10c

PUBLIC AFFAIRS PAMPHLETS

THE FIGHT ON CANCER

BY CLARENCE C. LITTLE

DID YOU KNOW:

That cancer is NOT hereditary or contagious?

That from 50 to 95 per cent of many kinds of cancer are curable if treated early?

That there are only three accepted forms of cancer treatment?

PUBLIC AFFAIRS PAMPHLETS
No. 38 1939

Digitized by Google

Digitized by Google

THE FIGHT ON CANCER

By CLARENCE C. LITTLE

THERE is a rift in the black cloud of fear and ignorance which has long prevented frank discussion of cancer. Through this gap, knowledge gained by new types of research, improved treatment and organized education is pouring like powerful sunlight to bring vigorous activity and hope.

The power behind that heartening light is the aroused interest of men and women like yourself who have come to realize that they have an all-important part to play in gaining a final victory against an enemy which kills approximately 150,000 of our citizens each year.

Cancer is peculiarly a personal problem. It cannot be checked or controlled by scientists or medical men alone. In its conquest every man and woman has a place to fill and a duty to perform.

The story of man's increasingly successful fight against cancer has lately become an inspiring one. It stretches over the centuries with a strange, sinister quality of uninformed

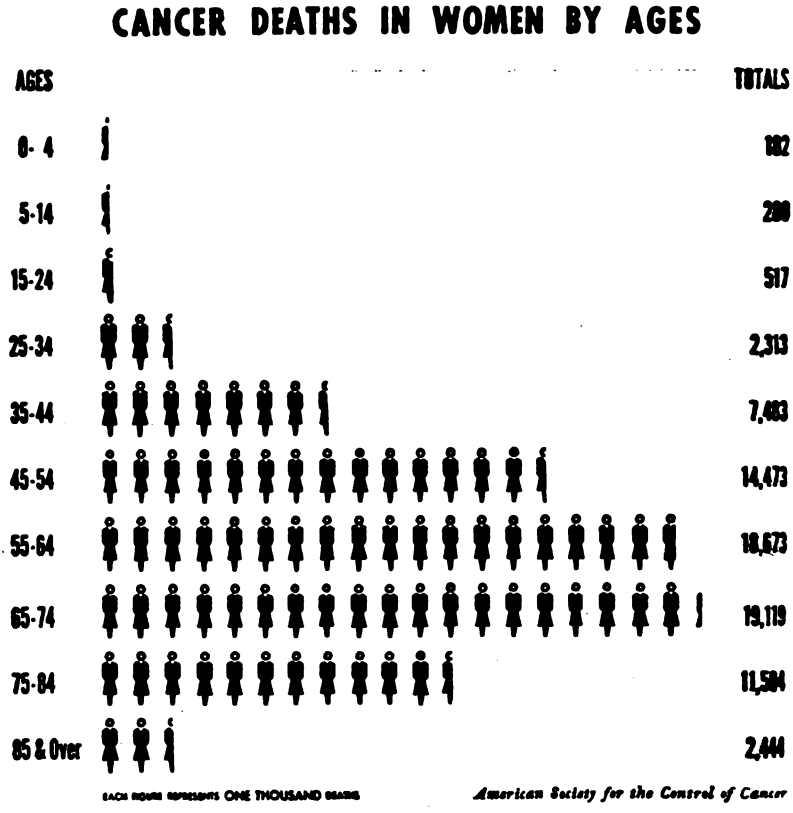
Clarence C. Little, Sc.D., Managing Director of the American Society for the Control of Cancer, Inc., and Director of the Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Maine, is author of *Civilization Against Cancer*, Farrar & Rinehart, 1939.

Copyright, 1939, by the Public Affairs Committee, Incorporated
—A nonprofit, educational organization—

Digitized by Google

fear which makes it unique. Man has had to be patient however; for until the last forty years, there was almost no progress.

Since the beginning of the twentieth century, however,



conditions have changed, and today tens of thousands of lives —formerly doomed—are being saved.

In this pamphlet will be presented some of the high lights of this story of progress. Naturally, much must be omitted, but there remain many thrilling events, the full meaning of which time will emphasize.

Recognition of Cancer

Successful treatment of cancer rests upon accurate and

Digitized by Google

prompt recognition of the type and location of the cancer which is to be treated.

The most skillful specialists, who have seen thousands of cancer cases, can, by inspection, do a reasonably good job of recognizing cancer where it is advanced and where it is located on the outside of the body.

Even the best of them, however, cannot distinguish by mere inspection early cancer or the nature of internal masses or lesions.

There is only one sure way to make certain of cancer, and that is through microscopic examination of the suspected tissue by a trained specialist.

This fact is generally admitted today, but there still remain altogether too many institutions and individuals who maintain that early or internal cancer can be diagnosed by inspection or by some other unproved method.

The ignorance of the public has allowed this wrong point of view to persist and has nourished one of the most dangerous elements in the whole cancer problem; namely, *quacks.*

Cancer Quacks

The history of *quackery* in cancer is a long and evil one. It includes the story of men and women who are out-and-out crooks and also of those who honestly but mistakenly believe that they have a successful "cure." The effect on the patient is the same in both cases and may be summed up as misinformation, disillusionment, expense, and death.

Mr. Smith, with a sore on his lip, reports to Dr. Hokum, a quack, who examines him superficially and announces that he has cancer. Mr. Smith naturally is worried. Dr. Hokum, however, calms him by promising a "cure" and usually agrees upon or receives a fixed fee in advance. If Mr. Smith is cured we can all be sure that the condition was *not* cancer, but he, believing that it was, goes back to his friends bringing word of Dr. Hokum's "miraculous" skill. The news spreads and new patients appear. If, however, Mr. Smith *did* have a cancer, he may show temporary improvement coupled with a more optimistic mental attitude, but sooner or later he gets worse and eventually dies. At that point Dr. Hokum attributes his death to the fact that Mr. Smith previously has been

Digitized by Google

unsuccessfully treated with surgery or X rays, or to some other hidden cause.

