

Chapter on Mortality, Cancer, and Injury

Erie County Community Health Needs Assessment, 2012

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*“Our mission is to preserve, promote, and protect  
the health, safety, and well-being of the people and the environment of Erie County.”*

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## Mortality, Cancer, and Injury

### Introduction

A total of 8,062 Erie County residents died during the period 2008 to 2010, for a corresponding crude death rate of 9.6 deaths per 1,000 population (Table 1). Overall, 3,786 (47.0%) deaths were to males and 4,276 (53.0%) deaths were to females. The crude death rates for males and females were 9.2 and 10.0 deaths per 1,000, respectively. With respect to race and ethnicity, 7,648 (94.9%) deaths were to Whites, 386 (4.8%) deaths were to Blacks, and 28 (0.3%) deaths were to persons classified as Other or Unknown Race. A total of 52 (0.6%) deaths were to Hispanics or Latinos (of any race).

The 2008-2010 resident death percentages and crude death rates for Erie County and Pennsylvania were largely comparable. However, Pennsylvania experienced a larger proportion of deaths and higher crude death rates among Blacks and Hispanics.

**Table 1. Deaths and Crude Death Rates by Race and Sex, 2008-2010**

Erie County and Pennsylvania, 2008-2010				
<u>Race or Ethnicity</u>	<u>Erie County Deaths</u>	<u>Rate</u>	<u>Pennsylvania Deaths</u>	<u>Rate</u>
All Races	8,062 (100.0%)	9.6	373,729 (100.0%)	9.9
Male	3,786 (47.0%)	9.2	180,309 (48.2%)	9.8
Female	4,276 (53.0%)	10.0	193,411 (51.8%)	10.0
Unknown	0		9	
White	7,648 (94.9%)	10.3	335,996 (89.9%)	10.6
Male	3,564 (44.2%)	9.8	161,312 (43.2%)	10.4
Female	4,084 (50.7%)	10.8	174,680 (46.7%)	10.7
Unknown	0		4	
Black or African American	386 (4.8%)	6.4	34,785 (9.3%)	8.5
Male	206 (2.6%)	6.5	17,391 (4.7%)	9.0
Female	180 (2.2%)	6.3	17,389 (4.7%)	8.1
Unknown	0		5	
Hispanic or Latino (of any race)	52 (0.6%)	1.8	4,656 (1.2%)	2.4
Male	31 (0.4%)	2.1	2,782 (0.7%)	2.8
Female	21 (0.3%)	1.5	1,874 (0.5%)	1.9
Unknown	0		0	

Note: Rates are per 1,000 population for each specified group, 2008-2010

Erie County resident deaths and age-specific death rates for the period 2008-2010 are presented in Table 2. Overall, males had higher age-specific death rates than females for all nine age group categories. The lowest age-specific rates were observed in the 10-19 years age group (0.3 deaths per 1,000 for males and 0.2 deaths per 1,000 for females), and the highest rates were seen in the 80 years and older age group (119.1 deaths per 1,000 for males and 102.5 deaths per 1,000 for females).

Although over half (51.0%) of all county deaths occurred in residents 80 years and older, females had nearly 1,000 more deaths than males in this age group category. Interestingly, only 8.2% of all deaths occurred in persons under the age of 50 years.

**Table 2. Deaths and Age-Specific Death Rates by Age and Sex, 2008-2010**

Erie County, 2008-2010						
<u>Age Group</u>	<u>Erie County</u>	<u>Rate</u>	<u>Erie County Males</u>	<u>Rate</u>	<u>Erie County Females</u>	<u>Rate</u>
All Ages	8,062 (100.0%)	9.6	3,786 (100.0%)	9.2	4,276 (100.0%)	10.0
0 - 9	116 (1.4%)	1.1	63 (1.7%)	1.2	53 (1.2%)	1.1
10 - 19	28 (0.3%)	0.2	18 (0.5%)	0.3	10 (0.2%)	0.2
20 - 29	103 (1.3%)	0.9	78 (2.1%)	1.3	25 (0.6%)	0.4
30 - 39	128 (1.6%)	1.3	78 (2.1%)	1.5	50 (1.2%)	1.0
40 - 49	285 (3.5%)	2.5	156 (4.1%)	2.7	129 (3.0%)	2.3
50 - 59	699 (8.7%)	6.1	422 (11.1%)	7.5	277 (6.5%)	4.7
60 - 69	1,021 (12.7%)	13.0	580 (15.3%)	15.5	441 (10.3%)	10.7
70 - 79	1,570 (19.5%)	31.3	828 (21.9%)	38.3	742 (17.4%)	26.0
80 and older	4,112 (51.0%)	108.3	1,563 (41.3%)	119.1	2,549 (59.6%)	102.5
Infant deaths	91 (1.1%)					
< 28 days	65 (0.8%)					
28 - 364 days	26 (0.3%)					

Note: Rates are per 1,000 population for each specified group, 2008-2010

The total number of deaths and crude death rates for Erie County's 38 municipalities during 2008-2010 are presented in Table 3. The number of deaths ranged from a low of 5 residents in Elgin Borough to a high of 3,286 residents in the City of Erie. Erie County's three most populous municipalities - the City of Erie, Millcreek Township, and Harborcreek Township - accounted for nearly two-thirds (65.4%) of all resident deaths. Crude death rates ranged from a low of 3.5 deaths per 1,000 in Venango Township to a high of 21.9 deaths per 1,000 in Wattsburg Borough.

**Table 3. Erie County Municipality Deaths and Crude Death Rates, 2008-2010**

Erie County Municipalities, 2008-2010		
<u>Municipality</u>	<u>Deaths</u>	<u>Rate</u>
Erie County	8,062 (100.0%)	9.6
Albion Borough	40 (0.5%)	8.8
Amity Township	17 (0.2%)	5.1
Concord Township	22 (0.3%)	5.5
Conneaut Township	54 (0.7%)	4.3
City of Corry	239 (3.0%)	12.4
Cranesville Borough	21 (0.3%)	11.7
Edinboro Borough	137 (1.7%)	7.0
Elgin Borough	5 (0.1%)	7.5
Elk Creek Township	42 (0.5%)	7.8
City of Erie	3,286 (40.8%)	10.6
Fairview Township	505 (6.3%)	16.3
Franklin Township	27 (0.3%)	5.4
Girard Borough	94 (1.2%)	10.5
Girard Township	124 (1.5%)	8.0
Greene Township	96 (1.2%)	6.8
Greenfield Township	21 (0.3%)	3.6
Harborcreek Township	450 (5.6%)	8.8
Lake City Borough	57 (0.7%)	6.5
Lawrence Park Township	134 (1.7%)	11.8
LeBoeuf Township	26 (0.3%)	5.2
McKean Borough	10 (0.1%)	8.8
McKean Township	72 (0.9%)	5.4
Millcreek Township	1,535 (19.0%)	9.7
Mill Village Borough	7 (0.1%)	5.9
North East Borough	125 (1.6%)	9.9
North East Township	176 (2.2%)	9.0
Platea Borough	8 (0.1%)	6.1
Springfield Township	78 (1.0%)	7.9
Summit Township	149 (1.8%)	7.8
Union Township	38 (0.5%)	7.8
Union City Borough	89 (1.1%)	9.0
Venango Township	24 (0.3%)	3.5
Washington Township	82 (1.0%)	6.1
Waterford Borough	51 (0.6%)	11.7
Waterford Township	75 (0.9%)	6.3
Wattsburg Borough	24 (0.3%)	21.9
Wayne Township	51 (0.6%)	9.9
Wesleyville Borough	71 (0.9%)	7.1

Note: Rates are per 1,000 population for each municipality, 2008-2010

## Age-Adjusted Death Rates

Age-adjusted death rates are constructs that are used to make comparisons of relative mortality risks across groups and over time. Age-adjusted death rates are better indicators than crude (unadjusted) death rates when comparing different groups or over time because they remove the potential bias that can occur when the populations being compared have different age distributions. For this report, age-adjusted rates were computed by the direct method by applying age-specific death rates to the year 2000 U.S. standard million population age distribution. All reported age-adjusted rates are per 100,000 U.S. standard population.

In the period 2008-2010, Erie County's age-adjusted death rate for all causes of death was 791.6 deaths per 100,000 population (Table 4). The age-adjusted rates for males and females were 930.3 and 687.3 deaths per 100,000, respectively. With respect to race and ethnicity, the highest rates were observed in Black males and females. Overall, the age-adjusted death rates for Erie County and Pennsylvania were similar.

