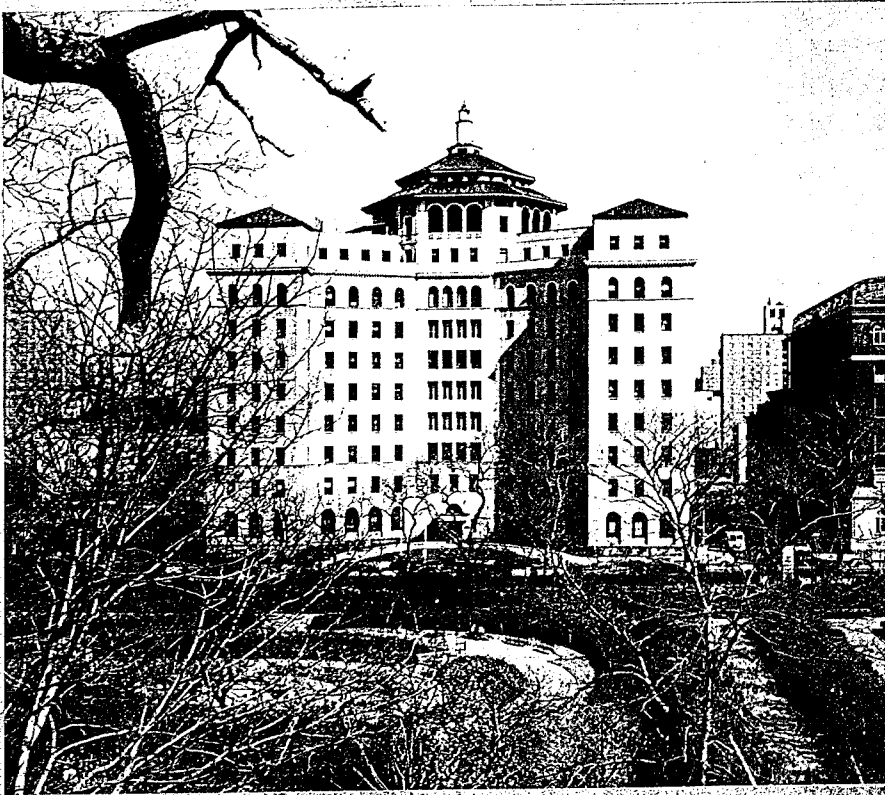




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CANCER EXPERIENCE AT THE NEW YORK MEDICAL COLLEGE

FLOWER AND FIFTH AVENUE HOSPITALS, 1960-1964

WALTER MERSHEIMER, M.D.

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## INTRODUCTION

This report of the Tumor Registry of the New York Medical College, Flower and Fifth Avenue Hospitals is based on special tabulations prepared by the End Results Section, Biometry Branch of the National Cancer Institute, in addition to tabulations made in conjunction with their preparation of the third comprehensive report of the End Results Group.<sup>1</sup> The End Results Group consists of representatives from three central registries and nine individual hospital registries (one of which is the Tumor Registry of the New York Medical College) and coordinates a national cooperative program for evaluating the end results of cancer therapy. (A detailed description of the program and the manner in which information is collected has been reported by Cutler and Latourette.<sup>2</sup>)

The New York Medical College Tumor Registry has abstracted and submitted punch cards to the End Results Group on all cancer cases diagnosed and treated in the Flower and Fifth Avenue Hospitals between 1950 and 1964, inclusive. The following report is a summary of the most significant data submitted, and a portion of the 400,000 cancer cases reported by over 100 hospitals of various types and sizes participating in the End Results Evaluation Program.

## DISTRIBUTION OF CASES

The New York Medical College Tumor Registry contains 5,297 malignant tumor cases diagnosed and treated between 1950 and 1964, inclusive. Almost all of the patients were white (96 percent), with little variation in each of the years. In the aggregate there were about three female to every two male patients. The Registry accessioned an average of 353 new cases annually for the fifteen-year period, varying from an average of 349 in the five years 1950 through 1954, to an average of 363 in the following five-year period through 1959, to 348 in the five years ending in 1964. The increase in the average number of new cases in the 1955-59 period was due principally to the significant increases in rectal, lung-and-bronchus, prostate, leukemia, brain, and non-melanotic skin cases in males, and in cases of the uterine cervix, uterine corpus, ovary, Hodgkin's disease, and non-melanotic skin cases in females (Tables 1, 2, and 3). Although the number of cases of the ovary in the female, and of the stomach, large intestine, and rectum in both sexes declined markedly between 1950-54 and 1960-64, this was made up in large measure by the increase in

the number of cancer of the cervix in females and of prostate and of the lung-and-bronchus malignancies in males between the two periods. It should be borne in mind that the changes over time represent shifts in the nature of the population of cancer patients seen in this hospital and do not necessarily parallel trends in the general population. For example, the incidence of cancer of the large intestine is increasing, but in the Flower and Fifth Avenue Hospitals the number seen decreased in the periods 1955-59 to 1960-64.

Malignancies of the digestive organs and breast constituted almost half of all the cases in the Registry over the entire period (30 and 17 percent, respectively), with cancers of the female genital organs and of the respiratory system following with 14 and 11 percent, respectively (Table 1). The eight leading sites made up almost two-thirds of all of the cases, with breast cases accounting for more than one of every six, and cancers of the large intestine and lung-and-bronchus each accounting for one of every ten patients (Figure 1). Nine percent of all the cancers diagnosed were multiple cancers.

### PERCENT OF ALL CASES BY LEADING SITES

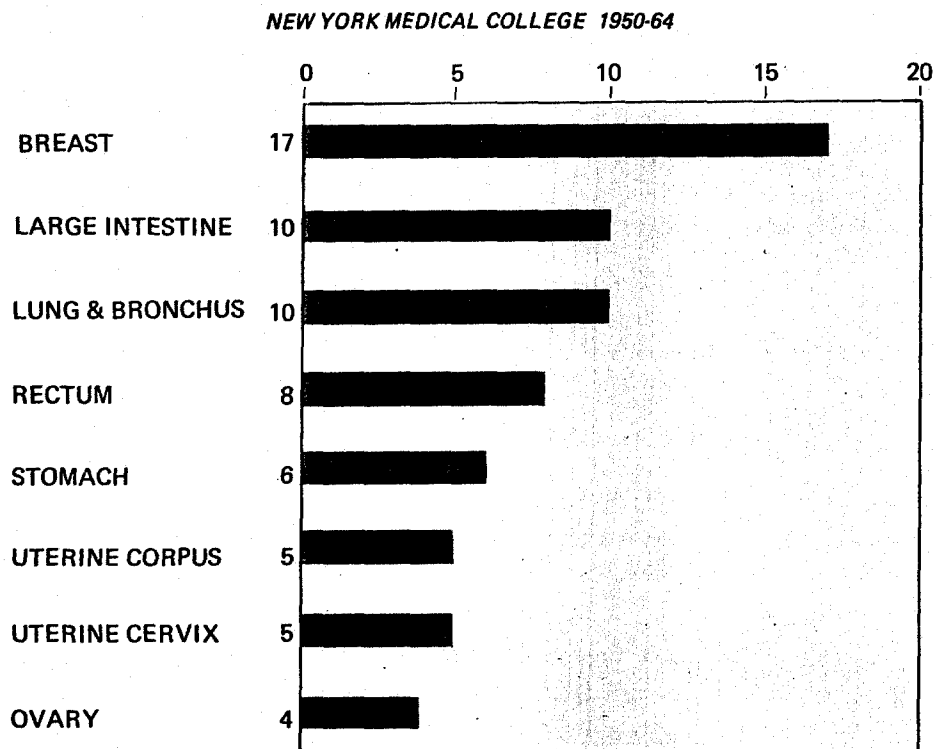


Fig. 1

In men the six leading sites made up almost two of every three malignancies over the fifteen-year period, with considerable variation in their distribution between the time periods (Table 2 and Figure 2). Almost one of every five male patients had cancer of the lung-and-bronchus, with substantial increases occurring in each five-year period from the preceding period – 19 percent in 1955-59, and 15 percent in 1960-64. Similarly, the

number of kidney and prostate cases increased 62 and 37 percent, respectively, between the earliest and latest period. On the other hand, although cancers of the large intestine, rectum, and stomach represented twelve, ten, and nine percent, respectively, over the entire period, these cases declined by 13, 29, and 25 percent, respectively, between 1950-54 and 1960-64.

