Preliminary Analyses of Mortality
Community Health Profile
Pompton Lakes, New Jersey

Presented to Pompton Lakes Health CAG
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The New Jersey Department of Health and Senior Services (NJDHSS) makes death record data available to the public through the NJ State Health Assessment Data (NJ SHAD) web-based query system. The death certificate is the source document for data included in the death query. New Jersey law requires death certificates to be filed by proper authorities such as hospitals, physicians, medical examiners, and funeral directors, in the event of a death occurring in the state. Death certificates are submitted to the office of the State Registrar. Statistics on deaths of New Jersey residents that occurred in other states are obtained through participation in the national Vital Statistics Cooperative Program. The mortality data presented in the query system are for New Jersey residents, regardless of where the death occurred.

Causes of deaths included in the mortality query are underlying causes, and were coded using National Center for Health Statistics software in accordance with the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision (ICD-10).

A. Counts of Death by Cause

Methods

NJ SHAD was used to generate counts of death by cause, in Pompton Lakes, the six surrounding municipalities combined (Oakland Borough, Pequannock Township, Riverdale Borough, Bloomingdale Borough, Wanaque Borough, and Wayne Township), and the State of New Jersey. Causes of death are grouped and classified according to the National Center for Health Statistics' "50 Rankable Causes of Death." Results are tabulated for males, females, and combined sexes. The percentage of all deaths in the period due to each specific cause is also presented.

Results

Table 1 displays the counts of death by cause, geographic area, and sex. Causes of death are listed in order of the percentage of total deaths by cause in the state. Counts for each of the top 20 causes of death are shown in the table, as are the combined counts of the other 30 rankable causes of death, and the total of all other causes. The two most frequent underlying causes of death in all three geographic areas were heart disease and cancers. Together these two causes account for 52% of deaths statewide, 60% of deaths in Pompton Lakes, and 53% of deaths in the six surrounding towns.

Table 1. Mortality Counts by Cause: Pompton Lakes, Six Surrounding Towns, and State of New Jersey, 2004-2006.

Rank in State	National Center for Health Statistics, 50 Rankable Causes of Death	Pompton Lakes				Six Surrounding Towns *				State of New Jersey			
		Male	Female	Total	% of All Causes	Male	Female	Total	% of All Causes	Male	Female	Total	% of All Causes
1	Diseases of heart	39	47	86	30.7%	379	528	907	30.4%	28,235	32,049	60,284	28.4%
2	Malignant neoplasms	39	44	83	29.6%	311	353	664	22.3%	24,909	26,172	51,081	24.1%
3	Cerebrovascular diseases	1	9	10	3.6%	63	94	157	5.3%	4,298	6,472	10,770	5.1%
4	Chronic lower respiratory diseases	7	12	19	6.8%	59	96	155	5.2%	3,936	5,055	8,991	4.2%
5	Diabetes mellitus	7	2	9	3.2%	38	62	100	3.4%	3,767	3,806	7,573	3.6%
6	Unintentional injuries	5	3	8	2.9%	54	29	83	2.8%	4,722	2,620	7,342	3.5%
7	Septicemia	6	3	9	3.2%	53	49	102	3.4%	2,463	3,208	5,671	2.7%
8	Alzheimer's disease	1	1	2	0.7%	32	58	90	3.0%	1,464	3,695	5,159	2.4%
9	Nephritis, nephrotic syndrome and nephrosis	5	2	7	2.5%	32	27	59	2.0%	2,388	2,448	4,836	2.3%
10	Influenza and pneumonia	0	2	2	0.7%	42	48	90	3.0%	2,021	2,477	4,498	2.1%
11	Chronic liver disease and cirrhosis	1	0	1	0.4%	14	7	21	0.7%	1,331	756	2,087	1.0%
12	Human immunodeficiency virus (HIV) disease	0	0	0	0.0%	2	0	2	0.1%	1,154	642	1,796	0.8%
13	Intentional self-harm (suicide)	2	0	2	0.7%	14	2	16	0.5%	1,353	344	1,697	0.8%
14	Essential (primary) hypertension and hypertensive renal disease	0	1	1	0.4%	6	17	23	0.8%	647	1,045	1,692	0.8%
15	Parkinson's disease	0	0	0	0.0%	22	15	37	1.2%	977	697	1,674	0.8%
16	Pneumonitis due to solids and liquids	1	2	3	1.1%	10	9	19	0.6%	831	750	1,581	0.7%
17	In situ and benign neoplasms, neoplasms of unknown behavior	0	1	1	0.4%	8	11	19	0.6%	729	744	1,473	0.7%
18	Assault (homicide)	2	0	2	0.7%	7	0	7	0.2%	1,037	226	1,263	0.6%
19	Aortic aneurysm and dissection	1	0	1	0.4%	6	2	8	0.3%	695	488	1,183	0.6%
20	Certain conditions originating in the perinatal period	1	0	1	0.4%	8	1	9	0.3%	584	489	1,073	0.5%
21-50	Other 30 Rankable Causes	1	2	3	1.1%	17	32	49	1.6%	1,887	2,092	3,979	1.9%
--	Other than 50 Rankable Causes	16	14	30	10.7%	143	220	363	12.2%	11,154	15,087	26,242	12.4%
	Total	*135*	*145*	*280*	*100.0%*	*1,320*	*1,660*	*2,980*	*100.00%*	*100,582*	*111,362*	*211,945* **	*100.0%*