**Table 4. Age-Adjusted Death Rates by Race and Sex, 2008-2010**

Erie County and Pennsylvania, 2008-2010				
<u>Race or Ethnicity</u>	<u>Erie County Deaths</u>	<u>Rate</u>	<u>Pennsylvania Deaths</u>	<u>Rate</u>
All Races	8,062 (100.0%)	791.6	373,729 (100.0%)	779.6
Male	3,786 (47.0%)	930.3	180,309 (48.2%)	940.1
Female	4,276 (53.0%)	687.3	193,411 (51.8%)	656.0
Unknown	0		9	
White	7,648 (94.9%)	770.2	335,996 (89.9%)	768.9
Male	3,564 (44.2%)	897.8	161,312 (43.2%)	927.0
Female	4,084 (50.7%)	673.2	174,680 (46.7%)	646.9
Unknown	0		4	
Black or African American	386 (4.8%)	1,042.1	34,785 (9.3%)	994.5
Male	206 (2.6%)	1,104.0	17,391 (4.7%)	1,234.3
Female	180 (2.2%)	950.0	17,389 (4.7%)	822.1
Unknown	0		5	
Hispanic or Latino (of any race)	52 (0.6%)	477.5	4,656 (1.2%)	471.4
Male	31 (0.4%)	611.9	2,782 (0.7%)	587.2
Female	21 (0.3%)	324.2	1,874 (0.5%)	370.2
Unknown	0		0	

Note: Age-adjusted rates are per 100,000 population for each specified group, 2008-2010

In Erie County, the age-adjusted death rate for all causes of death dropped from 874.2 deaths per 100,000 population in 1998-2000 to 791.6 deaths per 100,000 in 2008-2010, a decline of 9.4% (Table 5, Figure 1). For Erie County males and females, the death rates decreased by 11.5% and 7.0%, respectively. For Pennsylvania, the death rates declined by 10.2% for the total population, 10.8% for males, and 8.6% for females from 1998-2000 to 2008-2010.

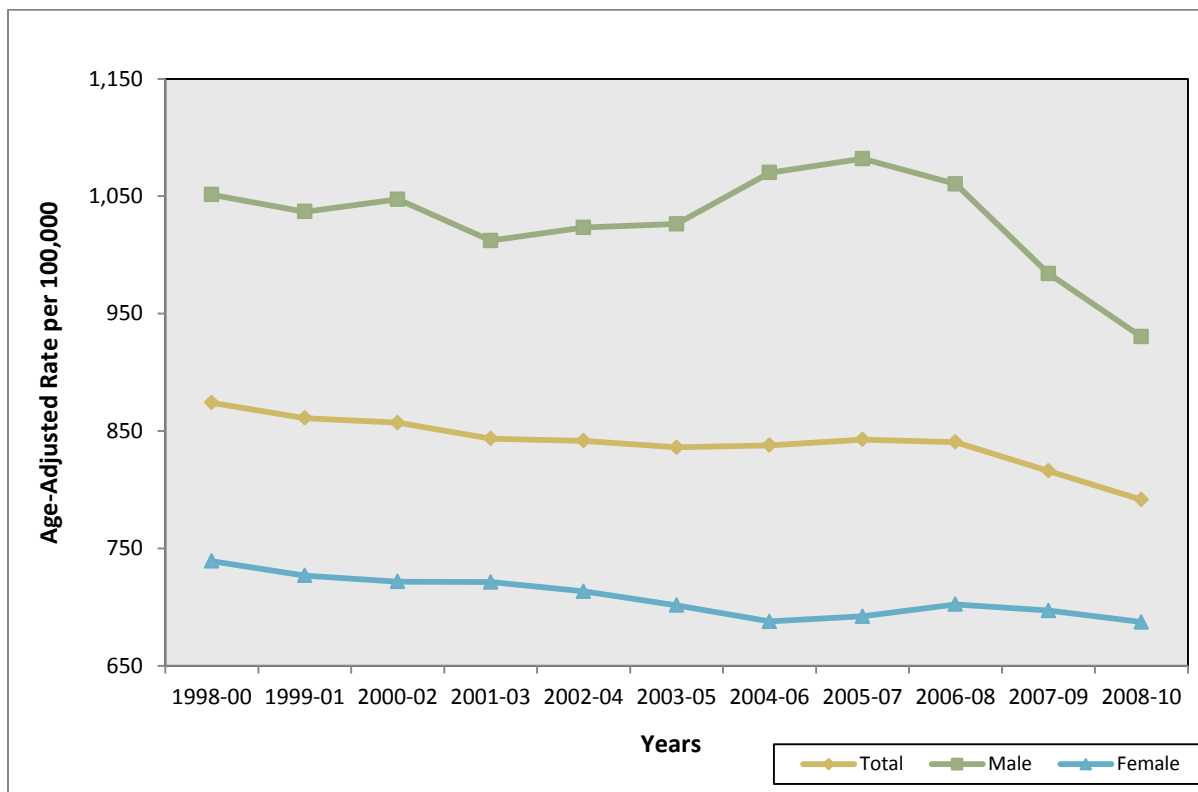
**Table 5. Age-Adjusted Death Rates, 1998-2000 to 2008-2010**

Erie County and Pennsylvania, 1998-2000 to 2008-2010						
<u>Years</u>	<u>Erie County</u>	<u>Erie County Males</u>	<u>Erie County Females</u>	<u>PA</u>	<u>PA Males</u>	<u>PA Females</u>
1998-2000	874.2	1,051.3	739.2	868.5	1,054.4	728.5
1999-2001	861.1	1,036.9	727.0	870.8	1,055.9	732.9
2000-2002	857.1	1,047.3	721.8	877.6	1,073.5	737.5
2001-2003	843.6	1,012.2	721.4	872.0	1,067.3	732.4
2002-2004	841.7	1,023.4	713.5	865.4	1,057.5	727.6
2003-2005	836.1	1,026.4	701.7	851.6	1,039.3	715.3
2004-2006	837.9	1,070.1	687.9	845.3	1,034.4	709.1
2005-2007	842.8	1,082.0	692.2	842.9	1,037.8	704.7
2006-2008	840.7	1,060.4	702.5	832.9	1,021.8	697.1
2007-2009	816.1	984.1	697.2	803.0	975.3	674.0
2008-2010	791.6	930.3	687.3	779.6	940.1	656.0

Note: Age-adjusted rates are per 100,000 population for the specified years



Figure 1. Erie County Age-Adjusted Death Rates for All Causes of Death, 1998-2000 to 2008-2010



### Leading Causes of Death

The 15 leading causes of death for Erie County residents in 2008-2010 are shown in Table 6. Although these causes collectively accounted for 6,526 (80.9%) of the 8,062 county deaths, heart disease and cancer (malignant neoplasms) accounted for nearly half (49.2%) of all resident deaths. The age-adjusted death rates for heart disease and cancer were 199.6 and 189.1 deaths per 100,000, respectively. It should be noted that the death rates for these two causes were considerably higher in males than in females.

Overall, the age-adjusted death rates for males were higher than the rates for females for 12 of the 15 leading causes. The three causes of death in which females had higher rates were stroke (cerebrovascular diseases), Alzheimer’s disease, and septicemia. Interestingly, 91 of the 110 (82.7%) suicide deaths occurred in males.

Due to low counts, age-adjusted death rates for Blacks were calculated for only four of the leading causes of death - heart disease, cancer, stroke, and diabetes mellitus. Blacks experienced substantially higher death rates than Whites for each of these four causes.

**Table 6. Erie County Leading Causes of Death, 2008-2010**

Erie County and Pennsylvania, 2008-2010											
Cause of Death	Total		Male		Female		White		Black		PA
	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate	Rate
All Causes of Death	8,062	791.6	3,786	930.3	4,276	687.3	7,648	770.2	386	1,042.1	779.6
Heart Disease	2,107	199.9	1,014	250.4	1,093	163.7	2,005	192.4	93	271.9	195.3
Cancer (Malignant Neoplasms)	1,861	189.1	940	226.2	921	164.2	1,769	185.4	88	240.0	183.8
Chronic Lower Respiratory Diseases	455	44.4	215	54.1	240	38.8	447	44.5	8	NA	39.9
Stroke (Cerebrovascular Diseases)	429	40.4	155	39.0	274	40.9	400	37.8	28	92.1	40.1
Accidents (Unintentional Injuries)	317	35.0	199	48.8	118	23.4	310	37.7	7	NA	40.4
Alzheimer's Disease	261	23.1	67	17.4	194	26.0	256	22.7	4	NA	20.6
Diabetes Mellitus	240	24.3	125	30.7	115	19.0	219	22.6	20	56.7	20.4
Nephritis, Nephrotic Syndrome, & Nephrosis	227	21.5	95	23.9	132	20.4	213	20.6	14	NA	18.6
Influenza & Pneumonia	160	17.5	81	20.1	113	15.6	187	17.0	7	NA	14.6
Suicide (Intentional Self-Harm)	110	12.7	91	21.7	19	NA	104	13.2	5	NA	11.9
Septicemia	107	10.6	41	9.8	66	11.2	101	10.3	5	NA	13.9
Chronic Liver Disease & Cirrhosis	79	8.1	45	9.9	34	6.6	77	8.1	2	NA	7.7
Essential Hypertension & Hypertensive Renal Disease	63	6.1	25	5.9	38	5.7	57	5.7	6	NA	6.1
Parkinson's Disease	58	5.5	31	8.0	27	3.9	58	5.6	0	NA	7.1
In situ, Benign, & Uncertain Neoplasms	52	5.3	33	8.2	19	NA	50	5.2	2	NA	5.1