### PERCENT OF MALE CASES BY LEADING SITES

NEW YORK MEDICAL COLLEGE

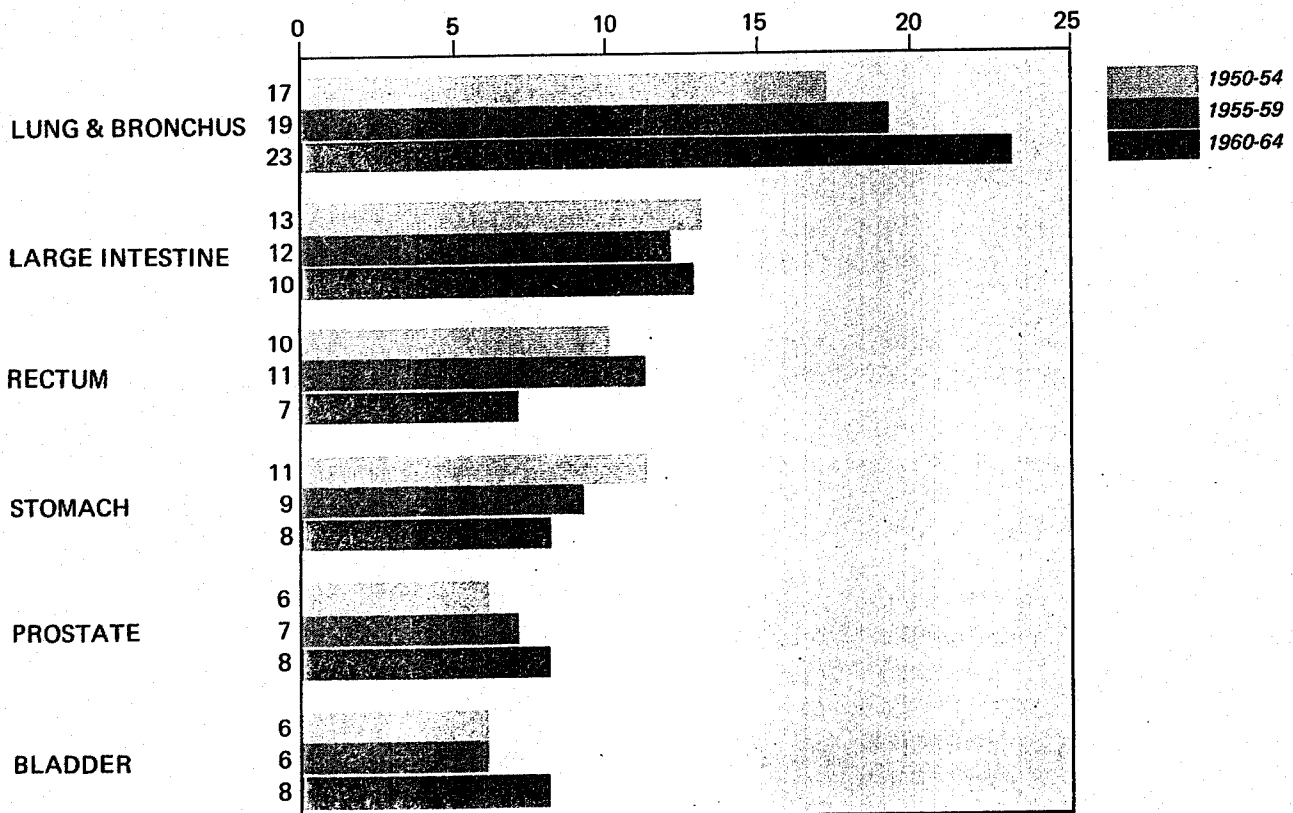


Fig. 2

In women the six leading sites constituted almost seven of every ten cancers over the entire period, with varying distributions in each time period (Table 3 and Figure 3). Three of every ten female patients had breast cancer, and about one in four had the disease in the genital organs, or in the digestive organs. Although the trend of breast and uterine corpus cases remained almost level, between

1950-54 and 1960-64 the number of stomach and rectum cases declined about 50 percent, and of the ovary and large intestine by 24 and 18 percent, respectively. Conversely, the number of cervical cases increased by more than 50 percent, and of non-melanotic skin cancers by more than 90 percent between the two periods.

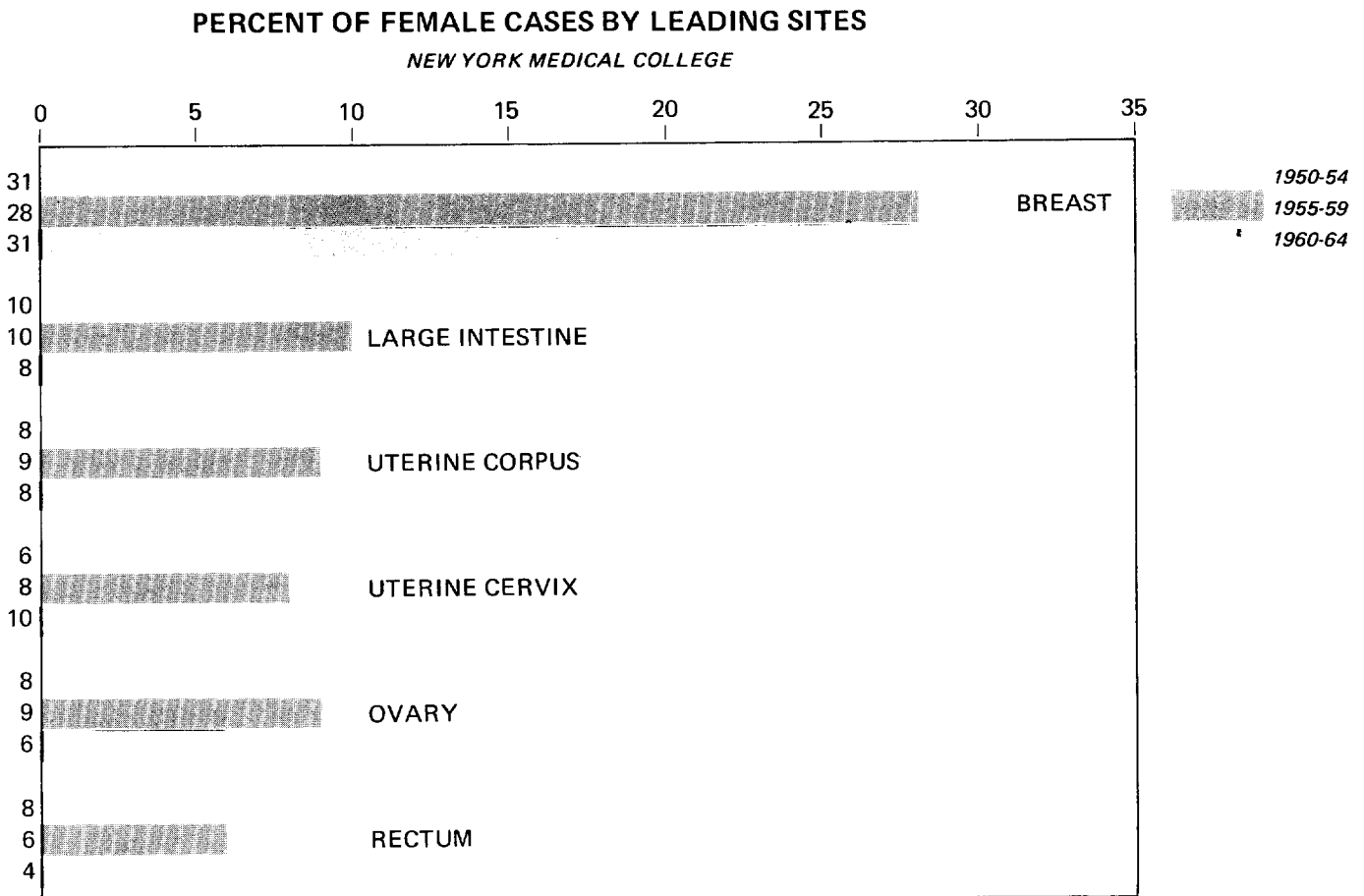


Fig. 3



## AGE DISTRIBUTION

More women than men were represented in the case load below 60 years of age, but there was a marked reversal thereafter (Figure 4). While only 13 percent of all men with cancer in the Flower and Fifth Avenue Hospitals were between the ages of 30 and 49, there were more than

twice that many female cases with cancer in that age group. On the other hand, 57 percent of the male cases, as compared with 42 percent of the female cases, were 60 years of age and over.

## AGE DISTRIBUTION OF CANCER CASES BY SEX

NEW YORK MEDICAL COLLEGE 1950-64

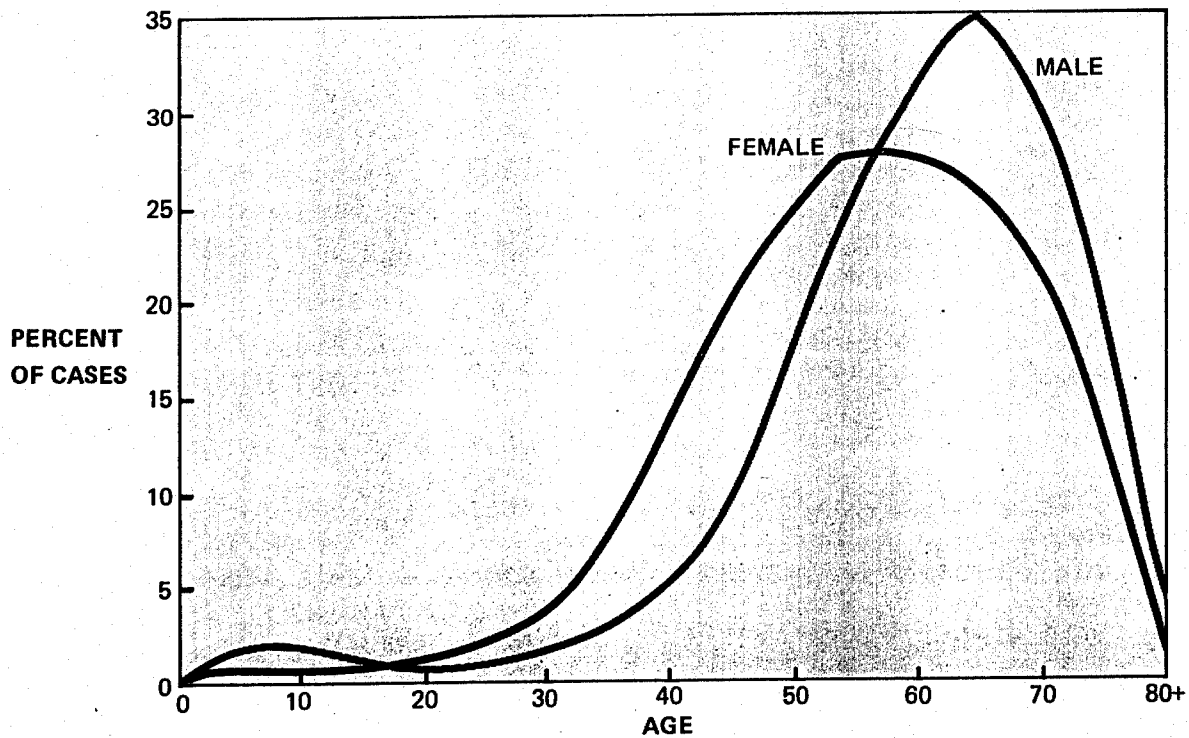


Fig. 4

The median age at diagnosis of all cases (half above and half below) was 59, ranging from 51 for patients with lymphomas and leukemias, to 63 years of age for prostate cases (Figure 5).

