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RECEIVED
JAN 27 2003
BY:

Subject: Cancer Incidence Report 1959-2001
All-Cause Mortality Report 1957-2000
Washington Works, Parkersburg, West Virginia

After a hiatus of several years, I am pleased to announce the resumption of the Epidemiology Program's Standard Cancer Incidence and All-Cause Mortality Surveillance Program for U.S. DuPont sites.

Attached please find the subject report from the Epidemiology Surveillance Program. If you have any questions, please do not hesitate to phone me.

Robin C. Leonard, Ph.D.

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**Epidemiology Surveillance Report
Cancer Incidence for Washington Works Site
1959-2001**

Interpretation of Surveillance Data

This report consists of tables showing the numbers of cancer cases reported from 1959 through 2001 at the DuPont Washington Works site in Parkersburg, West Virginia. For each specific cause the number of observed cases is compared to the number expected based on the experience of the entire U.S. Company population by the ratio of the observed to the expected numbers of cases. This ratio is the Standardized Incidence Ratio (SIR). This ratio is calculated only for those cancers for which at least five cases are observed. This is because the statistical estimates for small numbers are very uncertain, and unlikely to give any useful information. In addition, numbers smaller than 5 may well be due to chance occurrence, and seldom represent significant population trends. An SIR value of 1.0 indicates that the observed number of cases is equal to the expected, and therefore no increased risk is indicated. Accompanying the tables is a descriptive text that summarizes the main points.

Sources of Surveillance Data

Cancer cases that occur among active employees are recorded in the U.S. Company-wide Cancer Registry that was started in 1956. Through 1988, cases were reported to the Registry primarily by diagnoses entered on Accident and Health Insurance (A&H) claims and by death certificates that accompany life insurance claims filed by beneficiaries of deceased employees. Beginning in 1977, these sources were supplemented by Cancer Registry Report forms submitted by Company Medical personnel. Beginning in 2000, ascertainment of cancer cases is accomplished by a combination of Cancer Registry Reports from the plant sites, a screening of health insurance claims data, and case capture from death certificates acquired for the Mortality Registry.

Cancer cases are included in the observed numbers for the plant site if the person worked there at the time of diagnosis. For cases for which the date of diagnosis is unknown, the person is included in the observed numbers for the last known site at which he or she worked.

Methods of Analysis

To determine expected numbers of cases for the standardized analysis, cancer incidence rates for DuPont employees, specific for gender, 5-year time, and 5-year age categories are computed for each cancer diagnosis observed. Then, the Company-wide rates are multiplied by the person-years contributed to each of those categories by the site population. The sum of the products over all age groups is the expected number of cases. This approach constitutes an

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internally standardized analysis, which is generally preferred because it provides age-adjusted expected numbers and is based on actual plant populations.

Tests of Significance

Beginning with the 2002 Surveillance Reports, no symbols will represent statistically significant increases or decreases. However, the 95% confidence interval around the SIR will be presented. There are two primary reasons for this change. First, the choice of significance level of $p=0.05$, while customary, is also somewhat arbitrary. We have decided to emphasize the size of the SIR (the magnitude of the difference), along with the stability of the estimate (the width of the confidence interval), as the indicators of possible need for further investigation. However, it remains that if the 95% confidence interval includes 1.0, then that finding is not statistically significant for $p = .05$.

It may be that the observed number for a particular cause is greater than the expected number, but the 95% confidence interval may still include 1.0. In this instance, it does not necessarily follow that there can be no occupational risk factors associated with this moderate excess of cases. If the number of persons at the plant is small, excess cancer morbidity would be difficult to detect because of dilution by data from the rest of the plant. In addition, the duration of exposure may be too short for effects to be manifested by excess cancer cases.

To provide additional information in those situations in which there appears to be an excess of cases, we have incorporated in this report a table that lists (without personal identification) individual cancer cases if that type shows an SIR greater than 2.5. This will enable us to examine such things as age at diagnosis, duration of employment, and the length of time between hire and diagnosis. These data often give us a good indication as to whether or not the pattern presented is indicative of occupational risk factors being involved.

It is very important to understand that excess risk may occur because of other factors, such as smoking, diet, alcohol use, or family history. This type of information is not accumulated and analyzed in the routine Registry surveillance analyses.