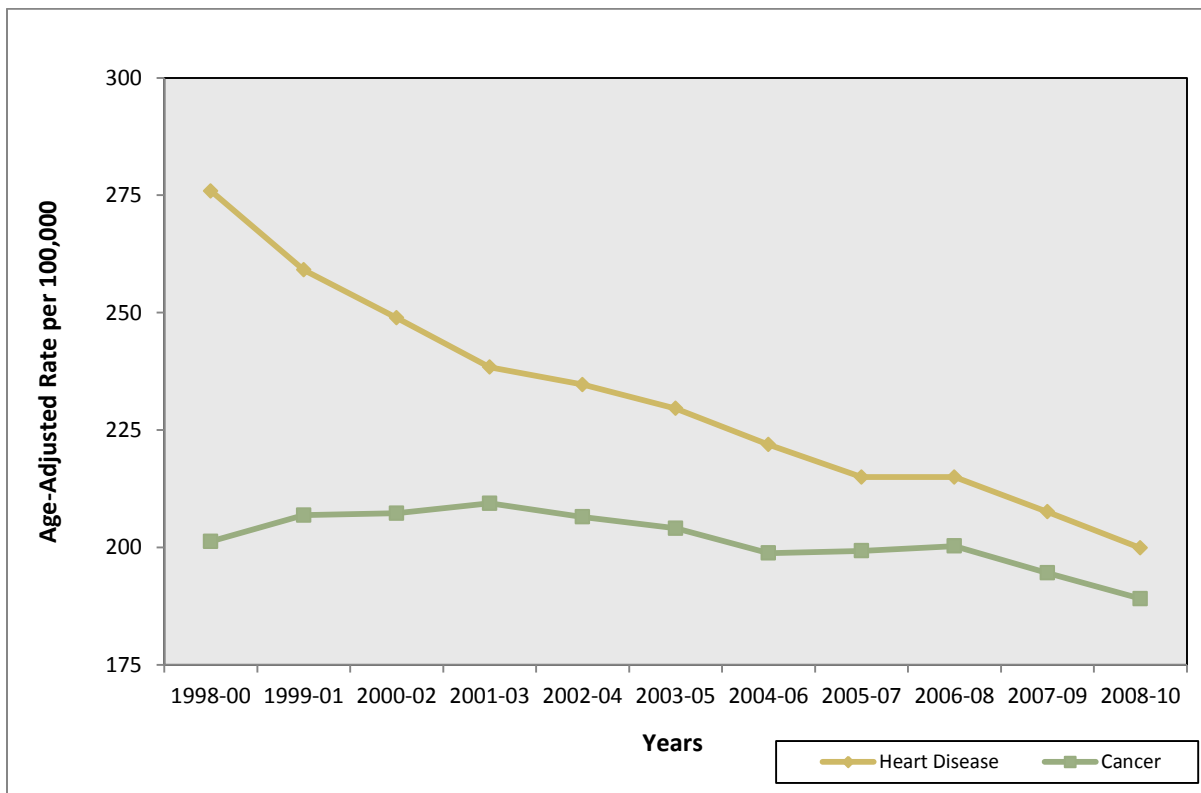
Notes: Age-adjusted rates are per 100,000 population, 2008-2010; NA = Not available

## Trends in Selected Leading Causes of Death

In Erie County, the age-adjusted death rate for heart disease dropped from 275.9 deaths per 100,000 population in 1998-2000 to 199.9 deaths per 100,000 in 2008-2010, a decline of 27.5% (Figure 2). For Erie County males and females, the death rates decreased by 27.0% and 27.5%, respectively. For Pennsylvania, the death rates declined by 28.0% for the total population, 26.2% for males, and 29.7% for females from 1998-2000 to 2008-2010.

In Erie County, the age-adjusted death rate for cancer (primary malignant neoplasms) dropped slightly from 201.3 deaths per 100,000 population in 1998-2000 to 189.1 deaths per 100,000 in 2008-2010, a decline of 6.1% (Figure 2). For Erie County males and females, the death rates decreased by 6.8% and 4.8%, respectively. For Pennsylvania, the death rates declined by 11.1% for the total population, 12.4% for males, and 10.5% for females from 1998-2000 to 2008-2010.

Figure 2. Erie County Age-Adjusted Death Rates for Heart Disease and Cancer, 1998-2000 to 2008-2010

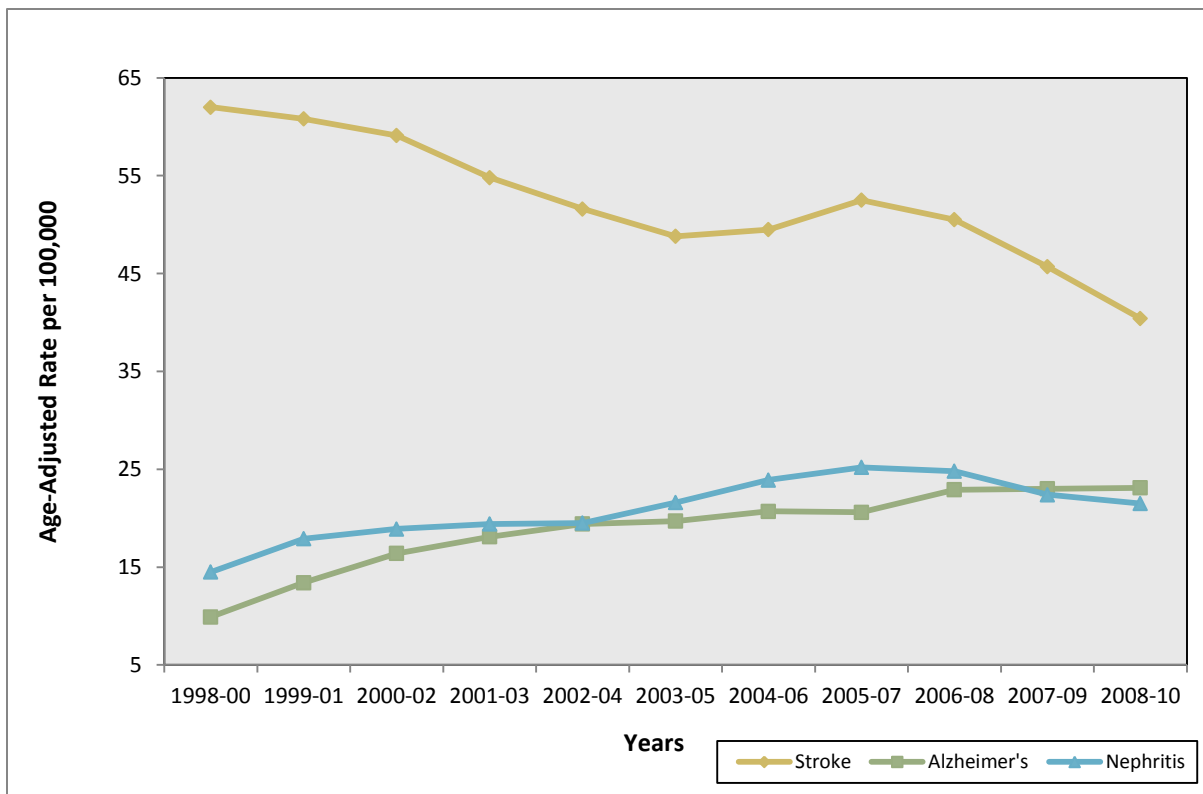


In Erie County, the age-adjusted death rate for stroke (cerebrovascular diseases) dropped from 62.0 deaths per 100,000 population in 1998-2000 to 40.4 deaths per 100,000 in 2008-2010, a decline of 34.8% (Figure 3). For Erie County males and females, the death rates decreased by 37.4% and 33.1%, respectively. For Pennsylvania, the death rates declined by 27.4% for the total population, 26.9% for males, and 27.3% for females from 1998-2000 to 2008-2010.

In Erie County, the age-adjusted death rate for Alzheimer’s disease rose from 9.9 deaths per 100,000 population in 1998-2000 to 23.1 deaths per 100,000 in 2008-2010, an upsurge of 133.3% (Figure 3). For Erie County males and females, the death rates increased by 74.0% and 173.7%, respectively. For Pennsylvania, the death rates rose by 76.1% for the total population, 76.0% for males, and 76.4% for females from 1998-2000 to 2008-2010.

In Erie County, the age-adjusted death rate for nephritis, nephrotic syndrome, and nephrosis rose from 14.5 deaths per 100,000 population in 1998-2000 to 21.5 deaths per 100,000 in 2008-2010, an increase of 48.3% (Figure 3). For Erie County males and females, the death rates increased by 20.1% and 82.1%, respectively. For Pennsylvania, the death rates rose by 17.0% for the total population, 18.3% for males, and 15.0% for females from 1998-2000 to 2008-2010.

**Figure 3. Erie County Age-Adjusted Death Rates for Stroke, Alzheimer’s Disease, and Nephritis, 1998-2000 to 2008-2010**



## Cancer Mortality

A total of 1,861 Erie County residents died from cancers (primary malignant neoplasms) during the period 2008 to 2010, for a corresponding age-adjusted death rate of 189.1 deaths per 100,000 population (Table 7). Overall, 940 (50.5%) deaths were to males and 921 (49.5%) deaths were to females. The age-adjusted death rates for males and females were 226.2 and 164.2 deaths per 100,000, respectively. For Pennsylvania, the death rates were 183.8 for the total population, 225.1 for males, and 155.8 for females.

With respect to race and ethnicity in Erie County, 1,769 (95.1%) cancer deaths were to Whites, 88 (4.7%) deaths were to Blacks, 4 (0.5%) deaths were to persons classified as Other Race, and 18 (2.1%) deaths were to Hispanics or Latinos (of any race).

