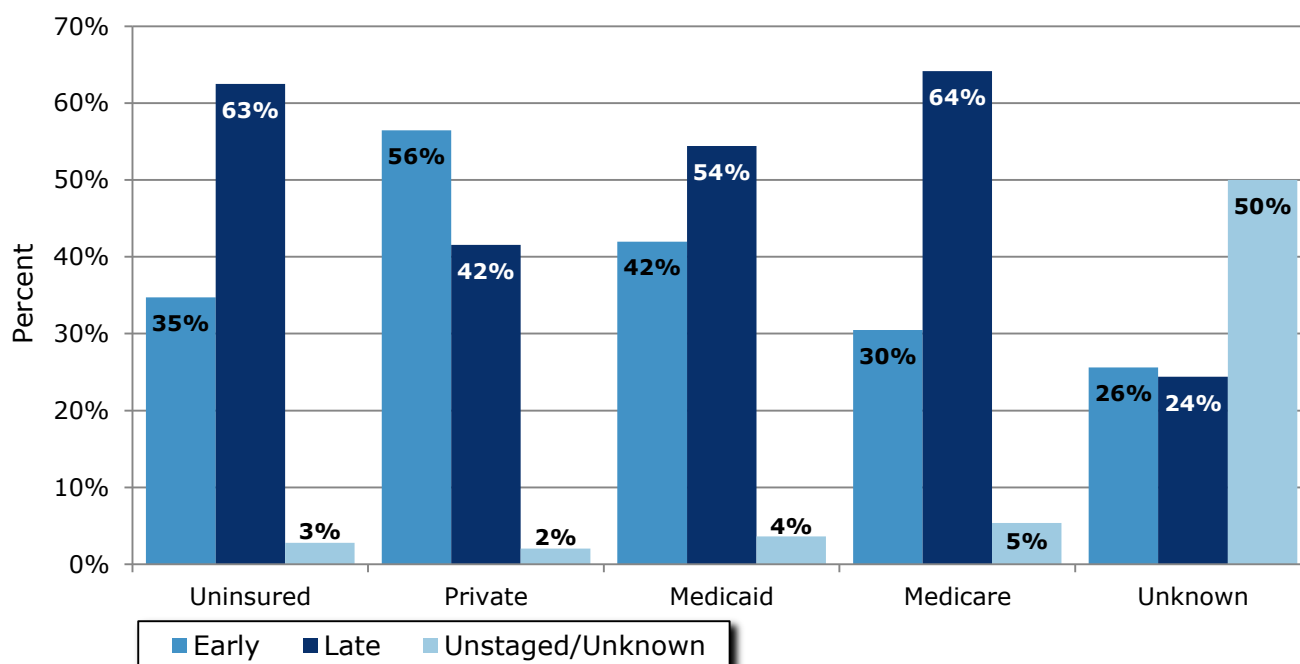
* The Ohio Behavioral Risk Factor Surveillance System Survey did not include cervical screening questions in 2001, 2005 and 2009.

Table 1.1: Cervical Cancer: Survival Probability (%) by Stage at Diagnosis and Race in the U.S. (SEER), 2001-

Five-year Survival Probability (%)			
Stage	Overall	White Female	Black Female
All Stages	68.6%	70.0%	58.4%
Localized	90.9%	92.1%	83.1%
Regional	57.0%	58.0%	48.9%
Distant	18.7%	19.8%	13.3%
Unstaged/ Unknown Stage	53.7%	53.0%	51.9%

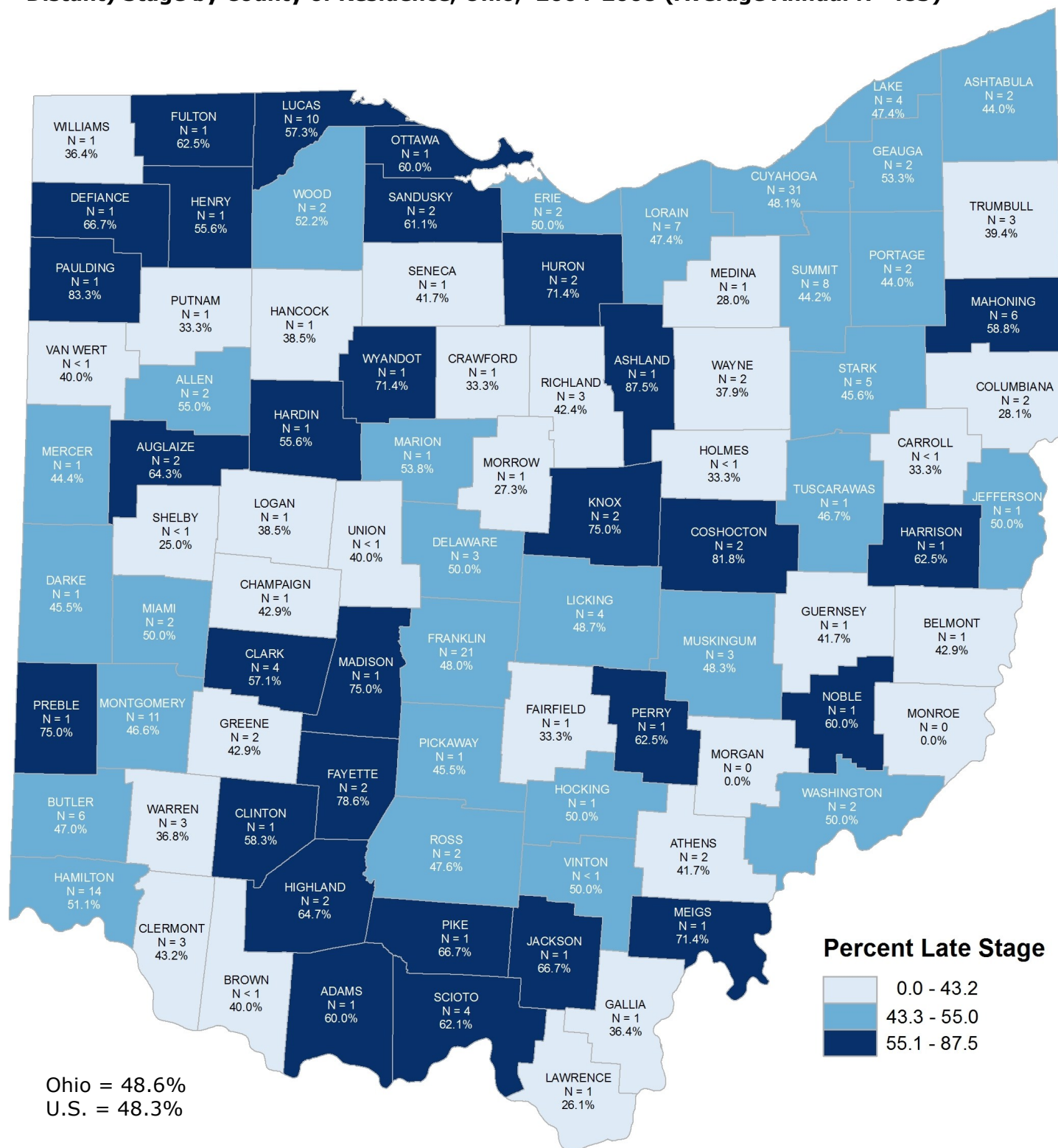
Source: Surveillance Epidemiology and End Results Program, *SEER Cancer Statistics Review, 1975-2008*, National Cancer Institute, 2011.

Figure 1.9 shows that, among those who were uninsured and those with Medicare and Medicaid as their primary insurance payer at diagnosis, the majority of cervical cancer cases were diagnosed at late stage, while among those with private insurance, the majority of cases were diagnosed at early stage. Those with unknown insurance type had the highest percentage of unstaged/unknown stage cervical cancers.

Figure 1.9: Cervical Cancer: Proportion of Cases (%) by Stage and Primary Payer (Insurance) at Diagnosis in Ohio, 2004-2008

Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

Figure 1.10: Cervical Cancer: Proportion of Cases (%) Diagnosed at Late (Regional or Distant) Stage by County of Residence, Ohio, 2004-2008 (Average Annual N=483)



Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

* Note: Each category represents approximately 33%, or 29, of the 88 Ohio counties.

Table 1.2: Cervical Cancer: Proportion of Cases (%) by County of Residence and Stage at Diagnosis in Ohio and the U.S. (SEER), 2004-2008

	Early Stage %	Late Stage %	Unstaged/ Unknown %	Average Annual Cases		Early Stage %	Late Stage %	Unstaged/ Unknown %	Average Annual Cases
Ohio	45%	49%	7%	483	Lawrence	65%	26%	9%	5
SEER	46%	49%	5%		Licking	51%	49%	0%	8
Adams	40%	60%	0%	1	Logan	54%	38%	8%	3
Allen	30%	55%	15%	4	Lorain	45%	47%	8%	15
Ashland	13%	88%	0%	2	Lucas	38%	57%	4%	18
Ashtabula	40%	44%	16%	5	Madison	13%	75%	13%	2
Athens	46%	42%	13%	5	Mahoning	29%	59%	12%	10
Auglaize	21%	64%	14%	3	Marion	46%	54%	0%	3
Belmont	57%	43%	0%	3	Medina	64%	28%	8%	5
Brown	60%	40%	0%	1	Meigs	29%	71%	0%	1
Butler	50%	47%	3%	13	Mercer	44%	44%	11%	2
Carroll	67%	33%	0%	<1	Miami	50%	50%	0%	4
Champaign	57%	43%	0%	3	Monroe	67%	0%	33%	<1
Clark	34%	57%	9%	7	Montgomery	45%	47%	8%	24
Clermont	43%	43%	14%	7	Morgan	100%	0%	0%	<1
Clinton	42%	58%	0%	2	Morrow	55%	27%	18%	2
Columbiana	53%	28%	19%	6	Muskingum	48%	48%	3%	6
Coshocton	18%	82%	0%	2	Noble	40%	60%	0%	1
Crawford	53%	33%	13%	3	Ottawa	40%	60%	0%	2
Cuyahoga	45%	48%	7%	64	Paulding	17%	83%	0%	1
Darke	55%	45%	0%	2	Perry	38%	63%	0%	2
Defiance	33%	67%	0%	1	Pickaway	55%	45%	0%	2
Delaware	47%	50%	3%	6	Pike	22%	67%	11%	2
Erie	39%	50%	11%	4	Portage	44%	44%	12%	5
Fairfield	50%	33%	17%	4	Preble	13%	75%	13%	2
Fayette	14%	79%	7%	3	Putnam	67%	33%	0%	2
Franklin	44%	48%	8%	45	Richland	52%	42%	6%	7
Fulton	38%	63%	0%	2	Ross	52%	48%	0%	4
Gallia	55%	36%	9%	2	Sandusky	28%	61%	11%	4
Geauga	40%	53%	7%	3	Scioto	31%	62%	7%	6
Greene	52%	43%	5%	4	Seneca	58%	42%	0%	2
Guernsey	42%	42%	17%	2	Shelby	75%	25%	0%	<1
Hamilton	41%	51%	8%	28	Stark	49%	46%	5%	11
Hancock	62%	38%	0%	3	Summit	49%	44%	7%	17
Hardin	33%	56%	11%	2	Trumbull	61%	39%	0%	7
Harrison	38%	63%	0%	2	Tuscarawas	47%	47%	7%	3
Henry	44%	56%	0%	2	Union	60%	40%	0%	1
Highland	24%	65%	12%	3	Van Wert	60%	40%	0%	1
Hocking	50%	50%	0%	2	Vinton	50%	50%	0%	<1
Holmes	33%	33%	33%	<1	Warren	61%	37%	3%	8
Huron	29%	71%	0%	3	Washington	38%	50%	13%	3
Jackson	33%	67%	0%	1	Wayne	45%	38%	17%	6
Jefferson	50%	50%	0%	2	Williams	45%	36%	18%	2
Knox	25%	75%	0%	2	Wood	43%	52%	4%	5
Lake	50%	47%	3%	8	Wyandot	29%	71%	0%	1

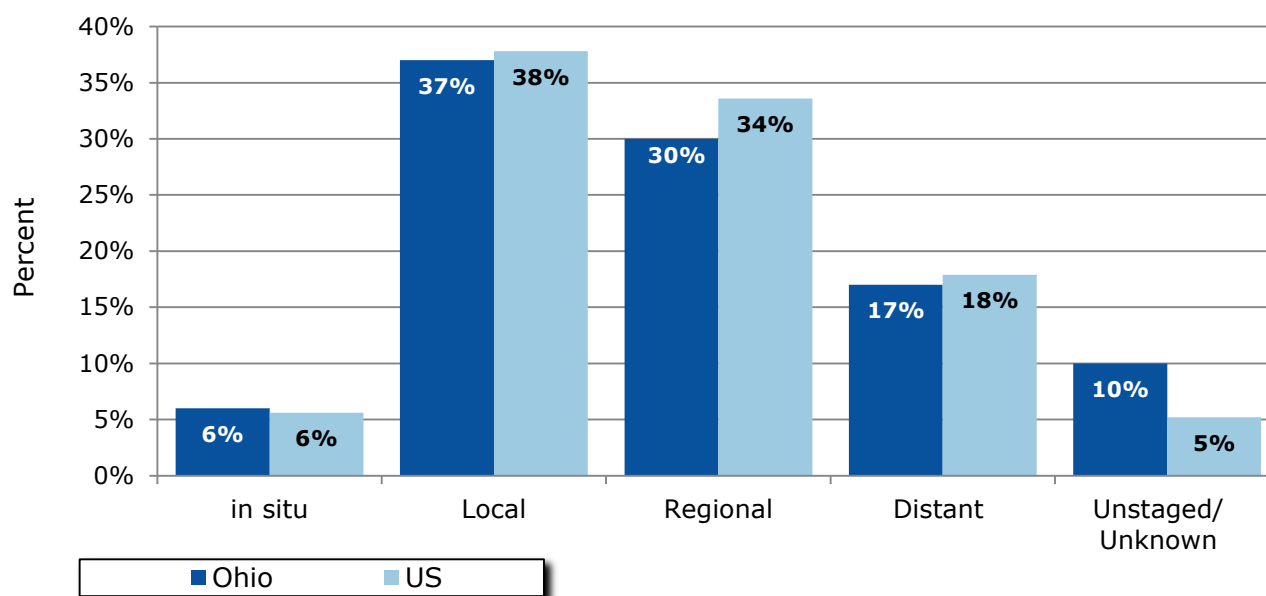
Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011; and the Surveillance Epidemiology and End Results Program, SEER*Stat Database: Incidence, Nov 2010 submission, National Cancer Institute, 2011.

Colon and Rectum Cancer

Figure 2.1 shows that, in Ohio, compared to the United States:

- An identical or similar percentage of colon and rectum cancer cases were diagnosed at the *in situ*, localized and distant stages.
- A lower percentage of colon and rectum cancer cases were diagnosed at the regional stage.
- The percentage of colon and rectum cancers reported as unstaged/unknown stage was two times higher.

Figure 2.1: Colon and Rectum Cancer: Proportion of Cases (%) by Stage at Diagnosis in Ohio, with Comparison to the U.S. (SEER), 2004-2008 (Average Annual N=6,745)



Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011; and the Surveillance Epidemiology and End Results Program, SEER*Stat Database: Incidence, Nov 2010 submission, National Cancer Institute, 2011.

Figure 2.2 shows that, compared to whites, in Ohio:

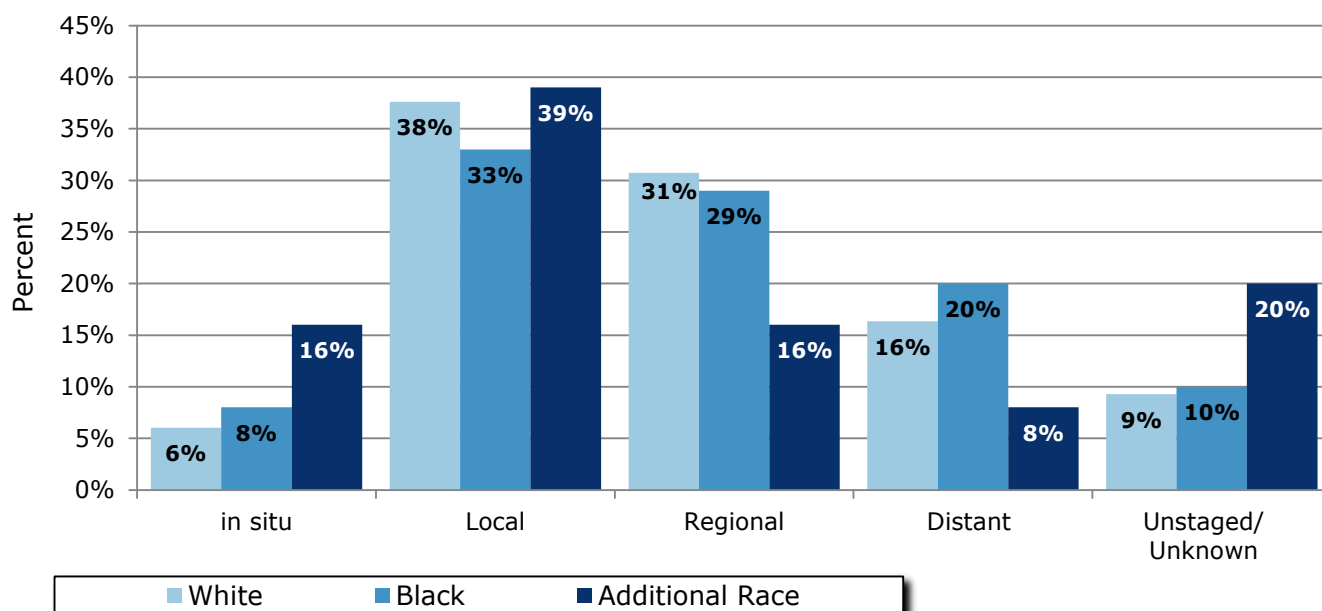
- A similar percentage of colon and rectum cancers among blacks were diagnosed at *in situ* and regional stages, a lower percentage of blacks had localized stage, and a higher percentage were diagnosed at distant stage.
- There were higher percentages of colon and rectum cancers among additional races diagnosed at the *in situ* stage and with an unstaged/unknown stage, while there were lower percentages of additional races diagnosed at regional and distant stages.

Figure 2.3 shows that, in Ohio:

- Percentages of colon and rectum cancers diagnosed at localized stage increased with increasing age group, while percentages diagnosed at regional and distant stages generally decreased with increasing age group.

Colon and Rectum Cancer

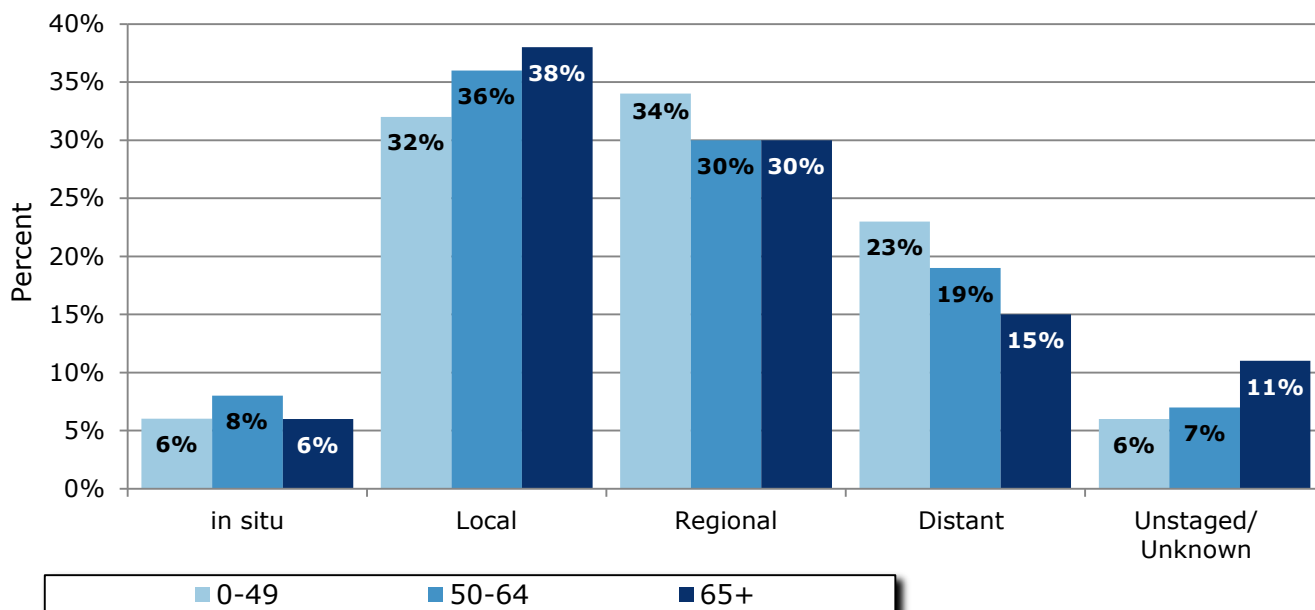
Figure 2.2: Colon and Rectum Cancer: Proportion of Cases (%) by Stage at Diagnosis and Race¹ in Ohio, 2004-2008 (Average Annual N=6,745)



Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

¹Additional Race includes Asian/Pacific Islander, American Indian/Alaskan Native, Other and Unknown races.

Figure 2.3: Colon and Rectum Cancer: Proportion of Cases (%) by Stage at Diagnosis and Age Group in Ohio, 2004-2008 (Average Annual N=6,745)

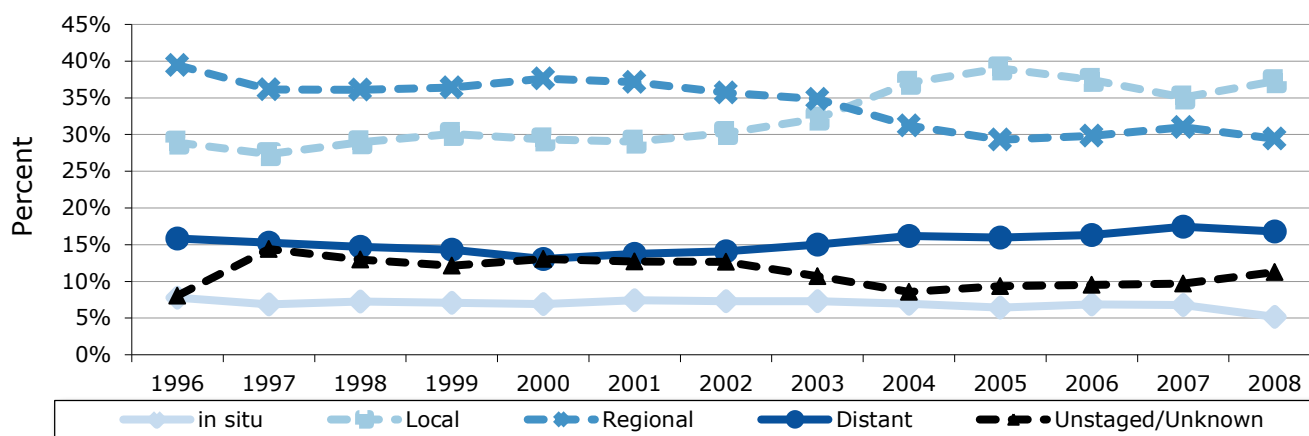


Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

Colon and Rectum Cancer

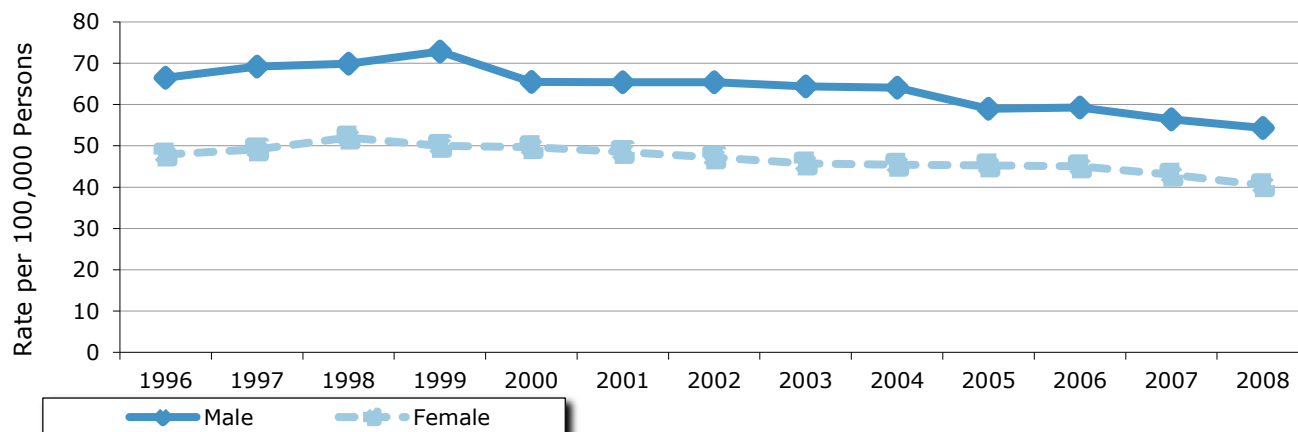
Figure 2.4 shows that the proportions of colon and rectum cancer cases diagnosed at *in situ* and regional stages have generally decreased from 1996 to 2008, while the proportion diagnosed at localized stage has generally increased over this time period. Some of these changes over time may be explained by changes in the proportion of colon and rectum cancer cases reported as unstaged/unknown stage.

Figure 2.4: Colon and Rectum Cancer: Trends in the Proportion of Cases (%) by Stage at Diagnosis in Ohio, 1996-2008

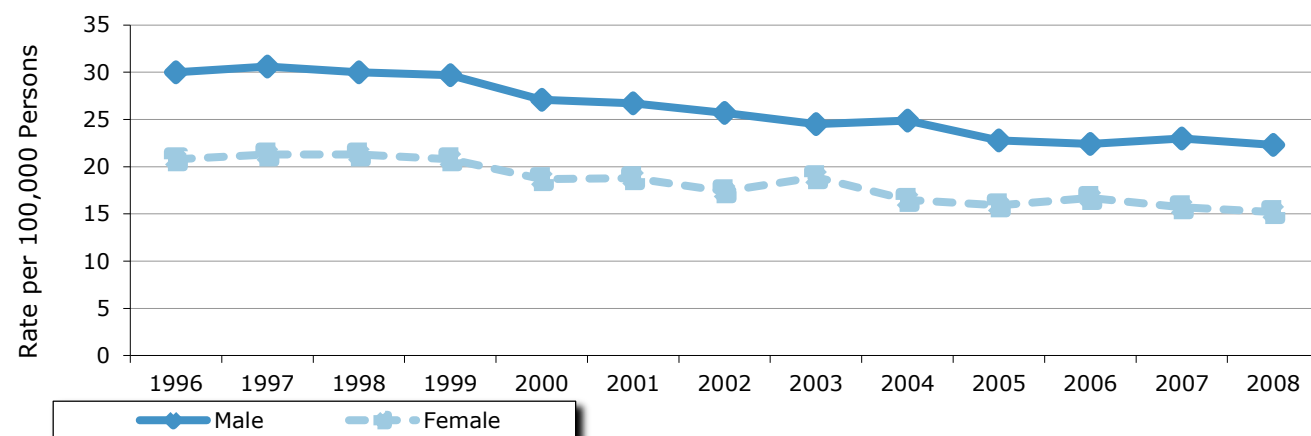


Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

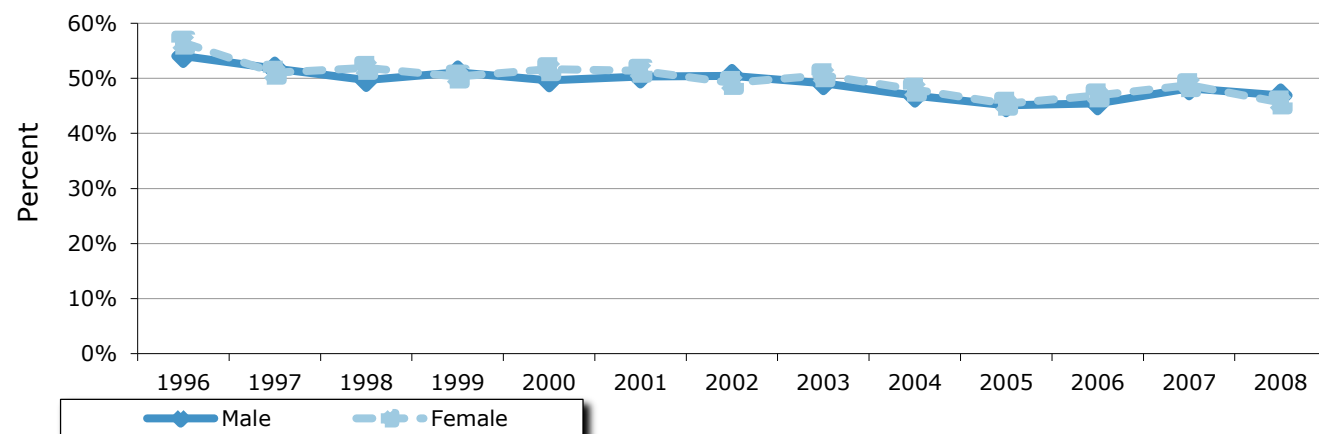
- Colon and rectum cancer incidence (Figure 2.5) and mortality (Figure 2.6) rates decreased among males and females in Ohio from 1996 to 2008.
- For both males and females, there has been a decrease in the percentage of colon and rectum cancer cases diagnosed at late stage during this time period (Figure 2.7).

Figure 2.5: Colon and Rectum Cancer: Trends in Average Annual Age-adjusted Incidence Rates per 100,000 Persons by Sex in Ohio, 1996-2008

Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

Figure 2.6: Colon and Rectum Cancer: Trends in Average Annual Age-adjusted Mortality Rates per 100,000 Persons by Sex in Ohio, 1996-2008

Source: Ohio Vital Statistics Program, Ohio Department of Health, 2010.

Figure 2.7: Colon and Rectum Cancer: Trends in the Proportion of Cases (%) Diagnosed at Late (Regional or Distant) Stage by Sex in Ohio, 1996-2008

Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

Colon and Rectum Cancer

Did You Know?

Researchers are studying whether genetic testing of stool samples can be useful in screening for colon and rectum cancer.

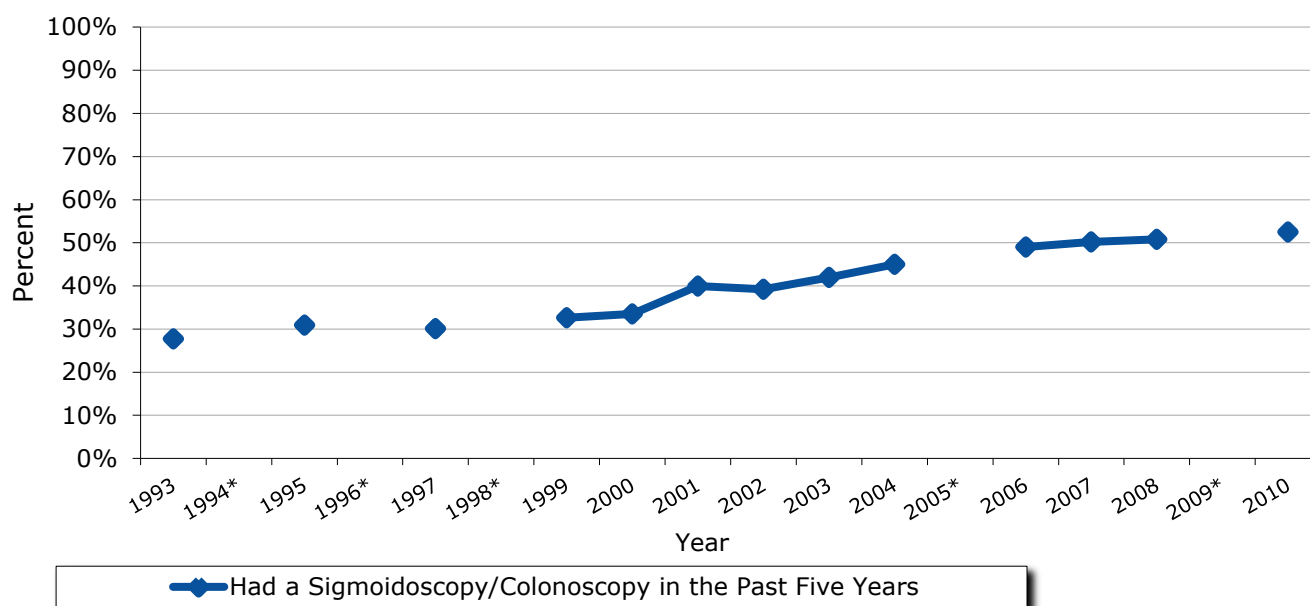
The lining of the colon constantly sheds cells into the stool.