Plant-Specific Summary of Findings—Washington Works

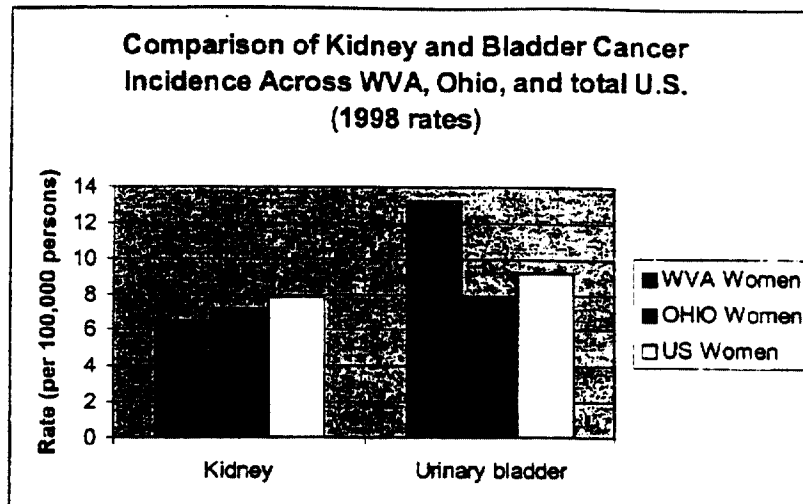
Table 1 is the cancer incidence surveillance report for Washington Works: 1959-2001. Of the 42 types of cancer reported to have occurred in employees at Washington Works, only 14 types had at least 5 cases observed. These types of cancer were colorectal (32 cases), pancreas (9 cases), larynx (6 cases), lung (61 cases in males), malignant melanoma (14 cases in males), female breast (8 cases), prostate (19 cases), kidney (18 cases), bladder (18 cases), brain (8 cases), lymphoid and histiocytic tissue (9 cases), multiple myeloma (7 cases in males), myeloid leukemia (8 cases), and unspecified sites (14 cases in males). Except for bladder and kidney, none of the confidence intervals around the SIRs excluded 1.0.

The SIR for bladder cancer in males is 1.94, with the 95% confidence interval ranging from 1.15 to 3.07. These numbers indicate an increased risk for bladder cancer in males. All cases were male.

The SIR for kidney cancer is 2.30, with the 95% confidence interval ranging from 1.36 to 3.65. These numbers indicate an increased risk for kidney cancer in males. All cases were male.

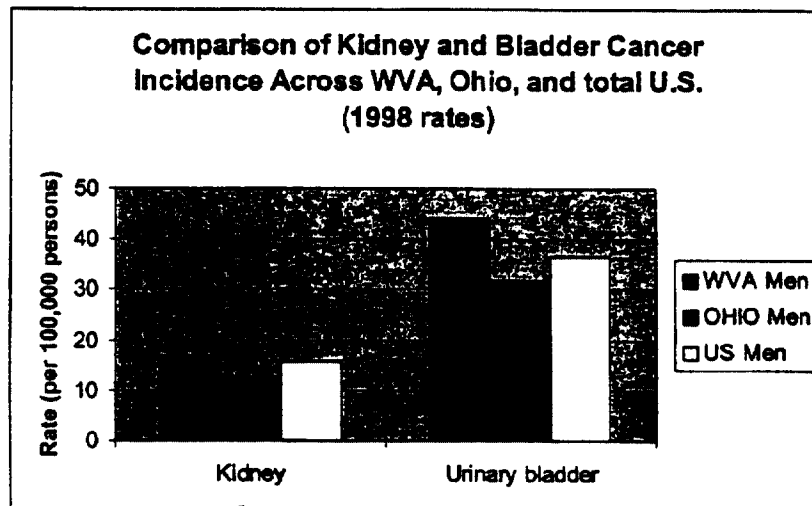
Figures 1 and 2 compare the incidence rates of bladder cancer and kidney cancer for West Virginia females and males to the rates for the U.S. and Ohio, based on data from the respective State Health Departments for the year 1998. West Virginia men tend to have higher rates of both kidney and bladder cancer. West Virginia women tend to have higher rates of bladder, but not kidney cancer.

Figure 1.



West Virginia women have higher bladder cancer than the comparison groups, but their kidney cancer rate is the lowest of the female comparison groups.

Figure 2.



Figures 1 and 2 indicate that West Virginia men have higher rates of kidney and bladder cancer than Ohio men and higher than the general U.S. male population.

Additional Information Specific to this Site Report

Bladder Cancer

Bladder cancer is the sixth most common cancer in the United States, excluding non-melanoma skin cancers. The American Cancer Society estimates that in 2003 there will be about 57,400 new cases of bladder cancer diagnosed in the United States (about 42,200 men and 15,200 women).

In 2003, there will also be about 12,500 deaths from bladder cancer in the United States (about 8,600 men and 3,900 women).

