

THE EMPLOYMENT OF PERSONS WITH A HISTORY OF TREATMENT FOR CANCER

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Metropolitan Life Insurance Company reviewed its experience with employees hired with past history of treatment for cancer. Included is followup on 74 such employees with data on age, cancer site, histology, interval between treatment and employment, personnel ratings, and current employment status. Fewer than one out of every thousand applicants for a job have a history of cancer and half of these are employable. Persons with a wide variety of cancer types are acceptable. Employment record is good with a normal "turnover" and 55% working at the termination of the study period. There were no deaths during the study period. Cancer recurrence rate was 2.7%, and 2.7% developed a second primary neoplasm. We conclude that the selective hiring of persons who have been treated for cancer, in positions for which they are physically qualified, is a sound industrial practice.

IN 1957, THE METROPOLITAN LIFE INSURANCE Company hired its first employee with a history of treated cancer. This is a review of our experience with these employees. We know of no similar review in the literature.

Applicants with cancer history are infrequent. Previous studies have shown that our rate of these applicants is less than one per thousand. In two years (1965-66) there were 19 cancer applicants among 30,000.

Our experience indicates that 47% of cancer history applicants can be medically accepted for employment. Fifteen of 32 (47%) were accepted from 1963-66 inclusive. Acceptance rates are increasing as we get more experience with these cases and as survival rates improve.

The study data derive from the pre-employment examination records of persons with a history of cancer plus post-employment medical and personnel records. The charts were examined between January and March 1972 with data recorded on employment status as

of January 1972. The study includes Home Office and Sales personnel.

FINDINGS

Data were available on 74 persons employed with known treated cancer. One employee had been treated for two different cancers at two different sites. Therefore, the study involves 74 employees with 75 cancers. Employment dates were from 1959 to 1971 inclusive. There were 41 females and 33 males. Age at time of employment ranged from 19 to 64 years with about 60% over 40 years of age (Table 1). Further breakdown, not indicated in the table, shows that a substantial number were under 30 (19 persons or about one quarter of the total number). Of these, lymphomas constituted the largest single group.

The time interval between therapy and employment ranged from 1 month to 25 years. Table 2 shows this span sub-grouped with the number of employees in each group noted according to cancer site. Over half were employed within 5 years of treatment.

Table 3 shows the system, primary site, and histology of the cancers in our series. There were 9 systems, at least 20 primary sites, and at least 31 different histologic types among the 75 cancers. Cancers of the reproductive system were encountered most frequently with 48 cases or 65% of all cancers. Carcinoma of the breast was by far the most common primary

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TABLE 1. Age, Sex, and Site of Cancer in 74 Employees

Age at employment	Breast	Uterus	Site of cancer			Other	Total persons
			Testes	Lymphatic	Skin		
Female							
19-39	1	4				3	8
40-49	16	2		1		1	20
50-59	11*	2*					12
60-65	1						1
Total Cancers	29	8		1		4	41-Females 42-Cancers*
Male							
19-39			4	7	2	7	20
40-49			6	1	3	2	12
50-59						1	1
Total Cancers			10	8	5	10	33-Males 33-Cancers

* One female with both breast and uterine cancers is included under both cancer sites.

site with 29 cases, followed by testes (10), lymph nodes (9), and uterus (8). Sometimes histopathology data was not available. In the case of the cervix it can be assumed that the cancers were probably epidermoid. The largest group accepted and known to have had cancer but with unknown histopathology was breast.

Table 4 shows the status of each employee as of January, 1972; 41 or 55% were working, 2 or 3% were on disability, and 31 or 42% were "discontinued." Therefore, the majority of persons hired with cancer history (55%) were still working as of January, 1972; most of them with 1-5 years of service. Those who were "discontinued" left usually within 1 year of hiring date. Leaving a position shortly after being hired usually indicates job dissatisfaction. The 2 on "disability" had served 1-2 years before becoming disabled.

Among the "working" group there were two employees who had had a significant illness at some point during their employment. One employee with history of left radical mastectomy in 1956 before employment underwent a right radical mastectomy in 1971, after employment. The second, with a history of resection for carcinoma of the ascending colon in 1947 before employment, underwent a left colectomy in 1971 for carcinoma of the splenic flexure and adhesions after employment. A third employee with history of embryonal adenocarcinoma of the left testis treated in 1966 was not overtly ill. However, he showed hepatosplenomegaly, bilirubin 1.6 and BUN 26 on his periodic examination of 1971. At the time of chart review no conclusions had been drawn.