During 2008-2010, Erie County's five leading cancer mortality sites were: (1) bronchus and lung (27.4% of all deaths), (2) colon and rectum (8.5%), (3) female breast (7.7%), (4) pancreas (6.0%), and (5) prostate (5.7%) (Table 7, Figure 4). These sites accounted for over half (55.4%) of all cancer deaths. As the leading cause of cancer death, lung cancer killed nearly as many people as colorectal, breast, pancreatic, and prostate cancers combined (510 versus 521 deaths). The age-adjusted death rate for lung cancer dropped from 58.1 deaths per 100,000 population in 1998-2000 to 51.8 deaths per 100,000 in 2008-2010, a decline of 10.8% (Figure 5). For Erie County males and females, the rates decreased by 23.2% and increased by 8.0%, respectively.

Among Erie County males, the five leading cancer mortality sites during 2008-2010 were: (1) bronchus and lung (28.3% of all deaths), (2) prostate (11.3%), (3) colon and rectum (8.1%), (4) pancreas (6.0%), and (5) esophagus (5.1%) (Table 7, Figure 6). These sites accounted for 58.7% of all male cancer deaths.

Among Erie County females, the five leading cancer mortality sites during 2008-2010 were: (1) bronchus and lung (26.5% of all deaths), (2) breast (15.6%), (3) colon and rectum (9.0%), (4) pancreas (6.1%), and (5) ovary (5.0%) (Table 7, Figure 7). These sites accounted for 62.2% of all female cancer deaths.

Overall, the Erie County and Pennsylvania age-adjusted death rates were similar across all cancer sites/types for the total population, males, and females. Due to low counts, possible age-adjusted cancer death rate comparisons for Erie County males and females were limited to a total of six cancer sites/types - bronchus and lung, colon and rectum, pancreas, leukemia, non-Hodgkin lymphoma, and brain. Males had higher death rates than females for each of these sites/types.

**Table 7. Erie County Cancer Mortality by Site/Type, 2008-2010**

Erie County and Pennsylvania, 2008-2010													
Cancer Site/Type	Total Population					Cancer Site/Type	Male			Cancer Site/Type	Female		
	All Deaths	White	Black	Rate	PA Rate		Deaths	Rate	PA Rate		Deaths	Rate	PA Rate
All Cancer Sites	1,861	1,769	88	189.1	183.8	All Cancer Sites	940	226.2	225.1	All Cancer Sites	921	164.2	155.8
Bronchus & Lung	510	487	22	51.8	50.0	Bronchus & Lung	266	63.6	65.1	Bronchus & Lung	244	43.3	39.3
Colon & Rectum	159	154	5	16.5	17.5	Prostate	106	26.9	22.0	Breast	144	26.3	23.8
Breast (Female)	144	136	8	26.3	23.8	Colon & Rectum	76	18.7	21.2	Colon & Rectum	83	14.4	14.6
Pancreas	112	104	7	11.4	11.5	Pancreas	56	13.4	13.3	Pancreas	56	9.8	10.4
Prostate	106	103	3	26.9	22.0	Esophagus	48	11.3	8.9	Ovary	46	8.2	8.6
Leukemia	76	72	4	7.8	7.5	Leukemia	38	9.0	10.2	Leukemia	38	6.6	5.6
Esophagus	62	59	3	6.4	4.9	Urinary Bladder	37	9.0	8.7	Corpus & Uterus, NOS	23	4.4	4.9
Non-Hodgkin Lymphoma	62	62	0	6.1	6.9	Liver	32	7.1	8.4	Non-Hodgkin Lymphoma	31	4.7	5.5
Urinary Bladder	48	45	3	4.6	4.8	Non-Hodgkin Lymphoma	31	7.4	8.9	Kidney & Renal Pelvis	25	4.4	2.6
Brain	46	44	1	4.8	4.2	Stomach	26	6.0	4.7	Brain	22	4.2	3.5
Ovary	46	45	1	8.2	8.6	Brain	24	5.7	4.9	Multiple Myeloma	16	NA	2.7
Liver	45	38	7	4.6	5.4	Oral Cavity & Pharynx	21	4.9	3.6	Esophagus	14	NA	1.7
Kidney & Renal Pelvis	42	41	1	4.3	4.0	Melanoma	18	NA	4.5	Urinary Bladder	11	NA	2.3
Stomach	42	39	3	4.1	3.3	Kidney & Renal Pelvis	17	NA	5.8	Liver	13	NA	2.4
Melanoma	31	31	0	3.2	3.0	Multiple Myeloma	15	NA	4.2	Stomach	16	NA	2.2
Multiple Myeloma	31	30	0	3.2	3.3	Larynx	9	NA	2.2	Melanoma	13	NA	1.9
Oral Cavity & Pharynx	25	23	2	2.5	2.3	Hodgkin Lymphoma	4	NA	0.4	Cervix Uteri	11	NA	2.2
Corpus & Uterus, NOS	23	23	0	4.4	4.9	Thyroid	3	NA	0.5	Larynx	3	NA	0.4
Larynx	12	12	0	NA	1.2	Testis	0	NA	0.3	Oral Cavity & Pharynx	4	NA	1.3
Cervix Uteri	11	10	1	NA	2.2	All Other Sites	113	NA	NA	Hodgkin Lymphoma	2	NA	0.3
Hodgkin Lymphoma	6	5	1	NA	0.4					Thyroid	3	NA	0.6
Thyroid	6	4	2	NA	0.5					All Other Sites	103	NA	NA
Testis	0	0	0	NA	0.3								
All Other Sites	216	202	8	NA	NA								

Notes: Age-adjusted rates are per 100,000 population, 2008-2010; NA = Not available

Figure 4. Erie County Cancer Deaths, 2008-2010

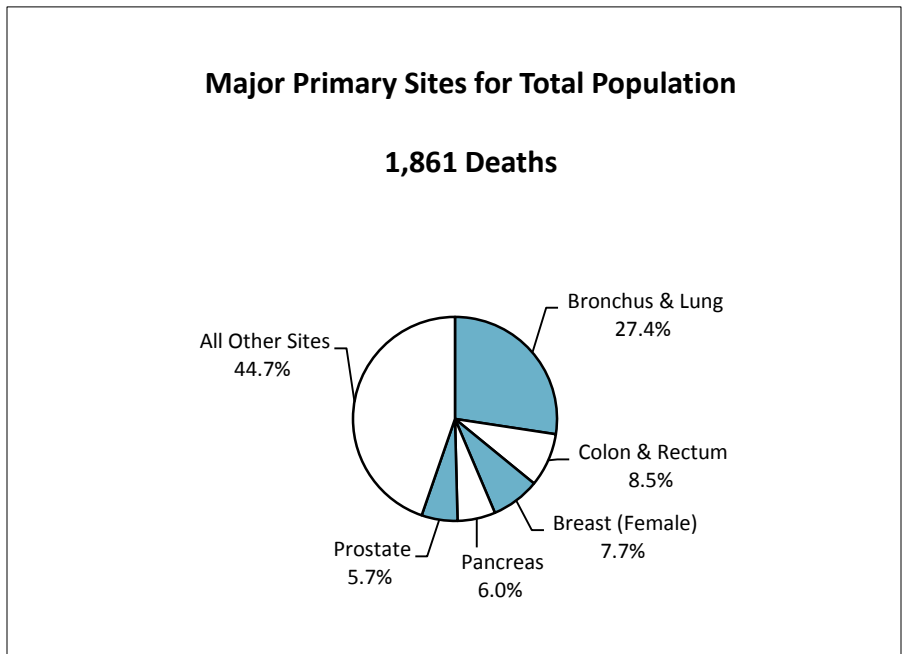


Figure 5. Erie County Age-Adjusted Death Rates for Lung Cancer, 1998-2000 to 2008-2010