The following risk factors have been linked to bladder cancer:

- **Smoking:** Smoking is the most important risk factor for bladder cancer. Cancer-causing chemicals in tobacco smoke are absorbed from the lungs and get into the blood. From the blood, they are filtered by the kidneys and collect in the urine. These chemicals in the urine damage the cells that line the inside of the bladder and increase the chance of cancer developing.
- **Work exposure:** Certain chemicals used in the dye industry have been linked to bladder cancer. Other types of industries use chemicals that may put workers at risk if good safety practices are not followed. Smokers who work with cancer-causing chemicals have an especially high risk of developing bladder cancer.
- **Race:** Whites are two times more likely to develop bladder cancer than are African Americans.
- **Age:** The risk of bladder cancer goes up with age.
- **Chronic bladder inflammation:** While chronic bladder irritations such as urinary infections and kidney and bladder stones don't cause bladder cancer, they have been associated with it in some studies.
- **Personal history of bladder cancer:** People who have had bladder cancer have a higher risk of forming another tumor.
- **Birth defects of the bladder:** Very rarely a connection between the belly button and the bladder fails to disappear as it should before birth and can become cancerous.
- **Use of the herb, *Aristolochia Fangchi*:** This Chinese herb, taken by some people to help them lose weight, has been linked to bladder cancer.

Kidney Cancer

The American Cancer Society estimates that there will be about 30,800 new cases of kidney cancer (18,700 in men and 12,100 in women) in the United States in the year 2001, and about 12,100 people (7,500 men and 4,600 women) will die from this disease. These statistics include both adults and children and

include renal cell carcinomas as well as transitional cell carcinomas of the renal pelvis. Renal cell carcinoma is the most common type of kidney cancer in adults.

In about 50% of cases, the renal cell carcinoma has not spread outside the kidney when it is discovered. In another 25% of people the cancer will be found to have grown locally outside the kidney, and in the remaining 25% it will have metastasized (spread farther away) to other parts of the body such as the lungs or bones.

The following risk factors have been linked to kidney cancer:

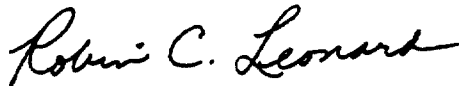
- **Smoking:** Smoking doubles the risk of getting kidney cancer.
- **Overuse of certain painkillers:** Pain killers containing phenacetin were once popular non-prescription medications, but they have not been available in the United States for over 20 years.
- **Asbestos:** Some studies show a link between exposure to asbestos in the workplace and kidney cancer.
- **Cadmium:** There may be a link between cadmium exposure and kidney cancer. Also, cadmium may increase the cancer-causing effect of smoking. Workers can be exposed to cadmium in the air from working with products such as batteries, paints, or welding materials.
- **Gene changes (mutations):** Genes are made up of DNA and are the basic units of heredity. They are the reason we resemble our parents. Changes or mutations in certain genes can increase the risk of developing kidney tumors. Some of these changes are inherited (people with a family history of renal cell cancer have an increased risk) and some can be caused by later damage, for example, by cigarette smoke.
- **von Hippel-Lindau syndrome:** This disease, caused by an inherited gene mutation (change), increases the chances of renal cell cancer and other types of cancer.
- **Tuberous sclerosis:** Patients who have this disease often have cysts in the kidneys, liver, and pancreas and are more likely to get renal cell cancer.
- **Diet and weight:** Some studies show a link between being overweight, a diet high in fat, and renal cell cancer.
- **Long-term dialysis:** People who have been on dialysis for a long time may develop cysts in their kidneys that can give rise to renal cell cancer.
- **Age:** RCC is rare in children and young adults; it is found mostly in adults between the ages of 50-70 years.
- **Gender:** Men are twice as likely to get renal cell cancer as are women. Not enough is known about the causes of renal cell cancer to say for sure how to prevent it. Since smoking is linked to this cancer (as well as to other cancers), if you smoke, you should quit. Also, if you work with asbestos or cadmium, be sure to follow good safety practices.

Recommendations for Follow-up

We recommend that complete work histories on the cases of bladder and kidney cancer be examined for any commonalities of occupational exposure, and the medical records be reviewed for the presence of other risk factors for kidney and bladder cancer. We also recommend that consideration be given to determining the feasibility of conducting a case-cohort study. This approach would provide an assessment of exposure potential and enable analyzing for associations with the health outcomes. The design of such a study would provide for one series of controls to be used for all the cancer cases (bladder and kidney.)

It is important to remember that the ongoing TFE epidemiology study being conducted by the APME should provide important information about cancer outcome in at least part of the Washington Works cohort. In addition, the work that will be done to categorize exposures for different jobs/tasks over time will be useful for a case-cohort study of the entire plant workforce. There is potential for leveraging these efforts to productive use in the surveillance program.