The "discontinued" group represents persons who have left their jobs for a variety of reasons. The great majority left voluntarily

TABLE 2. Interval between Therapy and Employment

More than	Less than	Breast	Uterus	Cancer site			Other	
				Testes	Lymphatic	Skin		
	1 yr.	3	1*		2	1	4	11
1 yr.	2 yrs.	4	4	1	2		1	12
2 yrs.	5 yrs.	7	2	5	1	1	4	20
5 yrs.	10 yrs.	11	1	1	4	3	4	24
10 yrs.	15 yrs.	3*		1			1	5
15 yrs.	20 yrs.	1		1				2
20 yrs.				1				1
TOTAL		29	8	10	9	5	14	75 Cancers

* 74 Persons.

TABLE 3. System, Primary Site, and Histology of Employees

System	Primary site	No. of cases	Histology
1. Reproductive	48		
	Breast	29	3 duct cell carcinoma 1 papillary and scirrhous 25 cell type unknown
	Uterus	8	
	Cervix		5 cell type unknown
	Corpus		1 adenocarcinoma 1 leiomyosarcoma 1 mucinous papillary cystadenocarcinoma, fairly differentiated
	Ovary	1	1 bilateral papillary pseudomucinous cystadenoma with malignant changes in focal areas
	Testes	10	5 seminoma 3 embryonal carcinoma 1 teratoma 1 cell type unknown
2. Lymphatic	9		
	Mediastinal nodes	3	3 Hodgkin's disease
	Not certain	1	1 Hodgkin's disease
	Cervical nodes	2	1 giant lymphoma 1 follicular lymphoma
	Axillary and inguinal nodes	1	1 giant follicular lymphoblastoma
	Lung	1	1 lymphosarcoma, lymphocytoma type
	Tonsil	1	1 cell type unknown
3. Skin	5		
	Leg	1	1 melanoma
	Arm	1	1 melanoma
	Back	1	1 epidermoid carcinoma
	Arm	1	1 epidermoid carcinoma
	Nose	1	1 basal cell
4. Gastrointestinal	3		
	Mouth	1	1 squamous cell carcinoma
	Ascending colon	1	1 carcinoma
	Sigmoid	1	1 adenocarcinoma
5. Glandular	4		
	Thyroid	3	2 papillary carcinoma 1 papillary follicular adenocarcinoma
	Parotid	1	1 mixed tumor
6. Genitourinary	3		
	Kidney	2	1 granular cell type adenocarcinoma 1 renal cell carcinoma
	Bladder	1	1 transitional cell carcinoma
7. Respiratory	1		
	Larynx	1	1 carcinoma
8. Musculoskeletal	1		
	Knee joint	1	1 synovial cell carcinoma
9. Nervous	1		
	Brain	1	1 malignant glioma
TOTAL		74 Persons	75 Cancers*

* One employee with a primary malignancy in two different sites was charted once for each tumor; breast and uterus.

TABLE 4. Employment Status

Status	Length of service						TOTAL	Percent of total
	0-6 months	7-12 months	1-2 years	2-5 years	5-10 years	Over 10 years		
Working	2	6	11	12	7	3	41	55%
Disabled			2				2	3%
Discontinued	16	7	2	5	1		31	42%
Voluntary		15	7	1	4	1	28	
Retired				1			1	
Health		1			1		2	
Death							0	
Discharged							0	
TOTAL	18	13	15	17	8	3	74	100%

(28 or 90%), and no one was discharged. It appears that those with cancer history leave their jobs at about the same rate as non-cancer employees, in the usual "turnover." There were two "discontinued" employees whose records indicate that "health" was the cause for departure. This is always difficult to evaluate, since many people refer to "health" as the reason for leaving a job they don't like or one in which they are not succeeding. One, with history of mastectomy in January, 1969, for duct cell carcinoma of the breast, had been out with anemia shortly before leaving in May 1970. There was no direct evidence however, to link the anemia with her history of malignancy. The second, with history of mastectomy in 1968 for papillary and cirrhous carcinoma of the breast, had been out for a few weeks on two occasions during the year prior to leaving the company. She had had local recurrence and pulmonary spread of her disease and, at one time, required hospitalization and intensive therapy. We can assume that she finally left her job in July, 1971 because of rapidly failing health. It is possible that there were others in this "discontinued" group who were ill at the time of their departure but did not so indicate when leaving.