Testing stool samples for genetic changes that occur in colon and rectum cancer cells may help doctors find evidence of cancer or precancerous growths. More studies are needed.

Sigmoidoscopy and colonoscopy are procedures that can detect premalignant and malignant lesions in the colon and rectum.

Figure 2.8 shows that the prevalence of having had a sigmoidoscopy/colonoscopy in the past five years has increased greatly among those 50 and older in Ohio from 1993 to 2010; although, the prevalence was only 51 percent in 2010.

Figure 2.8: Trend in Prevalence of Persons 50 and Older Who Reported Having Had a Sigmoidoscopy/Colonoscopy in the Past Five Years in Ohio, 1993-2010



Source: Ohio Behavioral Risk Factor Surveillance System, Ohio Department of Health, 2011.

The weighted percentages were adjusted to: 1) probability of selection, i.e., the number of different phone numbers that reach the household, the number of adults in each household, and the number of completed interviews in each cluster; and 2) demographic distribution, i.e., age and sex.

"Don't Know" and "Refused" were excluded from the denominator. This can cause an artificially high percentage.

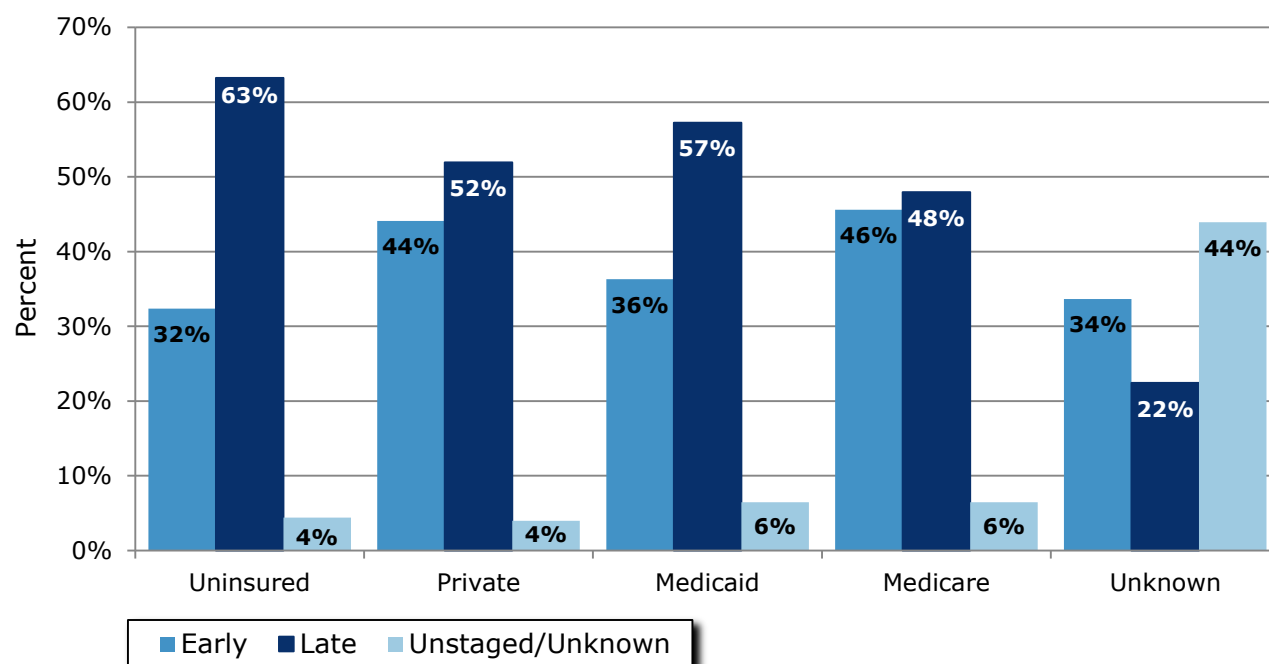
* The Ohio Behavioral Risk Factor Surveillance System Survey did not include colorectal screening questions in 1994, 1996, 1998, 2005 and 2009.

Table 2.1: Colon and Rectum Cancer: Survival Probability (%) by Stage at Diagnosis, Sex and Race in the U.S. (SEER), 2001-2007

Five-year Survival Probability (%)					
Stage	Overall	White Male	White Female	Black Male	Black Female
All Stages	64.3%	65.0%	64.5%	55.0%	56.9%
Localized	90.1%	90.6%	90.4%	83.2%	86.6%
Regional	69.2%	69.7%	69.7%	62.8%	64.0%
Distant	11.7%	12.1%	12.8%	7.8%	9.0%
Unstaged/ Unknown Stage	33.3%	30.3%	28.3%	35.1%	32.6%

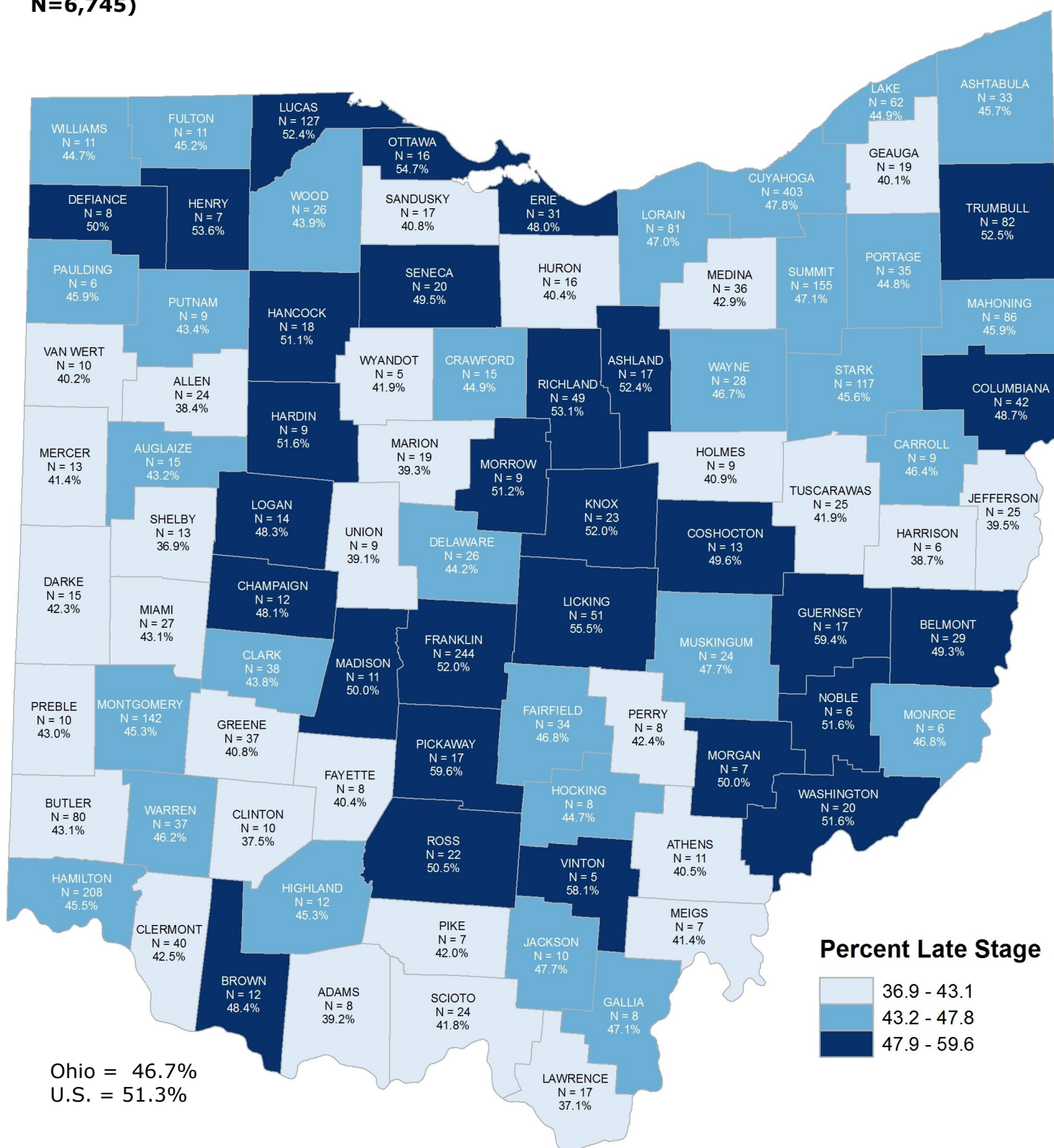
Source: Surveillance Epidemiology and End Results Program, *SEER Cancer Statistics Review, 1975-2008*, National Cancer Institute, 2011.

- Table 2.1 shows that the five-year survival probability for colon and rectum cancer decreases with advancing stage. For each stage, survival probability is greater among whites (both males and females), compared to blacks, with the exception of unstaged/unknown stage cancers.
- Figure 2.9 shows that the percentage of late stage colon and rectum cancers was greatest among those who were uninsured at diagnosis, followed by those with Medicaid, private insurance and Medicare as their primary insurance payer. Those with unknown insurance type had the highest percentage of unstaged/unknown stage colon and rectum cancers.

Figure 2.9: Colon and Rectum Cancer: Proportion of Cases (%) by Stage and Primary Payer (Insurance) at Diagnosis in Ohio, 2004-2008

Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

Figure 2.10: Colon and Rectum Cancer: Proportion of Cases (%) Diagnosed at Late (Regional or Distant) Stage by County of Residence, Ohio, 2004-2008 (Average Annual N=6,745)



Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

* Note: Each category represents approximately 33%, or 29, of the 88 Ohio counties.

Table 2.2: Colon and Rectum Cancer: Proportion of Cases (%) by County of Residence and Stage at Diagnosis in Ohio and the U.S. (SEER), 2004-2008

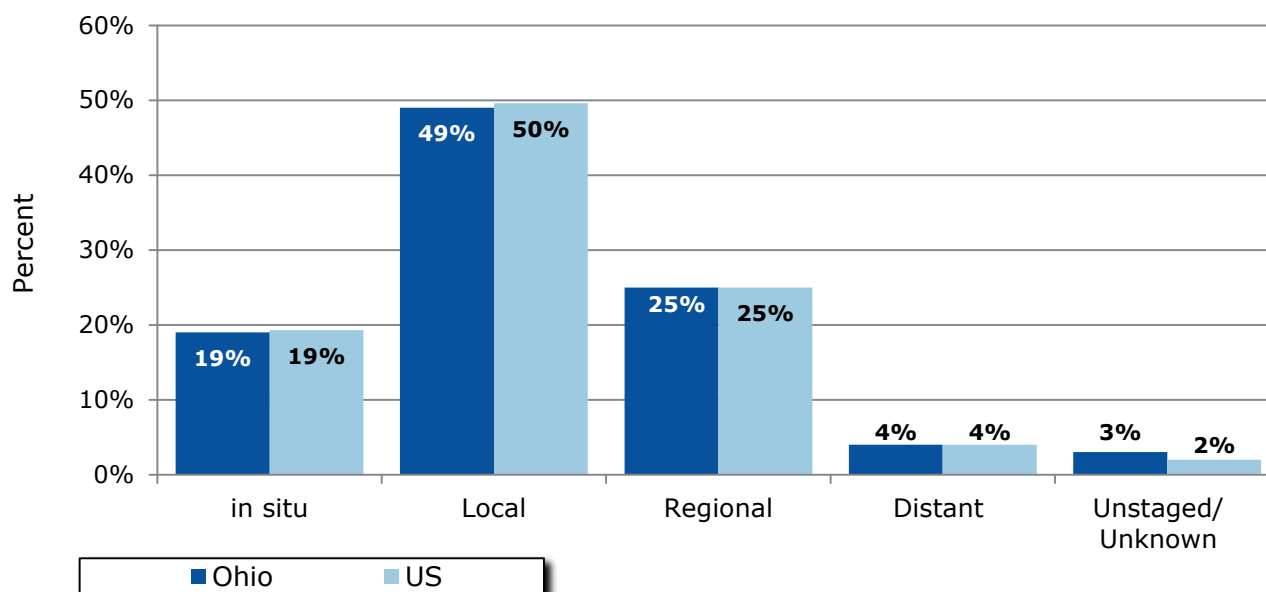
	Early Stage %	Late Stage %	Unstaged/ Unknown %	Average Annual Cases
Ohio	44%	47%	10%	6,745
SEER	43%	52%	5%	
Adams	43%	39%	18%	20
Allen	51%	38%	11%	62
Ashland	40%	52%	8%	33
Ashtabula	44%	46%	10%	73
Athens	50%	40%	10%	26
Auglaize	48%	43%	9%	35
Belmont	43%	49%	8%	58
Brown	42%	48%	10%	24
Butler	47%	43%	9%	185
Carroll	48%	46%	5%	19
Champaign	40%	48%	12%	26
Clark	46%	44%	10%	87
Clermont	48%	42%	9%	93
Clinton	52%	38%	11%	26
Columbiana	36%	49%	15%	85
Coshocton	45%	50%	5%	27
Crawford	45%	45%	10%	33
Cuyahoga	42%	48%	10%	843
Darke	42%	42%	15%	35
Defiance	45%	50%	5%	16
Delaware	47%	44%	9%	58
Erie	45%	48%	7%	65
Fairfield	42%	47%	11%	72
Fayette	39%	40%	20%	19
Franklin	40%	52%	8%	469
Fulton	47%	45%	8%	25
Gallia	47%	47%	6%	17
Geauga	48%	40%	12%	48
Greene	49%	41%	11%	90
Guernsey	35%	59%	6%	29
Hamilton	45%	45%	10%	457
Hancock	42%	51%	7%	36
Hardin	37%	52%	11%	18
Harrison	55%	39%	7%	15
Henry	35%	54%	12%	14
Highland	45%	45%	10%	27
Hocking	41%	45%	14%	19
Holmes	44%	41%	15%	22
Huron	51%	40%	9%	40
Jackson	40%	48%	12%	21
Jefferson	50%	40%	10%	62
Knox	40%	52%	8%	44
Lake	40%	45%	15%	138
Lawrence	52%	37%	11%	46
Licking	36%	55%	9%	92
Logan	45%	48%	6%	29
Lorain	44%	47%	9%	172
Lucas	41%	52%	6%	242
Madison	42%	50%	8%	21
Mahoning	39%	46%	15%	187
Marion	51%	39%	10%	49
Medina	49%	43%	8%	83
Meigs	46%	41%	13%	17
Mercer	46%	41%	12%	32
Miami	50%	43%	7%	64
Monroe	52%	47%	2%	12
Montgomery	45%	45%	9%	314
Morgan	42%	50%	8%	13
Morrow	39%	51%	10%	17
Muskingum	44%	48%	8%	51
Noble	35%	52%	13%	12
Ottawa	39%	55%	7%	30
Paulding	43%	46%	11%	12
Perry	51%	42%	7%	20
Pickaway	33%	60%	8%	29
Pike	47%	42%	11%	16
Portage	48%	45%	7%	77
Preble	49%	43%	8%	24
Putnam	46%	43%	10%	21
Richland	40%	53%	7%	93
Ross	37%	50%	13%	44
Sandusky	52%	41%	8%	43
Scioto	48%	42%	10%	57
Seneca	41%	50%	9%	41
Shelby	50%	37%	13%	36
Stark	44%	46%	10%	256
Summit	44%	47%	9%	328
Trumbull	38%	52%	10%	157
Tuscarawas	46%	42%	12%	60
Union	50%	39%	11%	22
Van Wert	45%	40%	15%	25
Vinton	37%	58%	5%	9
Warren	44%	46%	10%	81
Washington	46%	52%	3%	38
Wayne	43%	47%	10%	60
Williams	49%	45%	7%	25
Wood	47%	44%	9%	60
Wyandot	45%	42%	13%	12

Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011; and the Surveillance Epidemiology and End Results Program, SEER*Stat Database: Incidence, Nov 2010 submission, National Cancer Institute, 2011.

Female Breast Cancer

Figure 3.1 shows that there were only very slight differences in female breast cancer stage at diagnosis in Ohio, compared to the United States.

Figure 3.1: Female Breast Cancer: Proportion of Cases (%) by Stage at Diagnosis in Ohio, with Comparison to the U.S. (SEER), 2004-2008 (Average Annual N=10,040)



Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011; and the Surveillance Epidemiology and End Results Program, SEER*Stat Database: Incidence, Nov 2010 submission, National Cancer Institute, 2011.

Figure 3.2 shows that, compared to whites, in Ohio:

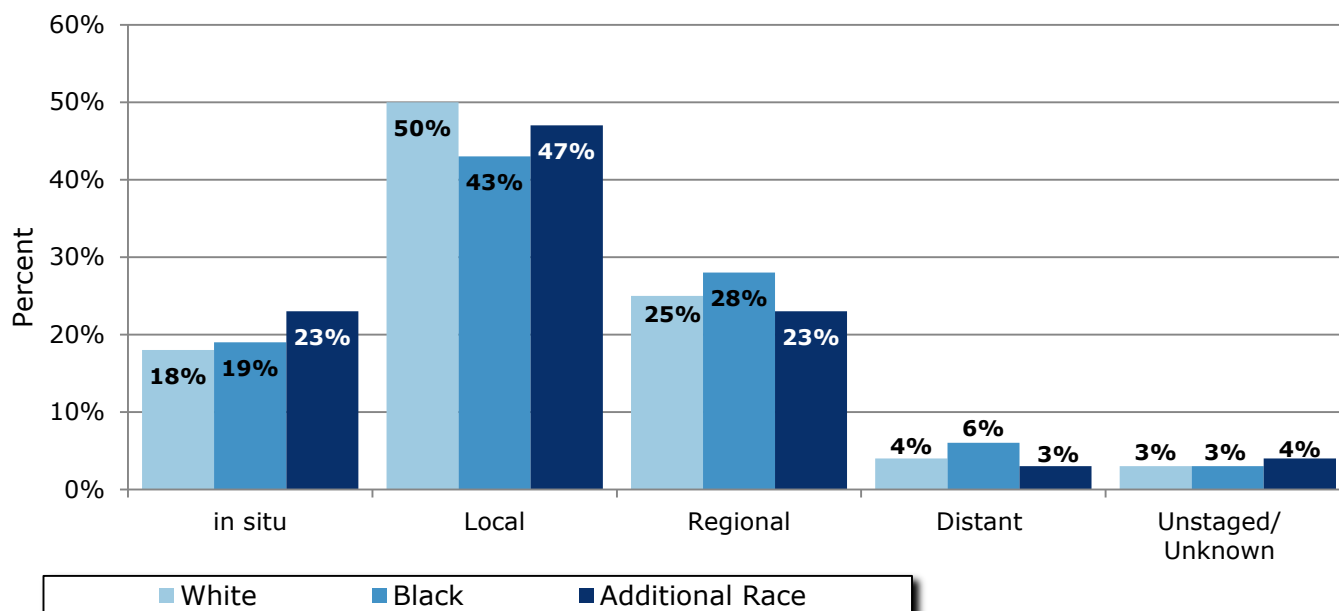
- There were similar percentages of female breast cancers among blacks diagnosed at *in situ* and distant stages and with an unstaged/unknown stage, a lower percentage diagnosed at the localized stage, and a higher percentage diagnosed at the regional stage.
- There were higher percentages of female breast cancers among additional races diagnosed at the *in situ* stage, and lower percentages of female breast cancers diagnosed at the localized stage. Percentages for regional, distant and unstaged/unknown stage cancers were similar.

Figure 3.3 shows that, in Ohio:

- Percentages of female breast cancers diagnosed at the localized stage increased with advancing age group, while percentages diagnosed at regional stage decreased with increasing age group. No clear trend by age group was apparent for breast cancers diagnosed at *in situ* and distant stages and for those with an unstaged/unknown stage.

Female Breast Cancer

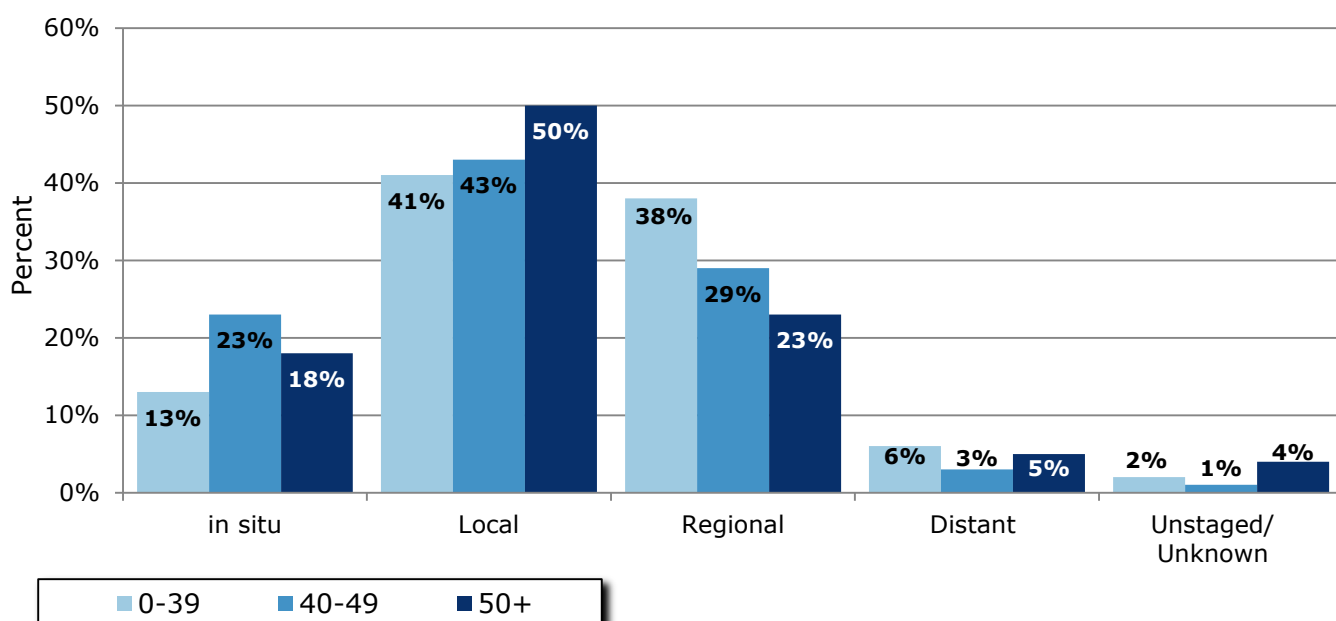
Figure 3.2: Female Breast Cancer: Proportion of Cases (%) by Stage at Diagnosis and Race¹ in Ohio, 2004-2008 (Average Annual N=10,040)



Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

¹Additional Race includes Asian/Pacific Islander, American Indian/Alaskan Native, Other and Unknown races.

Figure 3.3: Female Breast Cancer: Proportion of Cases (%) by Stage at Diagnosis and Age Group in Ohio, 2004-2008 (Average Annual N=10,040)

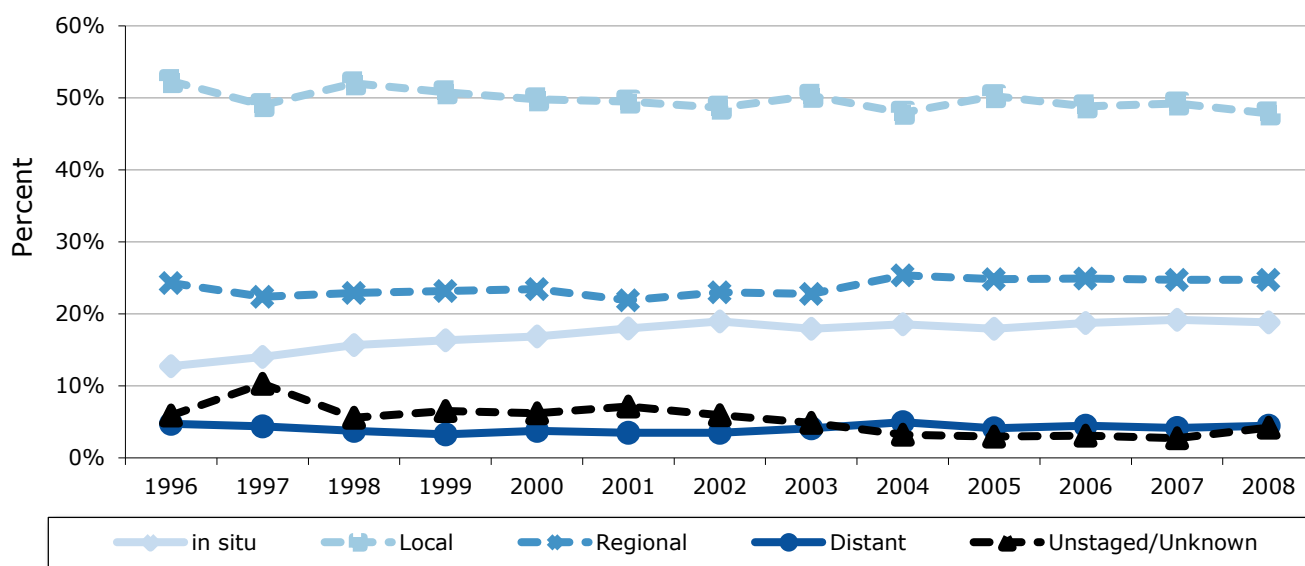


Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

Female Breast Cancer

Figure 3.4 shows that the proportion of female breast cancer cases diagnosed at *in situ* stage increased from 1996 to 2008, while the proportion diagnosed at localized stage slightly decreased over this time period. The percentages diagnosed at regional and distant stages remained relatively constant. Some of the changes over time may be explained by changes in the proportion of female breast cancer cases reported unstaged/unknown stage.

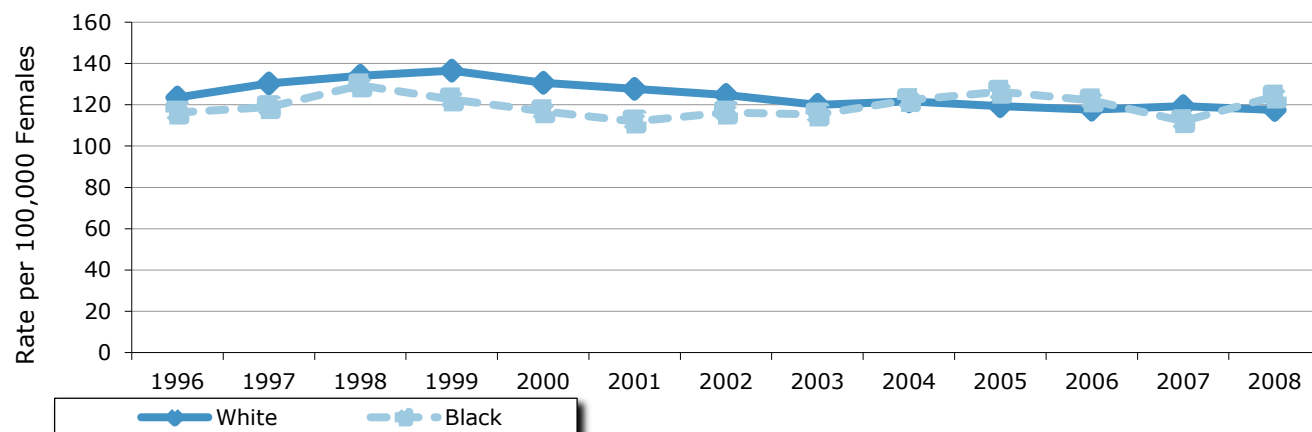
Figure 3.4: Female Breast Cancer: Trends in the Proportion of Cases (%) by Stage at Diagnosis in Ohio, 1996-2008



Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

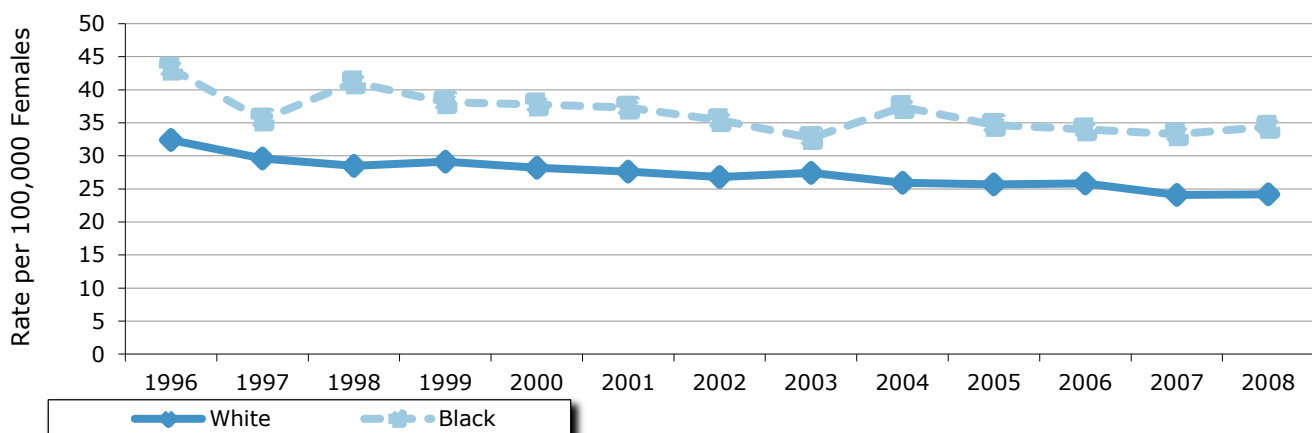
- Female breast cancer incidence rates slightly decreased among whites and was variable among blacks in Ohio from 1996 to 2008 (Figure 3.5), while mortality rates decreased among whites and blacks in Ohio during this time period (Figure 3.6).
- From 1996 to 2008, there was an increase in the percentage of female breast cancer cases diagnosed at late stage in Ohio among blacks, while the percentage for whites was more variable (Figure 3.7).

Figure 3.5: Female Breast Cancer: Trends in Average Annual Age-adjusted Incidence Rates per 100,000 Females by Race in Ohio, 1996-2008



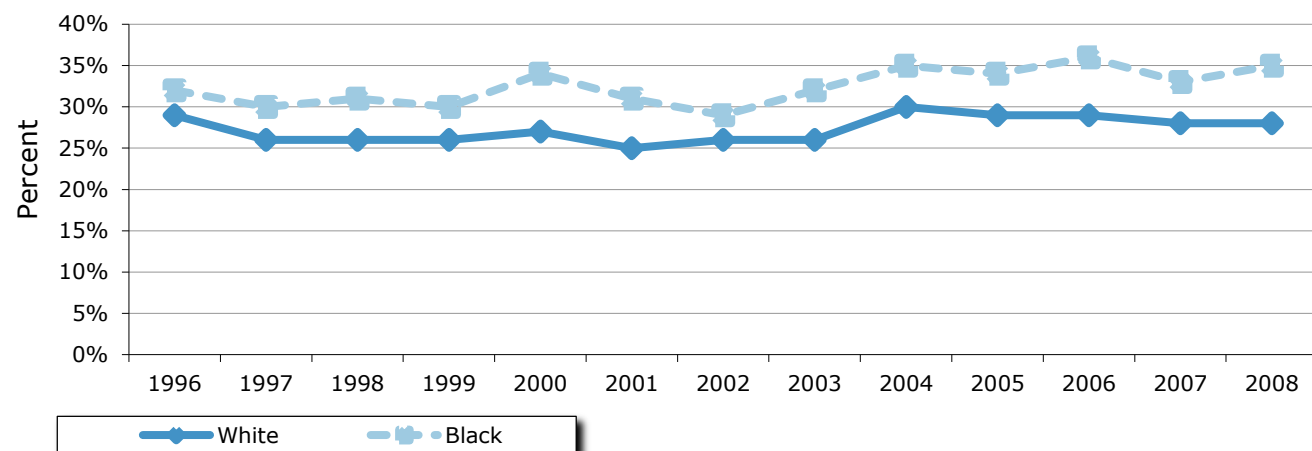
Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

Figure 3.6: Female Breast Cancer: Trends in Average Annual Age-adjusted Mortality Rates per 100,000 Females by Race in Ohio, 1996-2008



Source: Ohio Vital Statistics Program, Ohio Department of Health, 2010.