The higher proportion of female cases below the age of 60 is due principally to malignancies of the breast and

genital organs. Seven of every ten breast cases and more than six of every ten malignancies of the female genital organs were diagnosed in patients under 60 years of age. On the other hand, three of every four male patients with cancer of the genital organs were 60 years of age and older (Table 4).

### MEDIAN AGE OF CANCER CASES BY SITE

NEW YORK MEDICAL COLLEGE 1950-64

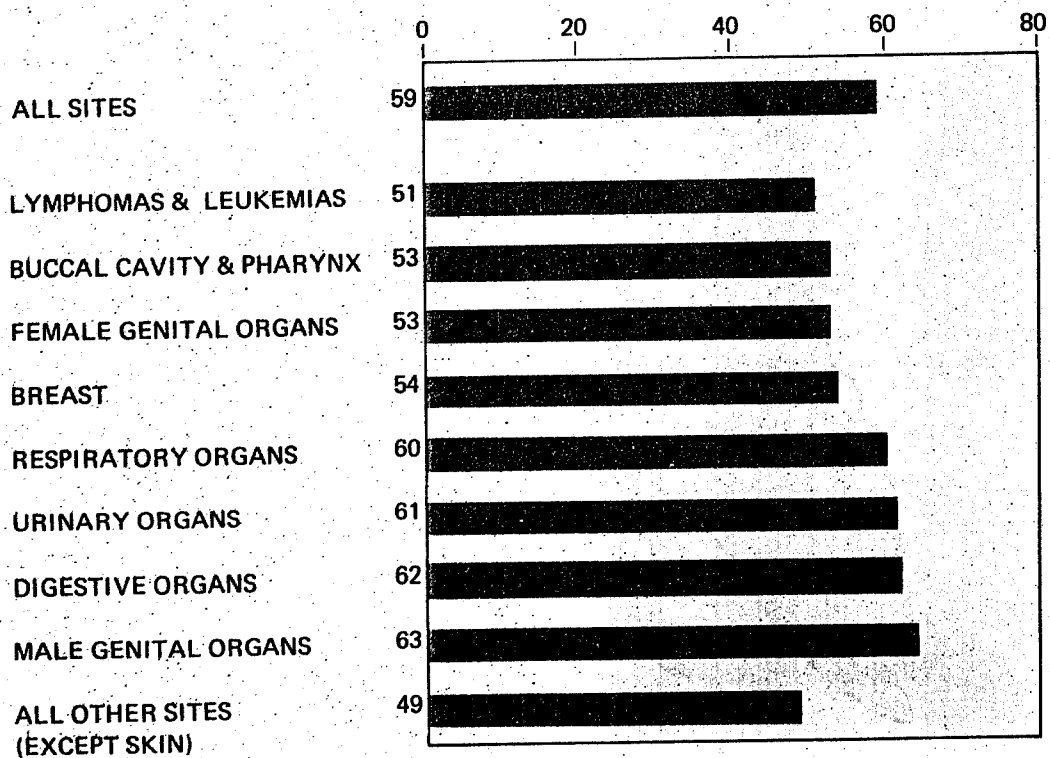


Fig. 5

**METHOD OF DIAGNOSIS**

Inasmuch as non-white cancer patients constituted only four percent of the total number in the Flower and Fifth Avenue Hospitals in the fifteen years, 1950 through 1964, and to facilitate comparisons with the third report of the End Results Group, the remainder of this analysis will deal only with the white cancer cases treated during this period.

A measure of the quality of medical care given cancer patients is the proportion of cases treated on the basis of microscopic confirmation of the disease. In this respect the performance of the New York Medical College com-

pares favorably with the combined End Results Group during the ten-year period 1955-64 for which data was obtained. A comparison of the levels of microscopic confirmation of ten selected sites in the 1955-59 and 1960-64 periods (representing about 70 percent of all of the cases) shows the maintenance of a high level of performance, except for stomach and bladder cases in the latest period (Figure 6). More noteworthy, is the marked improvement in microscopic confirmation of lung- and bronchus cases from 75 to 89 percent.

**CASES MICROSCOPICALLY CONFIRMED BY SELECTED SITES**

*NEW YORK MEDICAL COLLEGE*

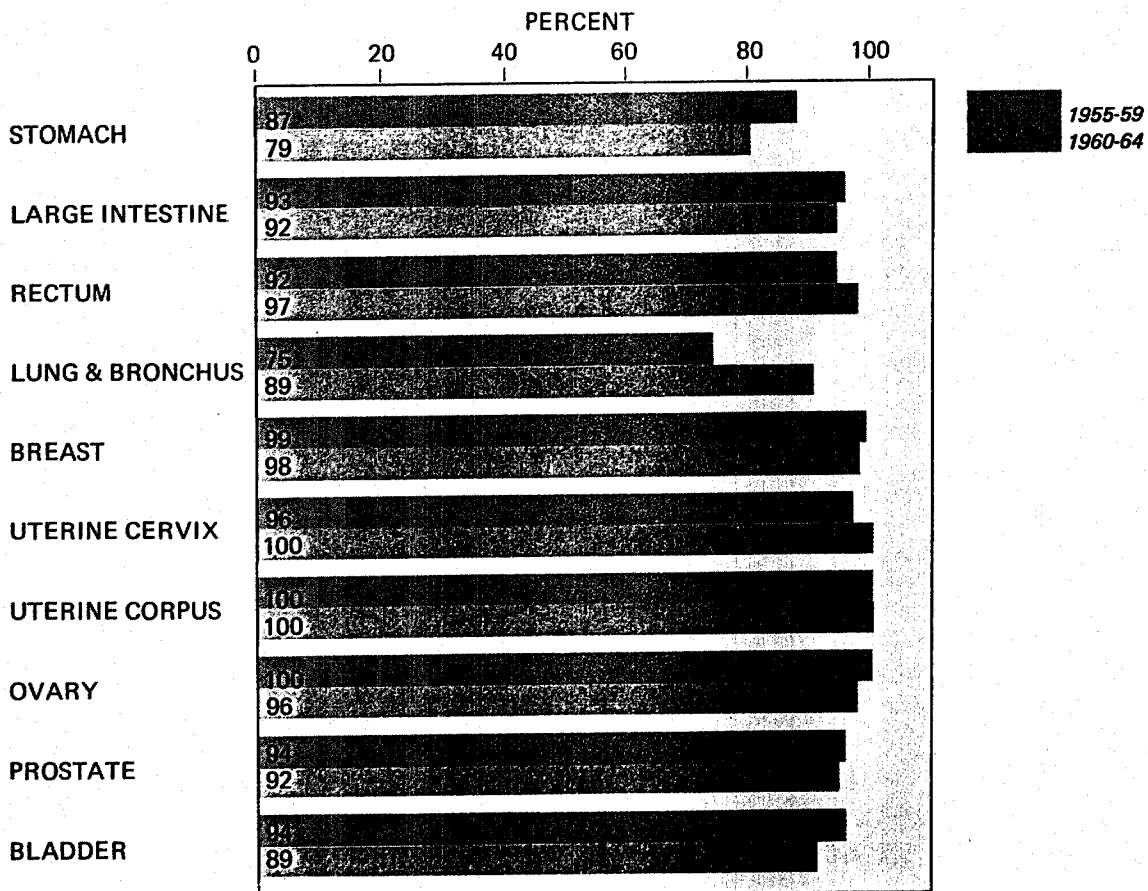


Fig. 6

## STAGE OF DISEASE

Just as the level of microscopic confirmation of malignancies is a measure of the qualitative basis of patient care, the extent of the disease (stage) at the time of diagnosis reflects the effectiveness of a cancer control educational program. If the proposition is accepted that early diagnosis and treatment enhances the prospects for patient cure and survival, then the extent of the disease at diagnosis is a measure of the discernment of physicians in diagnosis, and is indicative of the public's awareness of the need for regular physical examinations and the consequences in delaying medical care upon manifestation of the "danger signals." The basis of the determination of the stage of the disease at diagnosis is the information available during the first course of medical care, including the pathologist's examination of the surgical specimen.

During the fifteen years 1950 through 1964, an average of 43 percent of the cases (excluding non-melanotic skin, lymphomas, and leukemias) in the Flower and Fifth Avenue Hospitals were localized, ranging from a high of 82 percent for patients with cancer of the bladder to a low of 13 percent for lung-and-bronchus cases (Table 5). The extent of the disease at diagnosis was not specified

in the patients' medical charts for 12 percent of all of the cases (one of every eight), and for about one of every five patients with cancers of the esophagus, prostate, and lung-and-bronchus. Figure 7 shows the distribution by stage of the disease at diagnosis of the ten major sites which constituted almost 70 percent of the cancer caseload in the Flower and Fifth Avenue Hospitals.