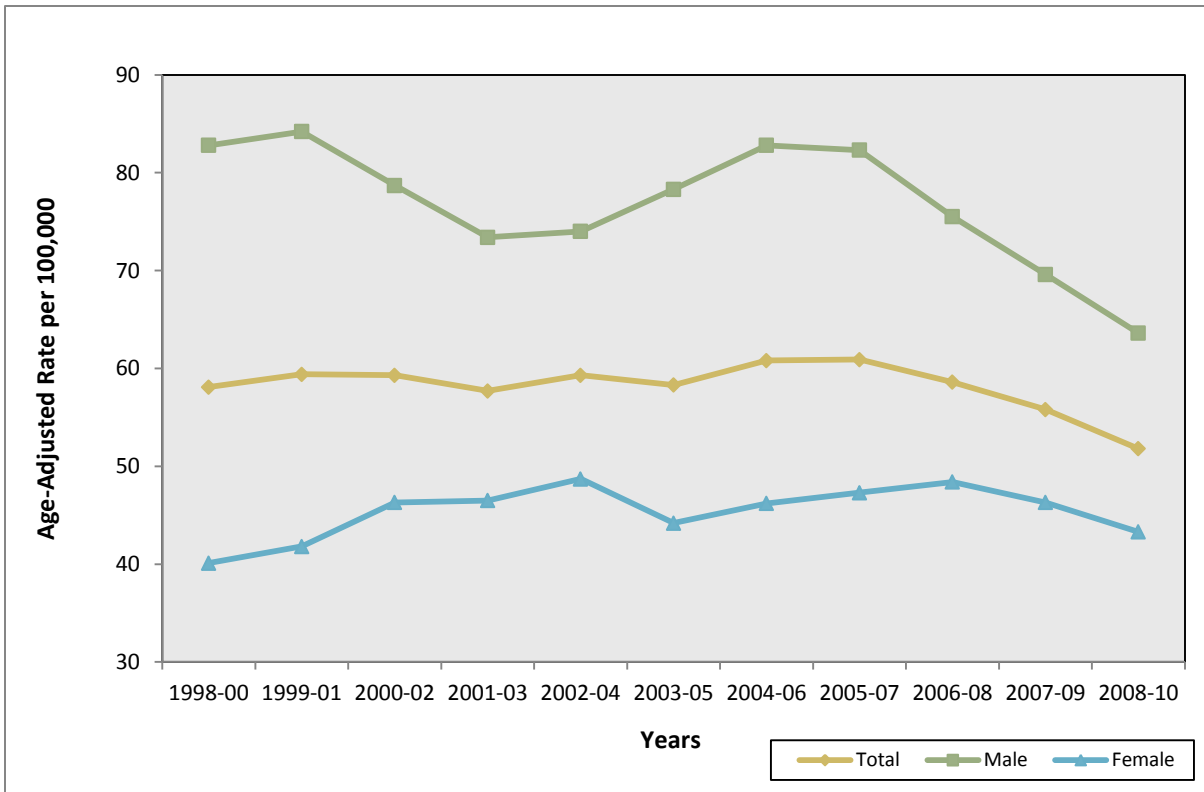


Figure 6. Erie County Male Cancer Deaths, 2008-2010

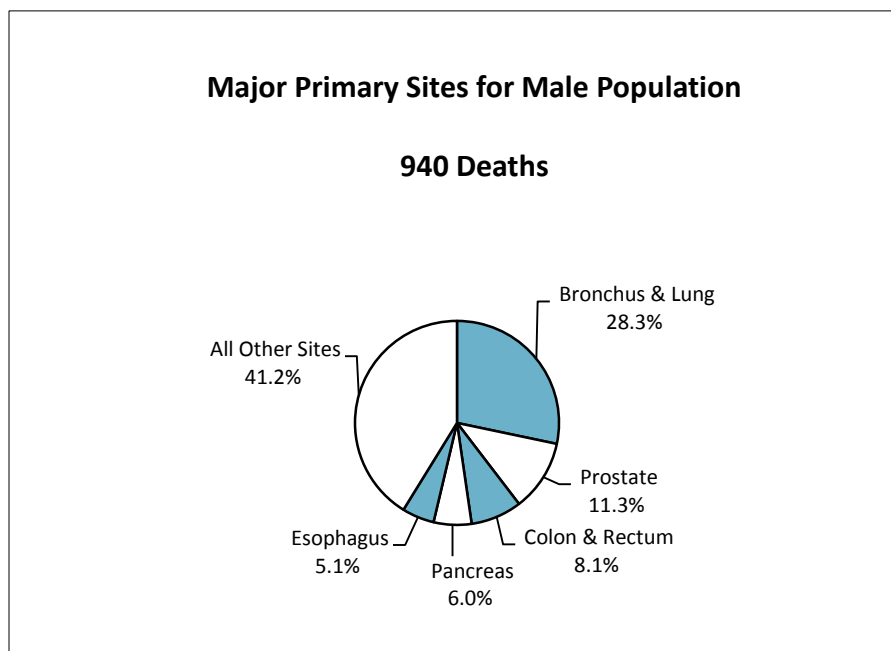
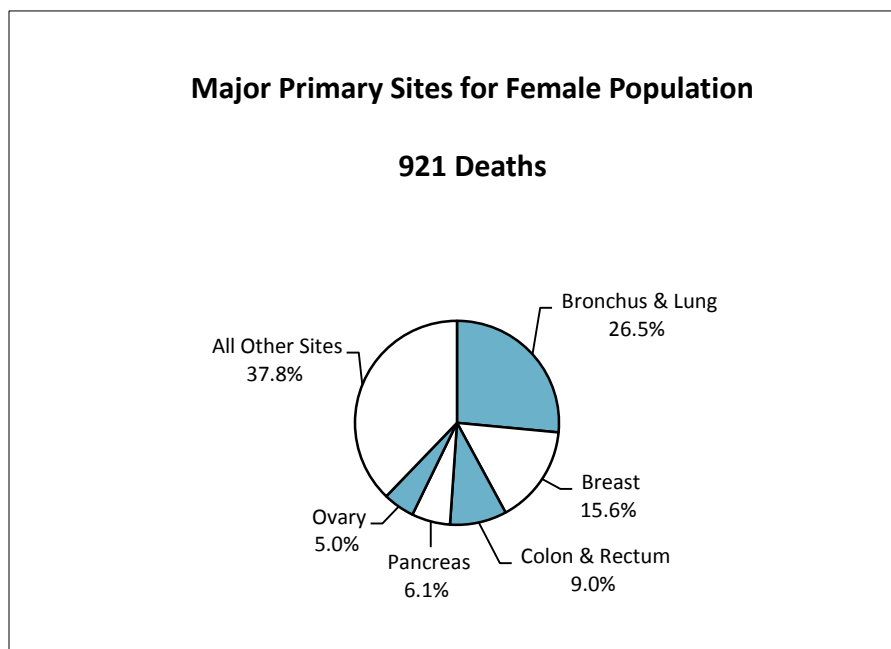


Figure 7. Erie County Female Cancer Deaths, 2008-2010





## Cancer Incidence

There were a total of 4,602 new cancer cases (primary invasive cancers and in situ urinary bladder cancers) diagnosed among Erie County residents during 2007-2009, for a corresponding age-adjusted cancer incidence rate of 483.9 cases per 100,000 population (Table 8). Overall, cancers were diagnosed in 2,274 (49.4%) males and 2,328 (50.6%) females. The age-adjusted incidence rates for males and females were 543.2 and 449.8 cases per 100,000, respectively. For Pennsylvania, the incidence rates were 507.7 for the total population, 584.2 for males, and 458.0 for females.

With respect to race and ethnicity in Erie County, cancers were diagnosed in 4,343 (94.4%) Whites, 217 (4.7%) Blacks, 42 (0.9%) persons of Other/Unknown Race, and 38 (0.8%) Hispanics or Latinos (of any race).

During 2007-2009, Erie County's five leading cancer incidence sites were: (1) female breast (14.5% of all diagnoses), (2) bronchus and lung (14.2%), (3) prostate (13.7%), (4) colon and rectum (9.4%), and (5) urinary bladder (4.5%) (Table 8, Figure 8). The age-adjusted incidence rate for breast cancer dropped slightly from 136.1 cases per 100,000 population in 1997-1999 to 130.6 cases per 100,000 in 2007-2009, a decline of 4.0% (Figure 9).

Among Erie County males, the five leading cancer incidence sites/types during 2007-2009 were: (1) prostate (27.8% of all diagnoses), (2) bronchus and lung (14.6%), (3) colon and rectum (9.8%), (4) urinary bladder (7.1%), and (5) non-Hodgkin lymphoma (4.9%) (Table 8, Figure 10). These sites/types accounted for 64.2% of all male diagnoses.

Among Erie County females, the five leading cancer incidence sites during 2007-2009 were: (1) breast (28.7% of all diagnoses), (2) bronchus and lung (13.8%), (3) colon and rectum (9.0%), (4) uterus (6.8%), and (5) thyroid (6.0%) (Table 8, Figure 11). These sites accounted for 64.2% of all female diagnoses.

Overall, the Erie County and Pennsylvania age-adjusted incidence rates were similar across all cancer sites/types for the total population, males, and females.

Valid age-adjusted cancer incidence rate comparisons for Erie County males and females were possible for a total of 13 cancer sites/types. Males had higher age-adjusted incidence rates than females for each of these sites/types with the exception of the thyroid, where the rate for females was approximately three times higher than the rate for males (27.9 versus 9.2 cases per 100,000).