Figure 3.7: Female Breast Cancer: Trends in the Proportion of Cases (%) Diagnosed at Late (Regional or Distant) Stage by Race in Ohio, 1996-2008



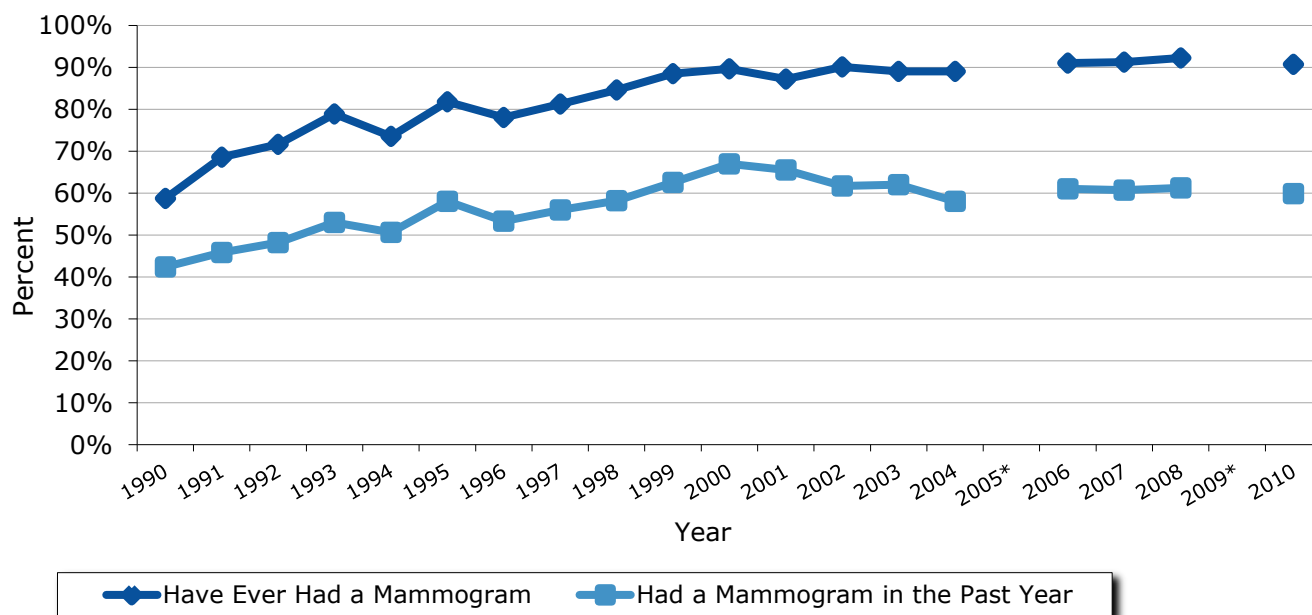
Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

Female Breast Cancer

Mammography is a procedure that can detect premalignant and malignant lesions in the breast.

- Figure 3.8 shows that the prevalence of ever having had a mammogram or having a mammogram in the past year increased greatly among women 40 and older in Ohio from 1990 to 2010.
- Table 3.1 shows that five-year survival probability of female breast cancer decreases with advancing stages. For each stage, survival probability is greater among whites, compared to blacks.

Figure 3.8: Trend in Prevalence of Women 40 and Older Who Reported Having Had a Mammogram Ever or in the Past Year in Ohio, 1990-2010



Source: Ohio Behavioral Risk Factor Surveillance System, Ohio Department of Health, 2011.

The weighted percentages were adjusted to: 1) probability of selection, *i.e.*, the number of different phone numbers that reach the household, the number of adults in each household, and the number of completed interviews in each cluster; and 2) demographic distribution, *i.e.*, age and sex.

"Don't Know" and "Refused" were excluded from the denominator. This can cause an artificially high percentage.

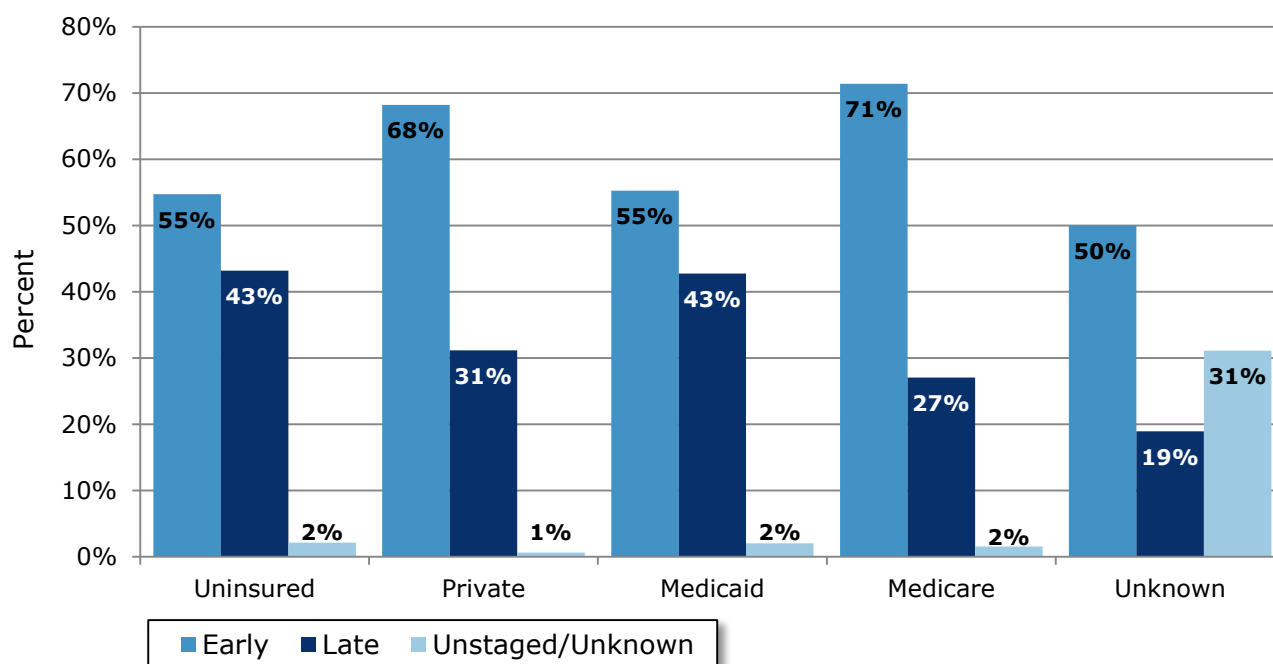
*The Ohio Behavioral Risk Factor Surveillance System Survey did not include mammography screening questions in 2005 and 2009.

Table 3.1: Female Breast Cancer: Survival Probability (%) by Stage at Diagnosis and Race in the U.S. (SEER), 2001-2007

Five-year Survival Probability (%)			
Stage	Overall	White Female	Black Female
All Stages	89.1%	90.4%	77.0%
Localized	98.6%	99.3%	92.6%
Regional	83.8%	85.2%	72.1%
Distant	23.4%	24.9%	15.0%
Unstaged/ Unknown Stage	52.4%	52.0%	45.2%

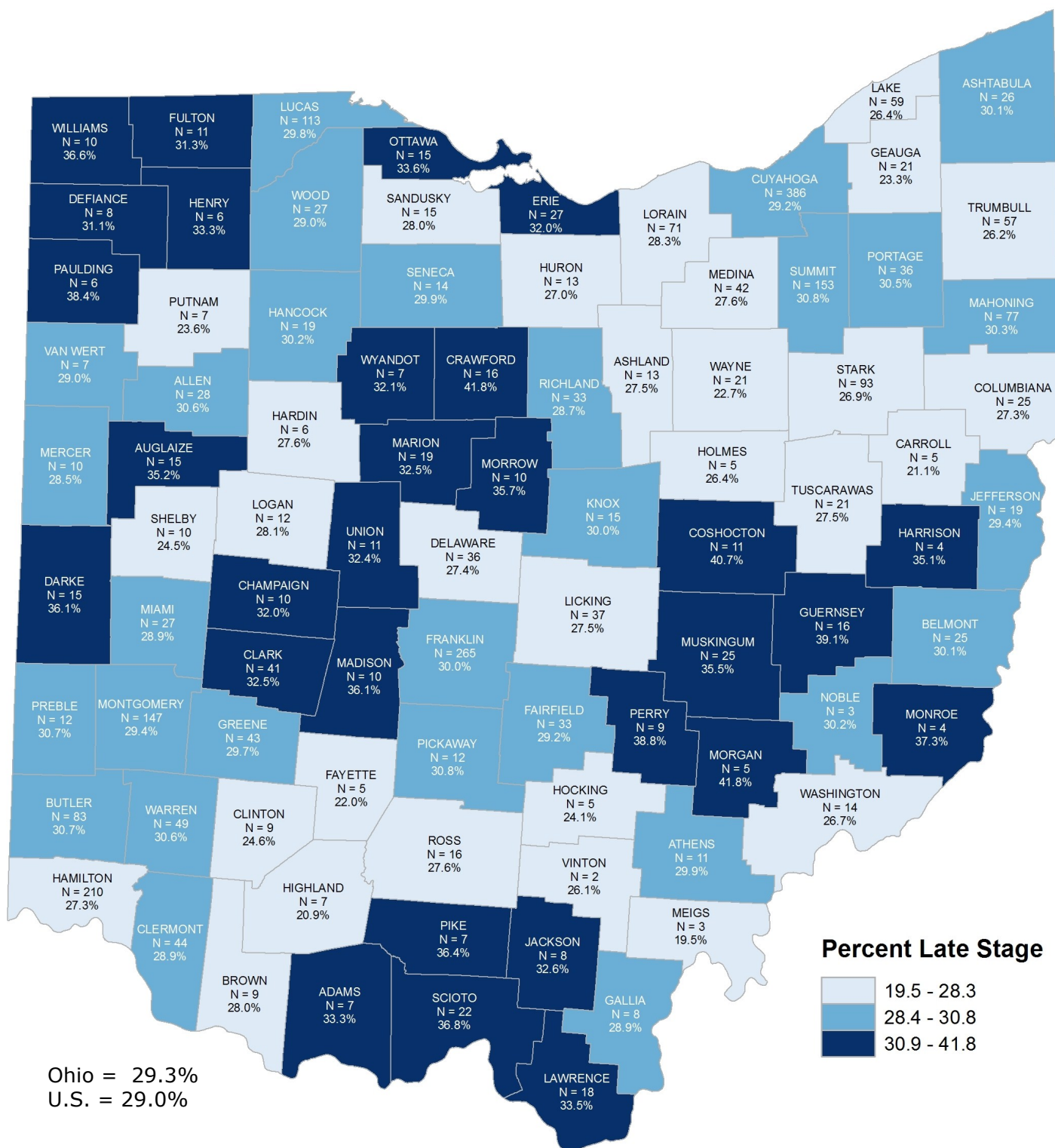
Source: Surveillance Epidemiology and End Results Program, *SEER Cancer Statistics Review, 1975-2008*, National Cancer Institute, 2011.

Figure 3.9 shows that the percentage of late stage female breast cancers was greatest among those who were uninsured and those with Medicaid as their primary insurance payer at diagnosis, followed by those with private insurance and Medicare as their primary payer. Those with unknown insurance type had the highest percentage of unstaged/unknown stage breast cancer.

Figure 3.9: Female Breast Cancer: Proportion of Cases (%) by Stage and Primary Payer (Insurance) at Diagnosis in Ohio, 2004-2008

Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

Figure 3.10: Female Breast Cancer: Proportion of Cases (%) Diagnosed at Late (Regional or Distant) Stage by County of Residence, Ohio, 2004-2008 (Average Annual N=10,040)



Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

* Note: Each category represents approximately 33%, or 29, of the 88 Ohio counties.

Table 3.2: Female Breast Cancer: Proportion of Cases (%) by County of Residence and Stage at Diagnosis in Ohio and the U.S. (SEER), 2004-2008

	Early Stage %	Late Stage %	Unstaged/ Unknown %	Average Annual Cases		Early Stage %	Late Stage %	Unstaged/ Unknown %	Average Annual Cases
Ohio	67%	29%	3%	10,040	Lawrence	62%	33%	5%	53
SEER	69%	29%	2%		Licking	69%	28%	4%	136
Adams	64%	33%	3%	21	Logan	68%	28%	4%	44
Allen	66%	31%	3%	92	Lorain	69%	28%	3%	250
Ashland	70%	28%	3%	46	Lucas	68%	30%	2%	381
Ashtabula	64%	30%	6%	88	Madison	60%	36%	4%	29
Athens	62%	30%	8%	35	Mahoning	65%	30%	5%	252
Auglaize	62%	35%	2%	43	Marion	65%	33%	3%	57
Belmont	67%	30%	3%	82	Medina	70%	28%	3%	154
Brown	69%	28%	3%	31	Meigs	78%	20%	2%	16
Butler	66%	31%	3%	269	Mercer	65%	28%	6%	34
Carroll	77%	21%	2%	23	Miami	68%	29%	3%	92
Champaign	65%	32%	3%	30	Monroe	58%	37%	5%	12
Clark	63%	32%	5%	125	Montgomery	68%	29%	3%	500
Clermont	69%	29%	2%	151	Morgan	53%	42%	5%	11
Clinton	74%	25%	1%	37	Morrow	54%	36%	11%	28
Columbiana	66%	27%	6%	92	Muskingum	62%	36%	2%	70
Coshocton	57%	41%	2%	27	Noble	67%	30%	2%	9
Crawford	53%	42%	5%	38	Ottawa	64%	34%	3%	43
Cuyahoga	68%	29%	3%	1324	Paulding	51%	38%	11%	15
Darke	56%	36%	8%	42	Perry	57%	39%	4%	23
Defiance	64%	31%	4%	27	Pickaway	66%	31%	3%	40
Delaware	70%	27%	3%	133	Pike	61%	36%	3%	20
Erie	66%	32%	2%	83	Portage	67%	31%	3%	117
Fairfield	66%	29%	4%	114	Preble	64%	31%	5%	38
Fayette	74%	22%	4%	22	Putnam	76%	24%	1%	30
Franklin	67%	30%	3%	883	Richland	69%	29%	2%	116
Fulton	66%	31%	2%	35	Ross	71%	28%	2%	57
Gallia	69%	29%	2%	27	Sandusky	69%	28%	3%	54
Geauga	73%	23%	3%	89	Scioto	61%	37%	2%	59
Greene	66%	30%	4%	146	Seneca	67%	30%	3%	48
Guernsey	59%	39%	1%	41	Shelby	67%	25%	8%	42
Hamilton	70%	27%	3%	770	Stark	70%	27%	3%	344
Hancock	67%	30%	3%	64	Summit	67%	31%	3%	495
Hardin	69%	28%	4%	21	Trumbull	71%	26%	3%	218
Harrison	56%	35%	9%	11	Tuscarawas	69%	27%	3%	76
Henry	64%	33%	2%	18	Union	60%	32%	8%	35
Highland	77%	21%	2%	32	Van Wert	67%	29%	4%	25
Hocking	71%	24%	5%	22	Vinton	67%	26%	7%	9
Holmes	58%	26%	15%	18	Warren	67%	31%	2%	160
Huron	69%	27%	4%	48	Washington	69%	27%	4%	53
Jackson	65%	33%	2%	26	Wayne	73%	23%	4%	91
Jefferson	68%	29%	2%	65	Williams	62%	37%	1%	28
Knox	64%	30%	6%	49	Wood	67%	29%	4%	92
Lake	71%	26%	2%	223	Wyandot	65%	32%	3%	21

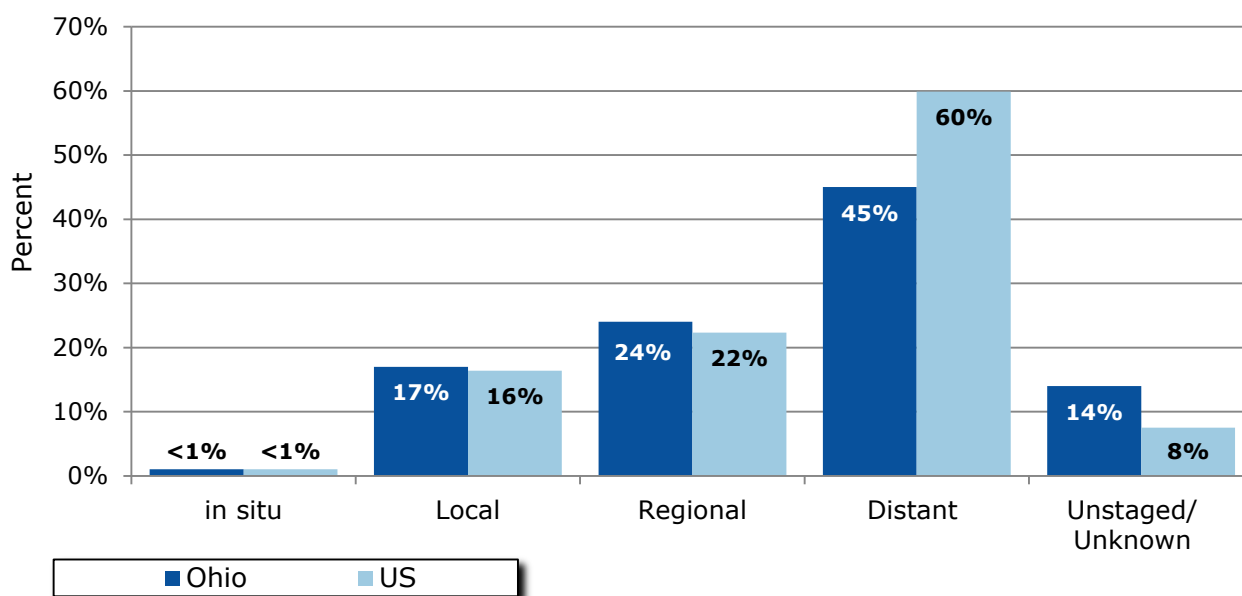
Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011; and the Surveillance Epidemiology and End Results Program, SEER*Stat Database: Incidence, Nov 2010 submission, National Cancer Institute, 2011.

Lung and Bronchus Cancer

Figure 4.1 shows that, in Ohio, compared to the United States:

- A similar percentage of lung and bronchus cancer cases were diagnosed at *in situ*, localized and regional stages.
- A lower percentage of lung and bronchus cancers were diagnosed at distant stage, and this may be partly due to the higher percentage reported with an unstaged/unknown stage.

Figure 4.1: Lung and Bronchus Cancer: Proportion of Cases (%) by Stage at Diagnosis in Ohio, with Comparison to the U.S. (SEER), 2004-2008 (Average Annual N=9,402)



Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011; and the Surveillance Epidemiology and End Results Program, SEER*Stat Database: Incidence, Nov 2010 submission, National Cancer Institute, 2011.

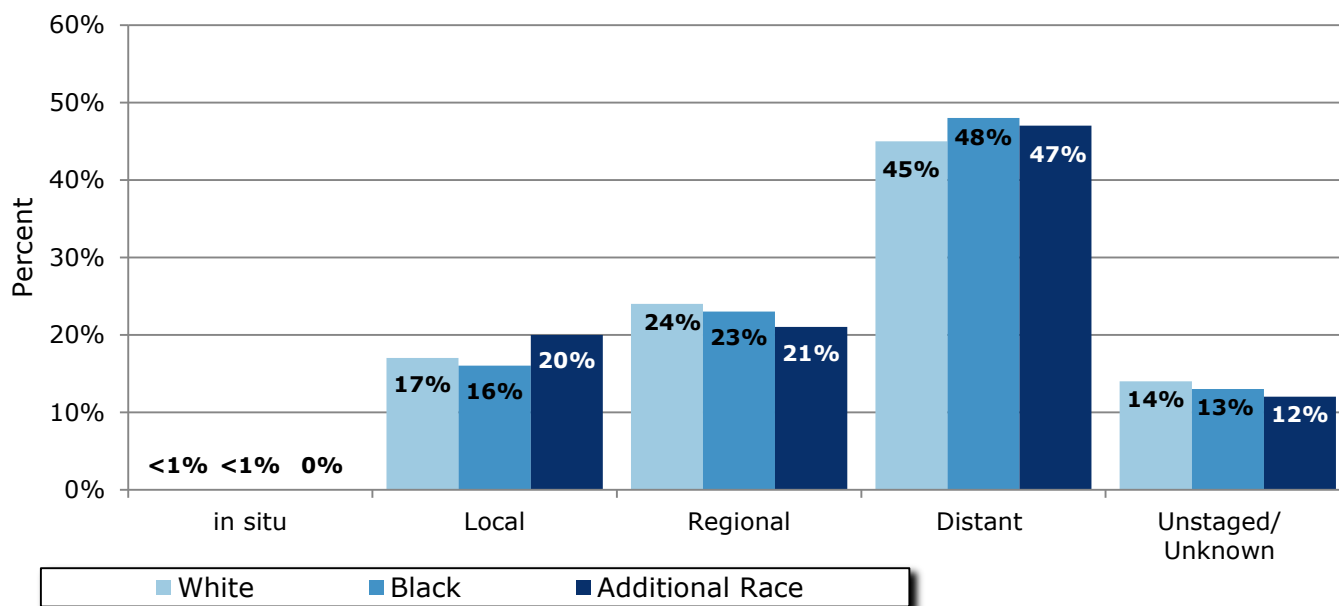
Figure 4.2 shows that, compared to whites, in Ohio:

- A higher percentage of lung and bronchus cancers among blacks were diagnosed at distant stage, and a similar percentage of blacks were diagnosed at other stages.
- There were higher percentages of lung and bronchus cancers among additional races diagnosed at the localized stage, while there were lower percentages of additional races diagnosed at the regional stage.

Figure 4.3 shows that, in Ohio, percentages of lung and bronchus cancers diagnosed at localized stage and unstaged/unknown stage increased with increasing age group, while percentages diagnosed at distant stage decreased with increasing age group.

Lung and Bronchus Cancer

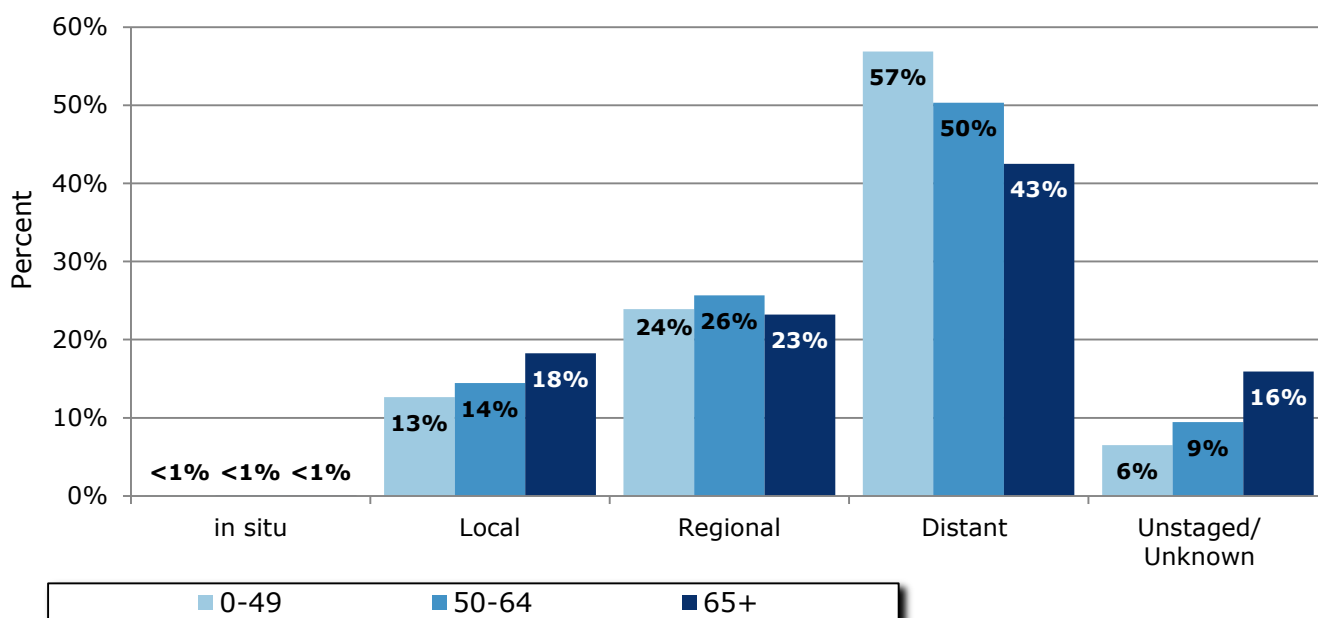
Figure 4.2: Lung and Bronchus Cancer: Proportion of Cases (%) by Stage at Diagnosis and Race¹ in Ohio, 2004-2008 (Average Annual N=9,402)



Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

¹Additional Race includes Asian/Pacific Islander, American Indian/Alaskan Native, Other and Unknown races.

Figure 4.3: Lung and Bronchus Cancer: Proportion of Cases (%) by Stage at Diagnosis and Age Group in Ohio, 2004-2008 (Average Annual N=9,402)

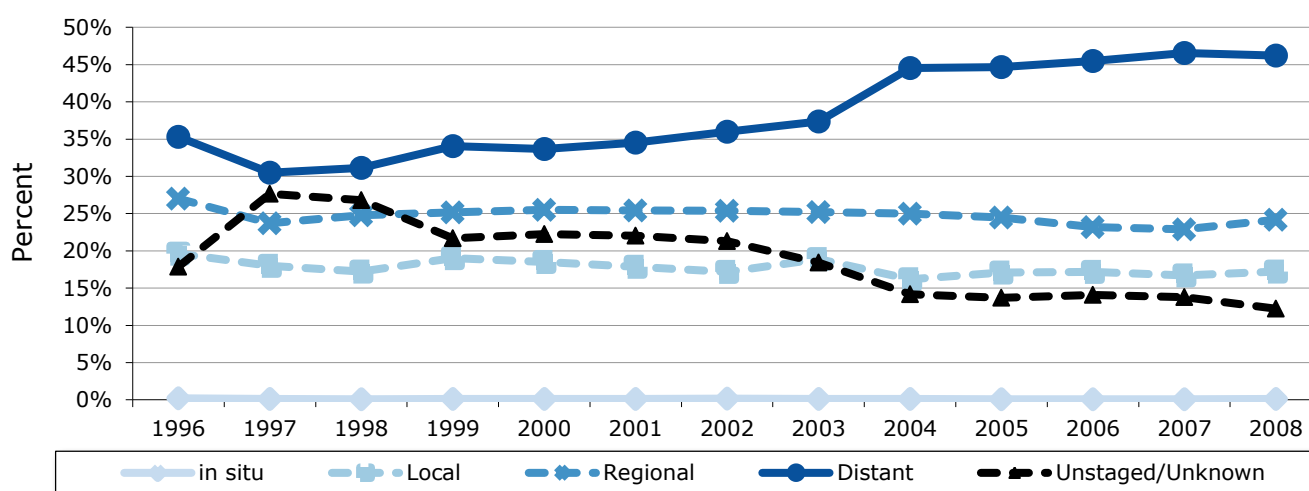


Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

Lung and Bronchus Cancer

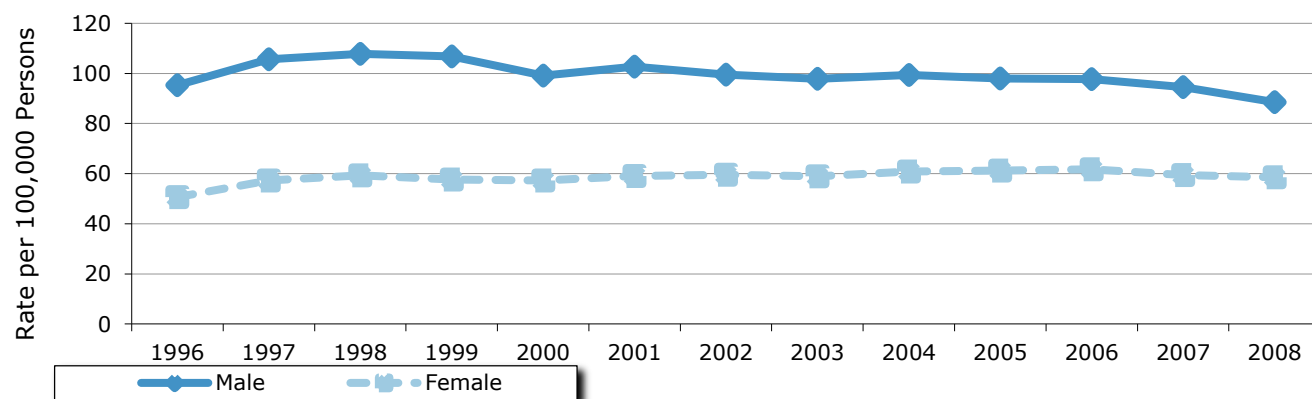
Figure 4.4 shows that the proportion of lung and bronchus cancer cases diagnosed at the distant stage increased from 1996 to 2008, while the proportion diagnosed at localized and regional stages was relatively stable over this time period. Some of the changes over time may be explained by changes in the proportion of lung and bronchus cancer cases reported unstaged/unknown stage, which increased from 1996 to 1997 then decreased considerably over this time period.

Figure 4.4: Lung and Bronchus Cancer: Trends in the Proportion of Cases (%) by Stage at Diagnosis in Ohio, 1996-2008

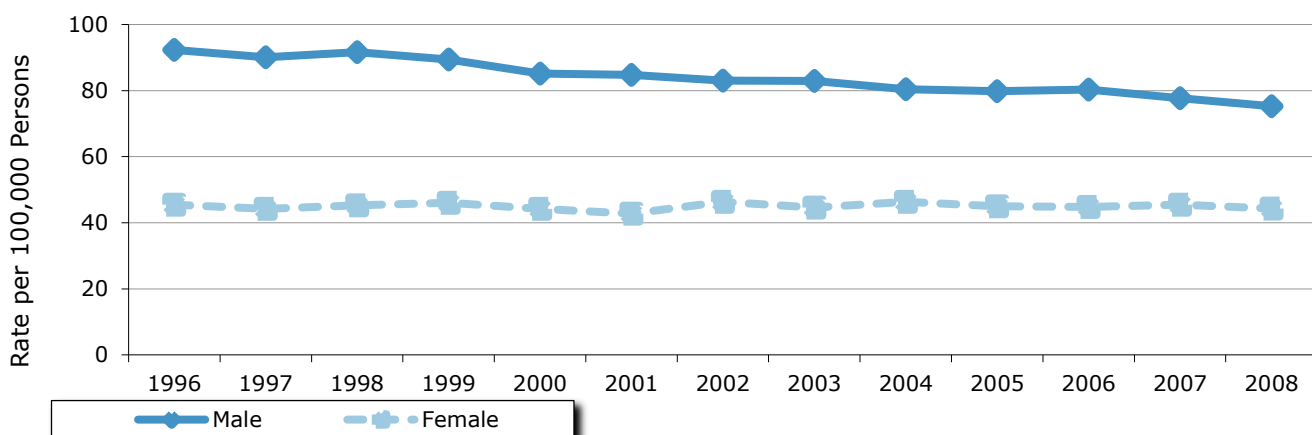


Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

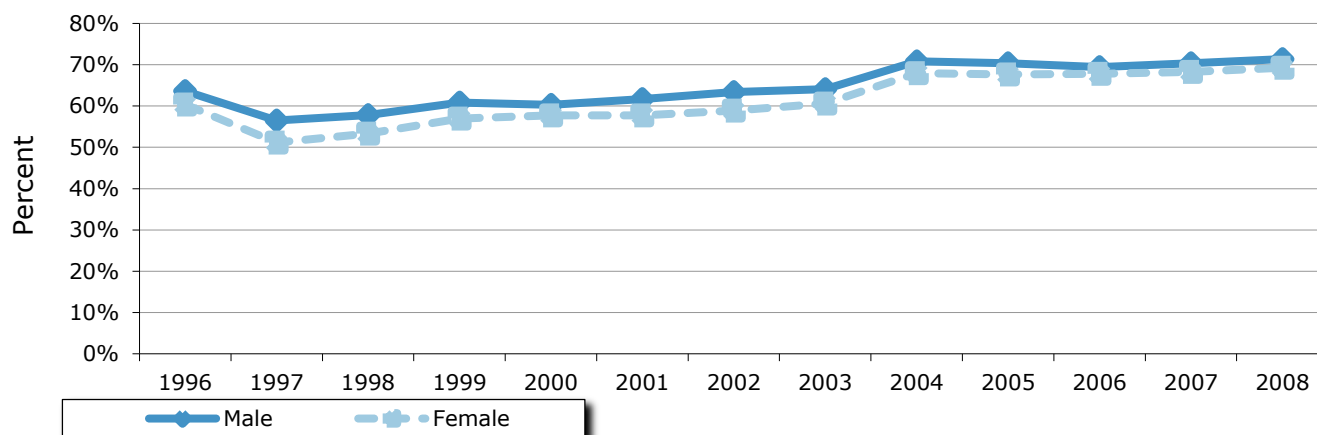
- Lung and bronchus cancer incidence (Figure 4.5) and mortality (Figure 4.6) rates slightly decreased among males in Ohio from 1996 to 2008, while the rates for females remained relatively constant over this time period.
- For both males and females, there was an increase in the percentage of lung and bronchus cancer cases diagnosed at late stage from 1996 to 2008 (Figure 4.7).