Results are from queries of the New Jersey Death Certificate Database through NJ SHAD, the New Jersey Department of Health and Senior Service's public web-based data query system (www.nj.gov/health/shad).

* Six surrounding municipalities are: Oakland, Pequannock, Riverdale, Bloomingdale, Wanaque, and Wayne.

** One death coded as sex unknown.

Other causes of death in the top 10 statewide are cerebrovascular diseases, chronic lower respiratory diseases, diabetes mellitus, unintentional injuries, septicemia, Alzheimer's disease, kidney diseases, and influenza and pneumonia. These causes of death each account for about 2% to 5% of all causes statewide. Overall, the relative proportion of counts is similar among the three geographic areas.

B. Age-Adjusted Mortality Rates

A mortality rate is the number of deaths in a defined population over a specific interval of time. A rate is usually expressed in a standard way such as "X deaths due to cause Y per 10,000 people per year." Crude mortality rates are simple rates and are calculated by dividing the number of deaths by the product of the total population and the number of years of observation. However, caution must be used when comparing crude rates between population groups (such as comparing a town to the state), or between different time periods (such as the same geographic area during different decades). Two populations with very different age distributions will have very different crude rates of mortality, since age is a very strong influence on the risk of dying.

One is often interested in comparing the risk of dying in two or more populations, after removing the effect of different age distributions. The "age-adjusted mortality rate" is a construct that shows what the level of mortality would be if the age composition was the same between two geographic areas or in two different time periods. Age-adjusted mortality rates are more appropriate than crude mortality rates as indicators of relative risk when comparing mortality across geographic areas that have different age compositions. One way of adjusting for age differences is by computing a Standardized Mortality Rate (described below).

Methods

NJDHSS compared age-adjusted mortality rates for all causes of death combined and for the ten most frequent causes of deaths in NJ (diseases of the heart; malignant neoplasms (cancers); cerebrovascular diseases; chronic lower respiratory diseases; diabetes mellitus; unintentional injuries; septicemia; Alzheimer's disease; nephritis, nephritic syndrome and nephrosis (kidney diseases); and influenza and pneumonia). Age-adjusted rates were calculated for Pompton Lakes and for the six surrounding municipalities combined (Oakland Borough, Pequannock Township, Riverdale Borough, Bloomingdale Borough, Wanaque Borough, and Wayne Township), in comparison the State of New Jersey, for the years 2004-2006. Mortality among males and females was evaluated separately since the background risks of these causes of death may vary by sex.

The age-standardization method that NJDHSS used results in the calculation of a Standardized Mortality Ratio (SMR). The SMR is calculated by dividing the observed number of deaths by an expected number of deaths for the surveyed population over a specific time period. The expected number is the number of deaths we would expect to see in the survey population if the mortality rates were the same as the comparison population. The expected number is derived by multiplying the

comparison population's age-sex-specific mortality rates and the study area age-sex-specific population figures. The comparison rates used to derive the expected number of cases were the New Jersey average annual mortality rates for 2004-2006.

The observed and expected numbers are evaluated by interpreting the ratio of these numbers. If the observed number of deaths equals the expected number of deaths, the SMR will equal 1.0. An SMR less than 1.0 indicates that fewer deaths were observed than expected, while an SMR greater than 1.0 indicates that more deaths than expected were observed.

