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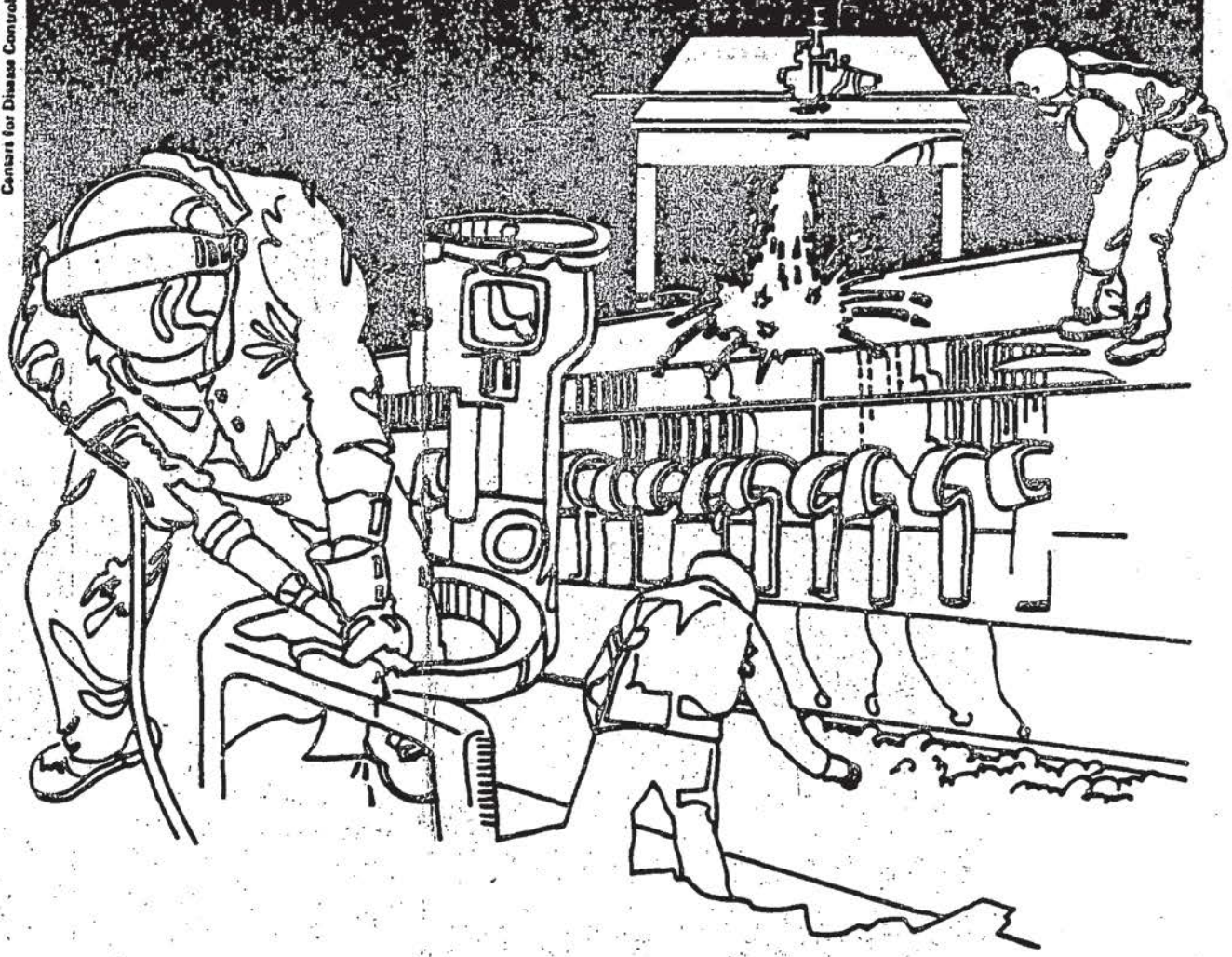

Health Hazard Evaluation Report

HETA 85-175-1621
MANSFIELD POST OFFICE
MANSFIELD, OHIO

PREFACE

The Hazard Evaluations and Technical Assistance Branch of NIOSH conducts field investigations of possible health hazards in the workplace. These investigations are conducted under the authority of Section 20(a)(6) of the Occupational Safety and Health Act of 1970, 29 U.S.C. 669(a)(6) which authorizes the Secretary of Health and Human Services, following a written request from any employer or authorized representative of employees, to determine whether any substance normally found in the place of employment has potentially toxic effects in such concentrations as used or found.