Figure 4.5: Lung and Bronchus Cancer: Trends in Average Annual Age-adjusted Incidence Rates per 100,000 Persons by Sex in Ohio, 1996-2008

Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

Figure 4.6: Lung and Bronchus Cancer: Trends in Average Annual Age-adjusted Mortality Rates per 100,000 Persons by Sex in Ohio, 1996-2008

Source: Ohio Vital Statistics Program, Ohio Department of Health, 2010.

Figure 4.7: Lung and Bronchus Cancer: Trends in the Proportion of Cases (%) Diagnosed at Late (Regional or Distant) Stage by Sex in Ohio, 1996-2008

Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

Lung and Bronchus Cancer

Did You Know?

Researchers are trying to develop effective early detection methods for lung and bronchus cancer. However, at present, there is no universally accepted screening test. Several lung and bronchus cancer screening methods being studied include sputum tests, chest X-rays and helical computed tomography (CT) scans.

- Table 4.1 shows that five-year survival probability decreases with advancing stage. For each stage, survival probability is greater among females, compared to males, for both whites and blacks.
- Small cell lung and bronchus cancer is an aggressive cancer in which the cells are small or oval-shaped. Non-small cell lung and bronchus cancer is more common and slightly less aggressive. For each stage (except unstaged/unknown stage) and for each race/sex group, survival probability is greater among those diagnosed with non-small cell lung cancer (Table 4.2).

Table 4.1: Lung and Bronchus Cancer: Survival Probability (%) by Stage at Diagnosis, Sex and Race in the U.S. (SEER), 2001-2007

Five-year Survival Probability (%)					
Stage	Overall	White Male	White Female	Black Male	Black Female
All Stages	15.1%	13.7%	18.3%	11.6%	14.5%
Localized	52.0%	48.0%	57.0%	39.5%	48.3%
Regional	24.2%	22.0%	26.8%	21.2%	24.0%
Distant	3.6%	2.9%	4.1%	3.3%	3.6%
Unstaged/ Unknown Stage	8.1%	6.5%	8.9%	9.8%	11.0%

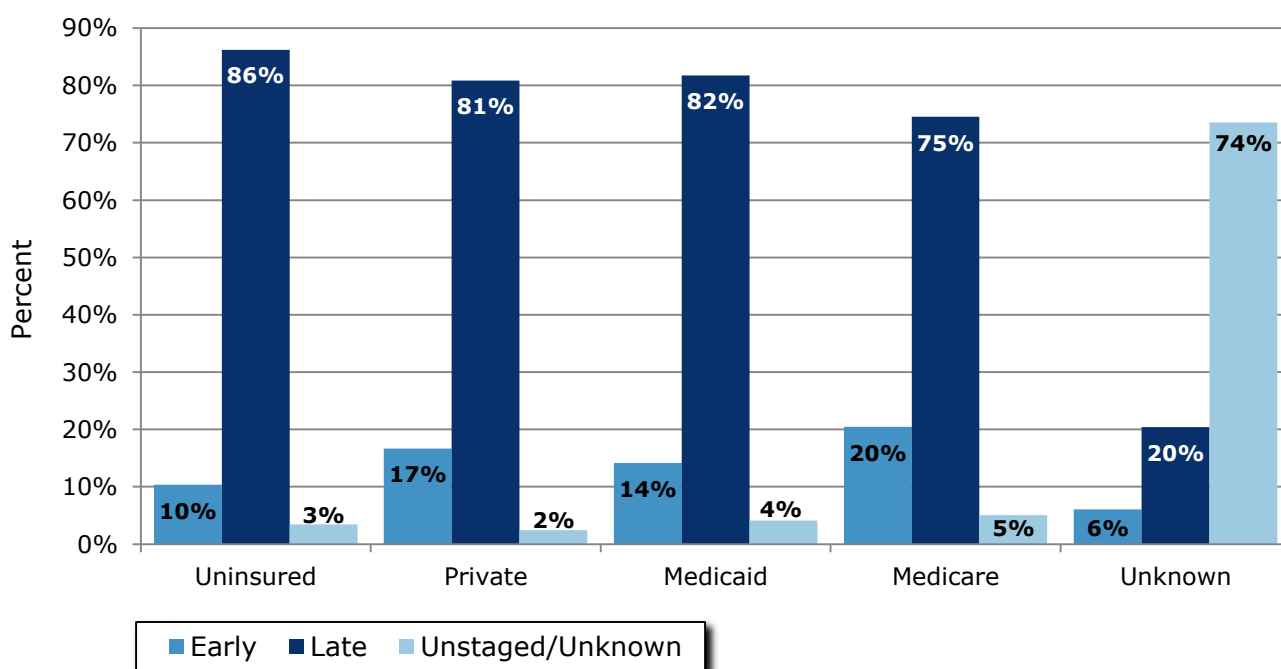
Source: Surveillance Epidemiology and End Results, SEER*Stat Database: Incidence, Nov 2010 submission, National Cancer Institute, 2011.

Table 4.2: Lung and Bronchus Cancer: Survival Probability (%) by Type and Stage at Diagnosis, Sex and Race in the U.S. (SEER), 2001-2007

Five-year Survival Probability (%)										
	Small Cell Cancer					Non-small Cell Cancer				
Stage	Overall	White Male	White Female	Black Male	Black Female	Overall	White Male	White Female	Black Male	Black Female
All Stages	6.1%	4.7%	7.4%	5.0%	5.6%	17.1%	15.1%	20.3%	12.3%	15.7%
Localized	21.5%	22.1%	23.3%	15.8% ^a	14.6% ^a	53.4%	49.3%	58.7%	40.4%	50.1%
Regional	13.5%	13.6%	15.4%	12.3%	12.6%	25.8%	23.7%	28.9%	21.9%	25.5%
Distant	2.7%	2.6%	3.4%	2.7%	2.4%	3.8%	3.1%	4.3%	3.4%	3.8%
Unstaged/ Unknown Stage	8.5%	8.6%	11.0%	7.4%	7.0%	8.1%	6.6%	8.7%	10.1%	11.3%

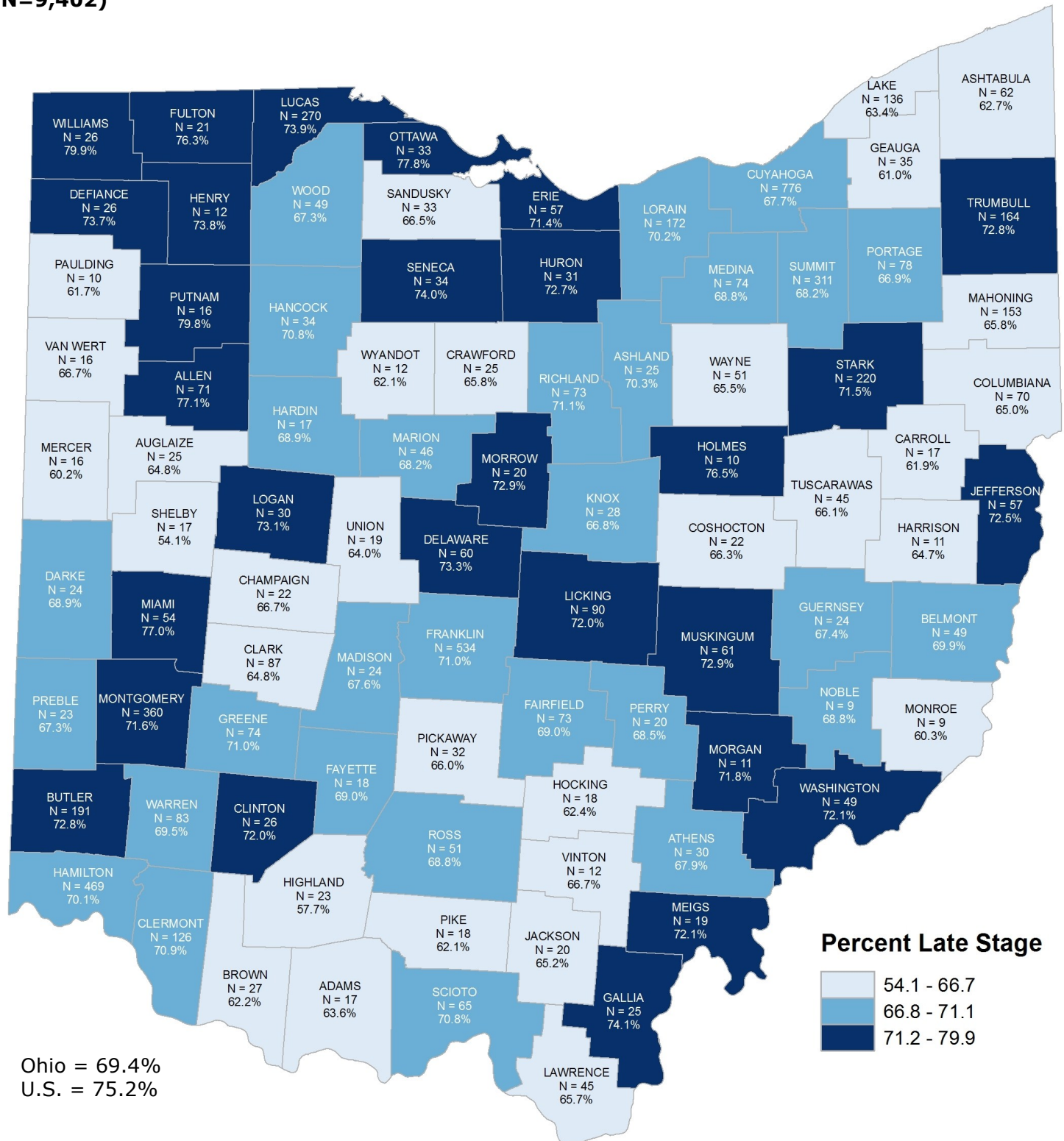
Source: Surveillance Epidemiology and End Results Program, *SEER Cancer Statistics Review, 1975-2008*, National Cancer Institute, 2011.

Figure 4.8 shows that the percentage of lung and bronchus cancers diagnosed at late stage was highest among those who were uninsured and was lowest among those with Medicare as their primary insurance payer at diagnosis. Those with unknown insurance had the highest percentage of unstaged/unknown stage lung and bronchus cancer.

Figure 4.8: Lung and Bronchus Cancer: Proportion of Cases by Stage and Primary Payer (Insurance) at Diagnosis in Ohio, 2004-2008

Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

Figure 4.9: Lung and Bronchus Cancer: Proportion of Cases (%) Diagnosed at Late (Regional or Distant) Stage by County of Residence, Ohio, 2004-2008 (Average Annual N=9,402)



Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

* Note: Each category represents approximately 33%, or 29, of the 88 Ohio counties.

Table 4.3: Lung and Bronchus Cancer: Proportion of Cases (%) by County of Residence and Stage at Diagnosis in Ohio and the U.S. (SEER), 2004-2008

	Early Stage %	Late Stage %	Unstaged/ Unknown %	Average Annual Cases
Ohio	17%	69%	14%	9,402
SEER	17%	76%	8%	
Adams	17%	64%	19%	26
Allen	14%	77%	9%	92
Ashland	12%	70%	18%	35
Ashtabula	15%	63%	22%	99
Athens	15%	68%	17%	44
Auglaize	22%	65%	13%	39
Belmont	20%	70%	11%	70
Brown	16%	62%	22%	43
Butler	15%	73%	12%	262
Carroll	20%	62%	18%	27
Champaign	9%	67%	24%	33
Clark	17%	65%	18%	134
Clermont	21%	71%	8%	178
Clinton	15%	72%	13%	36
Columbiana	14%	65%	21%	107
Coshocton	15%	66%	18%	34
Crawford	17%	66%	18%	37
Cuyahoga	17%	68%	15%	1146
Darke	15%	69%	16%	35
Defiance	13%	74%	13%	35
Delaware	16%	73%	11%	82
Erie	16%	71%	13%	80
Fairfield	17%	69%	14%	105
Fayette	12%	69%	19%	26
Franklin	19%	71%	10%	751
Fulton	11%	76%	13%	27
Gallia	17%	74%	8%	33
Geauga	20%	61%	19%	58
Greene	18%	71%	11%	104
Guernsey	19%	67%	14%	36
Hamilton	19%	70%	11%	668
Hancock	19%	71%	10%	48
Hardin	19%	69%	12%	24
Harrison	21%	65%	14%	17
Henry	14%	74%	12%	17
Highland	16%	58%	26%	40
Hocking	21%	62%	16%	28
Holmes	6%	76%	18%	14
Huron	17%	73%	11%	43
Jackson	18%	65%	17%	31
Jefferson	19%	72%	8%	79
Knox	19%	67%	14%	42
Lake	17%	63%	20%	214
Lawrence	14%	66%	20%	69
Licking	15%	72%	13%	126
Logan	13%	73%	13%	42
Lorain	14%	70%	16%	245
Lucas	17%	74%	9%	365
Madison	17%	68%	15%	35
Mahoning	15%	66%	19%	233
Marion	14%	68%	18%	68
Medina	18%	69%	13%	108
Meigs	16%	72%	12%	26
Mercer	21%	60%	19%	27
Miami	16%	77%	7%	70
Monroe	21%	60%	19%	16
Montgomery	18%	72%	10%	503
Morgan	18%	72%	10%	16
Morrow	11%	73%	16%	28
Muskingum	17%	73%	10%	84
Noble	13%	69%	19%	13
Ottawa	11%	78%	11%	42
Paulding	23%	62%	15%	16
Perry	14%	69%	17%	29
Pickaway	18%	66%	16%	49
Pike	18%	62%	20%	29
Portage	18%	67%	15%	117
Preble	21%	67%	11%	34
Putnam	14%	80%	6%	20
Richland	16%	71%	13%	103
Ross	14%	69%	17%	74
Sandusky	15%	67%	18%	49
Scioto	18%	71%	11%	91
Seneca	13%	74%	13%	46
Shelby	14%	54%	31%	32
Stark	15%	71%	13%	308
Summit	17%	68%	15%	455
Trumbull	17%	73%	11%	225
Tuscarawas	9%	66%	25%	68
Union	19%	64%	17%	30
Van Wert	16%	67%	18%	24
Vinton	18%	67%	15%	17
Warren	21%	69%	10%	119
Washington	18%	72%	9%	68
Wayne	16%	65%	19%	78
Williams	10%	80%	10%	33
Wood	18%	67%	15%	72
Wyandot	23%	62%	15%	19

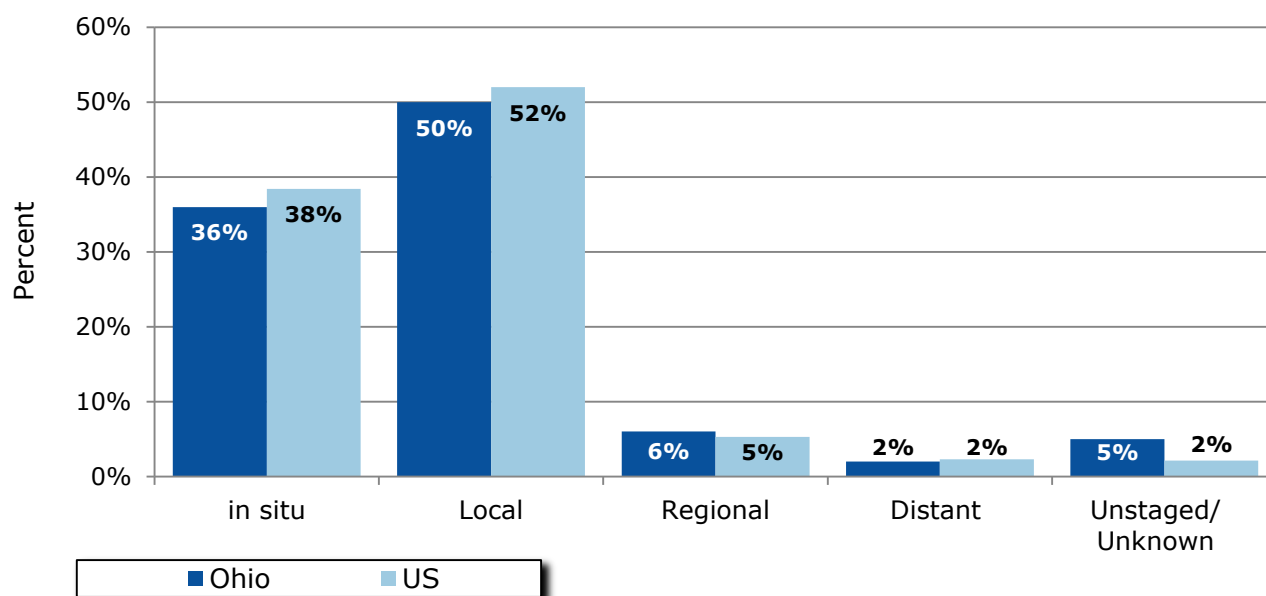
Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011; and the Surveillance Epidemiology and End Results Program, SEER*Stat Database: Incidence, Nov 2010 submission, National Cancer Institute, 2011.

Melanoma of the Skin

Figure 5.1 shows that, in Ohio, compared to the United States:

- There were similar percentages of melanomas of the skin diagnosed at each stage, with the exception of a higher percentage of melanoma cases reported as unstaged/unknown stage at diagnosis.

Figure 5.1: Melanoma of the Skin: Proportion of Cases (%) by Stage at Diagnosis in Ohio, with Comparison to the U.S. (SEER), 2004-2008 (Average Annual N=3,652)



Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011; and the Surveillance Epidemiology and End Results Program, SEER*Stat Database: Incidence, Nov 2010 submission, National Cancer Institute, 2011.

Figure 5.2 shows that, compared to whites, in Ohio:

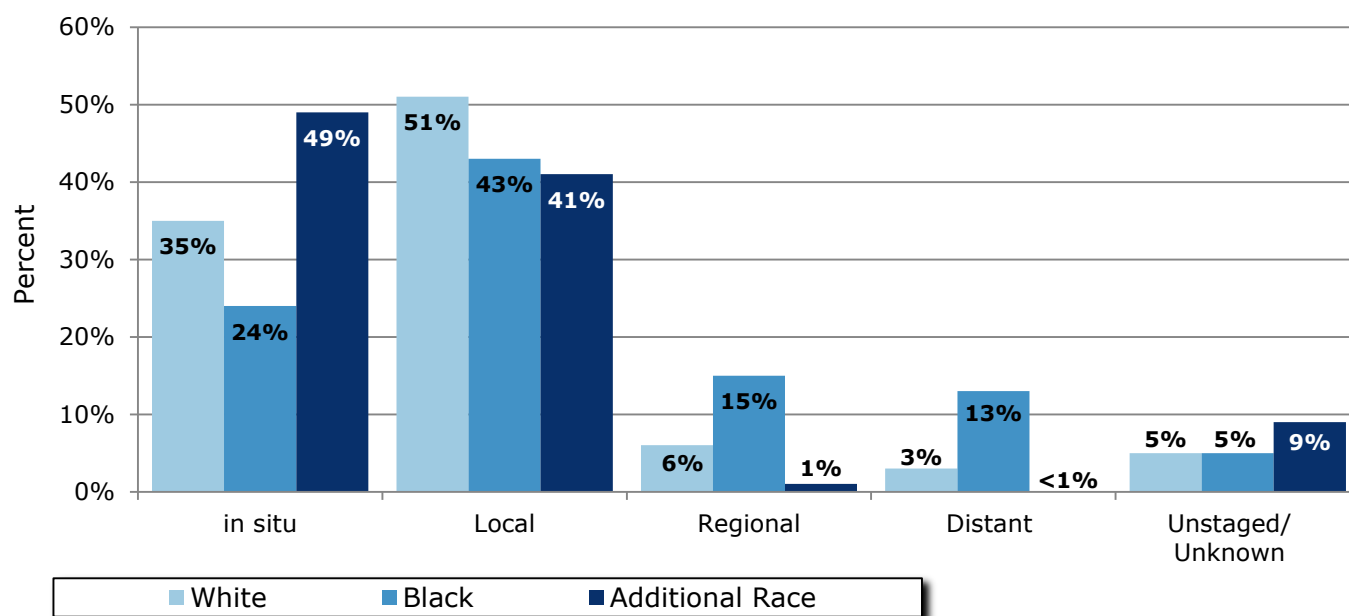
- Although melanoma of the skin is far less common among blacks, a greater percentage of cases among blacks were diagnosed at regional and distant stages, and a lower percentage of blacks were diagnosed at *in situ* and localized stages.
- There were higher percentages of melanoma of the skin cases among additional races diagnosed at the *in situ* stage and with an unstaged/unknown stage, while there were lower percentages of additional races diagnosed at localized, regional and distant stages.

Figure 5.3 shows that, in Ohio:

- Percentages of melanomas of the skin diagnosed at *in situ* stage increased with increasing age group, while percentages diagnosed localized stage decreased with increasing age group.

Melanoma of the Skin

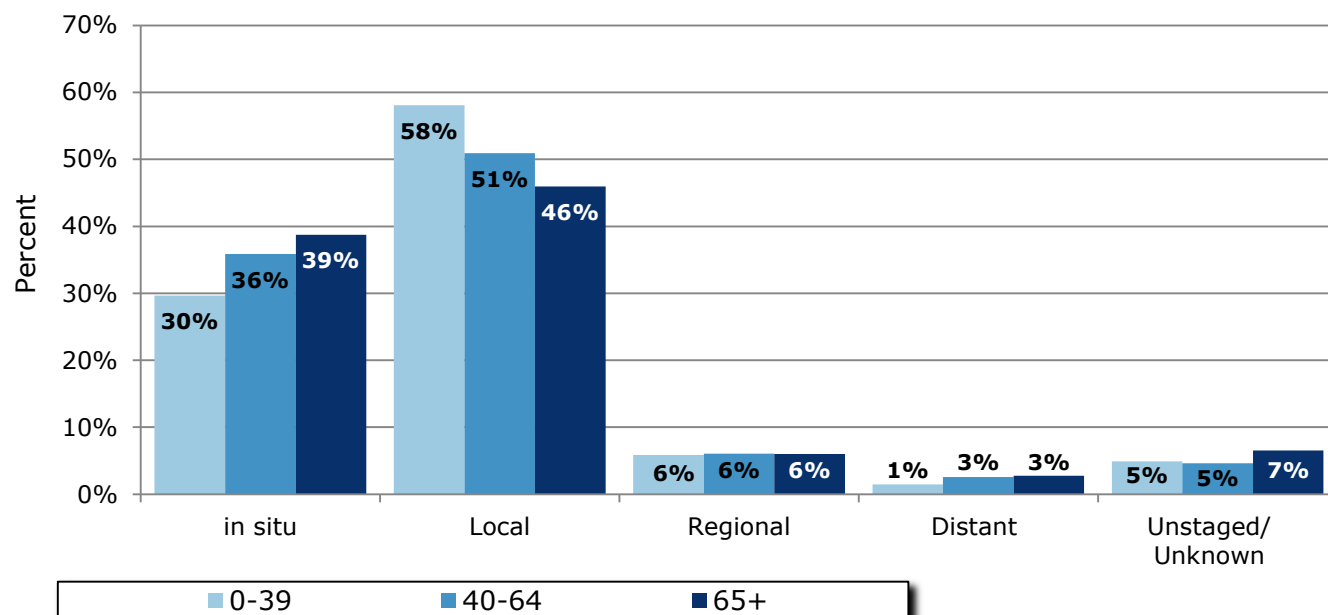
Figure 5.2: Melanoma of the Skin: Proportion of Cases (%) by Stage at Diagnosis and Race¹ in Ohio, 2004-2008 (Average Annual N=3,652)



Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

¹Additional Race includes Asian/Pacific Islander, American Indian/Alaskan Native, Other and Unknown races.

Figure 5.3: Melanoma of the Skin: Proportion of Cases (%) by Stage at Diagnosis and Age Group in Ohio, 2004-2008 (Average Annual N=3,652)

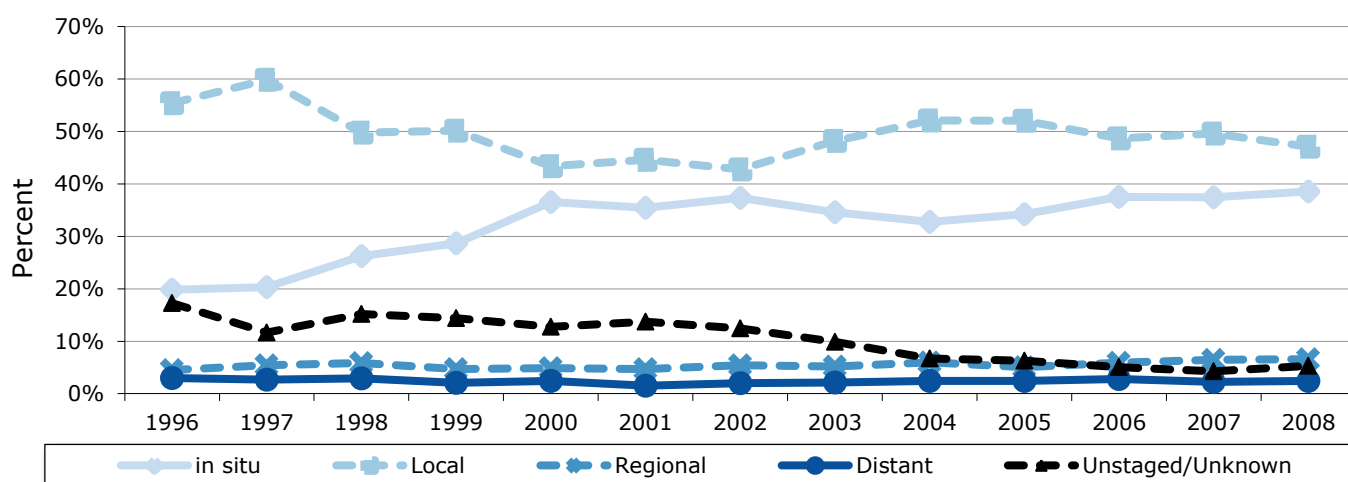


Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

Melanoma of the Skin

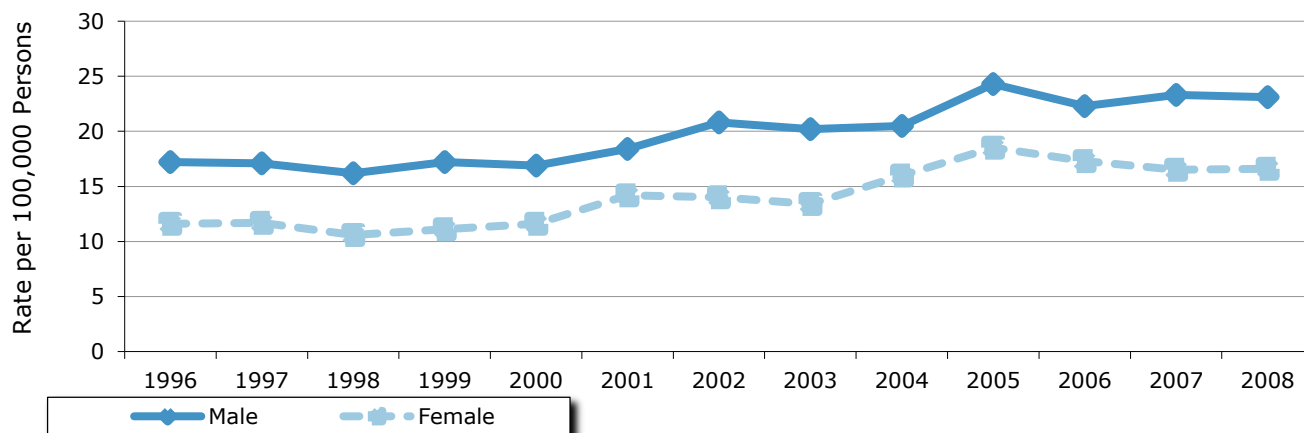
Figure 5.4 shows that the proportion of melanoma of the skin cases diagnosed at the localized stage was variable but decreased from 1996 to 2008, while the proportion diagnosed at *in situ* stage increased over this time period. The percentages diagnosed at regional and distant stages remained relatively constant. Some of the changes over time may be explained by changes in the proportion of melanoma of the skin cases reported as unstaged/unknown stage, which decreased over this time period.

Figure 5.4: Melanoma of the Skin: Trends in the Proportion of Cases (%) by Stage at Diagnosis in Ohio, 1996-2008

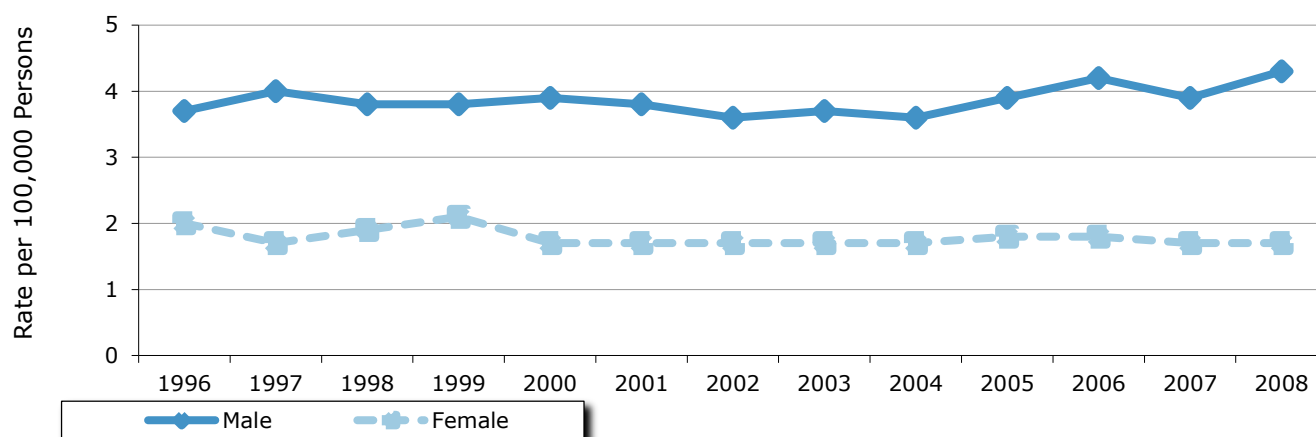


Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

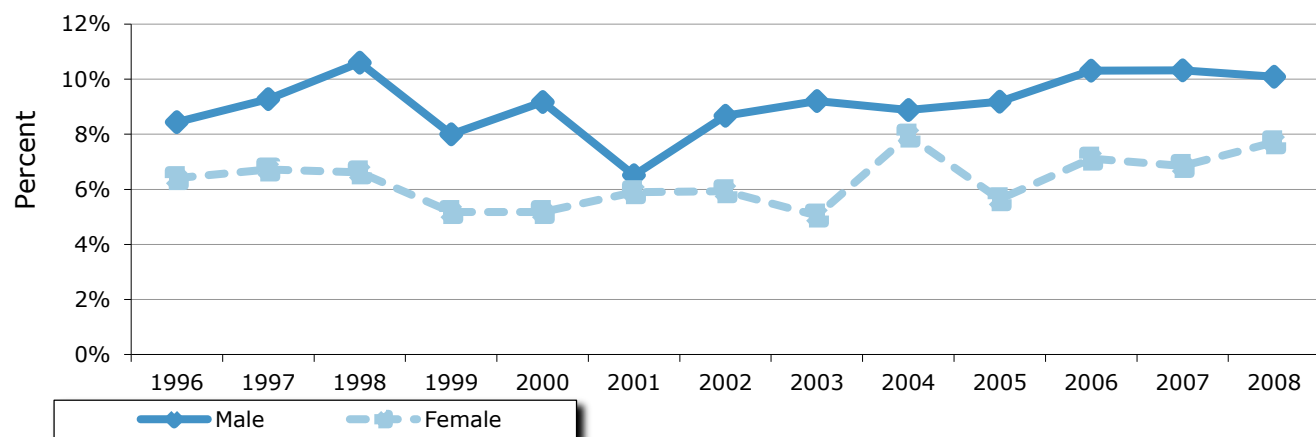
- Melanoma of the skin incidence rates (Figure 5.5) increased among males and females in Ohio from 1996 to 2008.
- Melanoma of the skin mortality rates (Figure 5.6) increased among males in Ohio from 1996 to 2008 and slightly decreased among females.
- For both males and females, there has been an increase in the percentage of melanomas of the skin diagnosed at late stage (Figure 5.7).