Random fluctuations may account for some SMRs being higher or lower than 1.0. The statistical significance of deviations from SMR equal to 1.0 was evaluated using a 95% confidence interval (CI). The 95% CI was used to evaluate the probability that the SMR may be greater or less than 1.0 due to chance alone. If the confidence interval includes 1.0, then the estimated SMR is not considered to be statistically significantly different than 1.0; that is, the observed number of deaths is not statistically different from the expected number of deaths.

Results of Standardized Mortality Ratio Analyses

As shown in Table 2, there are no statistically significantly elevated SMRs in the comparison of all-cause and cause-specific mortality rates between Pompton Lakes and the State of New Jersey, in the period 2004-2006. SMRs for heart disease, malignant neoplasms (cancers), and chronic lower respiratory diseases were elevated in both sexes in Pompton Lakes, but chance could be an explanation for the differences.

Table 2. Standardized Mortality Ratio: Pompton Lakes compared to NJ, 2004-2006

Cause of Death	Sex	Observed	Expected	SMR	95 % Confidence Interval
All causes	Female	145	135	1.07	0.91, 1.26
	Male	135	116	1.16	0.97, 1.37
Heart disease	Female	47	37	1.25	0.92, 1.67
	Male	39	31	1.23	0.88, 1.68
Malignant neoplasms	Female	44	33	1.32	0.96, 1.77
	Male	39	29	1.32	0.94, 1.81
Cerebrovascular diseases	Female	9	7.6	1.18	0.54, 2.24
	Male	1	4.8	0.21	0.0, 1.16
Chronic lower respiratory diseases	Female	12	6.3	1.90	0.98, 3.32
	Male	7	4.5	1.55	0.62, 3.20
Diabetes mellitus	Female	2	4.7	0.42	0.05, 1.53
	Male	7	4.4	1.58	0.63, 3.26
Unintentional injuries	Female	3	3.2	0.94	0.19, 2.74
	Male	5	5.8	0.86	0.28, 2.01

Cause of Death	Sex	Observed	Expected	SMR	95 % Confidence Interval
Septicemia	Female	3	3.8	0.79	0.16, 2.30
	Male	6	2.8	2.16	0.79, 4.70
Alzheimer's disease	Female	1	4.1	0.24	0.0, 1.36
	Male	1	1.5	0.67	0.01, 3.75
Nephritis, nephrotic syndrome & nephrosis	Female	2	2.9	0.69	0.08, 2.49
	Male	5	2.6	1.89	0.61, 4.42
Influenza & pneumonia	Female	2	2.8	0.72	0.08, 2.61
	Male	0	2.1	--	--

Data sources: 1. The NJ Death Certificate Database through NJ SHAD, the NJDHSS's public web-based data query system (www.nj.gov/health/shad). 2. The U.S. Census Bureau website (American FactFinder) (http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml).

In the six municipalities surrounding Pompton Lakes, SMRs for all-cause mortality, heart disease, and influenza and pneumonia were statistically significantly elevated for both females and males, compared to the State of New Jersey. Deaths from chronic lower respiratory diseases among females and from septicemia and Alzheimer's disease among males were also statistically significantly elevated.

Table 3. Standardized Mortality Ratio: Six Municipalities surrounding Pompton Lakes compared to the State of NJ, 2004-2006

Cause of Death	Sex	Observed	Expected	SMR	95 % Confidence Interval
All causes	Female	1660	1485	**1.12**	**1.06 , 1.17**
	Male	1320	1221	**1.08**	**1.02, 1.14**
Heart disease	Female	528	434	**1.22**	**1.11, 1.32**
	Male	379	339	**1.12**	**1.01, 1.23**
Malignant neoplasms	Female	353	341	1.03	0.93, 1.15
	Male	311	311	1.00	0.89, 1.11
Cerebrovascular diseases	Female	94	86	1.08	0.87, 1.33
	Male	63	51	1.23	0.94, 1.57
Chronic lower respiratory diseases	Female	96	67	**1.43**	**1.16, 1.74**
	Male	59	48	1.23	0.94, 1.59
Diabetes mellitus	Female	62	50	1.24	0.95, 1.58
	Male	38	46	0.81	0.57, 1.11
Unintentional injuries	Female	29	32	0.88	0.59, 1.27
	Male	54	60	0.89	0.67, 1.16
Septicemia	Female	49	42	1.16	0.86, 1.53
	Male	53	29	**1.79**	**1.34, 2.34**