There was no consistent trend in staging the ten selected sites (Table 6). While the early diagnosis of patients with malignancies of the lung-and-bronchus showed consistent improvement between the five-year periods, the proportion of patients with localized cancers of the large intestine and prostate declined. The decline in localized cases of the large intestine may be due to increased use of surgery resulting in more accurate staging, while the decrease in prostate cases is obscured by the large increase in the proportion of cases for which the extent of the disease was not reported (from five percent in 1950-54 to 30 percent in the latest period. Most of the other sites followed an erratic course (see particularly breast, uterine cervix, uterine corpus, and kidney cases).

## STAGE OF CANCER CASES AT DIAGNOSIS BY SELECTED SITES

NEW YORK MEDICAL COLLEGE 1950-64

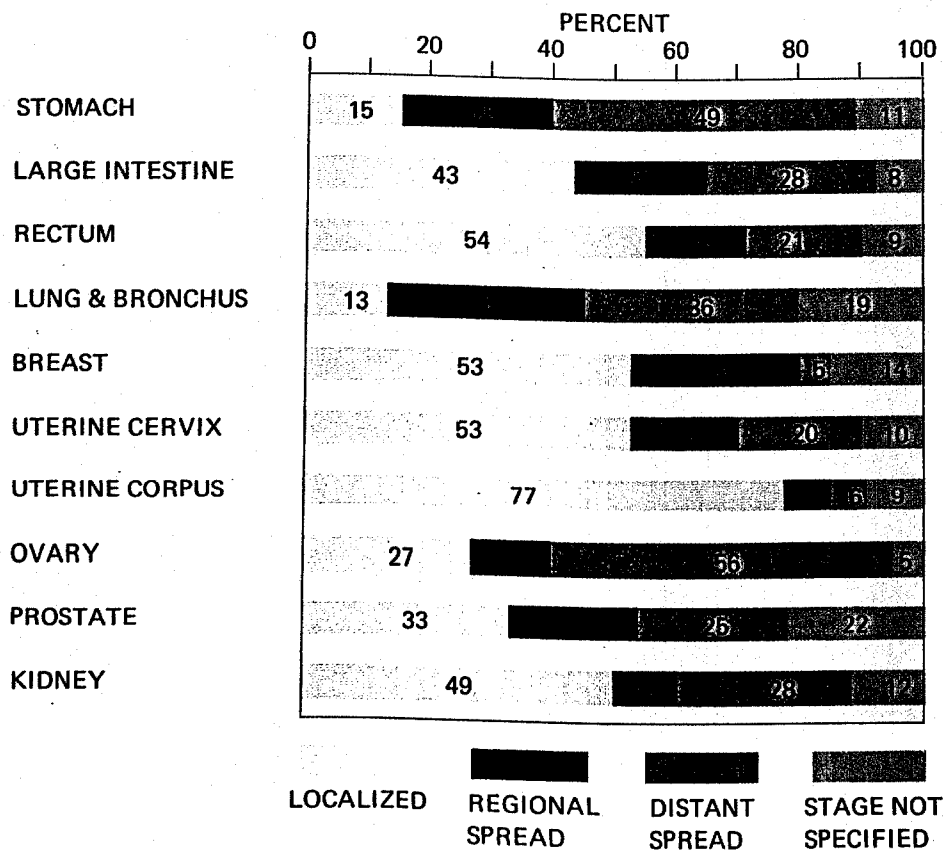


Fig. 7

### Survival of Cancer Cases

The ultimate measure of the effectiveness of the control of cancer by means of improved diagnostic, therapeutic, and follow-up techniques is seen in the survival rates of patients. The trend in patient survival will be presented in the same terms of relative survival rates as in the third report of the End Results Group.<sup>1</sup> As noted in this report

“the survival rate observed in a group of patients reflects mortality not only from the disease under study but also deaths due to all other causes. The risk of dying from causes other than the specific cancer under study varies with the sex and age characteristics of the patient group and with calendar time. The relative survival rate adjusts for ‘normal’ mortality and thus makes possible meaningful comparisons of the survival experience of groups of patients that differ with respect to sex, age, and calendar period of observation. It is defined as the ratio of the observed survival rate to the expected rate for a group of people in the general population similar to the patient group with respect to sex, age, and calendar period of observation. The relative survival rate is the probability of escaping the mortality risk due to the specific cancer under study.”

The report presents an illustration of the effect of adjustment for “normal” mortality and notes that “comparison of relative survival rates provides a measure of the difference in mortality associated with specific forms of

cancer in patient groups with different ‘normal’ mortality expectation.” It should be borne in mind that general population mortality experience may not be strictly applicable to the patient population seen at the Flower and Fifth Avenue Hospitals.

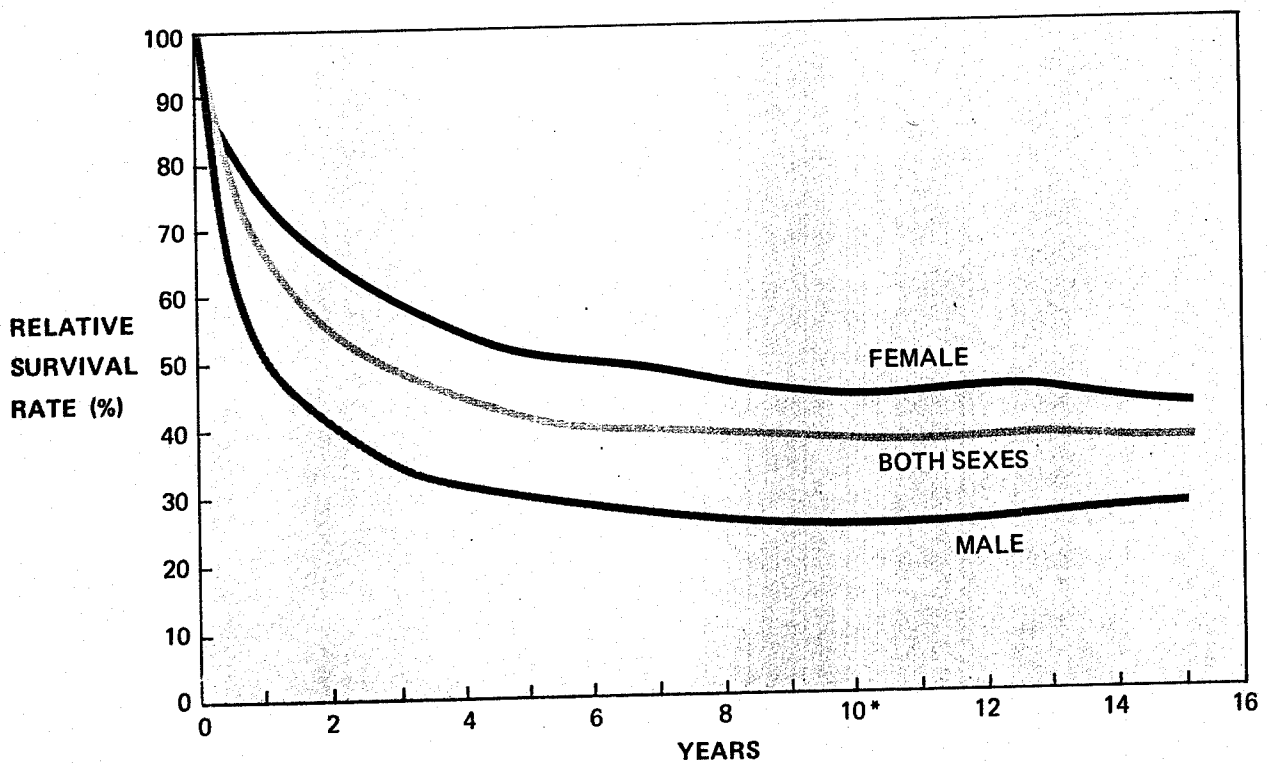
The actuarial method of computing the relative survival rates has been employed for this analysis. This permits us to take cognizance of the latest information concerning the status of each case in the series up to, and including, the latest year of the study period. (In this study a patient is considered “lost” to follow-up if no information has been received about him for two consecutive years, even though the Registrar continues to seek information about him for several more years.) The actuarial method of computing survival rates makes use of every case at each interval following the date of diagnosis, subject to the possibility of being alive or dead at the time. Thus, for the five-year survivorship computations, all cases which had the opportunity of surviving five years were used, irrespective of the date of diagnosis. Thus, the number of cases from which computations were made became smaller at each successive yearly interval, with the result that the data became less reliable as we approached the longer time periods. The computation of the survival rates by this method also has a “built-in” assumption, namely, that the living cases, which were dropped from the computations at each successive yearly interval will have the same relative mortality and survival as those which were kept in the computations at each successive time interval.

In our groupings of the cancer cases in the New York Medical College Tumor Registry it was possible to compute with confidence relative survival rates up to ten years in some instances. Thus, the five-year survival rate for all white cases diagnosed between 1950 and 1964,

inclusive, is 42 percent, and 38 percent for those who had the opportunity of surviving ten years. The relative survival rate remained stable beginning with the eighth year (Table 7). The differences in survival between male and female patients is shown in Figure 8.

### RELATIVE SURVIVAL OF CANCER CASES BY SEX

NEW YORK MEDICAL COLLEGE 1950-64



\*Survival rates beyond this point should be interpreted with caution because of the limited number of patients remaining under follow-up.