Figure 5.5: Melanoma of the Skin: Trends in Average Annual Age-adjusted Incidence Rates per 100,000 Persons by Sex in Ohio, 1996-2008

Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

Figure 5.6: Melanoma of the Skin: Trends in Average Annual Age-adjusted Mortality Rates per 100,000 Persons by Sex in Ohio, 1996-2008

Source: Ohio Vital Statistics Program, Ohio Department of Health, 2010.

Figure 5.7: Melanoma of the Skin: Trends in the Proportion of Cases (%) Diagnosed at Late (Regional or Distant) Stage by Sex in Ohio, 1996-2008

Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

Melanoma of the Skin

Recognition of changes in skin growths or the appearance of new growths is the best way to find skin cancer at an early stage. Adults should practice skin self examination regularly and have their skin assessed by a dermatologist on a routine basis.

A simple ABCD rule outlines the warning signals of melanoma. Check Moles:

A is for **asymmetry**. One half of the mole does not match the other half.

B is for **border irregularity**. The edges are ragged, notched or blurred.

C is for **color**. The pigmentation is not uniform, with variable degrees of tan, brown or black.

D is for **diameter** greater than 6 millimeters.

6 mm



Although, in recent years more melanomas are being diagnosed between 3 and 6 millimeters. Any sudden or progressive increase in size should be of concern.

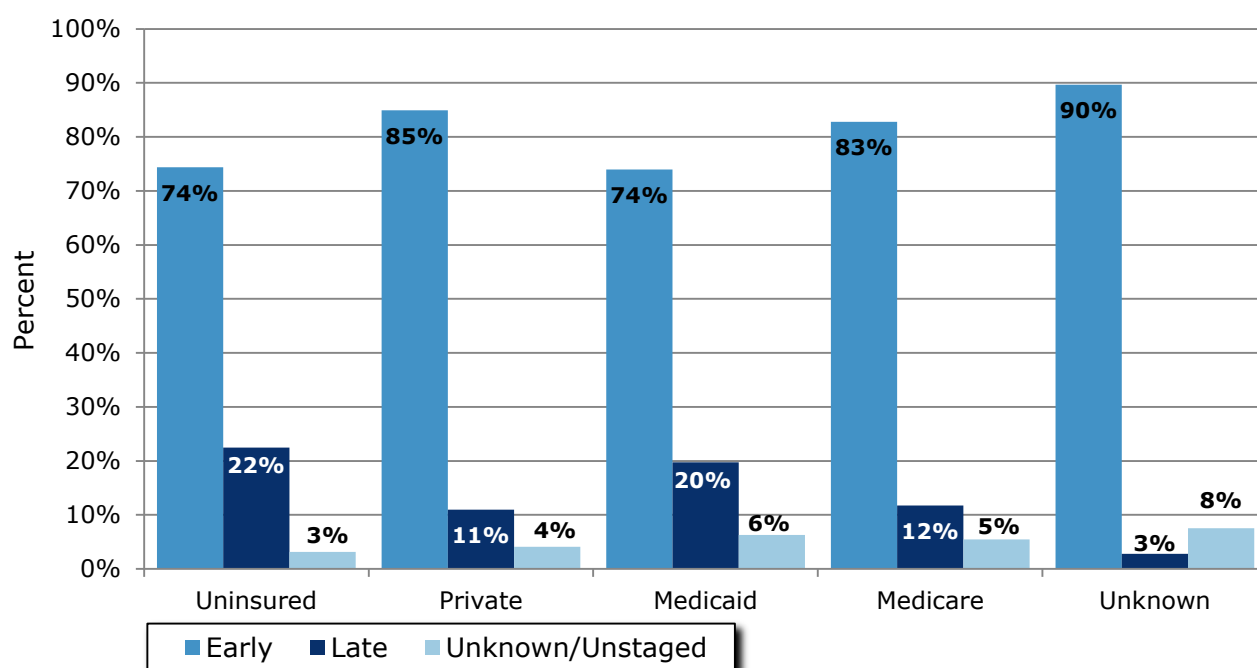
Table 5.1: Melanoma of the Skin: Survival Probability (%) by Stage at Diagnosis, Sex and Race in the U.S. (SEER), 2001-2007

Stage	Five-year Survival Probability (%)				
	Overall	White Male	White Female	Black Male	Black Female
All Stages	91.2%	88.9%	93.5%	65.2%	77.4%
Localized	98.1%	97.4%	98.6%	90.3%	94.8%
Regional	61.4%	58.2%	67.7%	44.3%	37.2%
Distant	15.3%	14.4%	16.6%	19.6%	-
Unstaged/ Unknown Stage	74.6%	70.0%	77.5%	-	-

Source: Surveillance Epidemiology and End Results Program, *SEER Cancer Statistics Review, 1975-2008*, National Cancer Institute, 2011.

- Statistic could not be calculated due to fewer than 25 cases during the time period.

- Table 5.1 shows that five-year survival probability decreases with advancing stage. For each stage except distant, survival probability is greater among whites (both males and females), compared to blacks, and among females, compared to males.
- Figure 5.8 shows that the highest percentage of melanomas of the skin diagnosed at late stage occurred among the uninsured, followed by those with Medicaid as their primary insurance payer at diagnosis.

Figure 5.8: Melanoma of the Skin: Proportion of Cases by Stage and Primary Payer (Insurance) at Diagnosis in Ohio, 2004-2008

Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

Figure 5.9: Melanoma of the Skin: Proportion of Cases (%) Diagnosed at Late (Regional or Distant) Stage by County of Residence, Ohio, 2004-2008 (Average Annual N=3,652)

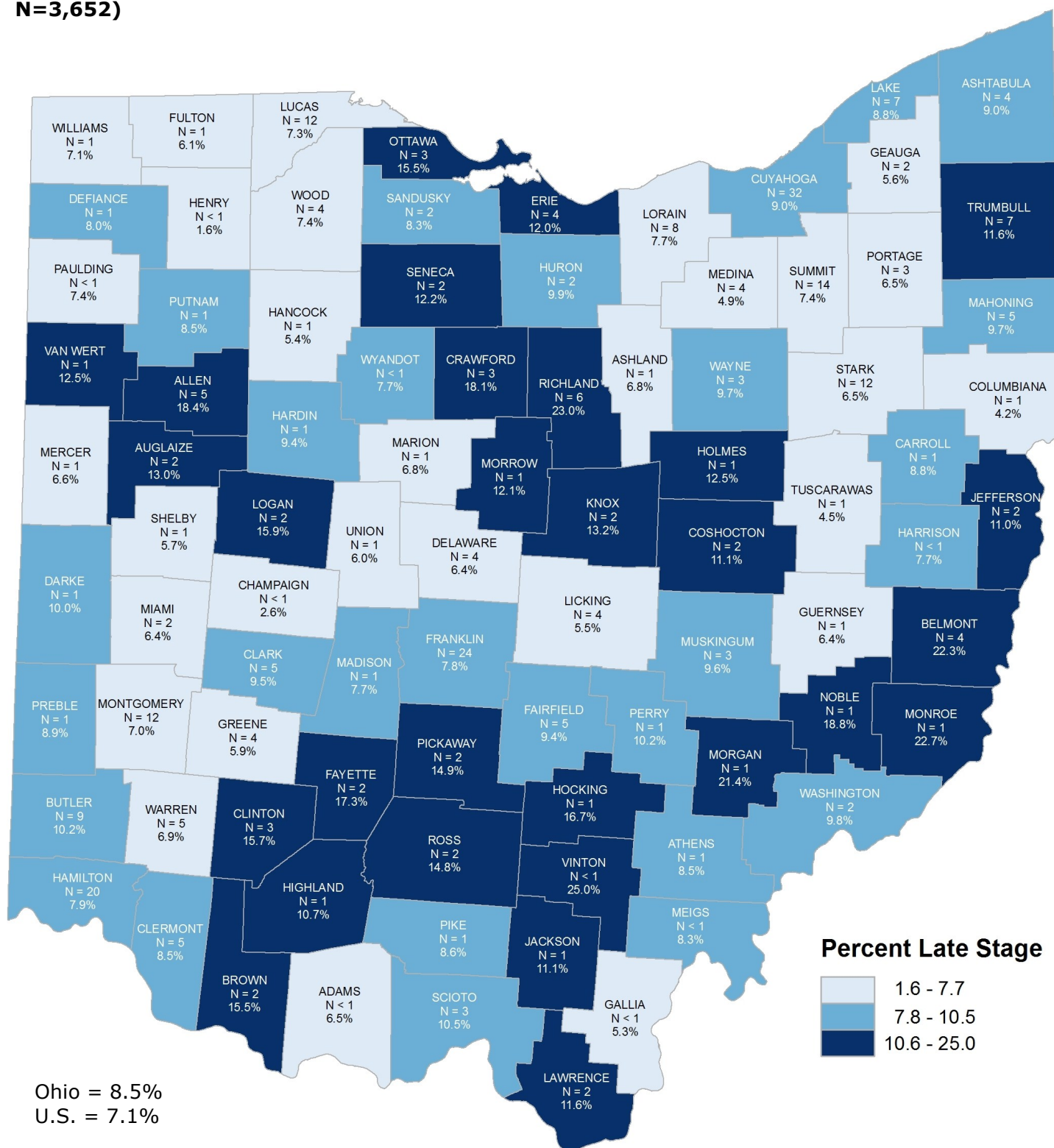


Table 5.2: Melanoma of the Skin: Proportion of Cases (%) by County of Residence and Stage at Diagnosis in Ohio and the U.S. (SEER), 2004-2008

	Early Stage %	Late Stage %	Unstaged/ Unknown %	Average Annual Cases		Early Stage %	Late Stage %	Unstaged/ Unknown %	Average Annual Cases
Ohio	86%	8%	5%	3,652	Lawrence	84%	12%	4%	19
SEER	90%	8%	2%		Licking	90%	5%	5%	80
Adams	87%	6%	6%	6	Logan	73%	16%	11%	13
Allen	78%	18%	4%	27	Lorain	88%	8%	5%	99
Ashland	85%	7%	8%	12	Lucas	87%	7%	5%	158
Ashtabula	87%	9%	4%	40	Madison	86%	8%	6%	13
Athens	79%	8%	13%	14	Mahoning	83%	10%	8%	56
Auglaize	80%	13%	7%	14	Marion	82%	7%	12%	21
Belmont	69%	22%	9%	19	Medina	90%	5%	5%	74
Brown	79%	16%	5%	12	Meigs	92%	8%	0%	5
Butler	84%	10%	6%	88	Mercer	83%	7%	11%	15
Carroll	88%	9%	4%	11	Miami	87%	6%	6%	37
Champaign	91%	3%	7%	15	Monroe	64%	23%	14%	4
Clark	81%	10%	10%	48	Montgomery	84%	7%	9%	172
Clermont	89%	9%	3%	61	Morgan	75%	21%	4%	6
Clinton	80%	16%	5%	17	Morrow	88%	12%	0%	7
Columbiana	83%	4%	13%	33	Muskingum	89%	10%	1%	33
Coshocton	83%	11%	6%	18	Noble	81%	19%	0%	3
Crawford	75%	18%	7%	14	Ottawa	79%	15%	6%	17
Cuyahoga	88%	9%	3%	361	Paulding	89%	7%	4%	5
Darke	77%	10%	13%	14	Perry	88%	10%	2%	10
Defiance	89%	8%	3%	17	Pickaway	70%	15%	15%	13
Delaware	89%	6%	5%	69	Pike	86%	9%	6%	7
Erie	84%	12%	4%	33	Portage	88%	6%	6%	40
Fairfield	84%	9%	7%	51	Preble	82%	9%	9%	11
Fayette	73%	17%	10%	10	Putnam	88%	8%	3%	12
Franklin	86%	8%	6%	304	Richland	76%	23%	1%	28
Fulton	92%	6%	2%	20	Ross	75%	15%	10%	16
Gallia	84%	5%	11%	8	Sandusky	91%	8%	1%	19
Geauga	90%	6%	4%	36	Scioto	85%	10%	4%	25
Greene	86%	6%	8%	64	Seneca	81%	12%	7%	15
Guernsey	91%	6%	3%	16	Shelby	92%	6%	2%	11
Hamilton	87%	8%	5%	248	Stark	90%	7%	4%	181
Hancock	92%	5%	2%	26	Summit	88%	7%	5%	189
Hardin	78%	9%	13%	6	Trumbull	84%	12%	4%	62
Harrison	85%	8%	8%	5	Tuscarawas	83%	5%	12%	26
Henry	94%	2%	5%	13	Union	90%	6%	4%	20
Highland	80%	11%	9%	11	Van Wert	84%	13%	3%	6
Hocking	75%	17%	8%	7	Vinton	50%	25%	25%	2
Holmes	75%	13%	13%	6	Warren	87%	7%	6%	78
Huron	86%	10%	4%	16	Washington	79%	10%	11%	25
Jackson	86%	11%	3%	7	Wayne	85%	10%	5%	33
Jefferson	89%	11%	0%	15	Williams	92%	7%	1%	17
Knox	85%	13%	2%	18	Wood	86%	7%	7%	52
Lake	87%	9%	4%	80	Wyandot	88%	8%	4%	5

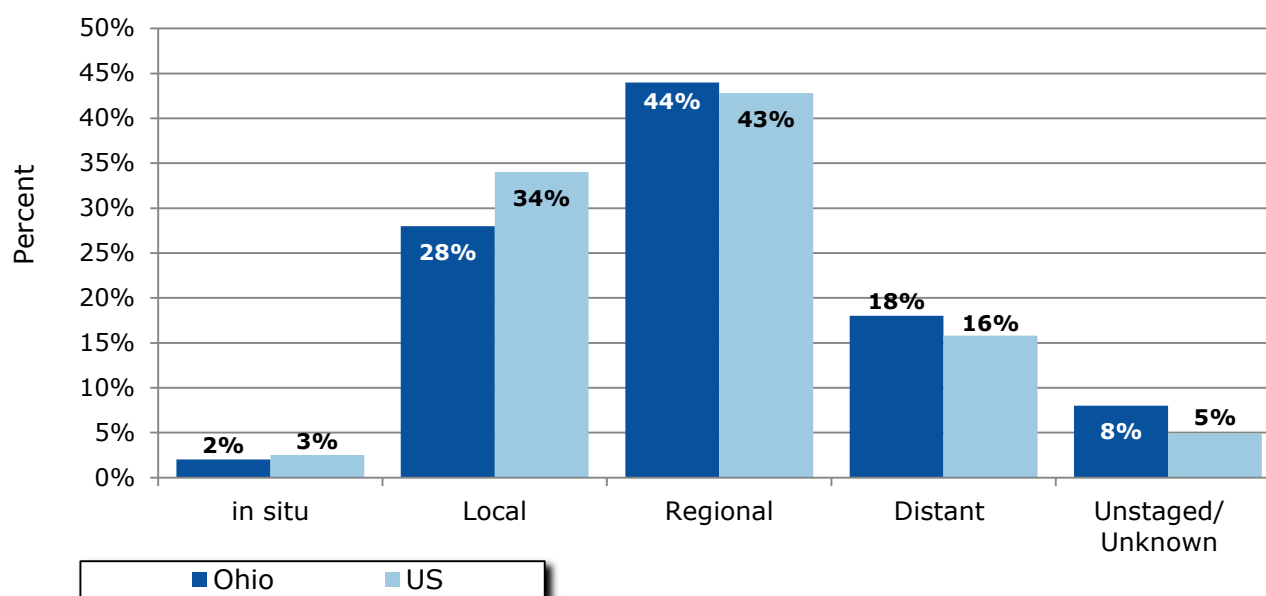
Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011; and the Surveillance Epidemiology and End Results Program, SEER*Stat Database: Incidence, Nov 2010 submission, National Cancer Institute, 2011.

Oral Cavity and Pharynx Cancer

Figure 6.1 shows that, in Ohio, compared to the United States:

- A lower percentage of oral cavity and pharynx cancer cases were diagnosed at the localized stage.
- Similar percentages of oral cavity and pharynx cancer cases were diagnosed at *in situ*, regional and distant stages.
- A higher percentage of oral cavity and pharynx cancer cases had an unstaged/unknown stage.

Figure 6.1: Oral Cavity and Pharynx Cancer: Proportion of Cases (%) by Stage at Diagnosis in Ohio, with Comparison to the U.S. (SEER), 2004-2008 (Average Annual N=1,306)



Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011; and the Surveillance Epidemiology and End Results Program, SEER*Stat Database: Incidence, Nov 2010 submission, National Cancer Institute, 2011.

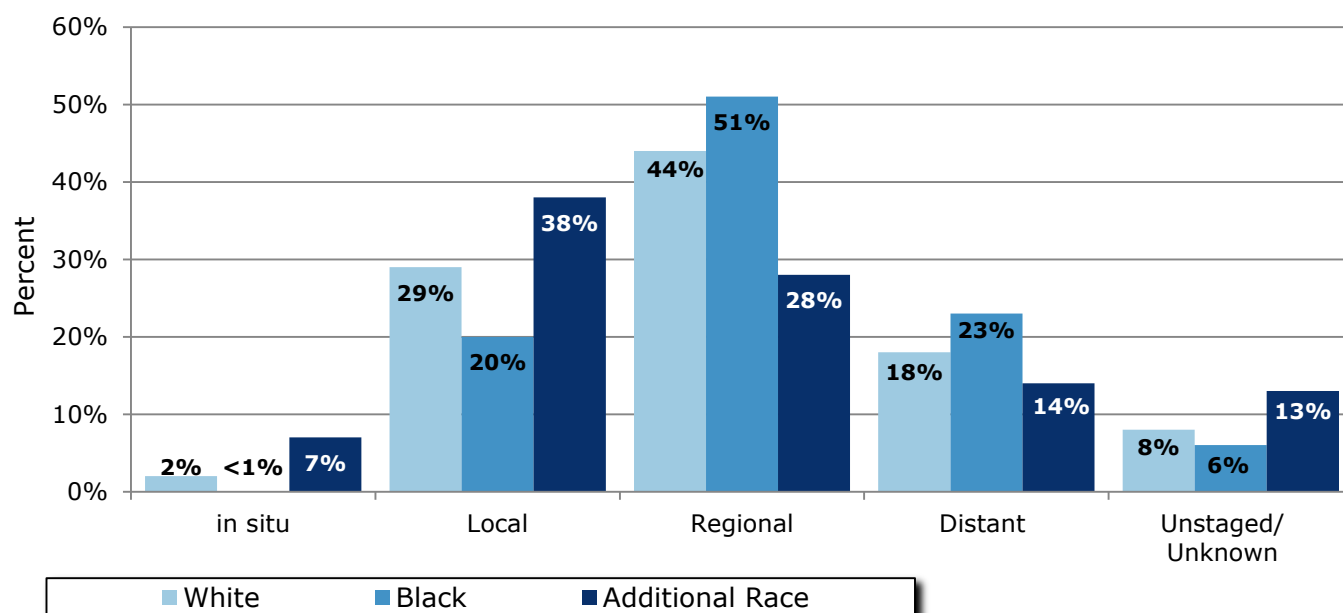
Figure 6.2 shows that, compared to whites, in Ohio:

- A higher percentage of oral cavity and pharynx cancers among blacks were diagnosed at regional and distant stages, and a lesser percentage of blacks were diagnosed at the localized stage.
- There were higher percentages of oral cavity and pharynx cancers among additional races diagnosed at the *in situ* and localized stages and with an unstaged/unknown stage, while there were lower percentages of additional races diagnosed at regional and distant stages.

Figure 6.3 shows that, in Ohio, a higher percentage of oral cavity and pharynx cancers were diagnosed at regional, distant, and with an unstaged/unknown stage among those 45 years and older, while there was a higher percentage diagnosed localized stage among those under 45 years.

Oral Cavity and Pharynx Cancer

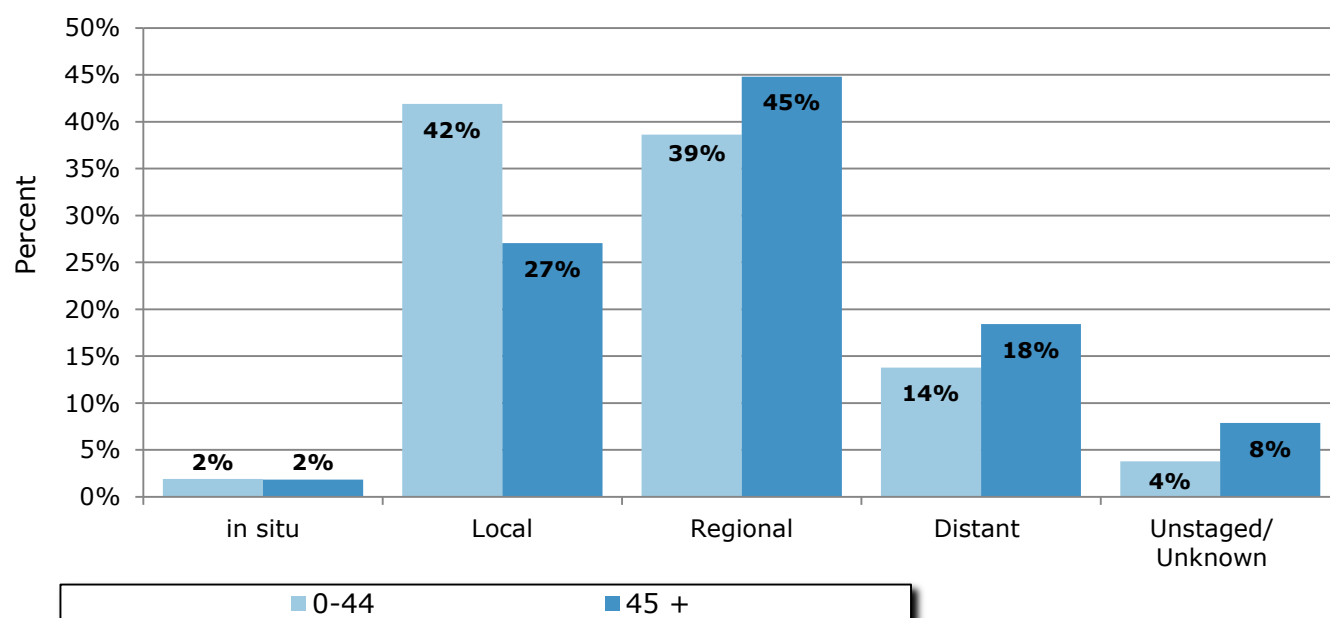
Figure 6.2: Oral Cavity and Pharynx Cancer: Proportion of Cases (%) by Stage at Diagnosis and Race¹ in Ohio, 2004-2008 (Average Annual N=1,306)



Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

¹Additional Race includes Asian/Pacific Islander, American Indian/Alaskan Native, Other and Unknown races.

Figure 6.3: Oral Cavity and Pharynx Cancer: Proportion of Cases (%) by Stage at Diagnosis and Age Group in Ohio, 2004-2008 (Average Annual N=1,306)

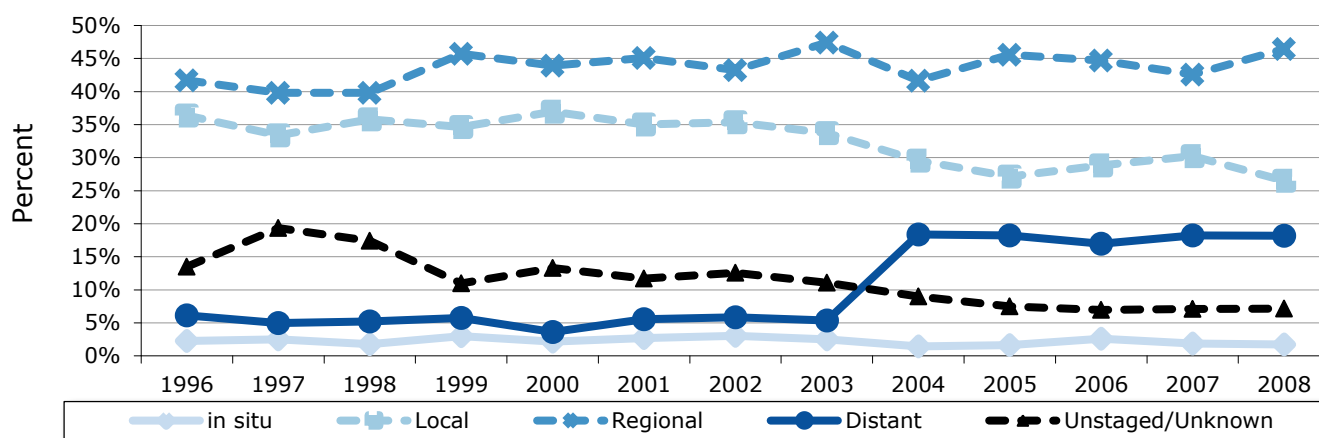


Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

Oral Cavity and Pharynx Cancer

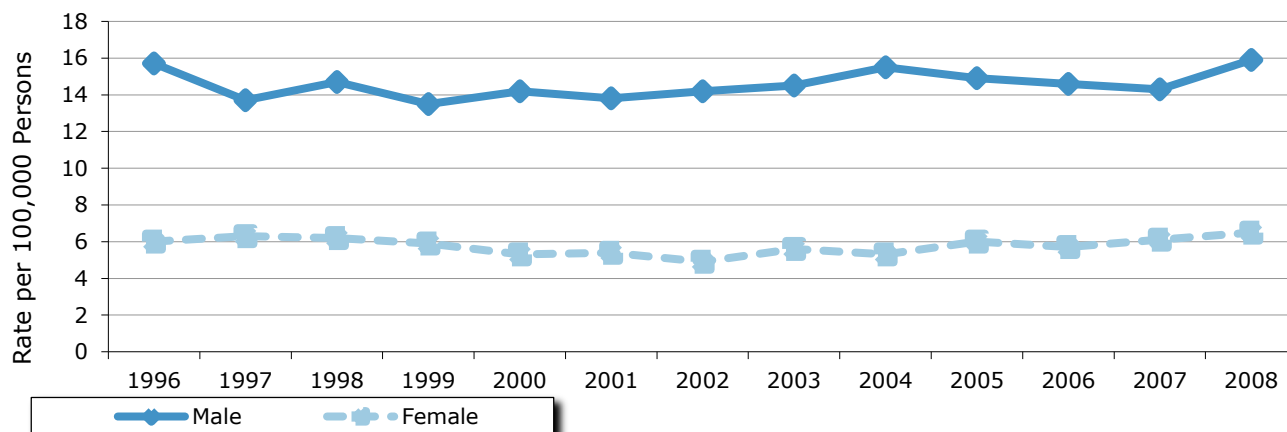
Figure 6.4 shows that the proportions of oral cavity and pharynx cancer cases diagnosed at regional and distant stages increased from 1996 to 2008, while the proportion diagnosed at localized stage decreased over this time period. Some of the changes over time may be explained by changes in the proportion of oral cavity and pharynx cancer cases reported at unstaged/unknown stage, which decreased over this time period.

Figure 6.4: Oral Cavity and Pharynx Cancer: Trends in the Proportion of Cases (%) by Stage at Diagnosis in Ohio, 1996-2008

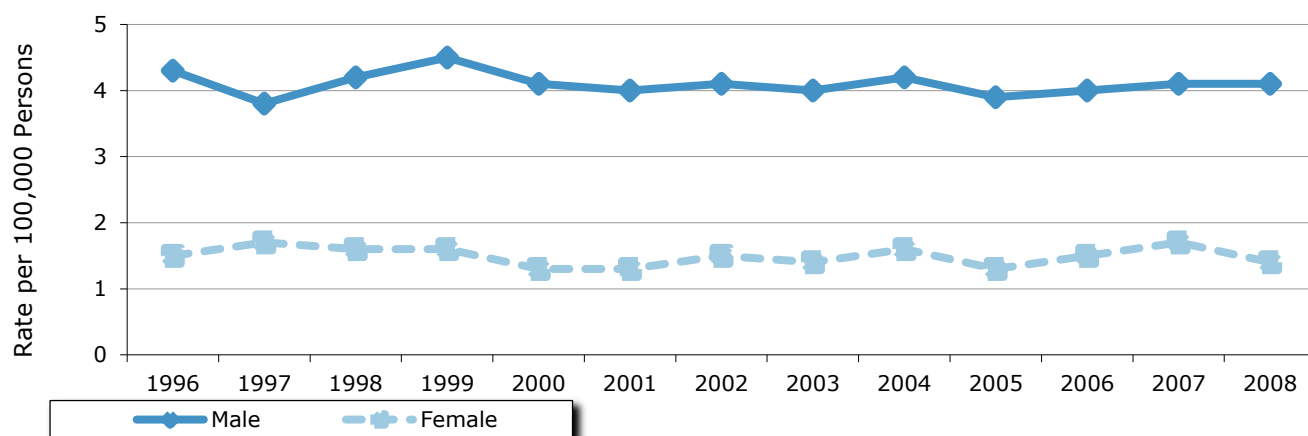


Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

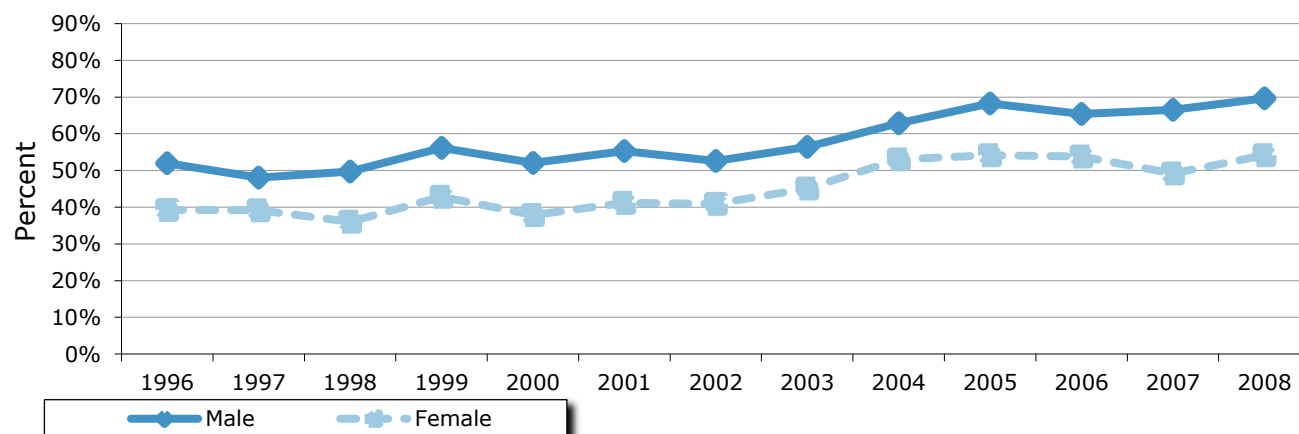
- Oral cavity and pharynx cancer incidence rates (Figure 6.5) among males in Ohio were slightly variable from 1996 to 2008; among females in Ohio, the rate remained relatively constant.
- Oral cavity and pharynx cancer mortality rates (Figure 6.6) in Ohio were relatively constant for males and females in Ohio over this time period.
- For both males and females, there was an increase in the percentage of oral cavity and pharynx cancer cases diagnosed at late stage from 1996 to 2008 (Figure 6.7).