The Hazard Evaluations and Technical Assistance Branch also provides, upon request, medical, nursing, and industrial hygiene technical and consultative assistance (TA) to Federal, state, and local agencies; labor; industry and other groups or individuals to control occupational health hazards and to prevent related trauma and disease.

HETA 85-175-1621
AUGUST 1985
MANSFIELD POST OFFICE
MANSFIELD, OHIO

NIOSH INVESTIGATOR:
Matthew A. London

I. SUMMARY

In February 1985, the National Institute for Occupational Safety and Health (NIOSH) received a request to investigate a possible excess of cancer among employees of the Mansfield, Ohio Post Office. This concern was initiated when Congressman Michael Oxley's office received a letter from a constituent which listed 14 current or former employees of the Post Office who reportedly had been diagnosed with cancer. The cancers included one cancer of the kidney, two lung cancers, one leukemia, and three lymphomas.

The Mansfield Postmaster, upon request, provided demographic information on the workforce, sufficient to enable the NIOSH investigators to preliminarily assess the problem. On May 23, 1985, a NIOSH medical officer conducted a site visit of the Mansfield Post Office, obtaining additional background information, receiving a walk-through of the facility, and meeting with representatives of the unions and management to outline the preliminary results of the study.

Given an unsubstantiated report of disease, we examined the possibility of there being an excess by: calculating the number of age- and sex-specific person-years at risk for the group; determining the expected number of cases using age- and sex-specific cancer incidence rates published by the National Cancer Institute; and comparing the reported number of cases to the expected number, taking the reports at face value. Only if an apparent excess appeared would we proceed further and verify the accuracy of the reported cases.

The numbers of reported cancers, and the expected numbers of each cancer, were as follows: cancers of the kidney and renal pelvis - one reported, 0.89 expected; leukemias - one reported, 0.85 expected; cancers of the lung and bronchus - two reported, 6.67 expected; lymphomas - three reported, 1.38 expected; all cancers combined - 14 reported, 30.84 expected. None of these were in sufficient excess to attain statistical significance. In addition, there is no evidence that the workers there have been occupationally exposed to any known carcinogen(s).

On the basis of the available data, it was determined that there is no evidence of an excess of cancer among employees of the Mansfield, Ohio Post Office.

KEYWORDS: SIC 4311 (U.S. Postal Service). Cancer, lung cancer, kidney cancer, leukemia, lymphoma.

II. INTRODUCTION

In February 1985, the National Institute for Occupational Safety and Health (NIOSH) received a request to investigate a possible excess of cancer among employees of the Mansfield, Ohio Post Office. This concern was initiated when Congressman Michael Oxley's office received a letter from a constituent which listed 14 current or former employees of the Post Office who reportedly had been diagnosed with cancer.

The Mansfield Postmaster, upon request, provided demographic information on the workforce, sufficient to enable the NIOSH investigators to assess preliminarily the problem. On May 23, 1985, a NIOSH medical officer conducted a site visit of the Mansfield Post Office, obtaining additional background information, receiving a walk-through of the facility, and meeting with represen- tatives of the unions and management to outline the preliminary results of the study.

The fourteen cancers, as listed by the requestor (Table I), included:
3 "lymphomia"s (assumed to be lymphomas), 0 deceased
1 cancer of the kidney, 0 deceased
2 cancers of the lung, 1 deceased
1 leukemia, deceased
7 cancers (no site specified), 3 deceased

Six of the people were described as being Mail Handlers, four were Clerks, one was a Carrier-Mail Handler, one was a Carrier Supervisor, and two were not given a job classification. No year of diagnosis, or other information was provided.

III. BACKGROUND

The current Mansfield Post Office has been in operation since 1973. It replaced two facilities, a main post office and an annex.

There are currently 347 employees of the Mansfield Post Office. A total of 416 additional former employees of that Post Office were identified from personnel records.

IV. EVALUATION DESIGN, METHODS, AND CRITERIA

We were provided by the Mansfield Postmaster with lists of all 347 current employees and all 416 former employees. Included for each individual was his/her date of birth, gender, race, date of first employment in the Post Office, and date of last employment. Considering a person to be at risk from the time s/he began work at the Post Office until the time of this study, we used the NIOSH Life-Table Analysis System (LTAS)[1] to calculate age-specific person-years at risk of developing cancer among the 763 individuals identified.