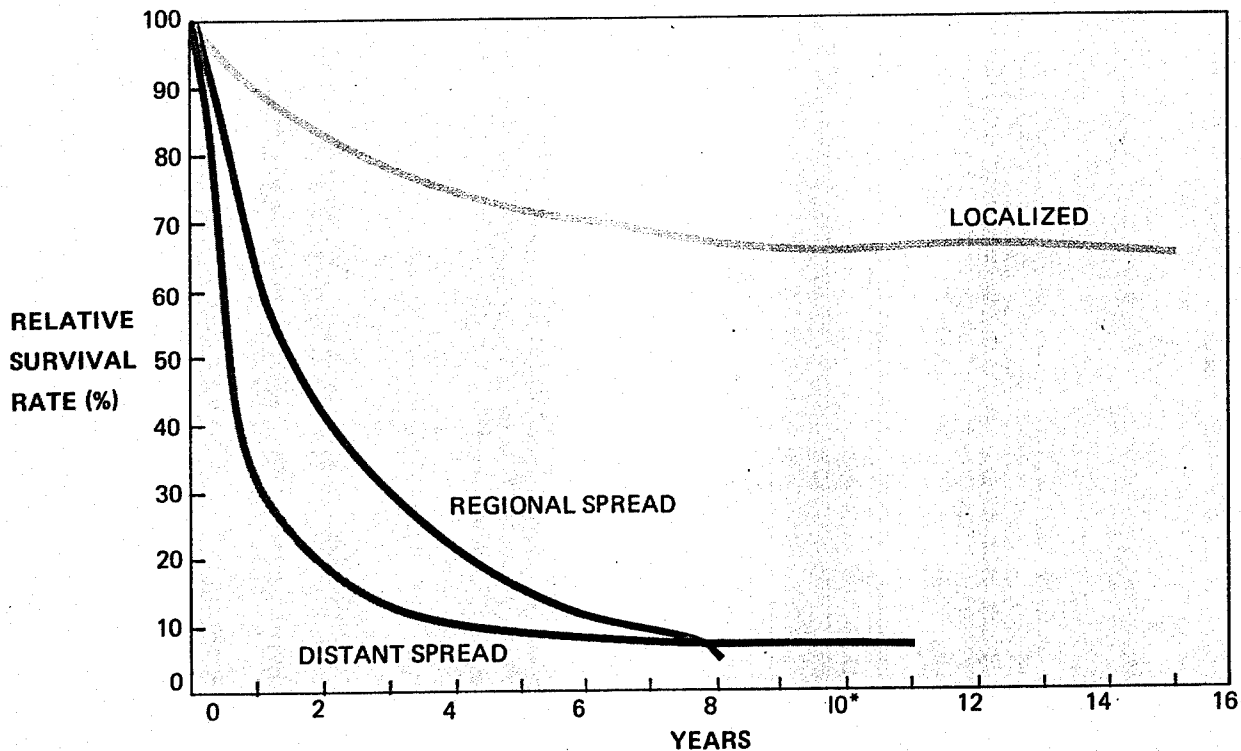
Fig. 8

The significance of early diagnosis in the successful treatment of cancer in the Flower and Fifth Avenue Hospitals is apparent when one notes that for all cases more than five times as many patients treated while the disease was localized survived five years, as compared with

those treated after the disease invaded adjacent areas—72 percent versus 14 percent, respectively, (Table 7 and Figure 9). The disparity was particularly large in male cases, 63 percent for localized cases as compared with only five percent for those with regional spread.

### RELATIVE SURVIVAL OF CANCER CASES BY STAGE OF DISEASE AT DIAGNOSIS

NEW YORK MEDICAL COLLEGE 1950-64



\* Survival rates beyond this point should be interpreted with caution because of the limited number of patients remaining under follow-up.

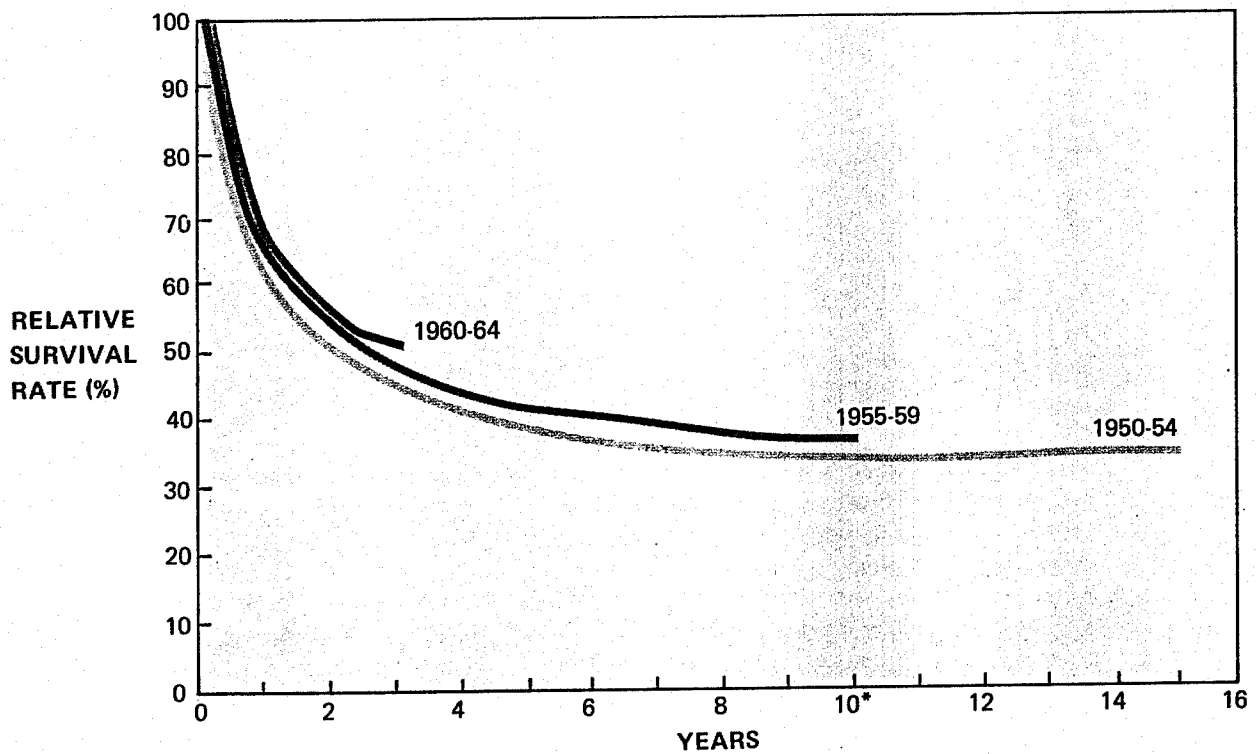
Fig. 9

Between the three periods, the overall relative survival rates show small increases (Figure 10). However, although the three-year survival rate of localized cases improved slightly,

from 77 to 79 percent, the rate for cases with regional spread more than doubled (from 20 percent to 48 percent) (Table 7).

### RELATIVE SURVIVAL OF CANCER CASES BY YEARS OF DIAGNOSIS

NEW YORK MEDICAL COLLEGE 1950-64



\* Survival rates beyond this point should be interpreted with caution because of the limited number of patients remaining under follow-up.

Fig. 10



The five-year relative survival rate of nine major selected sites ranged from a high of 75 percent for patients with cancer of the uterine corpus to seven percent for those with malignancies of the lung-and-bronchus (Table 8 and Figures 11 and 12). Sufficient data was not available to compute five-year rates for each of the major site groups diagnosed in each time period. The three-year

relative survival for all cases improved from 45 percent to 52 percent between 1950-54 and 1960-64 (Table 9). Also, significant improvement is evident for patients with cancer of the urinary organs, and of the genital organs (both male and female). Of the specific sites where data was available breast cases and those with cancer of the bladder showed significant improvement (Table 10).

**RELATIVE SURVIVAL OF CANCER CASES  
BY SELECTED SITES**

NEW YORK MEDICAL COLLEGE 1950-64

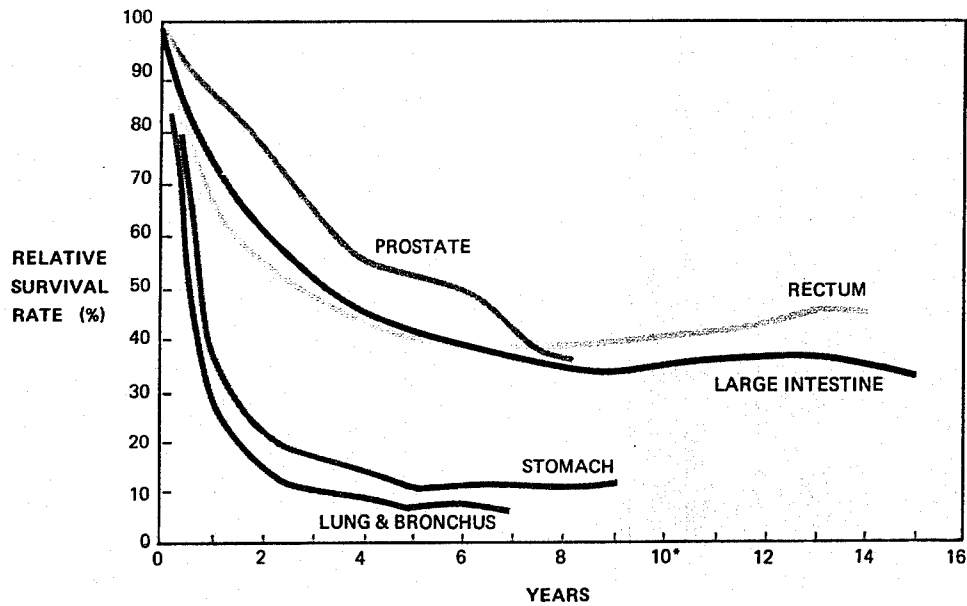


Fig. 11

\* Survival rates beyond this point should be interpreted with caution because of the limited number of patients remaining under follow-up.