Figure 6.5: Oral Cavity and Pharynx Cancer: Trends in Average Annual Age-adjusted Incidence Rates per 100,000 Persons by Sex in Ohio, 1996-2008

Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

Figure 6.6: Oral Cavity and Pharynx Cancer: Trends in Average Annual Age-adjusted Mortality Rates per 100,000 Persons by Sex in Ohio, 1996-2008

Source: Ohio Vital Statistics Program, Ohio Department of Health, 2010.

Figure 6.7: Oral Cavity and Pharynx Cancer: Trends in the Proportion of Cases (%) Diagnosed at Late (Regional or Distant) Stage by Sex in Ohio, 1996-2008

Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

Oral Cavity and Pharynx Cancer

Did You Know?

Dentists play an important role in screening for oral cavity and pharynx cancer and should conduct this screening at each routine dental examination.

Table 6.1 shows that five-year survival probability decreases with advancing stage. For each stage, survival probability is greater among whites (both males and females), compared to blacks. For each stage, black males have the lowest survival probability.

Table 6.1: Oral Cavity and Pharynx Cancer: Survival Probability (%) by Stage at Diagnosis, Sex and Race in the U.S. (SEER), 2001-2007

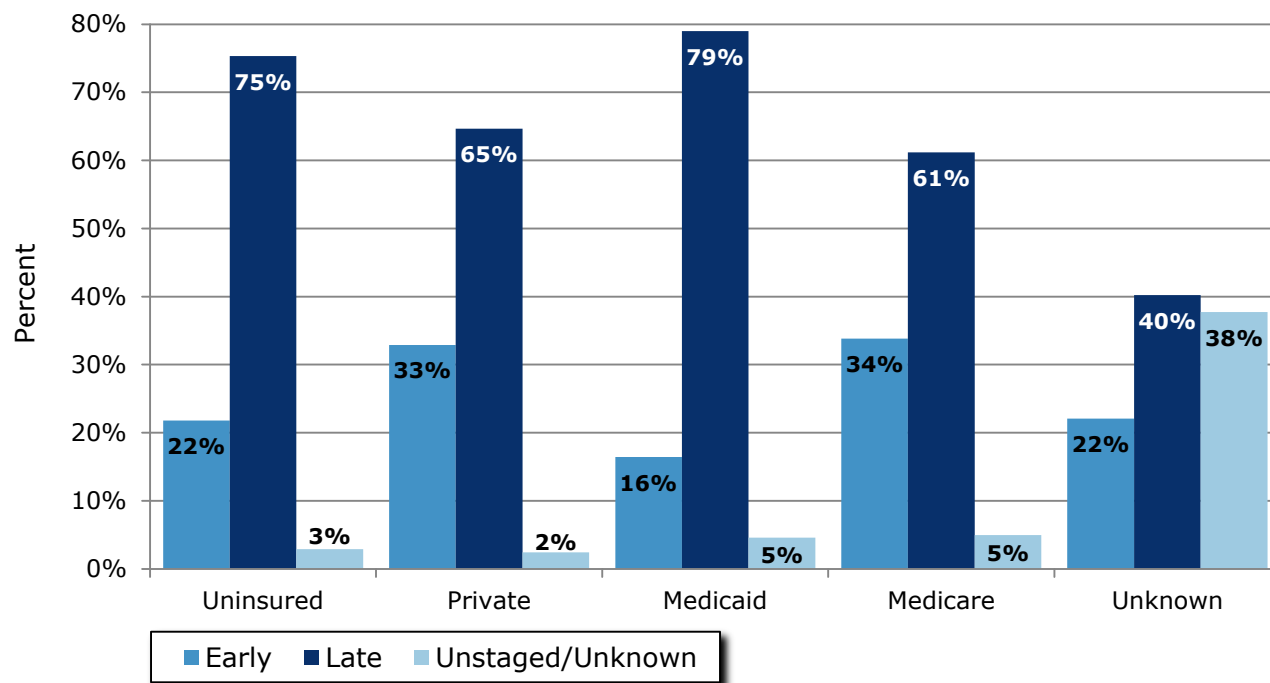
Five-year Survival Probability (%)					
Stage	Overall	White Male	White Female	Black Male	Black Female
All Stages	60.8%	62.0%	63.2%	37.3%	52.6%
Localized	82.3%	82.4%	82.8%	67.8%	82.5%
Regional	55.6%	59.2%	52.2%	35.5%	41.7%
Distant	33.5%	33.6%	33.2%	20.2%	29.9%
Unstaged/ Unknown Stage	50.4%	49.1%	52.4%	36.4%	42.3%

Source: Surveillance Epidemiology and End Results Program, *SEER Cancer Statistics Review, 1975-2008*, National Cancer Institute, 2011.

Oral Cavity and Pharynx Cancer

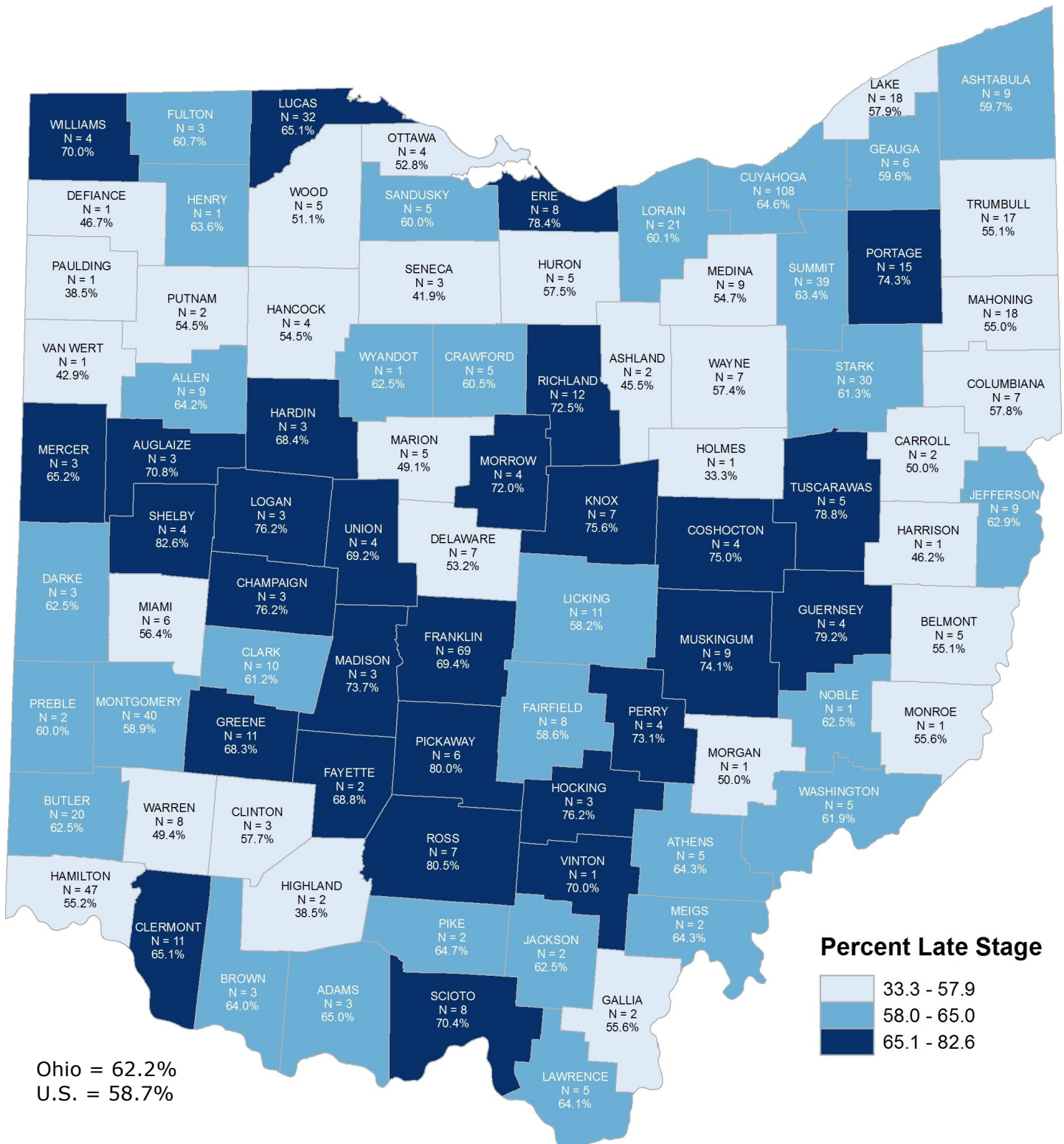
Figure 6.8 shows that the highest percentage of oral cavity and pharynx cancers diagnosed at late stage occurred among those with Medicaid as their primary insurance payer at diagnosis, followed by those who were uninsured. Those with unknown insurance had the highest percentage of unstaged/unknown stage oral cavity and pharynx cancer.

Figure 6.8: Oral Cavity and Pharynx Cancer: Proportion of Cases (%) by Stage and Primary Payer (Insurance) at Diagnosis in Ohio, 2004-2008



Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

Figure 6.9: Oral Cavity and Pharynx Cancer: Proportion of Cases (%) Diagnosed at Late (Regional or Distant) Stage by County of Residence, Ohio, 2004-2008 (Average Annual N=1,306)



Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

* Note: Each category represents approximately 33%, or 29, of the 88 Ohio counties.

Table 6.2: Oral Cavity and Pharynx Cancer: Proportion of Cases (%) by County of Residence and Stage at Diagnosis in Ohio and the U.S. (SEER), 2004-2008

	Early Stage %	Late Stage %	Unstaged/ Unknown %	Average Annual Cases		Early Stage %	Late Stage %	Unstaged/ Unknown %	Average Annual Cases
Ohio	30%	62%	8%	1,306	Lawrence	23%	64%	13%	8
SEER	36%	59%	5%		Licking	31%	58%	11%	20
Adams	25%	65%	10%	4	Logan	14%	76%	10%	4
Allen	25%	64%	10%	13	Lorain	33%	60%	7%	36
Ashland	36%	45%	18%	4	Lucas	29%	65%	6%	50
Ashtabula	26%	60%	14%	14	Madison	16%	74%	11%	4
Athens	29%	64%	7%	8	Mahoning	33%	55%	13%	32
Auglaize	25%	71%	4%	5	Marion	43%	49%	8%	11
Belmont	39%	55%	6%	10	Medina	38%	55%	7%	17
Brown	20%	64%	16%	5	Meigs	36%	64%	0%	3
Butler	25%	63%	13%	32	Mercer	26%	65%	9%	5
Carroll	13%	50%	38%	3	Miami	36%	56%	7%	11
Champaign	24%	76%	0%	4	Monroe	44%	56%	0%	2
Clark	28%	61%	11%	17	Montgomery	33%	59%	8%	68
Clermont	31%	65%	4%	17	Morgan	25%	50%	25%	2
Clinton	35%	58%	8%	5	Morrow	28%	72%	0%	5
Columbiana	34%	58%	8%	13	Muskingum	14%	74%	12%	12
Coshocton	25%	75%	0%	5	Noble	38%	63%	0%	2
Crawford	21%	60%	19%	9	Ottawa	39%	53%	8%	7
Cuyahoga	30%	65%	6%	167	Paulding	46%	38%	15%	3
Darke	29%	63%	8%	5	Perry	19%	73%	8%	5
Defiance	40%	47%	13%	3	Pickaway	17%	80%	3%	7
Delaware	34%	53%	13%	12	Pike	24%	65%	12%	3
Erie	22%	78%	0%	10	Portage	23%	74%	3%	20
Fairfield	30%	59%	11%	14	Preble	25%	60%	15%	4
Fayette	25%	69%	6%	3	Putnam	32%	55%	14%	4
Franklin	25%	69%	6%	99	Richland	25%	73%	3%	16
Fulton	32%	61%	7%	6	Ross	17%	80%	2%	8
Gallia	33%	56%	11%	4	Sandusky	28%	60%	13%	8
Geauga	36%	60%	4%	9	Scioto	26%	70%	4%	11
Greene	22%	68%	10%	16	Seneca	45%	42%	13%	6
Guernsey	21%	79%	0%	5	Shelby	13%	83%	4%	5
Hamilton	35%	55%	9%	84	Stark	29%	61%	9%	49
Hancock	45%	55%	0%	7	Summit	30%	63%	6%	62
Hardin	21%	68%	11%	4	Trumbull	40%	55%	5%	31
Harrison	31%	46%	23%	3	Tuscarawas	18%	79%	3%	7
Henry	36%	64%	0%	2	Union	23%	69%	8%	5
Highland	50%	38%	12%	5	Van Wert	43%	43%	14%	3
Hocking	10%	76%	14%	4	Vinton	20%	70%	10%	2
Holmes	56%	33%	11%	2	Warren	49%	49%	1%	16
Huron	35%	58%	8%	8	Washington	31%	62%	7%	8
Jackson	38%	63%	0%	3	Wayne	34%	57%	8%	12
Jefferson	33%	63%	4%	14	Williams	30%	70%	0%	6
Knox	24%	76%	0%	9	Wood	40%	51%	9%	9
Lake	34%	58%	9%	30	Wyandot	38%	63%	0%	2

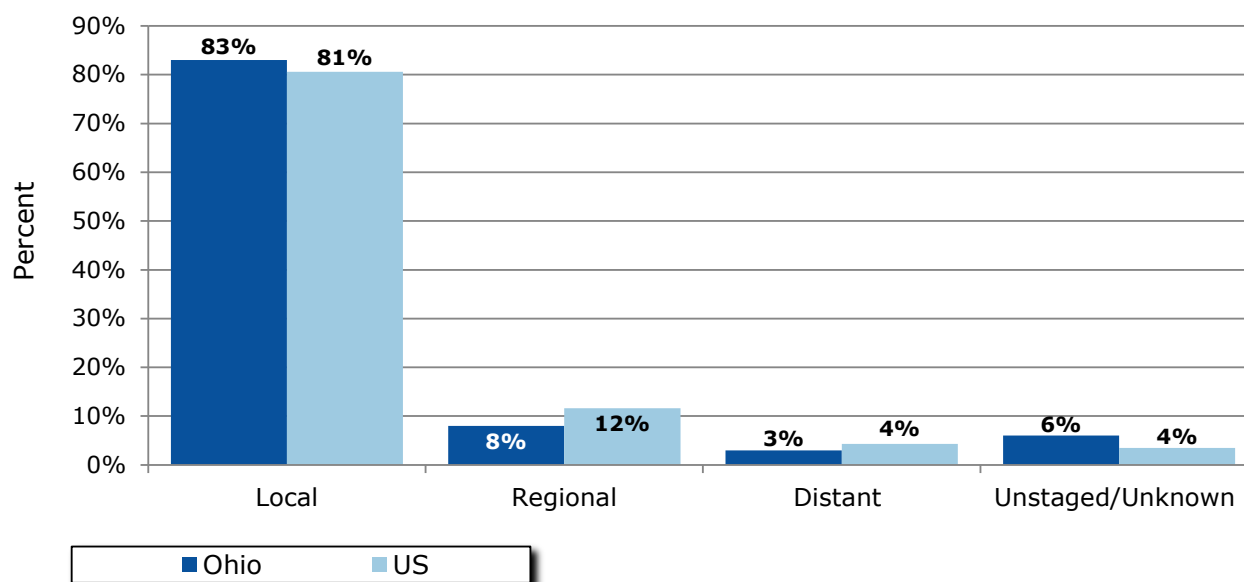
Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011; and the Surveillance Epidemiology and End Results Program, SEER*Stat Database: Incidence, Nov 2010 submission, National Cancer Institute, 2011.

Prostate Cancer

Figure 7.1 shows that, in Ohio, compared to the United States:

- A lower percentage of prostate cancer cases were diagnosed at the regional stage, while percentages for other stages were similar.

Figure 7.1: Prostate Cancer: Proportion of Cases (%) by Stage at Diagnosis in Ohio, with Comparison to the U.S. (SEER), 2004-2008 (Average Annual N=8,161)



Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011; and the Surveillance Epidemiology and End Results Program, SEER*Stat Database: Incidence, Nov 2010 submission, National Cancer Institute, 2011.

Figure 7.2 shows that, compared to whites, in Ohio:

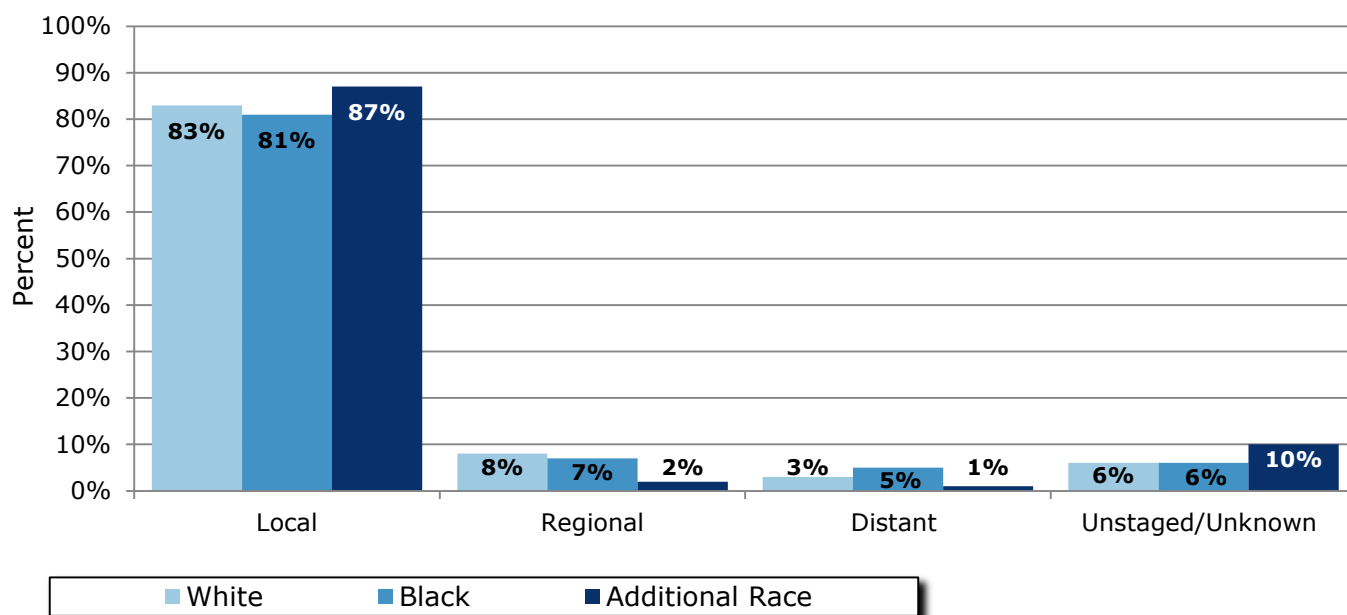
- There were similar percentages of prostate cancers among blacks diagnosed at each stage.
- There were higher percentages of prostate cancers among additional races diagnosed at the localized stage and with an unstaged/unknown stage, while there were lower percentages of additional races diagnosed at the regional stage.

Figure 7.3 shows that, in Ohio:

- A higher percentage of prostate cancers were diagnosed with an unstaged/unknown stage among those 45 years and older, while there were higher percentages diagnosed at the regional stage among those under 45 years.

Prostate Cancer

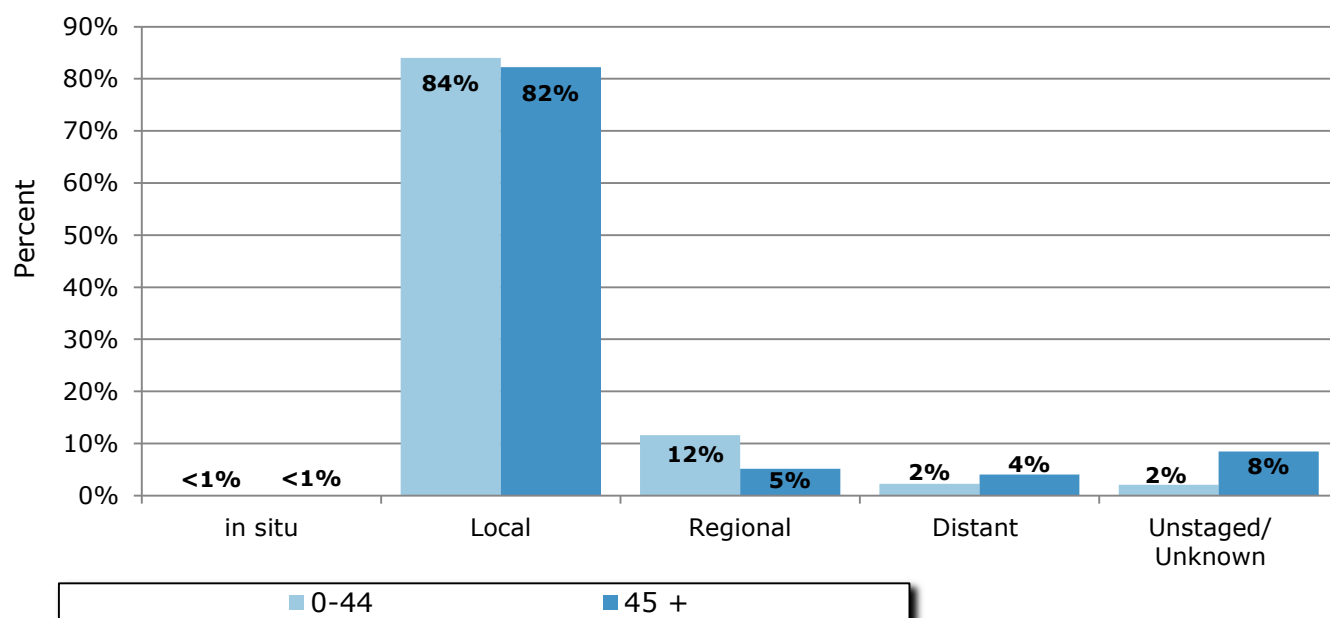
Figure 7.2: Prostate Cancer: Proportion of Cases (%) by Stage at Diagnosis and Race¹ in Ohio, 2004-2008 (Average Annual N=8,161)



Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

¹Additional Race includes Asian/Pacific Islander, American Indian/Alaskan Native, Other and Unknown races.

Figure 7.3: Prostate Cancer: Proportion of Cases (%) by Stage at Diagnosis and Age Group in Ohio, 2004-2008 (Average Annual N=8,161)

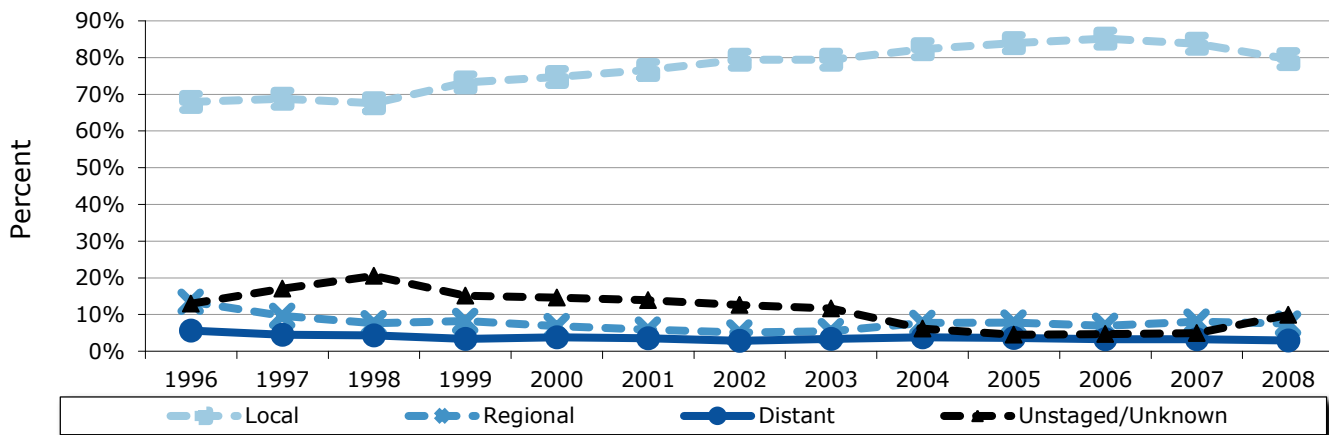


Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

Prostate Cancer

Figure 7.4 shows that the proportions of prostate cancer cases diagnosed at the localized stage increased from 1996 to 2008, while the proportions diagnosed at regional and distant stages were stable over this time period. Some of the changes over time may be explained by the decline in the proportion of prostate cancer cases diagnosed at unstaged/unknown stage.

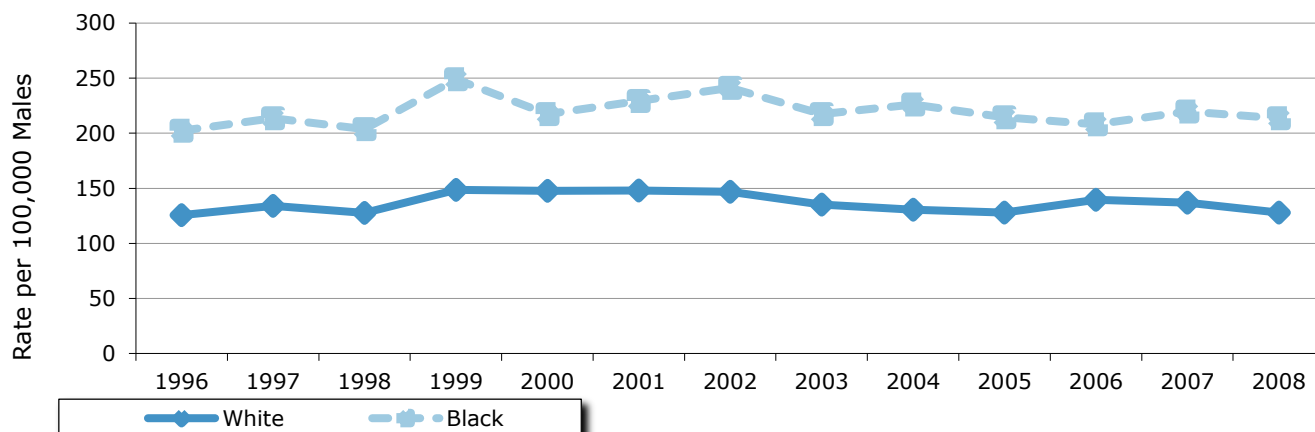
Figure 7.4: Prostate Cancer: Trends in the Proportion of Cases (%) by Stage at Diagnosis in Ohio, 1996-2008



Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

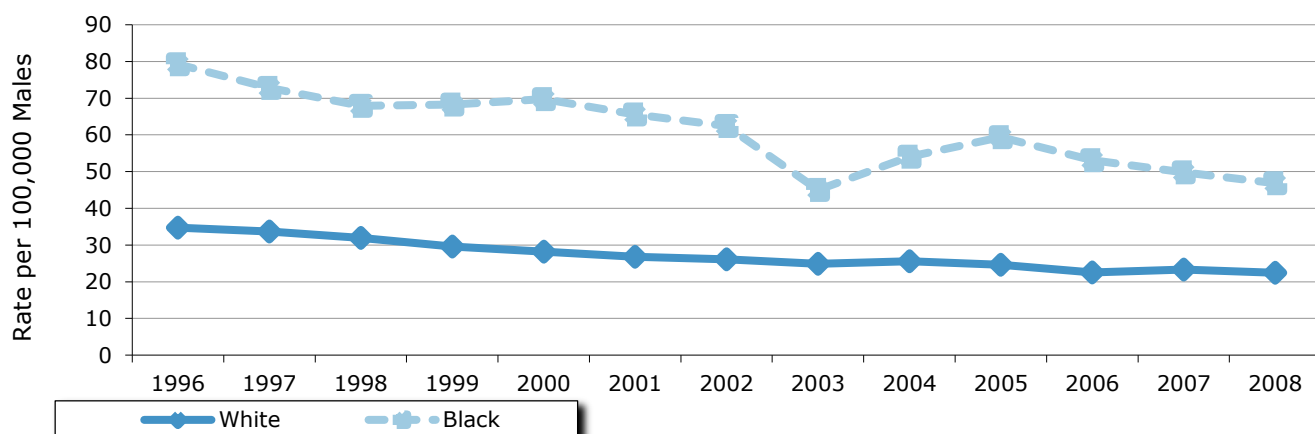
- Prostate cancer incidence rates (Figure 7.5) slightly increased among blacks in Ohio from 1996 to 2008, while the rate for whites remained relatively constant over this time period.
- Prostate cancer mortality rates (Figure 7.6) decreased among whites and blacks in Ohio from 1996 to 2008, and this decrease was greater for blacks.
- For both whites and blacks, there was a decrease in the percentage of prostate cancer cases diagnosed at late stage from 1996 to 2008 (Figure 7.7).

Figure 7.5: Prostate Cancer: Trends in Average Annual Age-adjusted Incidence Rates per 100,000 Males by Race in Ohio, 1996-2008



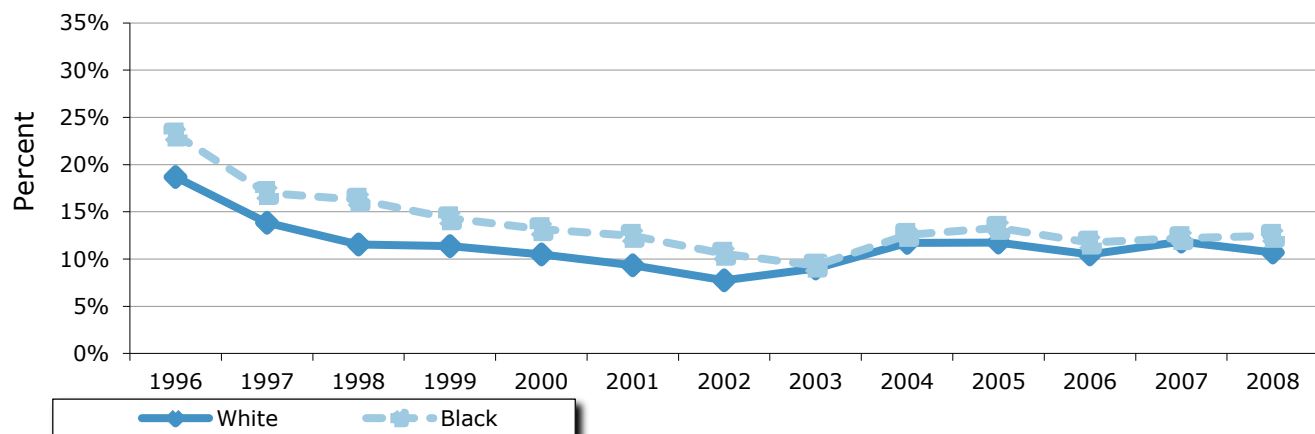
Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

Figure 7.6: Prostate Cancer: Trends in Average Annual Age-adjusted Mortality Rates per 100,000 Males by Race in Ohio, 1996-2008



Source: Ohio Vital Statistics Program, Ohio Department of Health, 2010.

Figure 7.7: Prostate Cancer: Trends in the Proportion of Cases (%) Diagnosed at Late (Regional or Distant) Stage by Race in Ohio, 1996-2008



Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

Prostate Cancer

- Prostate-specific antigen (PSA) is a protein produced by the prostate. The PSA test measures the level of PSA in the blood. The U.S. Food and Drug Administration (FDA) has approved the PSA test along with the digital (finger) rectal exam (DRE) to help detect prostate cancer in men age 50 years and older.
- Figure 7.1 shows that, in Ohio, the prevalence of PSA testing and/or DRE in the past year varied according to age group, education and annual household income in 2010. There were only slight differences by race. A higher percentage of men had PSA tests, compared to DRE.