Cause of Death	Sex	Observed	Expected	SMR	95 % Confidence Interval
Alzheimer's disease	Female	58	50	1.14	0.87, 1.48
	Male	32	16	**1.95**	**1.34, 2.76**
Nephritis, nephrotic syndrome & nephrosis	Female	27	32	0.83	0.55, 1.21
	Male	32	28	1.13	0.77, 1.59
Influenza & pneumonia	Female	48	33	**1.45**	**1.07, 1.93**
	Male	42	22	**1.84**	**1.32, 2.48**

Data sources: 1. The NJ Death Certificate Database through NJ SHAD, the NJDHSS's public web-based data query system (www.nj.gov/health/shad). 2. The U.S. Census Bureau website (American FactFinder) (http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml).

C. Age-Specific Mortality Rates

In addition to comparisons of age-adjusted rates, which reflect the mortality experience across all ages, it is sometimes useful to compare age-specific mortality rates (crude rates in specific age intervals) to see if there are differences between populations among specific age segments of the population.

Methods

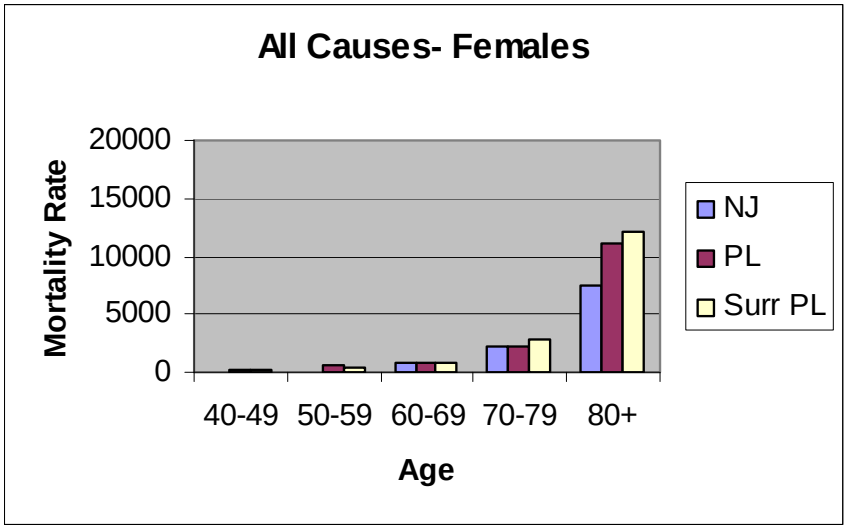
NJDHSS computed age-specific mortality rates by sex in ten-year age intervals in Pompton Lakes, the six surrounding municipalities combined (Oakland Borough, Pequannock Township, Riverdale Borough, Bloomingdale Borough, Wanaque Borough, and Wayne Township), and the State of New Jersey.

Results of Age-Specific Mortality Rate Analyses

Age-specific mortality rates by sex in Pompton Lakes, the six surrounding towns, and the State of New Jersey are presented in charts below (Figures 1-3). Figure 1 compares age-specific mortality rates for all causes combined; Figure 2 presents rates for deaths due to heart disease, and Figure 3 shows rates for malignant neoplasms.

In comparison to the State of New Jersey, age-specific mortality rates were higher in Pompton Lakes and in the six surrounding municipalities combined in the age interval above 80 years. This was observed for all-cause mortality, heart disease, deaths, and cancer deaths. Age-specific mortality in younger ten-year age intervals from age 40-49 through age 70-79 were similar across the three populations.

Figure 1. Age-specific mortality rates for all causes of death combined, by sex, for Pompton Lakes (PL), the six municipalities surrounding Pompton Lakes (Surr PL), and the State of New Jersey (NJ), 2004-2006. Rates are expressed as the number of deaths per 100,000 persons in the age interval.