**RELATIVE SURVIVAL OF CANCER CASES BY SELECTED SITES**

NEW YORK MEDICAL COLLEGE 1950-64

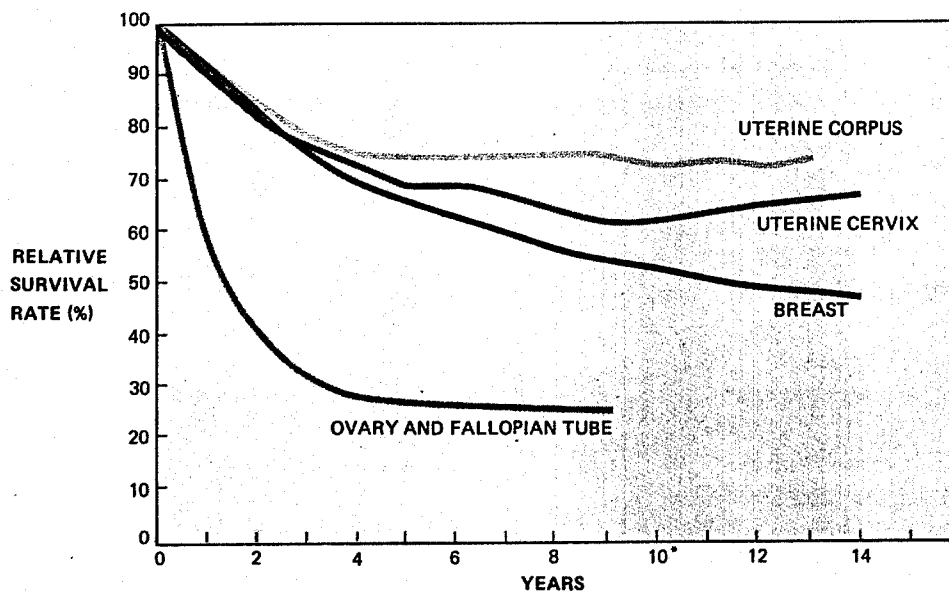


Fig. 12

\* Survival rates beyond this point should be interpreted with caution because of the limited number of patients remaining under follow-up.

Table 1

Number and Percent Distribution of All Cancer Cases  
New York Medical College, 1950-54, 1955-59, 1960-64

SITE OF CANCER	1950-64	1950-54		1955-59		1960-64	
		NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
All Sites	5,297	1,743	100.0	1,813	100.0	1,741	100.0
Buccal Cavity & Pharynx	1.2	19	1.1	18	1.0	27	1.5
Buccal Cavity	1.0	17	1.0	13	.7	25	1.4
Pharynx	.2	2	.1	5	.3	2	.1
Digestive Organs	29.8	576	33.0	567	31.3	436	25.1
Esophagus	.8	14	.8	17	.9	9	.5
Stomach	6.4	139	8.0	112	6.2	88	5.1
Large Intestine	10.4	191	10.9	201	11.1	161	9.3
Rectum	7.5	151	8.7	153	8.5	92	5.3
All Other Digestive	4.7	81	4.6	84	4.6	86	4.9
Respiratory Organs	10.7	171	9.8	186	10.3	210	12.0
Larynx	.4	12	.7	5	.3	7	.4
Lung & Bronchus	9.9	151	8.7	163	9.6	169	11.4
All Other Respiratory	.4	8	.4	8	.4	4	.2
Breast	17.4	319	18.3	294	16.1	308	17.7
Female Genital Organs	14.4	240	13.8	277	15.4	247	14.2
Uterine Cervix	4.7	65	3.7	85	4.7	98	5.6
Uterine Corpus	4.9	85	4.9	94	5.2	80	4.6
Ovary & Fallopian Tube	4.3	79	4.6	91	5.0	60	3.5
All Other Female Genital	.5	11	.6	7	.5	9	.5
Male Genital Organs	3.5	53	3.0	61	3.4	69	4.0
Prostate	2.8	41	2.3	50	2.8	56	3.2
All Other Male Genital	.7	12	.7	11	.6	13	.8
Urinary Organs	5.3	85	4.9	85	4.7	111	6.4
Kidney	1.6	26	1.5	29	1.6	32	1.8
Bladder	3.7	59	3.4	56	3.1	79	4.6
Lymphatic & Hematopoietic Tissues	5.9	97	5.6	119	6.5	98	5.6
Lymphosarcoma	.9	12	.7	20	1.1	18	1.0
Hodgkin's Disease	1.2	18	1.0	26	1.4	21	1.2
Leukemia & Aleukemia	2.6	38	2.2	57	3.1	42	2.4
All Other Lymphatic & Hematopoietic Tissues	1.2	29	1.7	16	.9	17	1.0
Other & Unspecified Sites	11.8	183	10.5	206	11.3	235	13.5
Melanoma of Skin	.9	14	.8	16	.9	19	1.1
Non-melanotic Skin	3.6	46	2.6	66	3.6	80	4.6
Brain & Other Nervous System	1.5	14	.8	27	1.8	39	2.5
Thyroid	1.3	25	1.4	26	1.4	17	1.0
Connective Tissue	.8	17	1.0	11	.6	13	.7
All Other & Unspecified Sites	3.7	67	3.9	60	3.0	67	3.6

Table 2

Number and Percent Distribution of Male Cancer Cases  
New York Medical College, 1950-54, 1955-59, 1960-64

SITE OF CANCER	1950-64	1950-54		1955-59		1960-64	
		NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
All Sites	2,216	699	100.0	774	100.0	743	100.0
Buccal Cavity & Pharynx	1.6	10	1.4	12	1.6	13	1.7
Buccal Cavity	1.4	9	1.3	10	1.3	12	1.6
Pharynx	.2	1	.1	2	.3	1	.1
Digestive Organs	37.7	294	42.1	306	39.5	235	31.7
Esophagus	1.1	9	1.3	8	1.0	8	1.1
Stomach	9.2	76	10.9	70	9.0	57	7.7
Large Intestine	11.8	88	12.6	96	12.4	77	10.4
Rectum	9.6	73	10.4	88	11.4	52	7.0
All Other Digestive	6.0	48	6.9	44	5.7	41	5.5
Respiratory Organs	21.3	140	20.0	156	20.2	176	23.8
Larynx	1.1	12	1.7	5	.7	7	1.0
Lung & Bronchus	19.6	122	17.4	145	18.7	167	22.5
All Other Respiratory	.6	6	.9	6	.8	2	.3
Breast	.3	0	0.0	2	.3	4	.5
Male Genital Organs	8.2	53	7.6	61	7.9	69	9.3
Prostate	6.6	41	5.9	50	6.5	56	7.5
All Other Male Genital	1.6	12	1.7	11	1.4	13	1.8
Urinary Organs	8.8	53	7.6	63	8.1	79	10.6
Kidney	2.4	13	1.9	19	2.4	21	2.8
Bladder	6.4	40	5.7	44	5.7	58	7.8
Lymphatic & Hematopoietic Tissues	7.5	54	7.7	62	8.0	51	6.8
Lymphosarcoma	1.4	8	1.1	12	1.5	10	1.3
Hodgkin's Disease	1.4	11	1.5	9	1.2	10	1.3
Leukemia & Aleukemia	3.3	19	2.7	33	4.3	23	3.1
All Other Lymphatic & Hematopoietic Tissues	1.4	16	2.4	8	1.0	8	1.1
Other & Unspecified Sites	14.6	95	13.6	112	14.4	116	15.6
Melanoma of Skin	.9	5	.7	6	.8	9	1.2
Non-melanotic Skin	4.2	23	3.3	33	4.3	36	4.8
Brain & Other Nervous System	2.3	7	1.0	19	2.4	25	3.4
Thyroid	1.0	10	1.4	8	1.0	5	.7
Connective Tissue	1.2	12	1.7	7	.9	7	.9
All Other & Unspecified Sites	5.0	38	5.5	39	5.0	34	4.6

Table 3

Number and Percent Distribution of Female Cancer Cases  
New York Medical College, 1950-54, 1955-59, 1960-64