Table 7.1: Prevalence of Men 50 and Older Who Reported Having Had a Prostate-specific Antigen (PSA) Test and/or Digital Rectal Exam (DRE) in the Past Year by Demographics in Ohio, 2010

	Had a PSA test in the past year	Had a DRE in the past year
AGE		
50-64	47%	43%
65+	71%	52%
RACE		
White	56%	47%
African American	55%	46%
EDUCATION		
Less Than High School	42%	35%
High School or GED	55%	44%
Some College	54%	46%
College Graduate	61%	52%
ANNUAL HOUSEHOLD INCOME		
< \$24,999	47%	34%
\$25,000-\$49,999	62%	49%
\$50,000+	55%	51%
Total (Men 50+)	56%	47%

Source: Ohio Behavioral Risk Factor Surveillance System, Ohio Department of Health, 2011.

The weighted percentages were adjusted to: 1) probability of selection, *i.e.*, the number of different phone numbers that reach the household, the number of adults in each household, and the number of completed interviews in each cluster; and 2) demographic distribution, *i.e.*, age and sex.

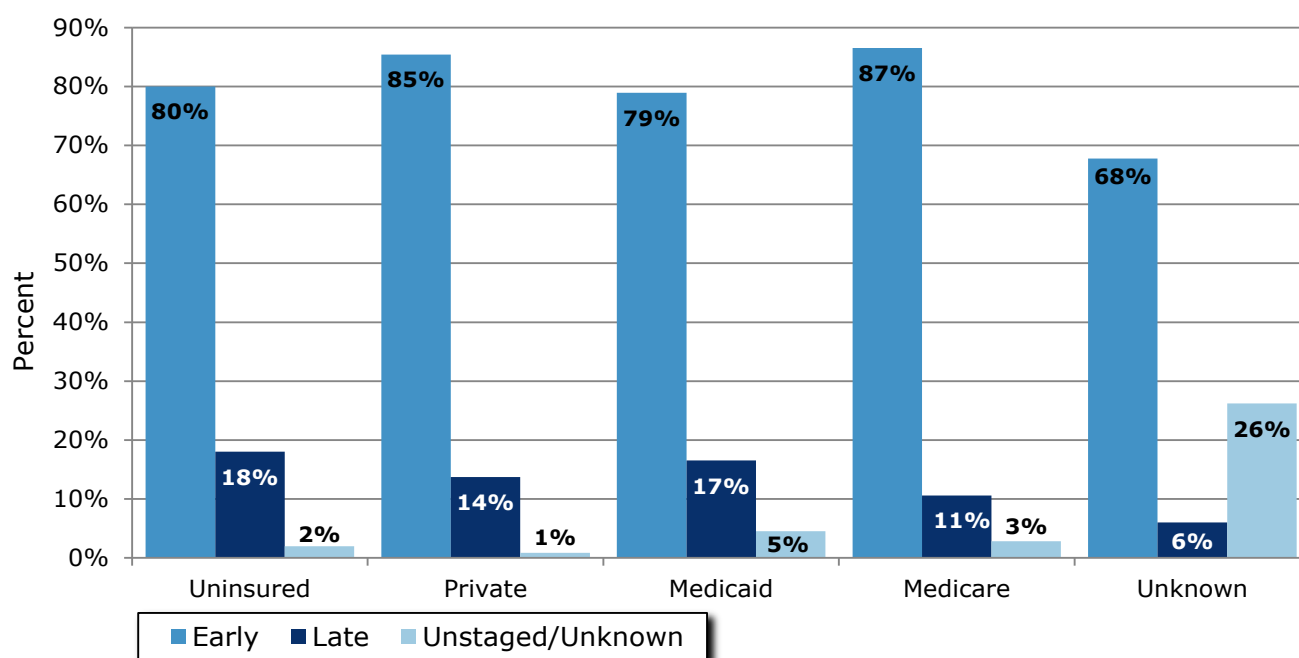
"Don't Know" and "Refused" were excluded from the denominator. This can cause an artificially high percentage.

Table 7.2: Prostate Cancer: Survival Probability (%) by Stage at Diagnosis and Race in the U.S. (SEER), 2001-2007

Five-year Survival Probability (%)			
Stage	Overall	White Male	Black Male
All Stages	99.4%	99.7%	96.2%
Localized	100.0%	100.0%	100.0%
Regional	100.0%	100.0%	100.0%
Distant	28.7%	28.1%	27.9%
Unstaged/ Unknown Stage	69.9%	68.8%	58.8%

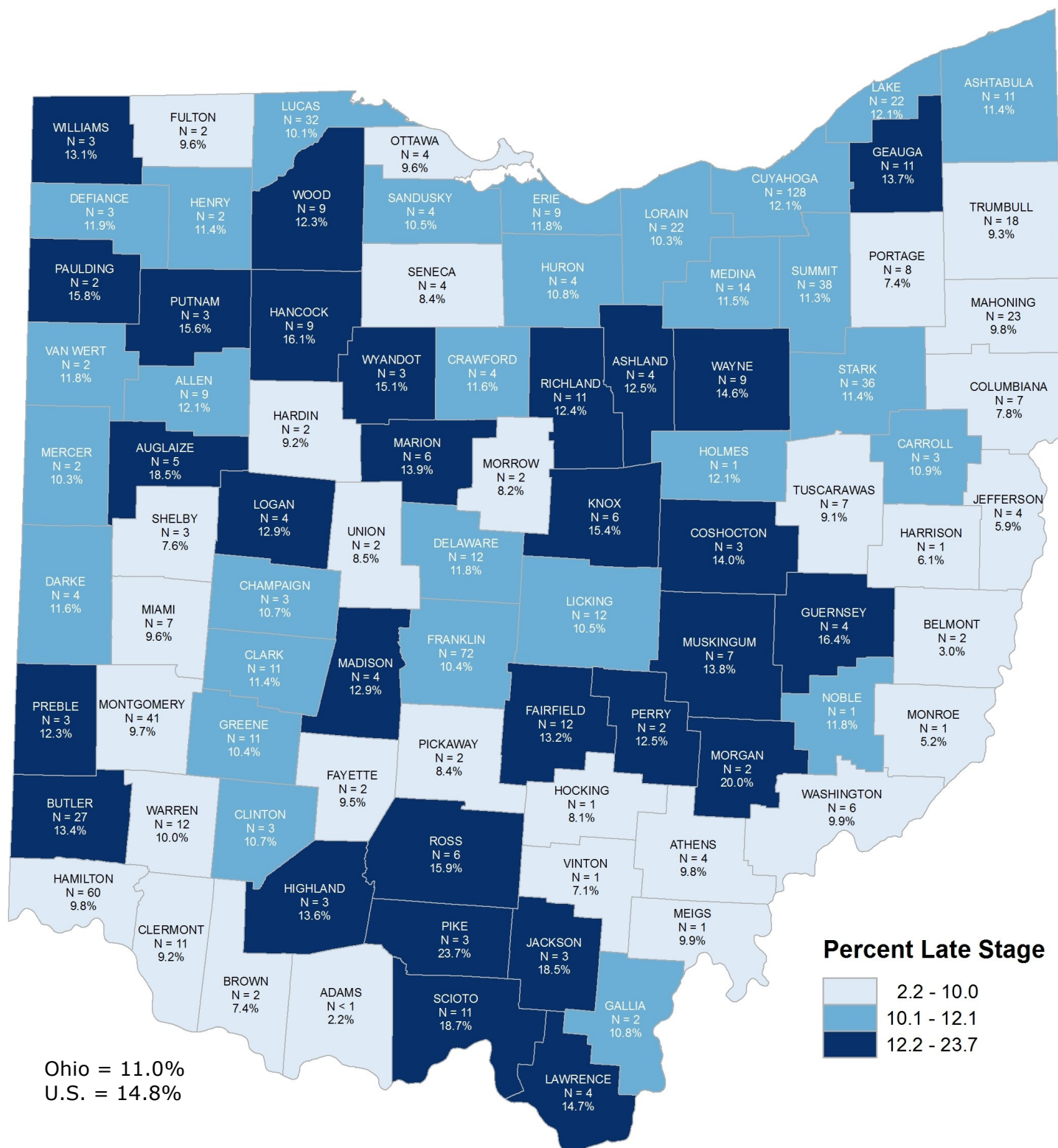
Source: Surveillance Epidemiology and End Results Program, *SEER Cancer Statistics Review, 1975-2008*, National Cancer Institute, 2011.

- Table 7.2 shows that five-year survival probability is at or near 100 percent for all stages combined, localized and regional stages but only 29 percent for men diagnosed at distant stage.
- Figure 7.8 shows that the highest percentage of prostate cancers diagnosed at late stage occurred among those uninsured at diagnosis, followed closely by those with Medicaid as their primary insurance payer. Those with unknown insurance type had the highest percentage of unstaged/unknown stage at diagnosis for prostate cancer.

Figure 7.8: Prostate Cancer: Proportion of Cases by Stage and Primary Payer (Insurance) at Diagnosis in Ohio, 2004-2008

Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

Figure 7.9: Prostate Cancer: Proportion of Cases (%) Diagnosed at Late (Regional or Distant) Stage by County of Residence, Ohio, 2004-2008 (Average Annual N=8,161)



Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

* Note: Each category represents approximately 33%, or 29, of the 88 Ohio counties.

Table 7.3: Prostate Cancer: Proportion of Cases (%) by County of Residence and Stage at Diagnosis in Ohio and the U.S. (SEER), 2004-2008

	Early Stage %	Late Stage %	Unstaged/ Unknown %	Average Annual Cases
Ohio	83%	11%	6%	8,161
SEER	81%	16%	4%	
Adams	88%	2%	10%	18
Allen	79%	12%	8%	71
Ashland	80%	13%	7%	35
Ashtabula	81%	11%	8%	95
Athens	86%	10%	4%	41
Auglaize	78%	18%	3%	26
Belmont	94%	3%	3%	60
Brown	84%	7%	9%	33
Butler	81%	13%	5%	201
Carroll	86%	11%	3%	26
Champaign	80%	11%	9%	24
Clark	82%	11%	6%	100
Clermont	86%	9%	4%	122
Clinton	80%	11%	9%	28
Columbiana	84%	8%	8%	90
Coshocton	75%	14%	11%	21
Crawford	82%	12%	6%	36
Cuyahoga	82%	12%	6%	1056
Darke	83%	12%	6%	35
Defiance	75%	12%	13%	27
Delaware	84%	12%	4%	102
Erie	78%	12%	10%	74
Fairfield	83%	13%	4%	89
Fayette	83%	10%	7%	17
Franklin	84%	10%	5%	691
Fulton	83%	10%	8%	21
Gallia	87%	11%	2%	19
Geauga	82%	14%	5%	83
Greene	80%	10%	10%	102
Guernsey	79%	16%	4%	23
Hamilton	86%	10%	4%	614
Hancock	80%	16%	4%	57
Hardin	86%	9%	5%	24
Harrison	91%	6%	3%	13
Henry	77%	11%	11%	16
Highland	79%	14%	7%	22
Hocking	84%	8%	8%	17
Holmes	74%	12%	14%	12
Huron	84%	11%	6%	39
Jackson	78%	18%	3%	18
Jefferson	91%	6%	3%	71
Knox	79%	15%	6%	38
Lake	75%	12%	13%	182
Lawrence	76%	15%	9%	29
Licking	84%	11%	5%	114
Logan	80%	13%	7%	34
Lorain	85%	10%	5%	213
Lucas	86%	10%	4%	314
Madison	83%	13%	4%	28
Mahoning	83%	10%	7%	238
Marion	82%	14%	4%	40
Medina	85%	11%	4%	119
Meigs	82%	10%	8%	14
Mercer	81%	10%	9%	23
Miami	88%	10%	3%	77
Monroe	94%	5%	1%	15
Montgomery	82%	10%	8%	423
Morgan	76%	20%	4%	10
Morrow	86%	8%	5%	22
Muskingum	79%	14%	8%	48
Noble	86%	12%	2%	10
Ottawa	83%	10%	7%	37
Paulding	75%	16%	9%	11
Perry	84%	13%	3%	18
Pickaway	86%	8%	6%	29
Pike	64%	24%	12%	12
Portage	86%	7%	7%	111
Preble	84%	12%	4%	28
Putnam	77%	16%	7%	22
Richland	82%	12%	6%	90
Ross	75%	16%	9%	36
Sandusky	81%	10%	8%	42
Scioto	76%	19%	5%	59
Seneca	85%	8%	7%	45
Shelby	87%	8%	6%	34
Stark	84%	11%	4%	317
Summit	82%	11%	7%	336
Trumbull	84%	9%	6%	195
Tuscarawas	85%	9%	5%	77
Union	85%	8%	7%	26
Van Wert	81%	12%	8%	19
Vinton	90%	7%	2%	8
Warren	85%	10%	5%	120
Washington	87%	10%	4%	56
Wayne	74%	15%	11%	59
Williams	80%	13%	7%	26
Wood	82%	12%	5%	73
Wyandot	83%	15%	2%	17

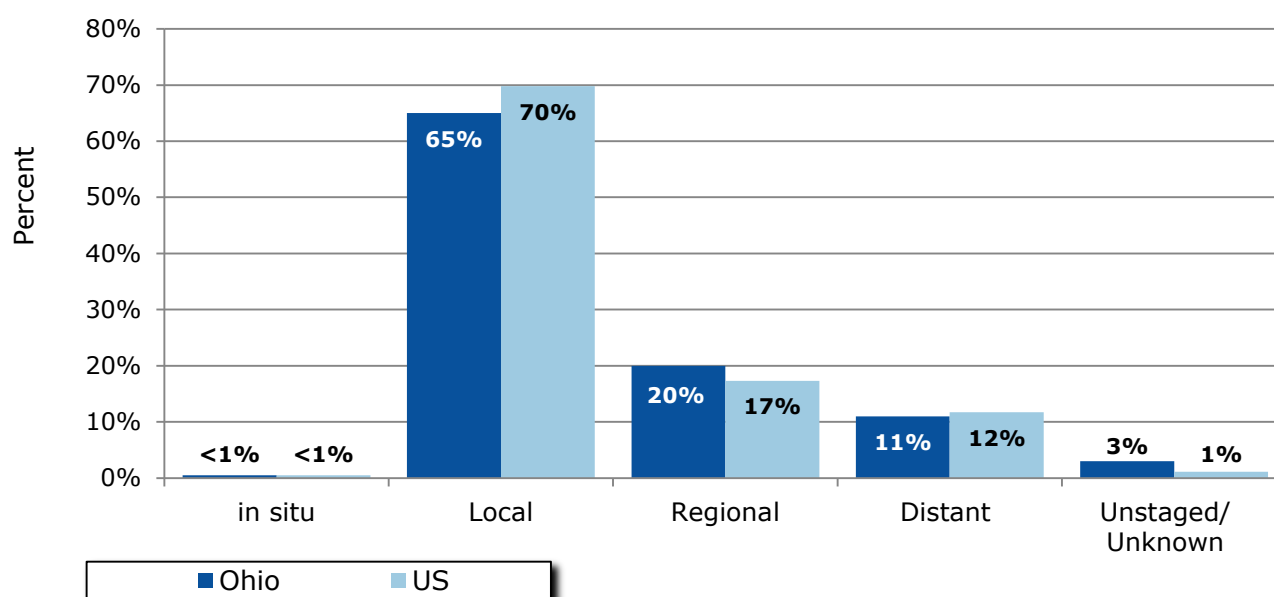
Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011; and the Surveillance Epidemiology and End Results Program, SEER*Stat Database: Incidence, Nov 2010 submission, National Cancer Institute, 2011.

Testicular Cancer

Figure 8.1 shows that, in Ohio, compared to the United States:

- A lower percentage of testicular cancer cases were diagnosed at the localized stage.
- A higher percentage of testicular cancer cases were diagnosed at the regional stage.

Figure 8.1: Testicular Cancer: Proportion of Cases (%) by Stage at Diagnosis in Ohio, with Comparison to the U.S. (SEER), 2004-2008 (Average Annual N=310)



Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011; and the Surveillance Epidemiology and End Results Program, SEER*Stat Database: Incidence, Nov 2010 submission, National Cancer Institute,

Figure 8.2 shows that, compared to whites, in Ohio:

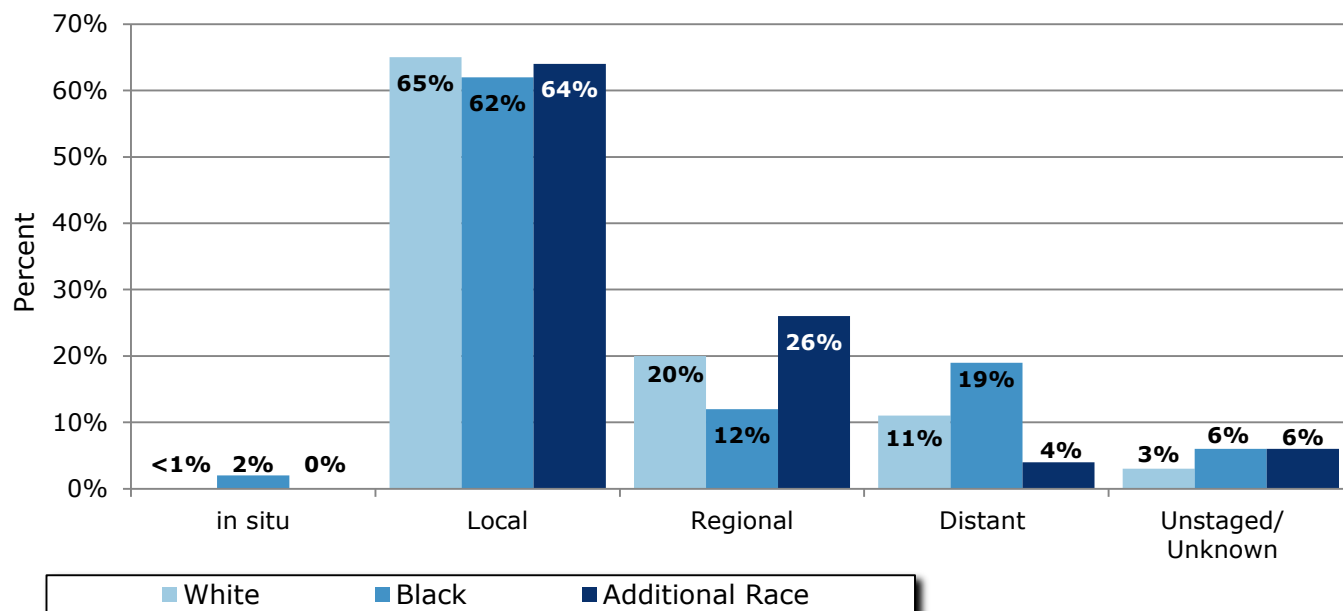
- A higher percentage of testicular cancers among blacks were diagnosed at distant stage or unstaged/unknown stage, and a lower percentage of blacks were diagnosed at localized and regional stages.
- There were higher percentages of testicular cancers among additional races diagnosed at the regional stage and unstaged/unknown stage, while there were lower percentages of additional races diagnosed at distant stage.

Figure 8.3 shows that, in Ohio:

- There were no clear trends with respect to stage at diagnosis of testicular cancer by age group.
- Men aged 0-29 years were most likely to be diagnosed at regional or distant stages, compared to men 30-44 and 45 years and older.

Testicular Cancer

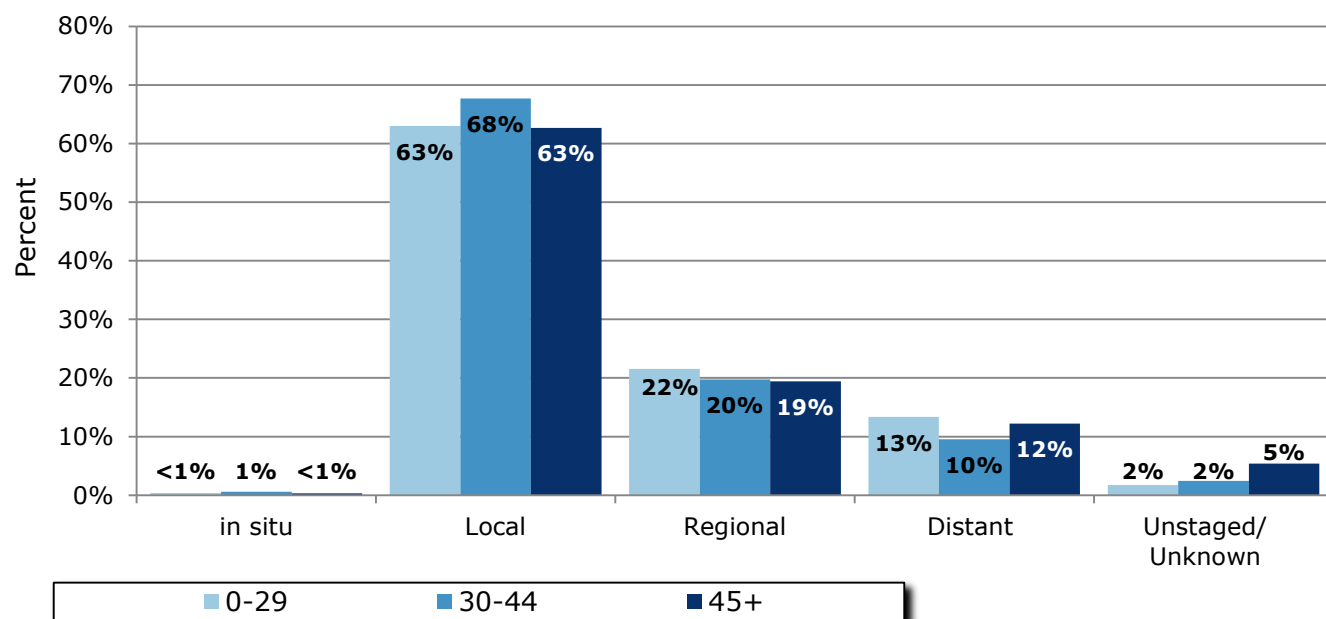
Figure 8.2: Testicular Cancer: Proportion of Cases (%) by Stage at Diagnosis and Race¹ in Ohio, 2004-2008 (Average Annual N=310)



Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

¹Additional Race includes Asian/Pacific Islander, American Indian/Alaskan Native, Other and Unknown races.

Figure 8.3: Testicular Cancer: Proportion of Cases (%) by Stage at Diagnosis and Age Group in Ohio, 2004-2008 (Average Annual N=310)

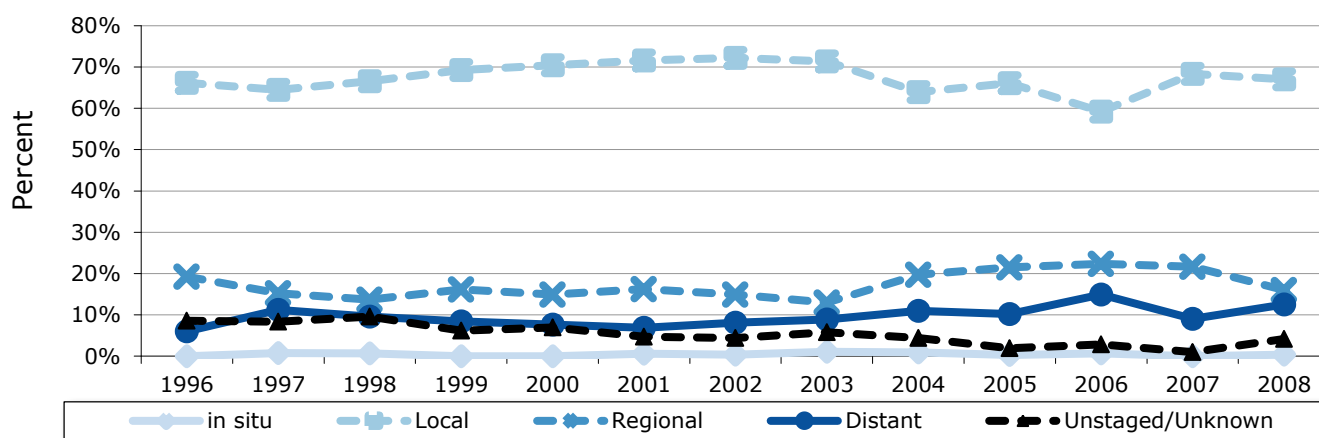


Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

Testicular Cancer

Figure 8.4 shows that the proportions of testicular cancer cases diagnosed at localized, regional and distant stages were variable from 1996 to 2008. The proportion of testicular cancer cases reported unstaged/unknown stage decreased slightly over this time period.

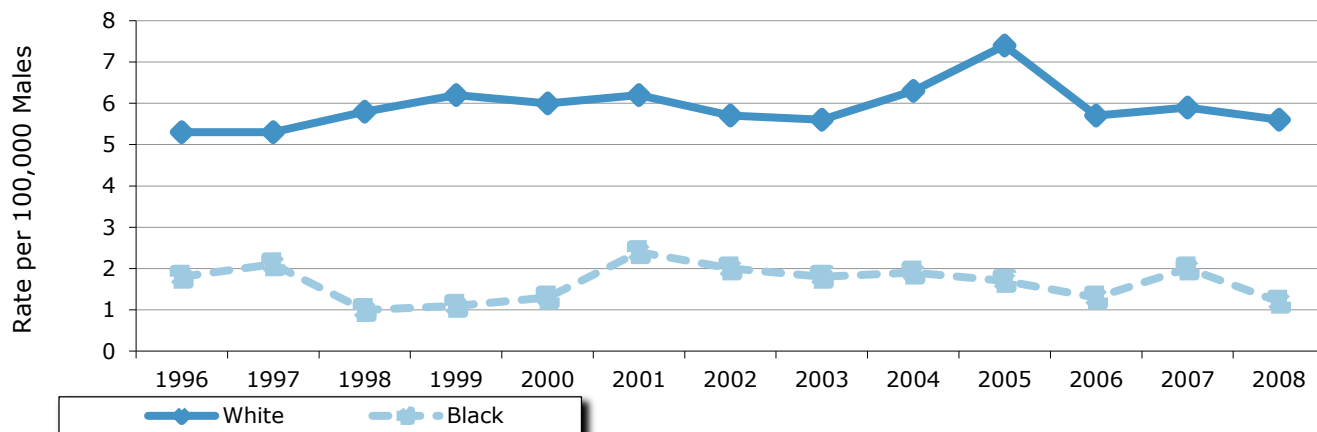
Figure 8.4: Testicular Cancer: Trends in the Proportion of Cases (%) by Stage at Diagnosis in Ohio, 1996-2008



Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

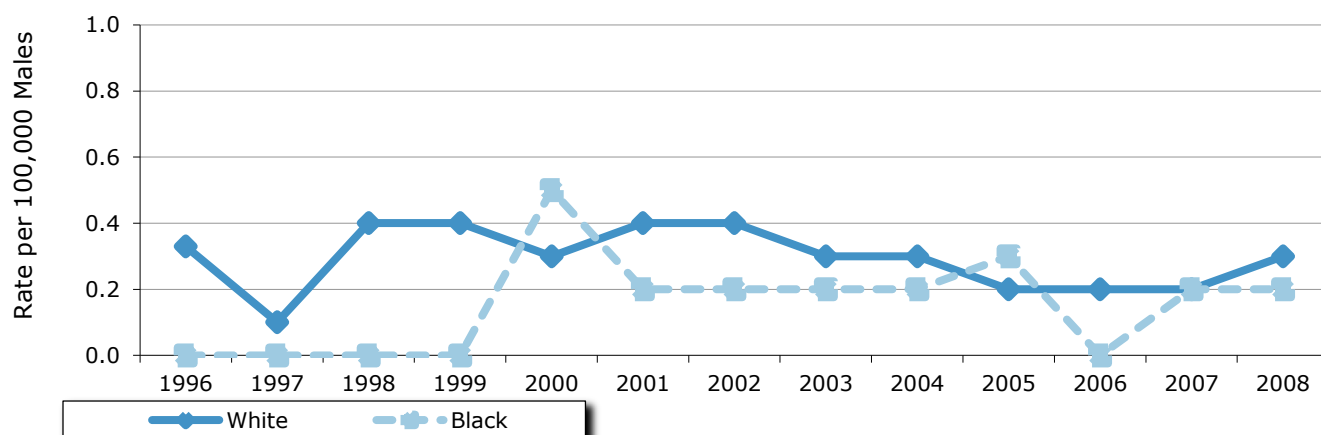
- Testicular cancer incidence rates (Figure 8.5) were much higher and slightly increased among whites in Ohio from 1996 to 2008, compared to blacks who had lower and more variable rates during this time period.
- For both whites and blacks, testicular cancer mortality rates (Figure 8.6) were sporadic but extremely low from 1996 to 2008.
- For whites, there was a slight increase from 1996 to 2008 in the percentage of testicular cancer cases diagnosed at late stage (Figure 8.7), while, for blacks, the percentage was inconsistent with no apparent directional trend. The variability in the percent diagnosed at late stage for blacks is due to the small number of cases diagnosed each year, ranging from six to 14 over the time period.

Figure 8.5: Testicular Cancer: Trends in Average Annual Age-adjusted Incidence Rates per 100,000 Males by Race in Ohio, 1996-2008



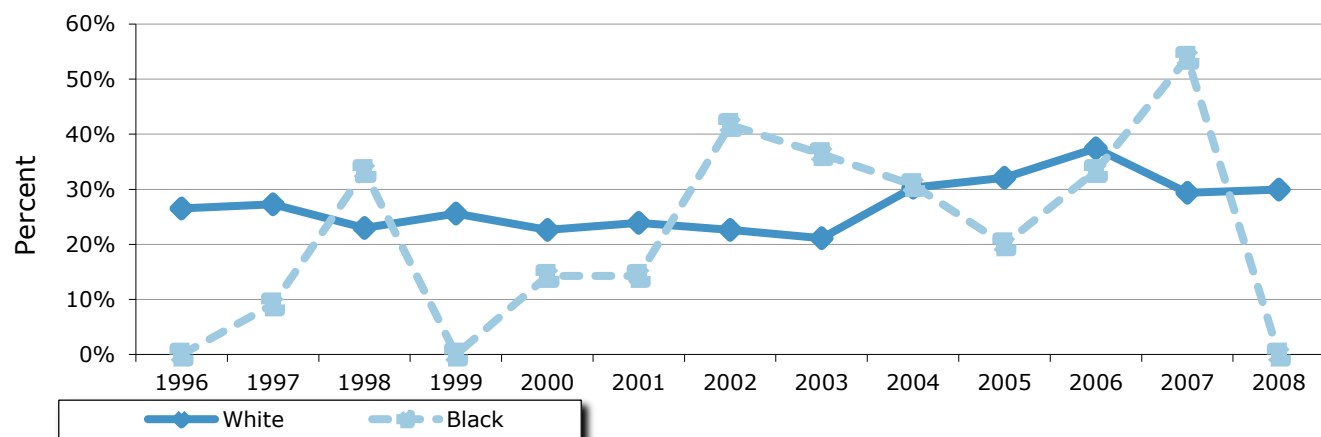
Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

Figure 8.6: Testicular Cancer: Trends in Average Annual Age-adjusted Mortality Rates per 100,000 Males by Race in Ohio, 1996-2008



Source: Ohio Vital Statistics Program, Ohio Department of Health, 2010.

Figure 8.7: Testicular Cancer: Trends in the Proportion of Cases (%) Diagnosed at Late (Regional or Distant) Stage by Race in Ohio, 1996-2008



Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

Testicular Cancer

Did You Know?

Testicular cancer is a highly treatable cancer with more than 90 percent of the cases labeled cured following therapy. The cure rate is nearly 98 percent when the cancer is detected early.

Table 8.1 shows that five-year survival probability decreases with advancing stage. For each stage, survival probability is greater among whites, compared to blacks.