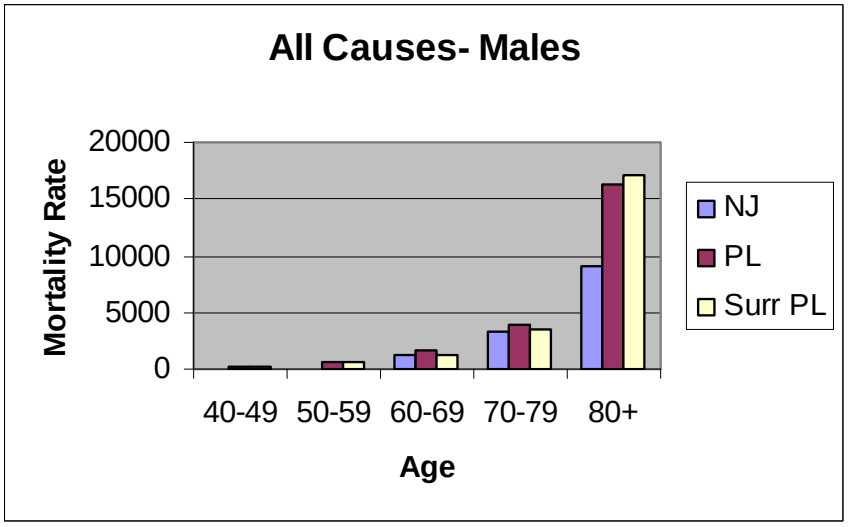
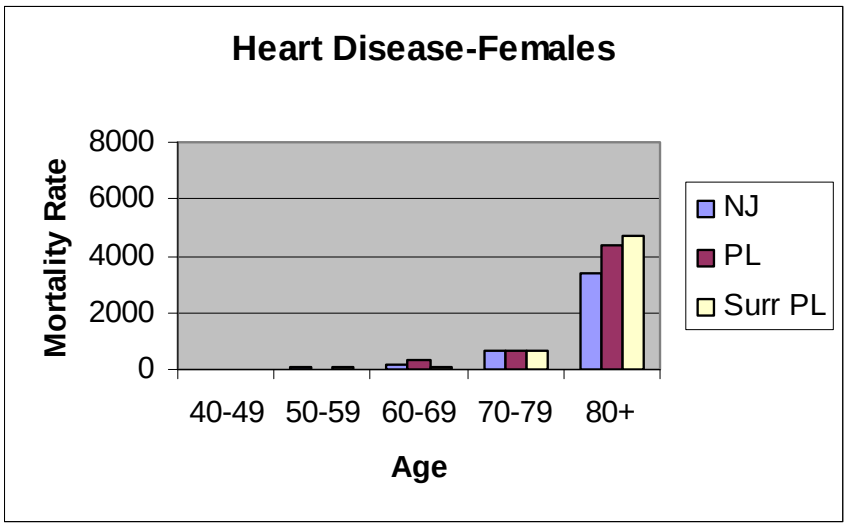


Figure 2. Age-specific mortality rates for deaths due to heart disease, by sex, for Pompton Lakes (PL), the six municipalities surrounding Pompton Lakes (Surr PL), and the State of New Jersey (NJ), 2004-2006. Rates are expressed as the number of deaths per 100,000 persons in the age interval.



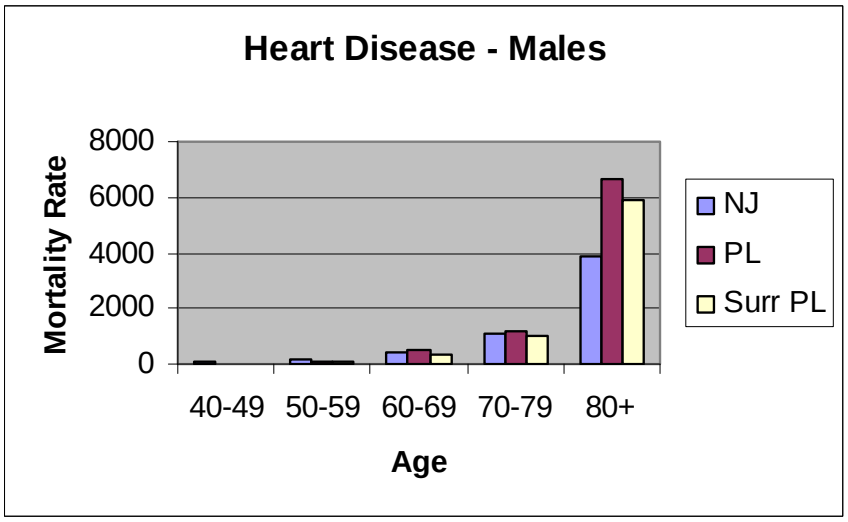


Figure 3. Age-specific mortality rates for deaths due to malignant neoplasms (cancers), by sex, for Pompton Lakes (PL), the six municipalities surrounding Pompton Lakes (Surr PL), and the State of New Jersey (NJ), 2004-2006. Rates are expressed as the number of deaths per 100,000 persons in the age interval.