If I can answer any questions, please do not hesitate to call.



Sincerely,
Robin C. Leonard, Ph.D.
Principal Epidemiologist,
E. I. du Pont de Nemours, Inc.

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TABLE 1.

Cancer Type	MALES				FEMALES			
	Observed	Expected	Obs/Exp Ratio	95% Confidence Interval	Observed	Expected	Obs/Exp Ratio	95% Confidence Interval
NEOPLASMS - LIP, ORAL CAVITY, & PHARYNX								
LIP	4	0.63	N/A	N/A - N/A				
TONGUE	2	1.35	N/A	N/A - N/A				
MAJOR SALIVARY GLANDS	1	0.78	N/A	N/A - N/A				
OTHER & UNSPECIFIED PARTS	1	0.57	N/A	N/A - N/A				
OROPHARYNX	1	0.7	N/A	N/A - N/A				
OTHER & ILL-DEFINED SITES	2	0.6	N/A	N/A - N/A				
NEOPLASMS - DIGESTIVE ORGANS & PERITONEUM								
ESOPHAGUS	3	4.82	N/A	N/A - N/A				
STOMACH	2	5.43	N/A	N/A - N/A				
SMALL INTESTINE, INCLUDING DUODENUM	3	0.57	N/A	N/A - N/A				
COLORRECTAL	32	30.8	1.04	0.71 - 1.46				
LIVER & INTRAHEPATIC BILE DUCTS	3	2.98	N/A	N/A - N/A	1	0.16	N/A	N/A - N/A
GALLBLADDER & EXTRAHEPATIC BILE DUCTS	2	1.35	N/A	N/A - N/A				
PANCREAS	9	9.13	0.98	0.44 - 1.87				
RETROPERITONEUM & PERITONEUM	1	0.29	N/A	N/A - N/A				
OTHER & ILL-DEFINED SITES	1	0.23	N/A	N/A - N/A				
NEOPLASMS - RESPIRATORY & INTRATHORACIC ORGANS								
NASAL CAVITIES, MIDDLE EAR, & SINUSES	2	0.56	N/A	N/A - N/A				
LARYNX	6	3.39	1.77	0.64 - 7.85				

* Observed/Expected Ratios are not calculated when less than 5 cases are observed.

1/22/2003 10:59:42 AM Page 1 of 3

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Cancer Type	MALES				FEMALES			
	Observed	Expected	Obs/Exp Ratio*	95% Confidence Interval	Observed	Expected	Obs/Exp Ratio*	95% Confidence Interval
TRACHEA, BRONCHUS, & LUNG	61	60.2	1.01	0.77 - 1.30	3	1.32	N/A	N/A - N/A
PLEURA	4	0.95	N/A	N/A - N/A				
NEOPLASMS - BONE, CONNECTIVE TISSUE, SKIN, & BREAST								
BONE & ARTICULAR CARTILAGE	2	0.83	N/A	N/A - N/A				
CONNECTIVE & OTHER SOFT TISSUE	3	2.82	N/A	N/A - N/A	1	0.21	N/A	N/A - N/A
MALIGNANT MELANOMA OF SKIN	14	10.6	1.31	0.72 - 2.21	3	0.68	N/A	N/A - N/A
FEMALE BREAST					8	5.42	1.47	0.63 - 2.90
NEOPLASMS - GENITOURINARY ORGANS								
CERVIX UTERI					1	1.25	N/A	N/A - N/A
PROSTATE	19	22.1	0.86	0.51 - 1.34				
TESTIS	5	3.41	1.46	0.47 - 3.42				
BLADDER	18	9.25	1.94	1.15 - 3.07				
KIDNEY & URINARY ORGANS	18	7.79	2.30	1.36 - 3.65				
NEOPLASMS - OTHER & UNSPECIFIED SITES								
BRAIN	8	6.63	1.20	0.51 - 2.37				
OTHER & UNSPECIFIED PARTS OF NERVOUS SYST	1	0.62	N/A	N/A - N/A				
THYROID GLAND	2	2.02	N/A	N/A - N/A	1	0.35	N/A	N/A - N/A
OTHER ENDOCRINE GLANDS & RELATED STRUCT	4	0.51	N/A	N/A - N/A				
OTHER & ILL-DEFINED SITES	2	1.27	N/A	N/A - N/A				
UNSPECIFIED SITE	14	10.8	1.29	0.70 - 2.16	1	0.27	N/A	N/A - N/A
NEOPLASMS - LYMPHATIC & HEMATOPOIETIC TISSUE								
LYMPHOSARCOMA & RETICULOSARCOMA	2	3.18	N/A	N/A - N/A				
HODGKIN'S DISEASE	3	3.24	N/A	N/A - N/A	1	0.18	N/A	N/A - N/A
OTHER LYMPHOID & HISTIOCYTIC TISSUE	9	7.62	1.18	0.53 - 2.24				
MULTIPLE MYELOMA & IMMUNOPROLIFERATIVE N	7	4.06	1.72	0.69 - 3.55	2	0.14	N/A	N/A - N/A
LYMPHOID LEUKEMIA	1	2.63	N/A	N/A - N/A	1	0.11	N/A	N/A - N/A