Table 8.1: Testicular Cancer: Survival Probability (%) by Stage at Diagnosis and Race in the U.S. (SEER), 2001-2007

Five-year Survival Probability (%)			
Stage	Overall	White Male	Black Male
All Stages	95.3%	95.7%	86.5%
Localized	99.0%	99.1%	98.5%
Regional	96.1%	96.8%	84.6%
Distant	72.7%	73.7%	51.9%
Unstaged/ Unknown Stage	85.5%	87.1%	--

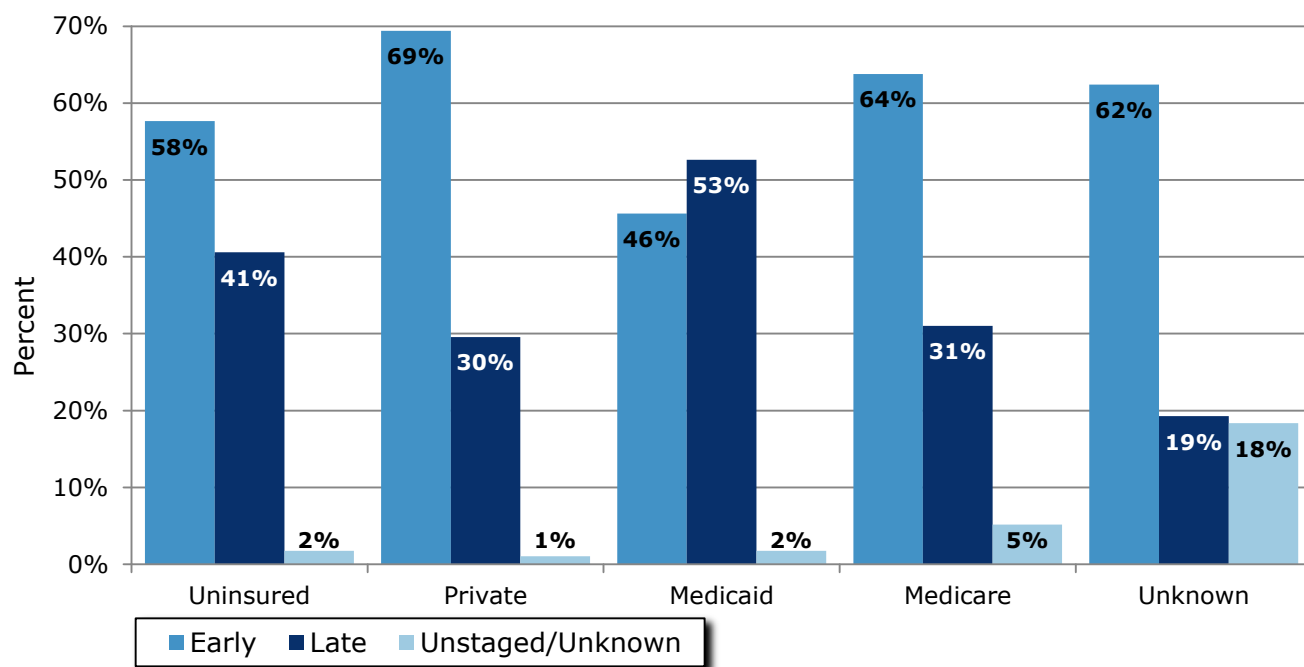
Source: Surveillance Epidemiology and End Results Program, *SEER Cancer Statistics Review, 1975-2008*, National Cancer Institute, 2011.

- Statistic could not be calculated due to fewer than 25 cases during the time period.

Testicular Cancer

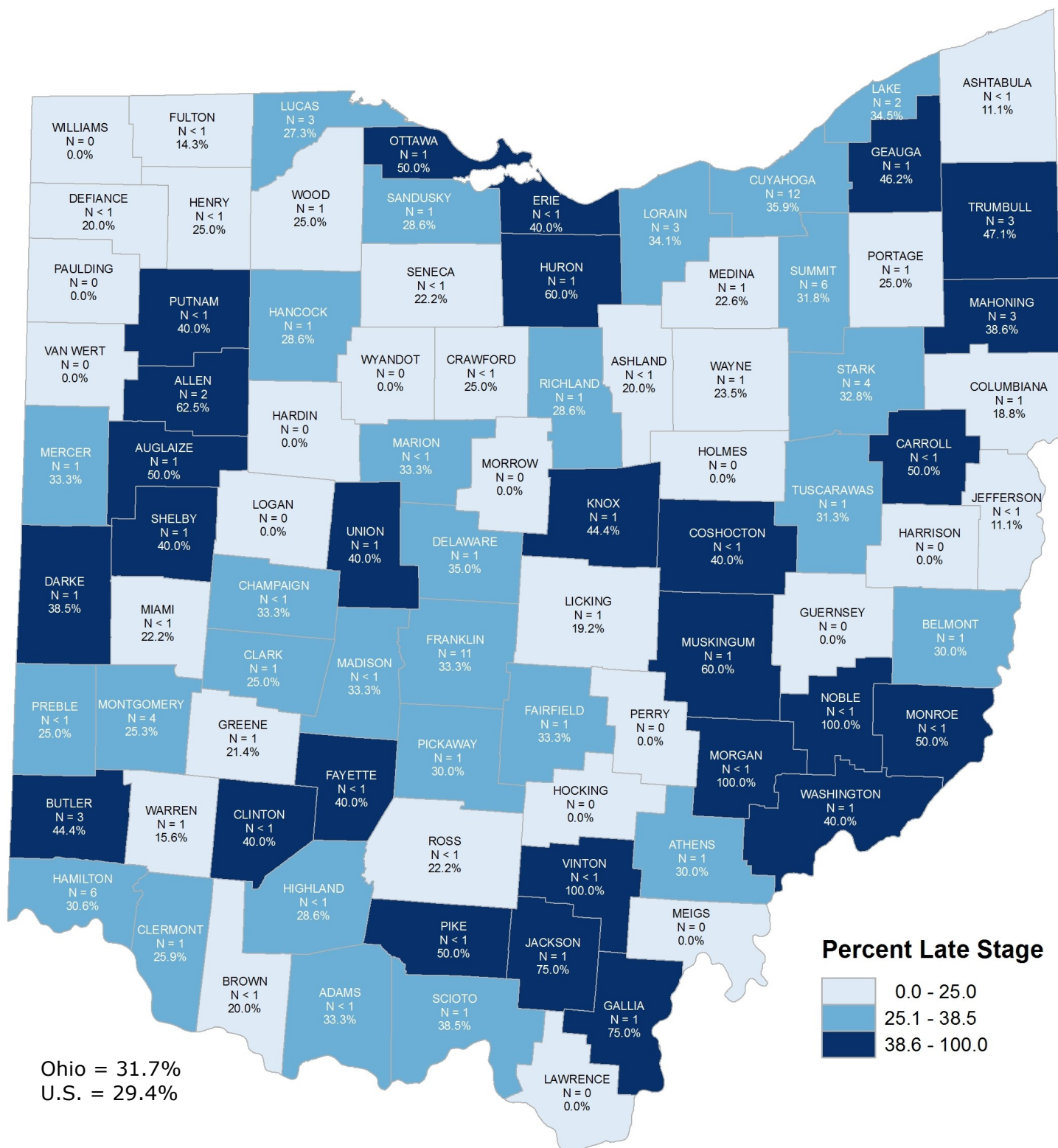
Figure 8.8 shows that the percentage of late stage testicular cancers was greatest among those with Medicaid as their primary insurance payer at diagnosis, followed by those who were uninsured. Those with unknown insurance had the highest percentage of unstaged/unknown stage testicular cancer.

Figure 8.8: Testicular Cancer: Proportion of Cases by Stage and Primary Payer (Insurance) at Diagnosis in Ohio, 2004-2008



Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

Figure 8.9: Testicular Cancer: Proportion of Cases (%) Diagnosed at Late (Regional or Distant) Stage by County of Residence, Ohio, 2004-2008 (Average Annual N=310)



Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

* Note: Each category represents approximately 33%, or 29, of the 88 Ohio counties.

Table 8.2: Testicular Cancer: Proportion of Cases (%) by County of Residence and Stage at Diagnosis in Ohio and the U.S. (SEER), 2004-2008

	Early Stage %	Late Stage %	Unstaged/ Unknown %	Average Annual Cases
Ohio	65%	32%	3%	310
SEER	70%	29%	1%	
Adams	67%	33%	0%	<1
Allen	31%	63%	6%	3
Ashland	80%	20%	0%	1
Ashtabula	89%	11%	0%	2
Athens	60%	30%	10%	2
Auglaize	38%	50%	13%	2
Belmont	60%	30%	10%	2
Brown	80%	20%	0%	1
Butler	50%	44%	6%	7
Carroll	50%	50%	0%	<1
Champaign	67%	33%	0%	<1
Clark	75%	25%	0%	3
Clermont	74%	26%	0%	5
Clinton	60%	40%	0%	1
Columbiana	63%	19%	19%	3
Coshocton	60%	40%	0%	1
Crawford	50%	25%	25%	<1
Cuyahoga	61%	36%	3%	33
Darke	62%	38%	0%	3
Defiance	80%	20%	0%	1
Delaware	65%	35%	0%	4
Erie	60%	40%	0%	1
Fairfield	67%	33%	0%	4
Fayette	60%	40%	0%	1
Franklin	65%	33%	1%	32
Fulton	86%	14%	0%	1
Gallia	25%	75%	0%	<1
Geauga	46%	46%	8%	3
Greene	79%	21%	0%	3
Guernsey	100%	0%	0%	1
Hamilton	66%	31%	3%	20
Hancock	71%	29%	0%	3
Hardin	100%	0%	0%	<1
Harrison	100%	0%	0%	<1
Henry	75%	25%	0%	<1
Highland	71%	29%	0%	1
Hocking	100%	0%	0%	<1
Holmes	100%	0%	0%	1
Huron	40%	60%	0%	1
Jackson	25%	75%	0%	<1
Jefferson	89%	11%	0%	2
Knox	56%	44%	0%	2
Lake	66%	34%	0%	6
Lawrence	100%	0%	0%	<1
Licking	77%	19%	4%	5
Logan	100%	0%	0%	<1
Lorain	63%	34%	2%	8
Lucas	71%	27%	2%	11
Madison	67%	33%	0%	1
Mahoning	61%	39%	0%	9
Marion	67%	33%	0%	1
Medina	71%	23%	6%	6
Meigs	100%	0%	0%	<1
Mercer	58%	33%	8%	2
Miami	78%	22%	0%	2
Monroe	50%	50%	0%	<1
Montgomery	68%	25%	7%	15
Morgan	0%	100%	0%	<1
Morrow	100%	0%	0%	1
Muskingum	40%	60%	0%	2
Noble	0%	100%	0%	<1
Ottawa	33%	50%	17%	1
Paulding	0%	0%	0%	0
Perry	100%	0%	0%	<1
Pickaway	70%	30%	0%	2
Pike	50%	50%	0%	<1
Portage	75%	25%	0%	3
Preble	63%	25%	13%	2
Putnam	60%	40%	0%	1
Richland	71%	29%	0%	3
Ross	78%	22%	0%	2
Sandusky	64%	29%	7%	3
Scioto	62%	38%	0%	3
Seneca	56%	22%	22%	2
Shelby	50%	40%	10%	2
Stark	67%	33%	0%	12
Summit	67%	32%	1%	18
Trumbull	50%	47%	3%	7
Tuscarawas	56%	31%	13%	3
Union	50%	40%	10%	2
Van Wert	100%	0%	0%	<1
Vinton	0%	100%	0%	<1
Warren	81%	16%	3%	6
Washington	60%	40%	0%	2
Wayne	76%	24%	0%	3
Williams	100%	0%	0%	1
Wood	75%	25%	0%	2
Wyandot	100%	0%	0%	1

Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011; and the Surveillance Epidemiology and End Results Program, SEER*Stat Database: Incidence, Nov 2010 submission, National Cancer Institute, 2011.

Appendix I: American Cancer Society Recommendations for the Early Detection of Cancer in Average Risk, Asymptomatic People

Gender	Age	Primary Site	Test or Procedure*	Frequency
Female	Under Age 21 ¹	Cervix	Conventional Pap Test	Every year OR
			Liquid-based Pap Test	Every 2 years
	21-39	Cervix	Conventional Pap Test	Every year ² OR
			Liquid-based Pap Test	Every 2 years
	40-49	Breast	Clinical Breast Exam	Every 3 years
			Breast Self-exam ³	Every month
		Cervix	Conventional Pap Test	Every year ² OR
			Liquid-based Pap Test	Every 2 years
	50+	Breast	Mammogram ⁴	Every year
			Clinical Breast Exam	Every year
			Breast Self-exam ³	Every month
		Cervix	Conventional Pap Test	Every year ² OR
			Liquid-based Pap Test	Every 2 years
		Colon & Rectum	Mammogram ⁴	Every year
			Clinical Breast Exam	Every year
			Breast Self-exam ³	Every month
			Colonoscopy	Every 10 years OR
Male	50+	Colon & Rectum	Flexible Sigmoidoscopy ⁵	Every 5 years OR
			Double-contrast Barium Enema ⁵	Every 5 years OR
			CT Colonography (virtual colonoscopy) ⁵	Every 5 years OR
			Fecal Occult Blood Test (FOBT) ^{5,6}	Every 5 years OR
			Fecal Immunochemical Test (FIT) ^{5,6}	Every year OR
			Stool DNA (sDNA) Test ⁵	Interval Uncertain
			Colonoscopy	Every 10 years OR
			Flexible Sigmoidoscopy ⁵	Every 5 years OR
		Prostate	Begin discussion about prostate cancer testing ⁷	Periodic

Source: American Cancer Society Ohio Division, Ohio Department of Health, The Ohio State University. Ohio Cancer Facts & Figures 2010.

¹ Screening should begin within three years after a woman begins having vaginal intercourse, but no later than 21.

² Women 30+ who have had three consecutive normal annual exams may get screened every two to three years. Alternately HPV DNA testing and conventional or liquid-based cytology could be performed every three years. Women who have risk factors such as HIV infection or a weak immune system may need to get screened more often. Women 70+ who have had three or more consecutive normal Pap tests in the last 10 years may choose to stop cervical cancer screening. Screening after a total hysterectomy is not necessary unless the surgery was done as a treatment for cervical cancer.

³ Breast self-exam is an option for women starting in their 20s. Women should know how their breasts normally feel and report any breast change promptly to their health care provider.

⁴ Women with a 20% or greater lifetime risk, such as those with known BRCA1 or BRCA2 mutations, strong family history of breast or ovarian cancer, or radiation to the chest between ages 10 to 30, should begin annual mammography and magnetic resonance imaging (MRI) at 30. Women with moderate (15%-20%) lifetime risk should talk with their doctors about the benefits and limitations of adding MRI screening to their yearly mammograms.

⁵ All positive tests should be followed up with a colonoscopy.

⁶ For FOBT or FIT to be a screening test, the take-home multiple-sample method should be used.

⁷ The American Cancer Society does not support routine prostate testing, such as digital rectal exam and prostate-specific antigen blood test, at this time. Men at high risk, such as African-American men or those with one or more first-degree relatives diagnosed with prostate cancer before 65, should discuss potential benefits and limitations of testing beginning at 45. Men at average risk should begin this discussion at 50.

*In addition to recommended cancer screenings named in the table, men and women 21 and older should seek periodic health counseling and exam of thyroid, ovaries/testes, lymph nodes, oral cavity and skin.

Appendix II: U.S. Preventive Services Task Force (USPSTF) Recommendations* for the Early Detection of Cancer in Average Risk, Asymptomatic People

Gender	Age	Primary Site/Type	Test or Procedure**	Frequency
Female	Under Age 21 ¹	Cervix	Regular Pap Test ²	Every three years
	21-49	Cervix	Regular Pap Test ²	Every three years
	50+	Cervix	Regular Pap Test ^{2,3}	Every three years
		Breast	Mammogram ⁴	Every two years
		Colon & Rectum	Colonoscopy ⁵	Every 10 years OR
			Flexible Sigmoidoscopy	Every 5 years AND
			High Sensitivity Fecal Occult Blood Test (FOBT)	Every 3 years OR
			High Sensitivity FOBT	Every year

Male	50+	Colon & Rectum	Colonoscopy ⁵	Every 10 years OR
			Flexible Sigmoidoscopy	Every 5 years AND
			High Sensitivity FOBT	Every 3 years OR
			High Sensitivity FOBT	Every year

¹ Screening should begin within three years after a woman begins having vaginal intercourse, but no later than 21.

² Screening after a total hysterectomy is not recommended.

³ Women >65 who have had adequate recent screenings with normal Pap smears and are not at high risk may choose to stop cervical cancer screening.

⁴ The decision to start regular, biennial screening mammograms before 50 should be an individual one and should take into account the patient's values regarding the benefits and harms. Evidence is insufficient to assess the benefits and harms of screening mammograms in women 75+.

⁵ Colorectal cancer screening is not recommended for adults 76 to 85, although there may be considerations that support screening in an individual patient. Screening is not recommended for adults >85.

* This summary of recommendations is based on information available on the USPSTF Web site (<http://www.uspreventiveservicestaskforce.org>) as of November 8, 2011.

** The USPSTF states that the evidence is insufficient to assess the benefits and harms of screening for bladder, lung and oral cancer, as well as prostate cancer in men <75. The USPSTF recommends against screening for ovarian, pancreatic and testicular cancer, as well as prostate cancer in men 75+.

Appendix III: Proportion of Cases (%) by Cancer Site, Stage and Year of Diagnosis in Ohio, 1996-2008

Cervix													
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
In situ	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Localized	58%	54%	53%	54%	55%	49%	53%	52%	51%	46%	42%	39%	45%
Regional	29%	27%	26%	30%	29%	31%	27%	30%	31%	39%	39%	43%	36%
Distant	8%	5%	5%	7%	6%	6%	9%	8%	9%	10%	11%	11%	13%
Unstaged/ Unknown	5%	14%	16%	8%	10%	14%	11%	10%	9%	6%	7%	6%	6%

Colon and Rectum													
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
In situ	8%	7%	7%	7%	7%	7%	7%	7%	7%	6%	7%	7%	5%
Localized	29%	27%	29%	30%	29%	29%	30%	32%	37%	39%	37%	35%	37%
Regional	39%	36%	36%	36%	38%	37%	36%	35%	31%	29%	30%	31%	29%
Distant	16%	15%	15%	14%	13%	14%	14%	15%	16%	16%	16%	17%	17%
Unstaged/ Unknown	8%	14%	13%	12%	13%	13%	13%	11%	9%	9%	10%	10%	11%

Female Breast													
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
In situ	13%	14%	16%	16%	17%	18%	19%	18%	19%	18%	19%	19%	19%
Localized	52%	49%	52%	51%	50%	50%	49%	50%	48%	50%	49%	49%	48%
Regional	24%	22%	23%	23%	23%	22%	23%	23%	25%	25%	25%	25%	25%
Distant	5%	4%	4%	3%	4%	3%	3%	4%	5%	4%	4%	4%	4%
Unstaged/ Unknown	6%	10%	6%	6%	6%	7%	6%	5%	3%	3%	3%	3%	4%

Lung and Bronchus													
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
In situ	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Localized	20%	18%	17%	19%	18%	18%	17%	19%	16%	17%	17%	17%	17%
Regional	27%	24%	25%	25%	25%	25%	25%	25%	25%	24%	23%	23%	24%
Distant	35%	31%	31%	34%	34%	35%	36%	37%	45%	45%	45%	47%	46%
Unstaged/ Unknown	18%	28%	27%	22%	22%	22%	21%	18%	14%	14%	14%	14%	12%

Appendix III (cont.): Proportion of Cases (%) by Cancer Site, Stage and Year of Diagnosis in Ohio, 1996-2008

Melanoma of the Skin													
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
In situ	20%	20%	26%	29%	37%	35%	37%	35%	33%	34%	38%	37%	39%
Localized	55%	60%	50%	50%	43%	45%	43%	48%	52%	52%	49%	50%	47%
Regional	5%	5%	6%	5%	5%	5%	5%	5%	6%	5%	6%	6%	7%
Distant	3%	3%	3%	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%
Unstaged/ Unknown	17%	12%	15%	14%	13%	14%	12%	10%	7%	6%	5%	4%	5%

Oral Cavity and Pharynx													
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
In situ	2%	2%	2%	3%	2%	3%	3%	2%	1%	2%	3%	2%	2%
Localized	36%	33%	36%	35%	37%	35%	35%	34%	30%	27%	29%	30%	26%
Regional	42%	40%	40%	46%	44%	45%	43%	47%	42%	46%	45%	43%	46%
Distant	6%	5%	5%	6%	4%	6%	6%	5%	18%	18%	17%	18%	18%
Unstaged/ Unknown	13%	19%	17%	11%	13%	12%	13%	11%	9%	8%	7%	7%	7%

Prostate													
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
In situ	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Localized	68%	69%	68%	73%	75%	77%	79%	79%	82%	84%	85%	84%	80%
Regional	13%	10%	8%	8%	7%	6%	5%	5%	8%	8%	7%	8%	8%
Distant	6%	4%	4%	3%	4%	4%	3%	3%	4%	4%	3%	3%	3%
Unstaged/ Unknown	13%	17%	21%	15%	15%	14%	13%	12%	6%	5%	5%	5%	10%

Testis													
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
In situ	0%	1%	1%	0%	0%	1%	0%	1%	1%	0%	1%	0%	0%
Localized	66%	64%	67%	69%	70%	72%	72%	71%	64%	66%	59%	68%	67%
Regional	19%	15%	14%	16%	15%	16%	15%	13%	20%	21%	22%	22%	16%
Distant	6%	11%	10%	8%	8%	7%	8%	9%	11%	10%	15%	9%	13%
Unstaged/ Unknown	9%	8%	10%	6%	7%	5%	4%	6%	4%	2%	3%	1%	4%

Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

Appendix IV: Proportion of Cases (%) by Cancer Site and Primary Payer (Insurance) at Diagnosis in Ohio, 2004-2008

Cancer Site/Type	Uninsured	Private	Medicaid	Medicare	Other Public	Insured Source NOS	Unknown
Cervix	8.9%	34.7%	16.0%	19.3%	0.6%	13.7%	6.8%
Colon and Rectum	2.6%	20.1%	3.6%	54.2%	0.6%	8.8%	10.0%
Female Breast	2.3%	36.1%	4.2%	37.9%	0.5%	12.4%	6.7%
Lung and Bronchus	2.9%	16.8%	5.7%	54.1%	0.8%	6.4%	13.3%
Melanoma of the Skin	1.6%	27.8%	1.8%	26.5%	0.5%	17.0%	24.9%
Oral Cavity and Pharynx	4.8%	29.1%	9.0%	35.4%	1.5%	9.8%	10.5%
Prostate	1.5%	25.3%	1.8%	44.4%	1.1%	9.9%	16.0%
Testis	11.0%	49.7%	7.4%	3.7%	0.7%	20.6%	7.0%

Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011.

Appendix V: Cancer Site and Histology Codes
International Classification of Diseases for Oncology, Third Edition (ICD-O-3)^{1,2}

Cancer Site/Type	ICD-O-3 Site and Histology Code(s)
All Cancer Sites/Types	C000-C809
Oral Cavity and Pharynx	C000-C009; C019-C029; C079-C089; C040-C049; C030-C039; C050-C059; C060-C069; C110-C119; C090-C099; C100-C109; C129; C130-C139; C140-C142; C148
Esophagus	C150-C159
Stomach	C160-C169
Colon and Rectum	C180-C189; C199; C209; C260
Liver and Intrahepatic Bile Duct	C220-C221
Pancreas	C250-C259
Larynx	C320-C329
Lung and Bronchus	C340-C349
Melanoma of the Skin	C440-C449 (Types 8720-8790)
Breast	C500-C509
Cervix	C530-C539
Corpus Uterus	C540-C549; C559
Ovary	C569
Prostate	C619
Testis	C620-C629
Bladder	C670-C679
Kidney and Renal Pelvis	C649; C659
Brain and Other CNS ³	C700-C729
Thyroid	C739
Hodgkin's Lymphoma	Types 9650-9667
Non-Hodgkin's Lymphoma	Types 9590-9596, 9670-9671; 9673; 9675; 9678; 9680; 9684; 9687; 9689-9691; 9695; 9698-9702; 9705; 9708-9709; 9714-9719; 9727-9729; 9823 (excluding sites C420, C421 and C424); 9827 (excluding sites C420, C421 and C424)
Multiple Myeloma	Types 9731-9732; 9734
Leukemia	Types 9733; 9742; 9800; 9801; 9805; 9820; 9823 (sites C420, C421 and C424); 9826; 9827 (sites C420, C421 and C424); 9831; 9832-9834; 9835-9837; 9840; 9860; 9861; 9863; 9866; 9867; 9870; 9871-9874; 9875; 9876; 9891; 9895-9897; 9910; 9920; 9930; 9931; 9940; 9945; 9946; 9948; 9963; 9964

[1] Source of Table: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, April 2004, adapted from the International Classification of Diseases for Oncology, Third Edition, World Health Organization, Geneva, 2000.

[2] Types 9590-9989 are excluded for all cancer sites except where indicated.

[3] CNS = Central Nervous System.

Appendix VI: Cancer Mortality Codes
International Statistical Classification of Diseases and Related Health Problems, 10th
Edition (ICD-10)¹

Cancer Site/Type	ICD-10
All Cancer Sites/Types	C000-C979
Oral Cavity and Pharynx	C000-C149
Esophagus	C150-C159
Stomach	C160-C169
Colon and Rectum	C180-C209; C260
Liver and Intrahepatic Bile Duct	C220-C229
Pancreas	C250-C259
Larynx	C320-C329
Lung and Bronchus	C340-C349
Melanoma of the Skin	C430-C439
Breast	C500-C509
Cervix	C530-C539
Corpus Uterus	C540-C559
Ovary	C560-C569
Prostate	C610-C619
Testis	C620-C629
Bladder	C670-C679
Kidney and Renal Pelvis	C640-C659
Brain and Other CNS ²	C700-C729
Thyroid	C730-C739
Hodgkin's Lymphoma	C810-C819
Non-Hodgkin's Lymphoma	C820-C829; C830-C839; C840-C849; C850-C859; C963
Multiple Myeloma	C900; C902
Leukemia	C901; C910-C959

[1] Source of Table: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, August 2006, adapted from the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, World Health Organization, Geneva, 1992.

[2] CNS = Central Nervous System.

**Appendix VII: Estimated Percent of OCISS Case Completeness
By Cancer Site/Type, Ohio, 2004-2008^{1,2,3}**

Sites/Types	% Complete
All Cancer Sites/Types	94%
Bladder	92%
Brain and Other CNS ⁴	>100%
Female Breast	88%
Cervix	94%
Colon and Rectum	96%
Corpus Uterus	>100%
Esophagus	>100%
Hodgkin's Lymphoma	91%
Kidney and Renal Pelvis	94%
Larynx	>100%
Leukemia	86%
Liver and Intrahepatic Bile Duct	75%
Lung and Bronchus	>100%
Melanoma of the Skin	93%
Multiple Myeloma	87%
Non-Hodgkin's Lymphoma	91%
Oral Cavity and Pharynx	89%
Ovary	96%
Pancreas	94%
Prostate	89%
Stomach	87%
Testis	90%
Thyroid	89%

[1] Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, November 2011.

[2] The 2004-2008 rates were calculated using vintage 2009 post-censal estimates for July 1, 2004-2008 (U.S. Census Bureau, 2010). Rates are direct age-adjusted to the U.S. 2000 standard population.

[3] Expected incidence rates were estimated based on the Surveillance, Epidemiology, and End Results (SEER) Program cancer incidence to mortality rate ratio for 2004-2008, SEER Cancer Statistics Review 1975-2008, National Cancer Institute, 2011.

[4] CNS=Central Nervous System

Note: Completeness may exceed 100 percent if the observed number of cases exceeds the number expected based on the SEER incidence to mortality rate ratio and Ohio mortality rates.

Data Sources

[1] Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2011 (data release February 2011).

[2] Surveillance, Epidemiology, and End Results (SEER) Program (www.seer.cancer.gov) SEER*Stat Database: Incidence – SEER 17 Regs Public-Use, Nov 2010 Sub (1975-2008), National Cancer Institute, 2011.

[3] Ohio Vital Statistics Program, Ohio Department of Health, 2010.

[4] Ohio Behavioral Risk Factor Surveillance System, Ohio Department of Health, 2011.

[5] Howlader N, Noone AM, Krapcho M, et. al. (eds). *SEER Cancer Statistics Review, 1975-2008*, National Cancer Institute. Bethesda, MD, http://seer.cancer.gov/csr/1975_2008/, based on November 2010 SEER data submission, posted to the SEER web site, 2011.

Technical Notes

Additional Race—Includes Asian/Pacific Islander, American Indian/Alaskan Native, Other and Unknown races. These races were combined due to the fact that small numbers prevent examination of each race separately.

Age-Adjusted Rate—A summary rate that is a weighted average of age-specific rates, where the weights represent the age distribution of a standard population (direct adjustment). The incidence and mortality rates presented in this report were standardized to the age distribution of the 2000 U.S. Standard Population. Under the direct method, the population was first divided into 19 five-year age groups, i.e., <1, 1-4, 5-9, 10-14...85+, and the age-specific rate was calculated for each age group. Each age-specific rate was then multiplied by the standard population proportion for the respective age group and summed to give an overall age-adjusted rate. Rates are presented as the number of cases per 100,000 persons per year. Age-adjustment allows for the comparison of rates between populations with different age distributions.

Average Annual Number—The number of cases or deaths diagnosed per year, on average, for the time period of interest (e.g., 2004-2008). Average annual numbers are calculated by summing the number of cases or deaths for a given time period, dividing by the number of years that comprise the time period and rounding to the nearest whole number.

Cancer Case—All primary malignancies diagnosed among Ohio residents from 2004-2008 and reported to the OCISS. Cases were categorized according to the International Classification of Diseases for Oncology, Third Edition (ICD-O-3), World Health Organization, Geneva, Switzerland, 2000. Data are presented by cancer site/type groupings created in the manner of the SEER Program at the National Cancer Institute. Case counts represent the number of primary cancers reported to the OCISS, not the number of persons; one person may be diagnosed with more than one primary tumor (e.g., lung cancer and melanoma of the skin) and therefore counted as more than one case. Only invasive cases, with the addition of *in situ* bladder cancer, were used in the calculation of incidence rates.

Incidence—The number of new cases diagnosed during a specified time period (e.g., 2004-2008).

Invasive Cancer—A malignant tumor that has infiltrated the organ in which the tumor originated. Invasive cancers consist of those diagnosed at the localized, regional, distant and unstaged/unknown stages.

Mortality—The number of deaths during a specified time period (e.g., 2004-2008). Deaths for 2004-2008 were coded using the International Classification of Diseases and Related Health Problems, Tenth Revision (ICD-10), World Health Organization, Geneva, Switzerland, 1992.

Technical Notes (cont.)

Rate—The number of cases or deaths per unit of population (e.g., per 100,000 persons) over a specified time period (e.g., 2004-2008). Rates may be unstable and are not presented when the case count for 2004-2008 is less than five. Rates were age-adjusted to the 2000 U.S. Standard Population.

Stage at Diagnosis—The stage of a cancer case refers to the degree to which the cancer has spread at the time it is diagnosed. The stage at diagnosis of cancer is an important determinant of survival. Patients with early stage disease often have better long-term survival, and detecting cancers at an early stage may lead to a reduction in mortality. The stages presented in this report, in the order of increasing spread, are *in situ*, localized, regional and distant. In addition, 15 percent of cancers in 2004-2008 were reported as unstaged or with an unknown stage at diagnosis. *In situ* and localized tumors are referred to as early stage tumors, and regional and distant tumors are termed late stage. Cancers diagnosed at the localized, regional, distant and unstaged/unknown stages are categorized as invasive.

in situ: A tumor that has not invaded or penetrated surrounding tissue

Localized: An invasive malignant tumor that is confined to the organ in which it originated.

Regional: An invasive malignant tumor that has spread by direct extension to adjacent organs or tissues and/or has spread to regional lymph nodes.

Distant: An invasive malignant tumor that has spread by direct extension beyond adjacent organs or tissues and/or metastasized to distant lymph nodes or tissues.

Unstaged/Unknown: Insufficient information is available to determine the stage of cancer at the time of diagnosis, or the case was reported with missing stage data.

Survival Probability—Five-year relative survival probabilities are from the SEER 17 areas, which contributed cases for diagnosis years 2001-2007. Probabilities are based on follow-up of patients into 2008.