Because we did not have information regarding individuals' vital status, we then reduced this number by 10%, to adjust crudely for deceased individuals who were incorrectly assumed to be alive. Using cancer incidence rates obtained from the National Cancer Institute's SEER Program[2], we calculated the number of expected cases of each cancer of interest (Table II).

For each site-specific cancer, we also calculated what can be termed the upper end of the 95% Confidence Interval (C.I.). This represents the number of cancers needed to be observed which would represent an excess sufficiently large that there would be less than a 5% chance that the excess was not a random occurrence. We assumed a Poisson distribution for the data.

As no statistically significant excess of cancer was observed, we did not proceed to verify each reported case of cancer.

V. RESULTS

The numbers of reported cancers, and the expected numbers of each cancer, calculated using the methods described in Section IV of this report, are as follows: cancers of the kidney and renal pelvis - one reported, 0.89 expected; leukemias - one reported, 0.85 expected; cancers of the lung and bronchus - two reported, 6.67 expected; lymphomas - three reported, 1.38 expected; all cancers combined - 14 reported, 30.84 expected.

A summary of our results, including the number of expected cases of each site-specific cancer, the upper end of the 95% Confidence Interval, and the number of cases reported by the requestor, is included in Table II.

Tables III through VII include the number of person-years, cancer incidence rates, and expected cases for each five-year age group, for each of the cancers of interest.

VI. DISCUSSION AND CONCLUSIONS

Due to the anonymity of the requestor, and the relative unavailability of individual medical records for each and every cohort member, we have accepted the list of 14 cancers at face value (Table I). However, that list has incomplete information. Additionally, one can assume that there are probably some employees who have been diagnosed as having cancer of whom the provider of the list was unaware. Those caveats aside, we found a slight excess of lymphomas (Table II), not statistically significant (there is a good chance it was a random occurrence). The numbers of leukemia and cancer of the kidney which were reported were approximately equal to what we would expect in the general population. There was no excess of cancers of the lung, nor of all cancers combined.

When performing comparisons of this type, it is important also to assess whether there is a putative agent to which the affected individuals were exposed. A meeting was held at the Mansfield Post Office, May 23, 1985, including representatives of management, labor, and NIOSH. Based upon information received from those present, it does not appear that either the current facility, nor its predecessors contained such known agents. When NIOSH raised questions about possible exposure to asbestos, the response was that there have been no apparent exposures of that sort.

Until such time as there is evidence that a significant number of cancers of a specific site (or sites) have been observed, we must conclude that there is no evidence of an excess of cancer among current and former employees of the Mansfield Post Office.

VII. REFERENCES

1. Waxweiler, RJ, et al. A modified life-table analysis system for cohort studies. Journal of Occupational Medicine, 25: 115-124, 1983.

2. National Cancer Institute Monograph 57, Surveillance, Epidemiology, and End Results: Incidence and Mortality Data, 1973-77. Tables 11E and 11F. NIH Publication No. 81-2330, June 1981.

VIII. AUTHORSHIP AND ACKNOWLEDGEMENTS

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X. DISTRIBUTION AND AVAILABILITY OF REPORT

Copies of this report are currently available upon request from NIOSH, Division of Standards Development and Technology Transfer, Publications Dissemination Section, 4676 Columbia Parkway, Cincinnati, Ohio 45226. After 90 days, the report will be available through the National Technical Information Service (NTIS), 5285 Port Royal, Springfield, Virginia 22161. Information regarding its availability through NTIS can be obtained from NIOSH Publications Office at the Cincinnati address. Copies of this report have been sent to:

1. R.L. Payne, MSC Manager/Postmaster,Cleve.,OH.
2. Honorable Michael G. Oxley
3. Joseph Cinadr, Postmaster,Mansfield,OH
4. Robert Zellner, A.P.W.U.
5. Rex Snyder, Mail Handlers Union
6. William Koontz, N.A.L.C.
7. Mildred Arnold, Rural Carriers Union
8. NIOSH, Region V
9. OSHA, Region V

For the purpose of informing affected employees, copies of this report shall be posted by the employer in a prominent place accessible to the employees for a period of 30 calendar days.