There were two employees on company "disability" status as of January, 1972. One had symptoms of recurrence of uterine carcinoma for which she had been primarily treated in 1967. She died 6 months after date of study termination. The other employee had mental illness apparently unrelated to her cancer history. Therefore, among this group of 74 cancer history employees, it is definitely known that two developed a second primary at a site of similar tissue, both of whom returned to work after surgery and are still

working. In two there was recurrence and/or metastasis, and no employee died within the study period.

Table 5 indicates that the majority of our cancer history employees were employed for full-time work (56 or 75%) as compared with part time (18 or 25%). Most occupied clerical positions (46 or 62.5%) as compared with sales (27 or 36.5%). Work hours and assignments were allocated according to the individuals' wishes on application and the company's need, and cancer history did not play a role in either. The pattern of job assignment is comparable to any other group of same age, skills, and available working time.

Work performance ratings are given for Home Office personnel only (Table 6). The great majority performed satisfactorily—33 or 85%, as compared with 6 or 15% in the "not satisfactory" category. Health is considered to be a contributing factor in two of these "not satisfactory" ratings. One such rating was given in one of the cases in which cancer recurred, and the second in the case of the employee with psychiatric disorder. These unsatisfactory ratings are considered slightly high but within tolerable limits. Job dissatisfaction as manifested by leaving the job early, which occurred among many of the "discontinued" group, probably accounts for this slightly higher poor performance rating.

TABLE 5. Work Assignment

	Full time	Part time	TOTAL
Sales	27	0	27
Clerical	28	18	46
Manual	1	0	1
TOTAL	56	18	74

The Home Office absence record of the cancer history employees is considered to be moderate as compared with non-cancer employees. While 9 out of 39 or 23% had absences over 20 days a year, and 13 had absences over 11 days, 20 or 51% had absences under 5 days and 26 or 66% had absences under 10 days (Table 7).

DISCUSSION

Providing there are no other disqualifying health conditions, it is our practice to accept for employment persons with a history of treatment for cancer if the history and findings suggest that there is a reasonable expectation of continuous service. Those treated 5 or more years previously, without sign of recurrence or metastasis, would fall within this criteria. However others, more recently treated and apparently free of disease, may also be considered. It is these applicants who present the most difficult employment decisions.

Appropriate relative survival rates serve as the essential selection guide. The approximate rate of attrition is therefore predetermined by the degree of selectivity. Our approach resulted in the medical approval of 50% of those who applied, and a known cancer recurrence in two persons or 2.7%. Our series also demonstrated the well-known tendency of cancer history patients to develop a second primary lesion; this occurred in two cases (2.7%). Although there was no mortality during the study period, we later learned that one case died 6 months later. As there is no health followup on those who choose to leave the job, these figures pertain during employment only.

TABLE 6. Work Performance (Home Office Only)

	Number	Percent
Satisfactory	33	85%
Not satisfactory	6	15%
TOTAL	39	100%

Contributing conditions: 1 recurrent cancer; 1 mental health.

TABLE 7. Maximum Absence in Any One Year (Home Office Only)

Days of absence	No. of employees
0-5	20
6-10	6
11-20	4
Over 20	9
TOTAL	39

We have not compared the post-employment health of our cancer history employees with that of any other group hired with handicaps or a history of a potentially recurrent disease.

OBSERVATIONS AND CONCLUSIONS

Fewer than one per thousand of all employment applicants have a history of cancer treatment.

Approximately 50% of cancer history applicants are medically acceptable for employment. Our acceptability standards have been broadened with favorable experience and increasing survival rates.

A wide variety of neoplasms is acceptable. The most common primary sites in our series are breast, testis, lymph nodes, and uterus. At least 31 histologic types are represented among the 74 cancer history employees.

The employment record of the cancer treated group is good relative to non-cancer employees of the same age and positions. The "turnover" was average with 55% of the employees working at the termination of the study period. The absence record is considered satisfactory and work performance adequate as compared with non-cancer employees.

There were no deaths during the period of observation although one person is known to have died after the termination of the study. Known cancer recurrence during employment was 2.7%.

We conclude that the selective hiring of persons who have been treated for cancer, in positions for which they are physically qualified, is a sound industrial practice.