* (Observed/Expected Ratios are not calculated when less than 5 cases are observed.)

1/22/2003 10:59:42 AM Page 2 of 3

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MALES

FEMALES

Cancer Type	Observed	Expected	Obs/Exp Ratio	95% Confidence Interval	Observed	Expected	Obs/Exp Ratio	95% Confidence Interval
MYELOID LEUKEMIA	0	3.96	0.01	0.86 - 3.97				
MONOCYTIC LEUKEMIA	1	0.22	NA	NA - NA				
LEUKEMIA OF UNSPECIFIED CELL TYPE	4	2.3	NA	NA - NA	1	0.07	NA	NA - NA

Location	Site Code
PARKERSBURG WV	2580
WASHINGTON WKS PARKERSBURG WV	2581
WASHINGTON RES LAB PARKSBG WV	2587
WASHINGTON WORKS WV	2589

Reference Population	Date
Total 282026	1/20/2003
F 94275	1/20/2003
M 197729	1/20/2003
22	1/20/2003

Site Population	Date
Total 6523	1/22/2003
F 1034	1/22/2003
M 4489	1/22/2003
	1/22/2003

* Observed/Expected Ratios are not calculated when less than 5 cases are observed.

1/22/2003 10:59:42 AM Page 3 of 3

WASHINGTON WKS PARKERSBURG WV

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**Epidemiology Surveillance Report
All-Cause Mortality for the Washington Works Site
1957-2000**

Interpretation of Surveillance Data

This report consists of tables showing the numbers of deaths from all causes reported from 1957 through 2000 at the DuPont Washington Works site in Parkersburg, West Virginia. For each specific cause the number of observed deaths is compared to the number expected based on the experience of the entire U.S. Company population by the ratio of the observed to the expected numbers of deaths. This ratio is the Standardized Mortality Ratio (SMR). This ratio is calculated only for those causes of death for which at least five deaths are observed. This is because the statistical estimates for small numbers are very uncertain, and unlikely to give any useful information. In addition, numbers smaller than 5 may well be due to chance occurrence, and seldom represent significant population trends. An SMR value of 1.0 indicates that the observed number of deaths is equal to the expected, and therefore no increased risk is indicated. Accompanying the tables is a descriptive text that summarizes the main points.

Sources of Surveillance Data

Deaths that occur among active and pensioned employees are recorded in the U.S. Company-wide Mortality Registry that was started in 1957. Deaths are reported to the Registry by the corporate Benefits division through death certificates that accompany life insurance claims filed by beneficiaries of deceased employees and pensioners.

Deaths are ascribed to the observed numbers for the plant site at which the employee worked at the time of death, or the site at which the pensioner worked at the time of retirement.

Methods of Analysis

To determine expected numbers of deaths for the standardized analysis, mortality rates for DuPont employees and pensioners, specific for gender, 5-year time, and 5-year age categories are computed for each cause of death observed. Then, the Company-wide rates are multiplied by the person-years contributed to each of those categories by the site population. The sum of the products over all age groups is the expected number of deaths. This approach constitutes an internally standardized analysis, which is generally preferred because it provides age-adjusted expected numbers and is based on actual plant populations.

Tests of Significance

Beginning with the 2002 Surveillance Reports, no symbols will represent statistically significant increases or decreases. However, the 95% confidence interval around the SMR will be presented. There are two primary reasons for this change. First, the choice of significance level of $p=0.05$, while customary, is also somewhat arbitrary. We have decided to emphasize the size of the SMR (the magnitude of the difference), along with the stability of the estimate (the width of the confidence interval), as the indicators of possible need for further investigation. However, it remains that if the 95% confidence interval includes 1.0, then that finding is not statistically significant for $p = .05$.

It may be that the observed number for a particular cause is greater than the expected number, but the 95% confidence interval may still include 1.0. In this instance, it does not necessarily follow that there can be no occupational risk factors associated with this moderate excess of deaths. If the number of persons at the plant is small, or the plant is recently built or acquired, excess mortality would be difficult to detect because of the small probability of this population having any deaths.