TABLE I

Cases of Cancer Reported by Rep. Oxley's Constituent
Mansfield Post Office
Mansfield, Ohio
HETA 85-175

Case #	Job Classification	Cancer	Vital Status
1	Mail Handler		
2	Mail Handler	Lymphomia (sic)	
3	Mail Handler	Lymphomia (sic)	
4	Mail Handler	Lymphomia (sic)	
5	Mail Handler	Kidney	
6	Clerk	Lung	Deceased
7	Clerk		Deceased
8	Clerk		Deceased
9			
10	Clerk	Lung	
11	Carrier-Supervisor		Deceased
12	Mail Handler		
13		Lukemia (sic)	Deceased
14	Carrier- Mail Handler		

TABLE II

Cases of Cancer
Mansfield Post Office
Mansfield, Ohio
HETA 85-175

Cancer	# Expected	Upper 95% C.I.*	# Reported
Kidney and Renal Pelvis	0.89	4	1
Leukemia	0.85	4	1
Lung and Bronchus	6.67	13	2
Lymphoma	1.38	5	3
All Sites	30.84	45	14

* This represents the minimum number of cancers necessary to be considered a statistically significant excess.

TABLE III

Cancers of the Kidney and Renal Pelvis
Mansfield Post Office
Mansfield, Ohio
HETA 85-175

Age	Adjusted Person-Years*	Incidence/100,000	Expected
15-19 (Males)	33	0.1	0.00
20-24	361	0.2	0.00
25-29	837	0.5	0.00
30-34	1100	1.0	0.01
35-39	1029	2.5	0.03
40-44	966	5.7	0.06
45-49	1015	9.7	0.10
50-54	961	15.4	0.15
55-59	719	24.0	0.17
60-64	495	30.4	0.15
65-69	276	41.5	0.11
70-74	113	49.1	0.06
75-79	18	54.7	0.01
80-84	1	52.1	0.00
			= 0.85
15-19 (Females)	26	0.1	0.00
20-24	173	0.4	0.00
25-29	265	0.4	0.00
30-34	236	0.7	0.00
35-39	178	1.3	0.00
40-44	141	2.8	0.00
45-49	122	3.7	0.00
50-54	102	6.6	0.01
55-59	71	10.4	0.01
60-64	49	13.8	0.01
65-69	33	18.6	0.01
70-74	8	23.2	0.00
75-79	1	21.4	0.00
80-84	0	26.2	0.00
			= 0.04

Total Number of Expected Cases = 0.89
Minimum Number of Cases Necessary for a Statistically Significant Excess** = 4
Number of Cases Reported = 1

* Person-years multiplied by 0.90 to correct for deceased members of the cohort incorrectly assumed to be alive.

** Upper boundary of the 95% Confidence Interval for the Poisson Distribution.

TABLE IV

Leukemias
Mansfield Post Office
Mansfield, Ohio
HETA 85-175

Age	Adjusted Person-Years*	Incidence/100,000	Expected
15-19 (Males)	33	3.0	0.00
20-24	361	1.8	0.01
25-29	837	2.8	0.02
30-34	1100	2.9	0.03
35-39	1029	4.0	0.04
40-44	966	4.5	0.04
45-49	1015	7.1	0.07
50-54	961	10.6	0.10
55-59	719	17.6	0.13
60-64	495	30.2	0.15
65-69	276	37.7	0.10
70-74	113	65.1	0.07
75-79	18	95.3	0.02
80-84	1	125.5	0.00
			= 0.78
15-19 (Females)	26	1.7	0.00
20-24	173	1.9	0.00
25-29	265	2.1	0.01
30-34	236	1.9	0.00
35-39	178	2.7	0.00
40-44	141	3.8	0.01
45-49	122	5.4	0.01
50-54	102	7.0	0.01
55-59	71	10.8	0.01
60-64	49	17.1	0.01
65-69	33	24.4	0.01
70-74	8	31.0	0.00
75-79	1	47.2	0.00
80-84	0	65.6	0.00
			= 0.07

Total Number of Expected Cases = 0.85
Minimum Number of Cases Necessary for a Statistically Significant Excess** = 4
Number of Cases Reported = 1

* Person-years multiplied by 0.90 to correct for deceased members of the cohort incorrectly assumed to be alive.