SITE OF CANCER	1950-64	1950-54		1955-59		1960-64	
		NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
All Sites	3,081	1,044	100.0	1,039	100.0	998	100.0
Buccal Cavity & Pharynx	.9	9	.9	6	.6	14	1.4
Buccal Cavity	.8	8	.8	3	.3	13	1.3
Pharynx	.1	1	.1	3	.3	1	.1
Digestive Organs	24.1	282	27.0	261	25.0	201	20.1
Esophagus	.5	5	.5	9	.9	1	.1
Stomach	4.4	63	6.0	42	4.0	31	3.1
Large Intestine	9.5	103	9.9	105	10.1	84	8.4
Rectum	5.9	78	7.5	65	6.2	40	4.0
All Other Digestive	3.8	33	3.1	40	3.8	45	4.5
Respiratory Organs	3.1	31	3.0	30	2.9	34	3.4
Lung & Bronchus	2.9	29	2.8	28	2.7	32	3.2
All Other Respiratory	.2	2	.2	2	.2	2	.2
Breast	29.7	319	30.5	292	27.9	304	30.5
Female Genital Organs	24.8	240	23.0	277	26.9	247	24.8
Uterine Cervix	8.0	65	6.2	85	8.2	98	9.9
Uterine Corpus	8.4	85	8.1	94	9.0	80	8.0
Ovary & Fallopian Tube	7.5	79	7.6	91	8.8	60	6.0
All Other Female Genital	.9	11	1.1	7	.9	9	.9
Urinary Organs	2.8	32	3.1	22	2.1	32	3.2
Kidney	1.1	13	1.3	10	1.0	11	1.1
Bladder	1.7	19	1.8	12	1.1	21	2.1
Lymphatic & Hematopoietic Tissues	4.8	43	4.1	57	5.5	47	4.7
Lymphosarcoma	.7	4	.4	8	.8	8	.8
Hodgkin's Disease	1.1	7	.7	17	1.6	11	1.1
Leukemia & Aleukemia	2.0	19	1.8	24	2.3	19	1.9
All Other Lymphatic & Hematopoietic Tissues	1.0	13	1.2	8	.8	9	.9
Other & Unspecified Sites	9.8	88	8.4	94	9.1	119	11.9
Melanoma of Skin	.9	9	.9	10	1.0	10	1.0
Non-melanotic Skin	3.3	23	2.2	33	3.2	44	4.4
Brain & Other Nervous System	1.5	7	.7	8	.8	14	1.4
Thyroid	.5	15	1.4	18	1.7	12	1.2
Connective Tissue	2.7	5	.5	4	.4	6	.6
All Other & Unspecified Sites	.9	29	2.7	21	2.0	33	3.3

Table 4

Percent Distribution of White Cancer Cases, By Site and Age Groups  
New York Medical College, 1950-64

Age At Diagnosis	Total All Sites	Buccal Cavity and Pharynx	Digestive Organs	Respiratory Organs	Breast	Female Genital Organs	Male Genital Organs	Urinary Organs	Lymphatic and Hemato- poietic Tissues	Other and Unspecified (except Skin)
All Ages, Number	4,791	64	1,559	545	907	673	177	276	305	285
0 - 9	1.4	0.0	0.3	0.0	0.0	0.3	0.0	1.5	12.8	6.0
10 - 19	0.8	0.0	0.1	0.0	0.0	0.0	1.7	0.0	6.2	5.3
20 - 29	1.8	4.7	0.6	0.4	0.9	2.2	4.0	0.4	7.2	6.7
30 - 39	5.4	7.8	1.9	2.4	9.9	7.3	2.8	4.3	7.2	12.3
40 - 49	15.7	17.2	9.6	11.4	29.0	21.7	2.8	10.9	10.8	17.5
50 - 59	26.8	34.4	24.6	32.1	29.9	29.9	13.6	27.9	18.4	26.3
60 - 69	29.3	23.4	34.3	40.7	20.2	27.0	41.2	29.7	23.3	15.4
70 - 79	15.7	9.4	23.9	11.4	8.2	10.4	26.6	21.0	11.8	9.5
80 & Over	3.1	3.1	4.9	1.6	1.9	1.2	7.3	4.3	2.3	1.0

Table 5

Percent Distribution of White Cancer Cases, By Stage At Diagnosis, By Site  
(Exclusive of Skin, Lymphomas, and Leukemias)  
New York Medical College, 1950-64

<u>Site of Cancer</u>	<u>Total Number of Cases</u>	<u>Localized</u>	<u>Regional Spread</u>	<u>Distant Spread</u>	<u>Not Localized But Extent of Spread Unknown</u>	<u>Unspecified</u>
All Sites, Number	4,486	1,918	921	1,056	48	543
Percent	(100.0%)	(42.8%)	(20.5%)	(23.5%)	(1.1%)	(12.1%)
<b>Buccal Cavity &amp; Pharynx</b>	64	59.4	26.5	1.6	1.6	10.9
Buccal Cavity	53	67.9	26.4	0.0	1.9	3.8
Pharynx	11	18.2	27.3	9.1	0.0	45.4
<b>Digestive Organs</b>	1,559	35.2	19.4	34.8	0.8	9.8
Esophagus	40	22.5	20.0	35.0	0.0	22.5
Stomach	339	15.0	24.8	48.1	1.5	10.6
Large Intestine	550	42.9	20.6	27.8	0.5	8.2
Rectum	396	53.8	15.4	21.2	0.3	9.3
All Other Digestive	234	17.1	15.8	54.7	1.3	11.1
<b>Respiratory Organs</b>	545	14.5	30.3	33.6	2.8	18.9
Larynx	24	37.5	37.5	12.5	0.0	12.5
Lung & Bronchus	515	13.0	29.9	35.0	2.9	19.2
All Other Respiratory	6	50.0	33.3	0.0	0.0	1.7
<b>Breast</b>	907	52.7	28.1	4.7	0.7	13.8
<b>Female Genital Organs</b>	673	53.6	11.2	26.0	1.0	8.2
Uterine Cervix	170	52.9	15.9	18.8	2.4	10.0
Uterine Corpus	255	77.2	6.7	6.3	0.4	9.4
Ovary & Fallopian Tube	226	27.0	11.5	56.2	0.4	4.9
Other Female Genital	22	59.1	22.7	0.0	4.6	13.6
<b>Male Genital Organs</b>	177	37.3	19.8	23.7	0.6	18.6
Prostate	148	33.1	20.3	25.0	0.0	21.6
Other Male Genital	29	58.6	17.2	17.2	3.5	3.5
<b>Urinary Organs</b>	276	71.4	9.4	11.6	0.7	6.9
Kidney	87	49.4	10.3	27.6	1.2	11.5
Bladder	189	81.5	9.0	4.2	0.5	4.8
<b>Other &amp; Unspecified Sites (except Skin)</b>	285	52.6	15.8	13.3	1.4	16.9
Melanoma of Skin	49	71.4	8.2	10.2	4.1	6.1
Brain	95	42.1	21.0	10.5	1.1	25.3
Thyroid	68	60.3	10.3	8.8	0.0	20.6
Connective Tissue	41	56.1	17.1	22.0	2.4	2.4
All Other Sites	32	34.4	21.9	25.0	0.0	18.7

Table 6

Percent Distribution of White Cancer Cases, By Stage At Diagnosis,\* By Selected Sites  
New York Medical College, 1950-54, 1955-59, 1960-64

Site of Cancer	Localized			Regional Spread			Distant Spread			Unspecified		
	1950- 1954	1955- 1959	1960- 1964	1950- 1954	1955- 1959	1960- 1964	1950- 1954	1955- 1959	1960- 1964	1950- 1954	1955- 1959	1960- 1964
Stomach	12	18	16	24	25	26	56	41	44	7	14	11
Large Intestine	46	43	39	18	16	29	27	29	28	9	12	3
Rectum	50	58	53	17	9	23	23	22	16	9	11	8
Lung & Bronchus	7	12	19	36	27	28	35	32	37	21	24	14
Breast	54	51	54	27	18	39	3	6	5	16	25	1
Uterine Cervix	59	41	59	11	13	26	25	28	2	5	17	10
Uterine Corpus	80	73	80	5	3	13	8	9	1	7	15	5
Ovary & Fallopian Tube	27	24	32	9	8	21	60	60	46	5	7	2
Prostate	39	31	30	25	15	21	32	27	18	5	27	30
Kidney	54	35	59	8	10	13	27	41	16	12	14	9

\* Excludes cases no longer localized, but extent of spread unknown

Table 7

Relative Survival Rates of White Cancer Cases By Sex, Stage, and Years of Diagnosis  
New York Medical College, 1950-64

Groups of Cases	Number of Cases	Relative Survival Rate (Percent)														
		1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	5 Yrs.	6 Yrs.	7 Yrs.	8 Yrs.	9 Yrs.	10 Yrs.	11 Yrs.	12 Yrs.	13 Yrs.	14 Yrs.	15 Yrs.
All Cases	5,075	65	54	48	45	<u>42</u>	41	39	38	38	38*	38	38	39	38	38
All Male Cases	2,121	52	41	35	32	<u>29</u>	28	27	26	25	25*	25	26	27	28	27
All Female Cases	2,954	74	64	57	53	<u>51</u>	49	47	46	45	45*	45	45	45	43	43
All Localized	2,061	90	83	78	74	<u>72</u>	71	68	67	66	65*	66	67	67	66	64
All Regional Spread	924	61	40	29	21	<u>14</u>	11	9	5							
All Distant Spread	1,367	29	18	13	11	<u>9</u>	8	7	7	7	7*	7				
Localized - Male	723	83	74	68	65	<u>63</u>	61	58	58	55	55*	55	56	60	63	60
Female	1,338	94	87	83	78	<u>77</u>	76	73	71	70	70*	70	71	70	67	66
Regional Spread - Male	380	47	26	17	11	<u>5</u>										
Female	544	70	49	37	27	<u>20</u>	15	13	5							
Distant Spread - Male	717	23	15	11	10	<u>8</u>	7	6	6							
Female	650	35	22	14	12	<u>10</u>	8	8	8	8						
Localized - 1950-54	676	90	82	77	72	<u>71</u>	69	66	65	63	63*	63	64	64	63	61
1955-59	691	90	82	77	74	<u>70*</u>	69	66	65	63	62					
1960-64	694	89	84	79												
Regional Spread - 1950-54	322	56	32	20	15	<u>9</u>	6	5	2							
1955-59	238	50	30	17	7	<u>3</u>										
1960-64	364	72	54	48												
Distant Spread - 1950-54	490	28	17	12	11	<u>8</u>	6	6	6	6						
1955-59	482	32	22	14	13	<u>11*</u>	10	9	10	9						
1960-64	395	26	17	12												

\* Survival rates beyond this point should be interpreted with caution because of the limited number of patients remaining under follow-up.