To provide additional information in those situations in which there appears to be an excess of deaths, we have incorporated in this report a table that lists (without personal identification) individual deaths if that cause shows an SMR greater than 2.5. This will enable us to examine such things as age at death, duration of employment, and the length of time between hire and death. These data often give us a good indication as to whether or not the pattern presented is indicative of occupational risk factors being involved.

It is very important to understand that excess risk may occur because of other factors, such as smoking, diet, alcohol use, or family history. This type of information is not accumulated and analyzed in the routine Registry surveillance analyses.

Plant-Specific Summary of Findings—Washington Works

Table 1 is the all-cause mortality surveillance report for Washington Works: 1957-2000. The only causes of death for which the SMR was greater than 2.0 were diseases of blood and blood-forming organs in males (SMR = 2.97; 95% CI = 0.95-6.94); and rheumatic heart disease in males (SMR = 3.55; 95% CI = (1.14-8.30). Note the exclusion of 1.0 in the confidence interval around the SMR for rheumatic heart disease in males.

Two other categories of circulatory system diseases were significantly elevated. These were acute myocardial infarction (SMR = 1.38; 95% CI = 1.15-1.64); and atherosclerosis and aneurysm (SMR = 1.98; 95% CI = 1.17-3.14).

Recommendations

An increased risk for mortality due to heart disease is not a new finding at Washington Works. An earlier study on heart disease at this site did not identify any occupational risk factors. We recommend the following:

1. Consider undertaking a feasibility assessment for a case-cohort study for heart disease, with emphasis on detailed exposure assessment and identification of other risk factors for heart disease.
2. Provide additional communications to workers concerning the known risk factors for heart disease, and consider on-site preventive programs.

If you have any further questions, please do not hesitate to call me.



Robin C. Leonard, Ph.D.
Principal Epidemiologist
E.I. du Pont de Nemours, Inc.

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TABLE 1.



Cause of Death	MALES				FEMALES			
	Observed	Expected	Obs/Exp Ratio*	95% Confidence Interval	Observed	Expected	Obs/Exp Ratio*	95% Confidence Interval
INFECTIOUS & PARASITIC DISEASES								
INFECTIOUS AND PARASITIC DISEASES	12	11.7	1.02	0.82 - 1.78				
NEOPLASMS - LIP, ORAL CAVITY, & PHARYNX								
LIP, ORAL CAVITY, AND PHARYNX	4	3.01	N/A	N/A - N/A				
NEOPLASMS - DIGESTIVE ORGANS & PERITONEUM								
ESOPHAGUS	3	4.31	N/A	N/A - N/A				
STOMACH	2	4.91	N/A	N/A - N/A				
SMALL INTESTINE, INCLUDING DUODENUM	2	0.40	N/A	N/A - N/A				
COLONRECTAL	19	20.3	0.93	0.56 - 1.46				
LIVER & INTRAHEPATIC BILE DUCTS	3	2.83	N/A	N/A - N/A	1	0.11	N/A	N/A - N/A
GALLBLADDER & EXTRAHEPATIC BILE DUCTS	2	1.19	N/A	N/A - N/A				
PANCREAS	7	8.68	0.80	0.32 - 1.66				
NEOPLASMS - RESPIRATORY & INTRATHORACIC ORGANS								
NASAL CAVITIES, MIDDLE EAR, & SINUSES	2	0.3	N/A	N/A - N/A				
LARYNX	2	1.31	N/A	N/A - N/A				
TRACHEA, BRONCHUS, & LUNG	64	66.1	0.97	0.73 - 1.27	1	1.06	N/A	N/A - N/A
PLEURA	1	0.79	N/A	N/A - N/A				
NEOPLASMS - BONE, CONNECTIVE TISSUE, SKIN, & BREAST								
BONE & ARTICULAR CARTILAGE	2	0.42	N/A	N/A - N/A				
CONNECTIVE & OTHER SOFT TISSUE	2	1.24	N/A	N/A - N/A				
MALIGNANT MELANOMA OF SKIN	2	3.33	N/A	N/A - N/A	1	0.12	N/A	N/A - N/A

* Observed/Expected Ratios are not calculated when less than 5 cases are observed.