** Upper boundary of the 95% Confidence Interval for the Poisson Distribution.

TABLE V

Cancers of the Lung and Bronchus
Mansfield Post Office
Mansfield, Ohio
HETA 85-175

Age	Adjusted Person-Years*	Incidence/100,000	Expected
15-19 (Males)	33	0.0	0.00
20-24	361	0.2	0.00
25-29	837	0.6	0.01
30-34	1100	2.6	0.03
35-39	1029	7.4	0.08
40-44	966	22.8	0.22
45-49	1015	58.3	0.59
50-54	961	106.8	1.03
55-59	719	181.7	1.31
60-64	495	284.2	1.41
65-69	276	400.9	1.11
70-74	113	481.5	0.54
75-79	18	519.0	0.09
80-84	1	454.1	0.00
			= 6.42
15-19 (Females)	26	0.3	0.00
20-24	173	0.2	0.00
25-29	265	0.7	0.00
30-34	236	2.0	0.00
35-39	178	5.6	0.01
40-44	141	14.5	0.02
45-49	122	29.9	0.04
50-54	102	46.0	0.05
55-59	71	72.3	0.05
60-64	49	89.3	0.04
65-69	33	98.1	0.03
70-74	8	92.5	0.01
75-79	1	85.3	0.00
80-84	0	73.0	0.00
			= 0.25

Total Number of Expected Cases = 6.67
Minimum Number of Cases Necessary for a Statistically Significant Excess** = 13
Number of Cases Reported = 2

* Person-years multiplied by 0.90 to correct for deceased members of the cohort incorrectly assumed to be alive.

** Upper boundary of the 95% Confidence Interval for the Poisson Distribution.

TABLE VI

Lymphomas
Mansfield Post Office
Mansfield, Ohio
HETA 85-175

Age	Adjusted Person-Years*	Incidence/100,000	Expected
15-19 (Males)	33	4.9	0.00
20-24	361	7.7	0.03
25-29	837	7.7	0.06
30-34	1100	8.6	0.09
35-39	1029	8.2	0.08
40-44	966	9.8	0.09
45-49	1015	14.0	0.14
50-54	961	19.4	0.19
55-59	719	25.8	0.19
60-64	495	36.7	0.18
65-69	276	46.4	0.13
70-74	113	61.9	0.07
75-79	18	67.2	0.01
80-84	1	73.4	0.00
			= 1.26
15-19 (Females)	26	4.4	0.00
20-24	173	5.7	0.01
25-29	265	6.9	0.02
30-34	236	5.3	0.01
35-39	178	5.3	0.01
40-44	141	7.4	0.01
45-49	122	10.1	0.01
50-54	102	15.0	0.02
55-59	71	19.4	0.01
60-64	49	28.8	0.01
65-69	33	36.0	0.01
70-74	8	45.9	0.00
75-79	1	53.4	0.00
80-84	0	52.9	0.00
			= 0.12

Total Number of Expected Cases = 1.38
Minimum Number of Cases Necessary for a Statistically Significant Excess** = 5
Number of Cases Reported = 3

* Person-years multiplied by 0.90 to correct for deceased members of the cohort incorrectly assumed to be alive.

** Upper boundary of the 95% Confidence Interval for the Poisson Distribution.

TABLE VII

All Cancers Combined
Mansfield Post Office
Mansfield, Ohio
HETA 85-175

Age	Adjusted Person-Years*	Incidence/100,000	Expected
15-19 (Males)	33	18.3	0.01
20-24	361	29.3	0.11
25-29	837	39.4	0.33
30-34	1100	51.6	0.57
35-39	1029	72.1	0.74
40-44	966	122.5	1.18
45-49	1015	234.6	2.38
50-54	961	409.0	3.93
55-59	719	687.2	4.94
60-64	495	1110.4	5.50
65-69	276	1643.3	4.54
70-74	113	2228.7	2.52
75-79	18	2794.1	0.50
80-84	1	3199.5	0.03
			= 27.28
15-19 (Females)	26	17.5	0.00
20-24	173	30.6	0.05
25-29	265	55.7	0.15
30-34	236	88.5	0.21
35-39	178	143.4	0.26
40-44	141	244.5	0.34
45-49	122	400.9	0.49
50-54	102	556.5	0.57
55-59	71	774.2	0.55
60-64	49	937.1	0.46
65-69	33	1111.0	0.37
70-74	8	1243.6	0.10
75-79	1	1489.3	0.01
80-84	0	1612.9	0.00
			= 3.56

Total Number of Expected Cases = 30.84
Minimum Number of Cases Necessary for a Statistically Significant Excess** = 45
Number of Cases Reported = 14

* Person-years multiplied by 0.90 to correct for deceased members of the cohort incorrectly assumed to be alive.

** Upper boundary of the 95% Confidence Interval for the Poisson Distribution.

DEPARTMENT OF HEALTH AND HUMAN SERVICES
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