**Table 8. Erie County Cancer Incidence by Site/Type, 2007-2009**

Erie County and Pennsylvania, 2007-2009													
Cancer Site/Type	Total Population					Cancer Site/Type	Male			Cancer Site/Type	Female		
	All Cases	White	Black	Rate	PA Rate		Cases	Rate	PA Rate		Cases	Rate	PA Rate
All Cancer Sites	4,602	4,343	217	483.9	507.7	All Cancer Sites	2,274	543.2	584.2	All Cancer Sites	2,328	449.8	458.0
Breast (Female)	667	626	33	130.6	128.1	Prostate	632	147.4	151.7	Breast	667	130.6	128.1
Bronchus & Lung	653	622	28	67.6	69.9	Bronchus & Lung	332	80.2	86.8	Bronchus & Lung	321	59.5	58.3
Prostate	632	575	49	147.4	151.7	Colon & Rectum	223	54.6	58.1	Colon & Rectum	209	37.4	43.2
Colon & Rectum	432	410	20	45.0	49.6	Urinary Bladder	161	40.2	45.4	Corpus & Uterus, NOS	158	30.3	31.4
Urinary Bladder	208	202	4	21.0	25.2	Non-Hodgkin Lymphoma	111	26.2	25.6	Thyroid	140	32.2	27.9
Non-Hodgkin Lymphoma	204	196	7	21.3	21.2	Kidney & Renal Pelvis	84	19.6	23.3	Non-Hodgkin Lymphoma	93	17.1	17.9
Thyroid	178	170	5	20.9	18.7	Oral Cavity & Pharynx	83	19.3	16.7	Melanoma	71	14.7	15.8
Corpus & Uterus, NOS	158	152	3	30.3	31.4	Melanoma	80	19.1	23.0	Kidney & Renal Pelvis	69	13.7	12.0
Kidney & Renal Pelvis	153	144	9	16.4	17.0	Leukemia	61	14.8	16.6	Ovary	63	12.5	13.5
Melanoma	151	148	0	16.3	18.6	Pancreas	59	14.3	14.5	Pancreas	58	10.2	11.2
Oral Cavity & Pharynx	117	111	5	12.2	11.2	Stomach	46	11.1	10.4	Leukemia	53	10.2	9.8
Pancreas	117	111	5	12.0	12.7	Esophagus	43	10.2	10.0	Urinary Bladder	47	8.4	11.0
Leukemia	114	104	7	12.0	12.7	Multiple Myeloma	39	9.2	7.4	Cervix Uteri	34	7.8	8.2
Stomach	68	61	7	7.0	7.0	Thyroid	38	9.1	9.2	Oral Cavity & Pharynx	34	6.5	6.5
Brain	64	63	1	7.2	7.2	Brain	33	8.2	8.3	Brain	31	6.4	6.3
Multiple Myeloma	64	59	4	6.7	5.9	Liver	25	5.6	11.0	Multiple Myeloma	25	4.7	4.8
Ovary	63	62	1	12.5	13.5	Testis	23	5.7	6.3	Stomach	22	4.0	4.3
Esophagus	60	58	2	6.1	5.5	Larynx	21	4.6	7.2	Esophagus	17	NA	2.1
Liver	38	34	3	3.9	6.8	Hodgkin Lymphoma	17	NA	3.7	Hodgkin Lymphoma	15	NA	3.0
Cervix Uteri	34	29	4	7.8	8.2	All Other Sites	163	NA	NA	Liver	13	NA	3.4
Hodgkin Lymphoma	32	31	1	3.6	3.3					Larynx	3	NA	1.5
Larynx	24	21	2	2.5	4.0					All Other Sites	185	NA	NA
Testis	23	23	0	5.7	6.3								
All Other Sites	348	331	17	NA	NA								

Notes: Age-adjusted rates are per 100,000 population, 2007-2009; NA = Not available

Figure 8. Erie County New Cancer Cases, 2007-2009

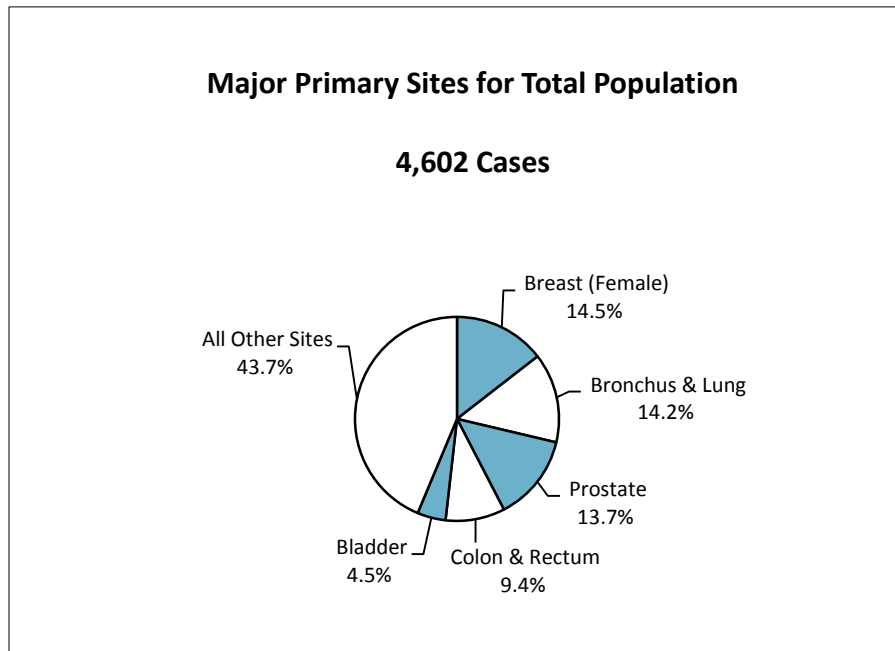


Figure 9. Erie County Age-Adjusted Incidence Rates for Female Breast Cancer, 1997-1999 to 2007-2009

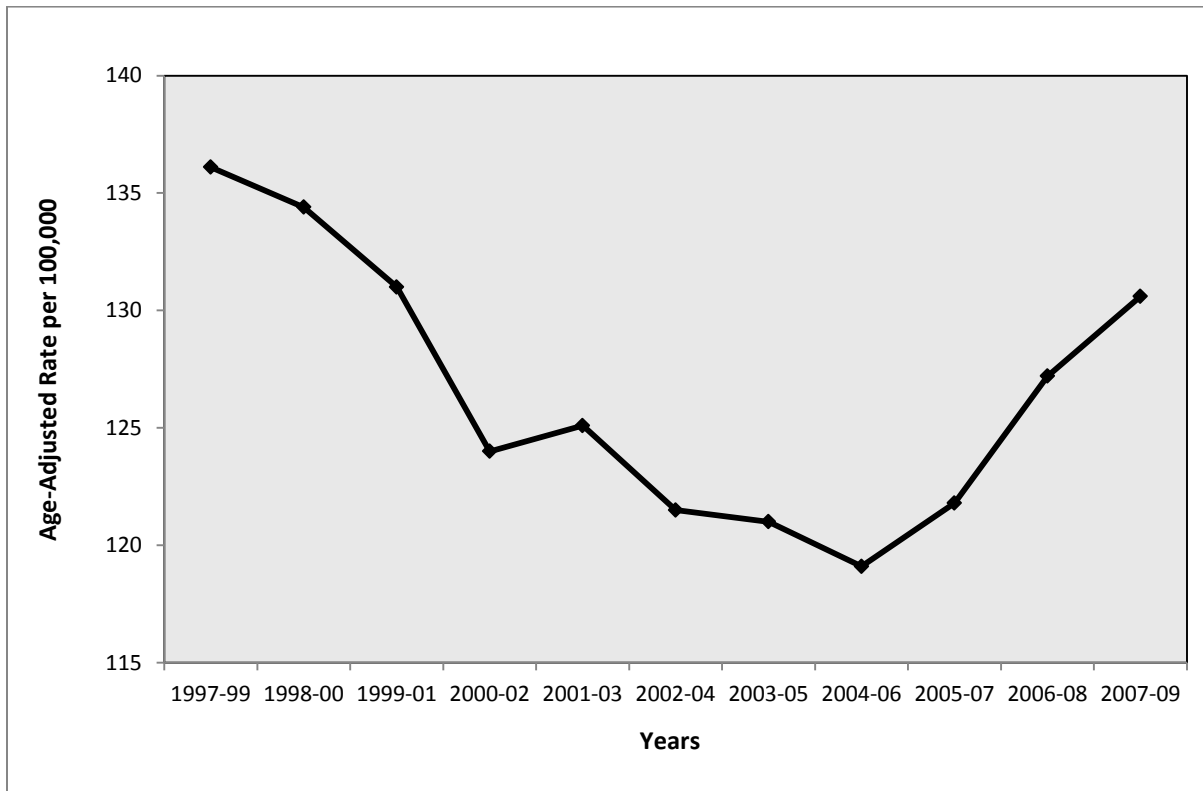


Figure 10. Erie County Male New Cancer Cases, 2007-2009

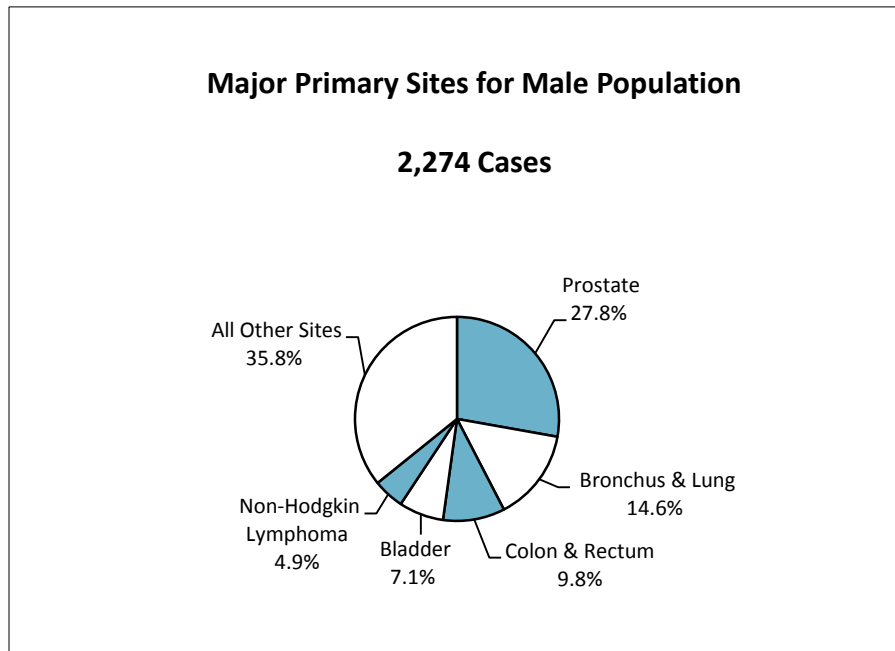
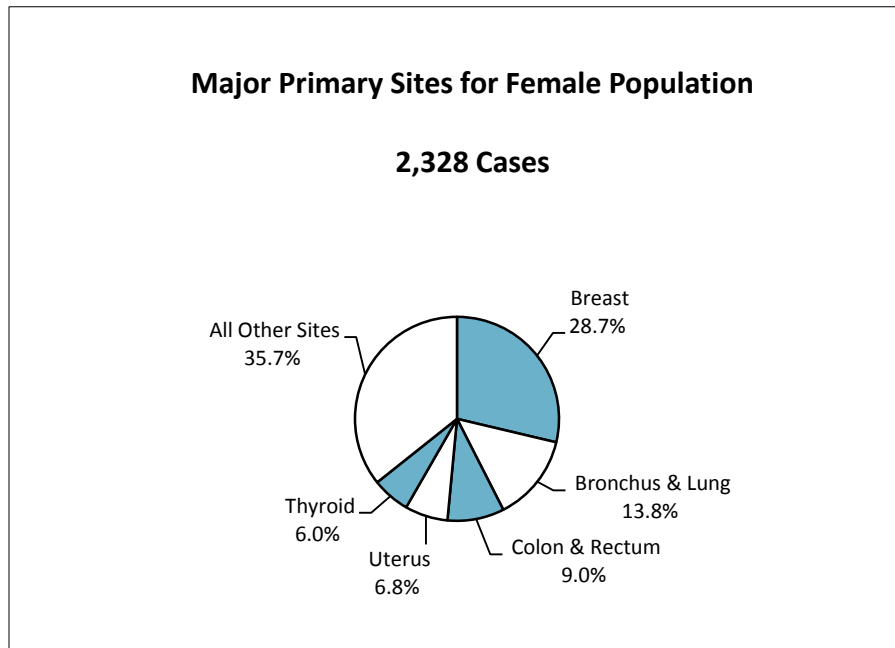