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Cause of Death	MALES				FEMALES			
	Observed	Expected	Obs/Exp Ratio*	95% Confidence Interval	Observed	Expected	Obs/Exp Ratio*	95% Confidence Interval
OTHER SKIN	1	0.33	NA	NA - NA	2	1.79	NA	NA - NA
FEMALE BREAST								

NEOPLASMS - GENITOURINARY ORGANS

PROSTATE	9	14.2	0.63	0.28 - 1.20
TESTIS	1	0.38	NA	NA - NA
BLADDER	7	4.34	1.61	0.84 - 3.32
KIDNEY & URINARY ORGANS	8	5.20	1.53	0.68 - 3.02

NEOPLASMS - OTHER & UNSPECIFIED SITES

BRAIN	6	5.49	1.09	0.39 - 2.37
OTHER ENDOCRINE GLANDS & RELATED STRUCTUR	3	0.32	NA	NA - NA
OTHER & ILL-DEFINED SITES	1	0.75	NA	NA - NA
SECONDARY MALIGNANT NEOPLASM OF RESPIRATO	1	0.1	NA	NA - NA
UNSPECIFIED SITE	13	9.85	1.32	0.70 - 2.25

NEOPLASMS - LYMPHATIC & HEMATOPOIETIC TISSUE

LYMPHOSARCOMA & RETICULOSARCOMA	1	1.61	NA	NA - NA
HODGKINS DISEASE	2	1.49	NA	NA - NA
OTHER LYMPHOID & HISTIOCYTIC TISSUE	3	4.99	NA	NA - NA
MULTIPLE MYELOMA & IMMUNOPROLIFERATIVE NEO	5	3.44	1.45	0.46 - 3.39
LYMPHOID LEUKEMIA	1	0.06	NA	NA - NA
MYELOID LEUKEMIA	6	3.49	1.71	0.62 - 3.74
MONOCYTIC LEUKEMIA	1	0.12	NA	NA - NA
LEUKEMIA OF UNSPECIFIED CELL TYPE	3	1.83	NA	NA - NA

NEOPLASMS OF UNCERTAIN BEHAVIOR

NEOPLASMS OF UNSPECIFIED NATURE	1	0.98	NA	NA - NA
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ENDOCRINE, NUTRITIONAL, & METABOLIC DISEASES, & IMMUNITY DISORDERS

DIABETES MELLITUS	12	7.60	1.57	0.81 - 2.75
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* Observed/Expected Ratios are not calculated when less than 5 cases are observed.

WASHINGTON WKS PARKERSBURG WV

Cause of Death	MALES				FEMALES			
	Observed	Expected	Obs/Exp Ratio*	95% Confidence Interval	Observed	Expected	Obs/Exp Ratio*	95% Confidence Interval
DISEASES OF BLOOD & BLOOD-FORMING ORGANS								
DISORDERS OF LIPOID METABOLISM	1	0.68	N/A	N/A - N/A				
OTHER AND UNSPECIFIED DISORDERS OF METABOLISM	1	0.48	N/A	N/A - N/A				
OBESITY AND OTHER HYPERALIMENTATION	1	0.33	N/A	N/A - N/A				
DISEASES OF BLOOD AND BLOOD-FORMING ORGANS								
DISEASES OF BLOOD AND BLOOD-FORMING ORGANS	5	1.68	2.97	0.95 - 6.94				
MENTAL DISORDERS								
SENILE AND PRESENILE ORGANIC PSYCHOTIC COND	2	1.43	N/A	N/A - N/A				
DISEASES OF NERVOUS SYSTEM & SENSE ORGANS								
OTHER CEREBRAL DEGENERATIONS	1	2.32	N/A	N/A - N/A	1	0.05	N/A	N/A - N/A
PARKINSON'S DISEASE	2	1.89	N/A	N/A - N/A				
OTHER CONDITIONS OF BRAIN					1	0.05	N/A	N/A - N/A
MONONEURITIS OF LOWER LIMB	1	0.02	N/A	N/A - N/A				
DISEASES OF CIRCULATORY SYSTEM								
RHEUMATIC HEART DISEASE	5	1.41	3.55	1.14 - 8.30				
HYPERTENSIVE DISEASE	6	6.23	0.96	0.35 - 2.09				
ACUTE MYOCARDIAL INFARCTION	128	92.3	1.38	1.15 - 1.64	1	0.89	N/A	N/A - N/A
OTHER ACUTE AND SUBACUTE FORMS OF ISCHEMIC	1	2.05	N/A	N/A - N/A				
OTHER FORMS OF CHRONIC ISCHEMIC HEART DISEASE	71	71.5	0.99	0.77 - 1.25	1	0.87	N/A	N/A - N/A
ACUTE PULMONARY DISEASE	3	2.79	N/A	N/A - N/A				
OTHER CARDIOPATHY	48	39.3	1.22	0.90 - 1.62	1	0.60	N/A	N/A - N/A
CEREBROVASCULAR DISEASES	27	28.1	0.96	0.63 - 1.39	1	0.79	N/A	N/A - N/A
ATHEROSCLEROSIS AND ANEURYSM	16	9.06	1.98	1.17 - 3.14				
OTHER VASCULAR DISEASE	4	2.96	N/A	N/A - N/A				
DISEASES OF RESPIRATORY SYSTEM								
OTHER BACTERIAL PNEUMONIA	2	0.57	N/A	N/A - N/A				
PNEUMONIA, ORGANISM UNSPECIFIED	8	8.63	0.92	0.39 - 1.82				

* (Observed/Expected Ratios are not calculated when less than 5 cases are observed.)