Table 8

Relative Survival Rates of White Cancer Cases, By Site Groups and Selected Sites  
New York Medical College, 1950-64

Site of Cancer	Number of Cases	Relative Survival Rate (Percent)														
		1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	5 Yrs.	6 Yrs.	7 Yrs.	8 Yrs.	9 Yrs.	10 Yrs.	11 Yrs.	12 Yrs.	13 Yrs.	14 Yrs.	15 Yrs.
All Sites	5,075	65	54	48	45	<u>42</u>	41	40	38	38	38*	38	38	39	38	38
Buccal Cavity & Pharynx	62	75	65	62	63	<u>62</u>	63	65	61							
Digestive Organs	1,509	53	41	34	30	<u>27</u>	26	25	25	25	25*	26	26	27	27	27
Stomach	302	33	21	16	14	<u>11</u>	11	11	10	11						
Large Intestine	536	64	53	48	42	<u>40</u>	38	36	35	32	34*	34	34	35	34	32
Rectum	386	74	60	49	44	<u>39</u>	38	37	38	38	40*	42	42	45	43	
Respiratory Organs	553	28	17	12	10	<u>9</u>	8	7								
Lung & Bronchus	505	27	15	10	9	<u>7</u>	8	6								
Breast	890	93	82	76	69	<u>66</u>	63	60	56	54	53*	51	50	48	47	48
Female Genital Organs	716	81	69	62	59	<u>57</u>	56	55	54	53	53*	54	54	56	57	52
Uterine Cervix	222	90	80	77	73	<u>67</u>	68	67	63	61	62*	63	64	65	67	
Uterine Corpus	251	91	84	77	75	<u>75</u>	74	74	75	75	72*	74	72	74		
Ovary & Fallopian Tube	218	58	40	32	27	<u>27</u>	26	26	26	24						
Male Genital Organs	172	84	78	65	59	<u>55</u>	54	47	43	42	40					
Prostate	141	84	77	63	56	<u>51</u>	48	41	36							
Urinary Organs	271	73	64	59	55	<u>54</u>	51	51	48	48	51*	53	56	53		
Melanoma of Skin	48	88	82	75	65	<u>63</u>	60	56	51							
Non-melanotic Skin	187	96	93	89	91	<u>87</u>	90	87	87	86	78*	81				
Lymphatic & Hematopoietic Tissues	295	51	40	31	29	<u>26</u>	21	20	19	19						
Other & Unspecified Sites	372	48	39	36	35	<u>33</u>	34	33	34	35	35*	34	35	37		

\* Survival rates beyond this point should be interpreted with caution because of the limited number of patients remaining under follow-up.

Table 9

Relative Survival Rates of White Cancer Cases By Site Groups  
New York Medical College, 1950-54, 1955-59, 1960-64

Site of Cancer	Years of Diagnosis	Number of Cases	Relative Survival Rate (Percent)														
			1 yr.	2 yrs.	3 yrs.	4 yrs.	5 yrs.	6 yrs.	7 yrs.	8 yrs.	9 yrs.	10 yrs.	11 yrs.	12 yrs.	13 yrs.	14 yrs.	15 yrs.
All Sites	1950-54	1,693	63	51	45	42	39	37	36	35	34	34*	34	34	35	34	34
	1955-59	1,735	65	55	48	44	42*	41	39	38	37	37					
	1960-64	1,647	67	57	52												
Buccal Cavity & Pharynx	1950-54	19	70	49													
	1955-59	18	80	70	58												
	1960-64	25	76	77	78												
Digestive Organs	1950-54	559	53	40	33	30	26	26	24	24	24	24*	25	25	25	25	25
	1955-59	537	54	43	37	32	30*	28	28	27	26	26					
	1960-64	413	51	38	31												
Respiratory Organs	1950-54	165	25	12	7	6											
	1955-59	181	25	17	13	10	9*	9									
	1960-64	207	34	21	15												
Breast	1950-54	314	90	77	71	65	63	59	57	53	51	50*	48	46	44	43	44
	1955-59	286	95	83	75	68	63*	59	55	52	50	50					
	1960-64	290	95	87	83												
Female Genital Organs	1950-54	232	78	66	59	55	53	52	52	49	49	49*	50	50	51	53	48
	1955-59	261	79	66	60	57	54*	54	53	54	53	50					
	1960-64	223	86	75	67												
Male Genital Organs	1950-54	49	85	69	47	41	38	37									
	1955-59	59	85	81	71	67	64*	64	64	60							
	1960-64	64	82	83	76												
Urinary Organs	1950-54	83	70	54	51	48	45	44	44	42	44	46*	48	50	47		
	1955-59	83	70	65	58	55	53*	48	48	42							
	1960-64	105	80	72	68												
Melanoma of Skin	1950-54	13	86	79	80	73											
	1955-59	16	83	84	72	58											
	1960-64	19	95	82	74												
Non-melanotic Skin	1950-54	46	96	96	91	94	87	90	83	81	79	69*	72				
	1955-59	63	99	91	85	88	85*	88	87	90							
	1960-64	78	94	93	93												
Lymphatic & Hematopoietic Tissues	1950-54	92	42	33	25	23	19	14	13								
	1955-59	111	58	42	31	31	27*	24	23	23	24						
	1960-64	92	50	44	41												
Other & Unspecified Sites	1950-54	121	53	42	40	39	35	36	35	34	35	35*	34	35	36		
	1955-59	120	47	39	34	34	33*	34	35	36	37						
	1960-64	131	44	36	33												

\* Survival rates beyond this point should be interpreted with caution because of the limited number of patients remaining under follow-up.

Table 10

Relative Survival Rates of White Cancer Cases By Selected Sites  
New York Medical College, 1950-54, 1955-59, 1960-64

Site of Cancer	Years of Diagnosis	Number of Cases	Relative Survival Rate (Percent)														
			1 yr.	2 yrs.	3 yrs.	4 yrs.	5 yrs.	6 yrs.	7 yrs.	8 yrs.	9 yrs.	10 yrs.	11 yrs.	12 yrs.	13 yrs.	14 yrs.	15 yrs.
Stomach	1950-54	133	28	17	15	13	<u>10</u>	10	10								
	1955-59	107	41	28	19	15	<u>13*</u>	11									
	1960-64	80	29	20													
Large Intestine	1950-54	185	64	52	45	40	<u>38</u>	36	33	34	32	33*	32	33	33	32	30
	1955-59	188	65	57	53	45	<u>42*</u>	43	38	36	31	33					
	1960-64	158	63	47	45												
Rectum	1950-54	150	72	57	46	42	<u>35</u>	40	32	34	33	34*	36	36	38	36	
	1955-59	146	72	59	51	45	<u>44*</u>	40	41	41	43	45					
	1960-64	88	78	65	48												
Lung & Bronchus	1950-54	147	21	9	4												
	1955-59	165	23	16	12	9	<u>9</u>										
	1960-64	192	34	20	16												
Breast	1950-54	314	90	77	71	65	<u>63</u>	59	57	53	51	50*	48	46	44	43	44
	1955-59	286	95	83	75	68	<u>63*</u>	59	55	52	50	50					
	1960-64	287	95	87	83												
Uterine Cervix	1950-54	62	88	75	67	61	<u>58</u>	59	57	50	47	48*	49	50	51		
	1955-59	50	83	69	69	65	<u>50*</u>	51	52								
	1960-64	41	90	70	65												
Uterine Corpus	1950-54	83	89	80	74	74	<u>74</u>	69	71	70	72	71*	73	70	72		
	1955-59	90	92	84	77	74	<u>74*</u>	75	75	77	73						
	1960-64	76	92	88	78												
Ovary	1950-54	76	56	40	33	26	<u>25</u>	24	22								
	1955-59	85	56	38	27	22	<u>22</u>										
	1960-64	57	65	45	42												
Prostate	1950-54	41	82	62	41	37	<u>33</u>										
	1955-59	47	83	80	68	63	<u>59*</u>	58	56								
	1960-64	51	85	87	78												
Bladder	1950-54	58	73	60	56	54	<u>49</u>	49	49	45	47	49*	52	55			
	1955-59	53	81	77	70	67	<u>63*</u>	59	57	60							
	1960-64	73	80	70	70												

\* Survival rates beyond this point should be interpreted with caution because of the limited number of patients remaining under follow-up.

The foregoing descriptive analysis of the cancer experience in the New York Medical College, Flower and Fifth Avenue Hospitals is a measure of the work-load and quality of care in this institution. The accomplishments and short-comings reflected by the data in the Tumor Registry may be likened to a continuous com-

mercial "profit and loss" statement. As such it highlights successes and deficiencies in patient care, and improvements and omissions in the reporting of necessary patient information. It may, therefore, point the way for additional professional and public education and intensified research to save more patients from this disease.

#### REFERENCES

1. End Results in Cancer, Report No. 3. End Results Section Biometry Branch, National Cancer Institute, Bethesda, 1968.
2. Cutler, S. J. and Latourette, H. B.: A National Cooperative Program for the Evaluation of End Results in Cancer. J. Nat. Cancer Inst. 22:633-646, 1959.