Figure 11. Erie County Female New Cancer Cases, 2007-2009



## Injury Deaths

Injury includes both unintentional injuries (accidents) and self-inflicted or assault injuries (violence). From 2005 to 2009, there were a total of 745 deaths due to injury among Erie County residents (Table 9). Most of these deaths were accidents. Overall, 533 (71.5%) deaths were unintentional, 168 (22.6%) were suicides, 30 (4.0%) were homicides, and 14 (1.9%) were undetermined. Males accounted for over two-thirds (68.2%) of all injury deaths, while seniors had both the highest number of deaths (230) and highest death rate (114.3 deaths per 100,000 population) among the five age group categories.

From 2005 to 2009, the leading causes of injury death among Erie County residents were poisonings, motor vehicle traffic accidents, unintentional falls, and firearm-related events. These four causes accounted for 536 (71.9%) of the 745 total injury deaths. Overall, 121 (68.0%) of the 178 poisoning deaths were accidental drug poisonings, and 80 (85.1%) of the 94 firearm-related events were suicides.

**Table 9. Erie County Injury Deaths and Death Rates, 2005-2009**

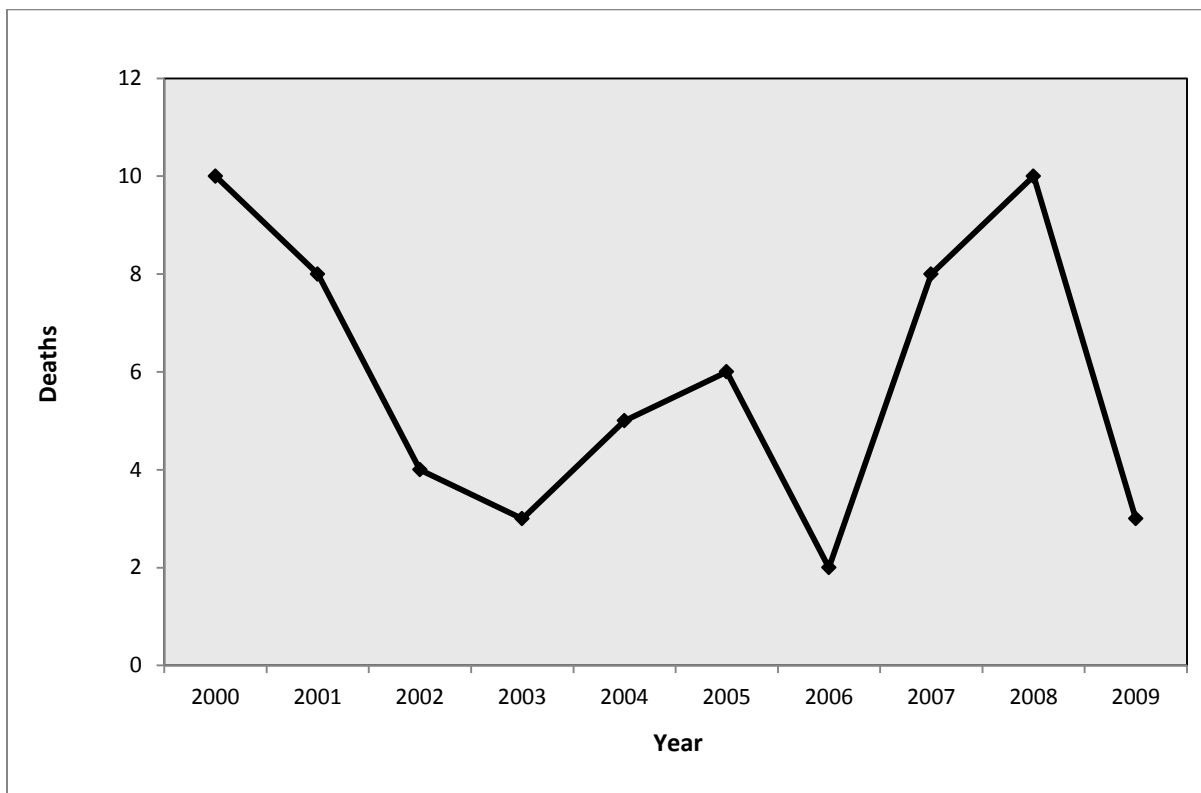
Erie County and Pennsylvania, 2005-2009															
Subject	Number	Rate	PA Rate	Male	Female	Age 0-19	Rate	Age 20-34	Rate	Age 35-49	Rate	Age 50-64	Rate	Age ≥65	Rate
All Injuries	745	50.9	58.8	508	237	54	14.3	142	49.8	177	62.1	142	56.6	230	114.3
Unintentional Injuries	533	35.8	40.2	337	196	37	9.8	88	30.9	116	40.7	90	35.9	202	100.4
Suicides	168	11.9	11.4	147	21	10	NA	36	12.6	51	17.9	47	18.7	24	11.9
Homicides	30	2.2	5.9	17	13	6	NA	11	NA	5	NA	5	NA	3	NA
Undetermined	14	NA	NA	7	7	1	NA	7	NA	5	NA	0	NA	1	NA
Leading Causes															
Poisonings	178	12.9	15.3	109	69	1	NA	38	13.3	80	28.1	46	18.3	13	NA
Motor Vehicle Traffic Accidents	137	9.5	11.5	96	41	13	NA	47	16.5	34	11.9	18	NA	25	12.4
Unintentional Falls	129	7.7	7.2	70	59	0	NA	2	NA	4	NA	14	NA	109	54.2
Firearm-Related Events	94	6.5	10.6	88	6	4	NA	25	8.8	21	7.4	26	10.4	18	NA
Notes: Erie County and PA age-adjusted rates are per 100,000 population, 2005-2009; All other rates are per 100,000 for each specified group, 2005-2009; NA = Not available															

## Childhood Injury Deaths

From 2000 to 2009, there were a total of 59 deaths due to injury among Erie County residents 14 years of age and younger. Injury deaths ranged from a low of 2 in 2006 to a high of 10 in both 2000 and 2008 (Figure 12).

The average number of childhood injury deaths for the 10 year period was 5.9 per year. Overall, the Erie County age-specific death rate was 10.9 deaths per 100,000 persons aged 0 to 14 years. For Pennsylvania, the corresponding rate was 8.9.

Figure 12. Erie County Childhood Injury Deaths, 2000-2009



Of the 59 total injury deaths, 48 (81.4%) were unintentional (accidents), 6 (10.2%) were homicides, 4 (6.8%) were suicides, and 1 (1.7%) death was undetermined (Table 10). Males accounted for a slight majority (59.3%) of deaths, and over half (50.8%) of all deaths occurred in children under the age of five.

Motor vehicle traffic accidents, drownings, and suffocations were the three leading causes of childhood injury deaths, accounting for 55.9% of all injury deaths and 68.8% of all unintentional deaths.