1/22/2003 10:58:18 AM Page 3 of 5

CONFIDENTIAL -

WASHINGTON WKS PARKERSBURG WV

000047

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Cause of Death	MALES				FEMALES			
	Observed	Expected	Obs/Exp Ratio *	95% Confidence Interval	Observed	Expected	Obs/Exp Ratio *	95% Confidence Interval
EMPHYSEMA	6	5.11	1.17	0.42 - 2.55	1	0.06	N/A	N/A - N/A
CHRONIC AIRWAY OBSTRUCTION, NOT ELSEWHERE	12	10.7	1.12	0.57 - 1.95				
ASBESTOSIS	1	0.77	N/A	N/A - N/A				
PULMONARY CONGESTION AND HYPOSTASIS	1	0.39	N/A	N/A - N/A				
POSTINFLAMMATORY PULMONARY FIBROSIS	2	1.51	N/A	N/A - N/A				
OTHER DISEASES OF LUNG	2	1.57	N/A	N/A - N/A				
DISEASES OF DIGESTIVE SYSTEM								
CHRONIC LIVER DISEASE AND CIRRHOSIS	8	8.21	0.97	0.41 - 1.92				
OTHER DISORDERS OF GALLBLADDER	1	0.28	N/A	N/A - N/A				
GASTROINTESTINAL HEMORRHAGE	1	0.96	N/A	N/A - N/A				
DISEASES OF GENITOURINARY SYSTEM								
DISEASES OF KIDNEY AND URINARY TRACT	5	6.34	0.78	0.25 - 1.84	1	0.13	N/A	N/A - N/A
DISEASES OF THE MUSCULOSKELETAL SYSTEM & CONNECTIVE TISSUE								
MUSCULOSKELETAL AND CONNECTIVE TISSUE DISEASE	2	1.36	N/A	N/A - N/A				
CONGENITAL ANOMALIES								
OTHER CONGENITAL ANOMALIES OF NERVOUS SYSTEM	1	0.11	N/A	N/A - N/A				
CONGENITAL ANOMALIES OF URINARY SYSTEM	1	0.18	N/A	N/A - N/A				
SYMPTOMS, SIGNS, & ILL-DEFINED CONDITIONS								
SYMPTOMS, SIGNS, AND ILL-DEFINED CONDITIONS	3	7.39	N/A	N/A - N/A	1	0.19	N/A	N/A - N/A
EXTERNAL CAUSES OF INJURY & POISONING								
OTHER TRANSPORT ACCIDENT	2	2.40	N/A	N/A - N/A				
MOTOR VEHICLE ACCIDENT	19	18.7	1.01	0.61 - 1.58	2	0.86	N/A	N/A - N/A
ACCIDENTAL FALL	1	2.31	N/A	N/A - N/A				
FIRE OR EXPLOSION	1	1.96	N/A	N/A - N/A				
OTHER EXTERNAL CAUSES OF INJURY AND POISONING	4	6.02	N/A	N/A - N/A	1	0.06	N/A	N/A - N/A
SUICIDE	7	13.0	0.53	0.21 - 1.10				

* Observed/Expected Ratios are not calculated when less than 5 cases are observed.

WASHINGTON WAS PARKERSBURG WV

000048

Cause of Death	MALES				FEMALES			
	Observed	Expected	Ratio ^a	95% Confidence Interval	Observed	Expected	Ratio ^a	95% Confidence Interval
ASSAULT	1	2.80	N/A	N/A - N/A				
INJURY DUE TO WARFARE	1	0.02	N/A	N/A - N/A				

Location	Site Code
PARKERSBURG WV	2560
WASHINGTON WKS PARKERSBURG WV	2561
WASHINGTON RES LAB PARKSBG WV	2567
WASHINGTON WORKS WV	2569

Reference Population	Date
Total 263026	1/20/2003
F 64275	1/20/2003
M 197729	1/20/2003
22	1/20/2003

Site Population	Date
Total 5523	1/22/2003
F 1034	1/22/2003
M 4489	1/22/2003

000049

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WASHINGTON WKS PARKERSBURG WV