Table 10. Erie County Childhood Injury Deaths and Death Rates, 2000-2009

Erie County and Pennsylvania, 2000-2009				
<u>Subject</u>	<u>Number</u>	<u>Percent</u>	<u>Rate</u>	<u>PA Rate</u>
All Injuries (ages 0 - 14 years)	59	100.0	10.9	8.9
Male	35	59.3	12.6	NA
Female	24	40.7	9.1	NA
0 - 4 years	30	50.8	NA	NA
5 - 9 years	10	16.9	NA	NA
10 - 14 years	19	32.2	NA	NA
Unintentional Injuries	48	81.4	8.9	6.5
Motor Vehicle Traffic Accidents	15	25.4	NA	2.1
Drownings	10	16.9	NA	0.8
Fires/Flames	5	8.5	NA	1.1
Suffocations (ages < 1)	4	6.8	NA	11.2
Suffocations (ages 1 - 14)	4	6.8	NA	0.4
All Other Accidents	10	16.9	NA	NA
Suicides	4	6.8	NA	1.5
Homicides	6	10.2	NA	1.5
Undetermined	1	1.7	NA	NA

Notes: Rates are per 100,000 population, 2000-2009; NA = Not available

## Injury Hospitalizations

In 2009, there were a total of 2,630 hospitalizations due to injury in Erie County (Table 11). Most of these hospitalizations were the result of unintentional injuries (accidents). Overall, 2,150 (81.7%) hospitalizations were due to accidents, 291 (11.1%) were due to self-inflicted injuries, 90 (3.4%) were due to assault injuries, and 99 (3.8%) were undetermined. Females accounted for a slight majority (54.1%) of hospitalizations, while seniors had both the highest number of hospitalizations (1,195) and highest hospitalization rate (2,919 hospitalizations per 100,000 population) among the five age group categories.

In 2009, the leading causes of injury hospitalization in Erie County were unintentional falls, poisonings, and motor vehicle traffic accidents. These three causes accounted for nearly two-thirds (64.4%) of all hospitalizations. The leading cause, unintentional falls, accounted for almost half (45.1%) of all hospitalizations. Most (71.9%) unintentional fall hospitalizations occurred in seniors.

Overall, 61.7% of poisoning hospitalizations were due to self-inflicted poisonings.

**Table 11. Erie County Injury Hospitalizations and Hospitalization Rates, 2009**

Erie County and Pennsylvania, 2009															
Subject	Number	Rate	PA Rate	Male	Female	Age 0-19	Rate	Age 20-34	Rate	Age 35-49	Rate	Age 50-64	Rate	Age ≥65	Rate
All Injuries	2,630	849.3	1020.4	1,207	1,423	198	266.5	344	595.3	433	778.6	460	890.3	1,195	2,919.1
Unintentional Injuries	2,150	677.3	856.6	966	1,184	141	189.8	187	323.6	282	507.1	394	762.5	1,146	2,799.4
Self-Inflicted Injuries	291	106.4	79.1	129	162	34	45.8	103	178.3	107	192.4	40	77.4	7	NA
Assaults	90	33.0	44.0	70	20	15	NA	37	64.0	26	46.8	10	NA	2	NA
Undetermined	99	NA	NA	42	57	8	NA	17	NA	18	NA	16	NA	40	NA
Leading Causes															
Unintentional Falls	1,185	352.1	436.7	406	779	24	32.3	35	60.6	87	156.4	187	361.9	852	2,081.2
Poisonings	379	135.7	133.4	162	317	34	45.8	113	195.6	123	221.2	67	129.7	42	102.6
Self-Inflicted Poisonings	234	86.6	63.9	95	139	22	29.6	81	140.2	95	170.8	31	60.0	5	NA
Motor Vehicle Traffic Accidents	129	68.8	94.2	119	82	22	29.6	52	90.0	51	91.7	38	73.5	38	92.8
Notes: Erie County and PA age-adjusted rates are per 100,000 population, 2009; All other rates are per 100,000 for each specified group, 2009; NA = Not available															

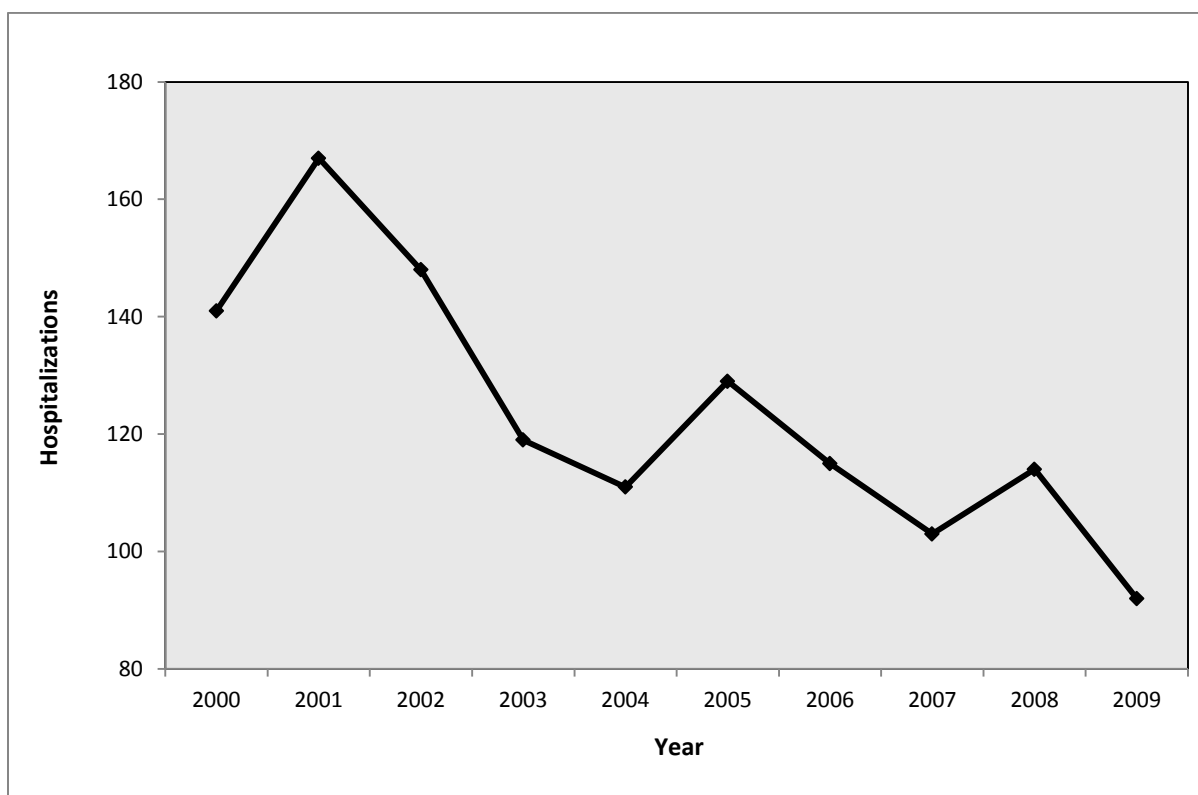
## Childhood Injury Hospitalizations

From 2000 to 2009, there were a total of 1,239 hospitalizations due to injury in Erie County for persons 14 years of age and younger. Injury hospitalizations ranged from a low of 92 in 2009 to a high of 167 in 2001 (Figure 13).

The average number of childhood injury hospitalizations for the 10 year period was 123.9 per year. Overall, the Erie County age-specific injury hospitalization rate was 228.6 hospitalizations per 100,000 persons aged 0 to 14 years. For Pennsylvania, the corresponding rate was 292.6.



Figure 13. Erie County Childhood Injury Hospitalizations, 2000-2009



The vast majority of the 1,239 childhood injury hospitalizations were the result of unintentional injuries (accidents) (Table 12). Overall, 1,073 (86.6%) hospitalizations were due to accidents, 81 (6.5%) were due to self-inflicted injuries, 50 (4.0%) were due to assault injuries, and 35 (2.8%) were undetermined. Interestingly, 79 of the 81 self-inflicted injuries occurred in children aged 10 to 14 years. A total of 42 (53.2%) of these 79 injuries were self-inflicted poisonings.

With regard to gender, males accounted for 60.0% of hospitalizations. While children aged 10 to 14 years had the highest number of hospitalizations (499), children under the age of five had the highest hospitalization rate (284.1 hospitalizations per 100,000 population) among the three age group categories.

From 2000 to 2009, the leading causes of childhood injury hospitalization in Erie County were falls, motor vehicle traffic accidents, and poisonings. These three causes accounted for 45.2% of all hospitalizations. The leading cause, falls, accounted for over one-fifth (22.4%) of hospitalizations. Of the 134 poisonings, 86 (64.2%) were unintentional and 43 (32.1%) were self-inflicted. A total of 66 (76.7%) of the 86 unintentional poisonings occurred in children under the age of five, and 42 (97.8%) of the 43 self-inflicted poisonings occurred in children aged 10 to 14 years.

Table 12. Erie County Childhood Injury Hospitalizations, 2000-2009

Erie County and Pennsylvania, 2000-2009				
<u>Subject</u>	<u>Number</u>	<u>Percent</u>	<u>Rate</u>	<u>PA Rate</u>
All Injuries (ages 0 - 14 years)	1,239	100.0	228.6	292.6
Male	744	60.0	267.0	359.0
Female	495	40.0	188.0	222.7
0 - 4 years	480	38.7	284.1	NA
5 - 9 years	260	21.0	143.6	NA
10 - 14 years	499	40.3	260.1	NA
Unintentional Injuries	1,073	86.6	198.0	264.7
Self-Inflicted Injuries	81	6.5	14.9	NA
Assaults	50	4.0	9.2	12.0
Undetermined	35	2.8	NA	NA
Leading Causes				
Falls	277	22.4	51.1	81.8
Motor Vehicle Traffic Accidents	149	12.0	27.5	39.7
Poisonings	134	10.8	24.7	25.0

Notes: Rates are per 100,000 population, 2000-2009; NA = Not available