Surgery, X rays, and Radium—The Only Approved Treatments

The fact is that surgery, X rays, and radium, either singly or in combination, are the only forms of cancer treatment accepted by organized medicine as of proved value.

This attitude is amply justified not only by the failure of other types of treatment, but by the outstanding success of these methods.

There are several ways in which this success can be demonstrated. Using the records of established medical men, the American College of Surgeons, a great national organization, has collected facts on over 29,000 cancer cases in which the patient has lived for five years or more following an operation or radiation. Such cases are officially accepted as clinical "cures" because few cases that remain well for a five-year period will recur.

The success of surgery, radium, or X rays is directly related to the stage which the cancer has reached when it is treated. The sooner the cancer is detected and treated, the greater the chance of cure.

This is shown by the chart on pages 16 and 17 using varied but representative types of cancer. These results are striking. They form the cornerstone of the educational campaign against cancer which will be described later.

Cancer Clinics

As our knowledge of cancer increased, it became clear that in many cases the most successful handling of the patient came only after one or more conferences between surgeons, radiologists, pathologists, internists, and other specialists.

The need of microscopic study of tumor tissue and the growing frequency of combined use of X rays and surgery, or for choosing wisely between them, form the main reasons why such group activity is an all-important development in the fight against cancer.

So true is this that the American College of Surgeons

Digitized by Google

regularly maintains a staff of medical men who advise and assist in the establishment of cancer clinics. These men also regularly inspect and certify for official approval clinics that are already established.

The growth in the number of these clinics has been a definite indication of progress in the treatment of cancer. In places where the greatest advance in the control of cancer has been made, the clinic idea is accepted as a basic principle.

The combined use of surgery and irradiation, to which reference has been made, is becoming much more general and has given surprisingly good results which are better than might have been expected had surgery or irradiation alone been used.

GENERAL FACTS ABOUT CANCER

THE reason why group judgment is useful in diagnosing and treating cancer is that the word "cancer" is used to include many different types and degrees of abnormal growth.

Since a lump or swelling usually is formed when tissue becomes cancerous, cancers are included, for descriptive purposes, in a great group called *tumors*.

A tumor is a mass of new tissue which persists and grows independently of its surrounding structures. There are two types—*benign* and *malignant*.

Benign tumors are usually surrounded by some sort of limiting capsule or structure. They do not invade the adjacent tissue.

Malignant tumors are usually irregular in shape. They invade surrounding tissues and have no clearly defined boundary. To all malignant tumors the name of *cancer* is applied.

In its early stages cancer is usually confined to a small area. This fact accounts for the relatively greater success of treatments at such stages. As cancer progresses, it extends its growth from its original point of origin and also gives off living bits of itself, which may be transmitted to distant parts of the body by the blood or by the colorless body fluid known as lymph. Often these transferred bits of the original tumor

Digitized by Google

lodge in vital and inaccessible parts of the body and there start a secondary growth of the same malignant type as the original mass.

The analogy of the spread of fire is helpful in describing the growth of cancer. Early cancer may be compared with a small fire, localized and capable of being easily extinguished. Late cancer is like a widespread conflagration, out of control and, therefore, difficult or impossible to extinguish. There is a further parallel between fire and cancer in that when a conflagration occurs, sparks may leave the main blaze and settle elsewhere, starting a secondary fire. In very much the same way, bits of a rapidly growing cancer may leave the main mass and settle elsewhere in the body to start secondary cancerous growths.

Cancer Is Not Catching

A natural question from anyone reading of the rapid spread of cancer in the body would be: "Is cancer catching?" The answer is "No."

For decades many efforts have been made in laboratories to find a germ or germs responsible for cancer. They have not been successful.

There is no evidence that cancer can be "caught" by any person working with patients afflicted with the disease. Had such an event been possible, cancer would have destroyed the human race long before now.

What Is Cancer?

It is natural to ask *what* cancer is, since it is not a disease of the ordinary type. The answer is somewhat startling. Cancer is merely the uncontrolled growth of one or more cells or tissues of our body.

In order to understand the origin and nature of cancer, it will be necessary to describe briefly a series of events experienced by every human being since man first appeared.

Each and every one of us started his individual existence as a tiny, fertilized egg cell in the body of his mother. At that stage we were each of us too small to be identified by the naked eye.

Digitized by Google

The word "cell" is used to describe the smallest living unit capable of independent existence among higher animals and man.

The fertilized egg cell possesses one of life's most general but least understood characteristics; namely, that of being able to form, of its own substance, two "daughter cells" which remain attached to one another and which can repeat the process of "cell division."

By this process the number of cells of which we are composed increased with truly miraculous speed. Various types of tissues and organs, each with a definite structure and use, developed. In nine short months we had changed from a microscopic speck to a baby ready for birth.

The number of cells of which we were composed had increased from one to billions. During our stay within our mothers' bodies, the rate of growth was almost unbelievably rapid.

After birth we continued to grow rapidly. We are all aware of the great increase in size and of the further development which occurs in infants during their first year. Remarkable as this is, however, it is infinitely less rapid than was the rate of growth before birth. We had already begun to "slow down."

The slowing process continued, for, although each successive year we increased in actual size, we did so at a steadily decreasing rate of speed.

Finally, as adults, we reached a balance and we stopped growing. The experience of becoming an adult is, therefore, one in which natural "brakes" are being silently and effectively applied to our tendency to grow.

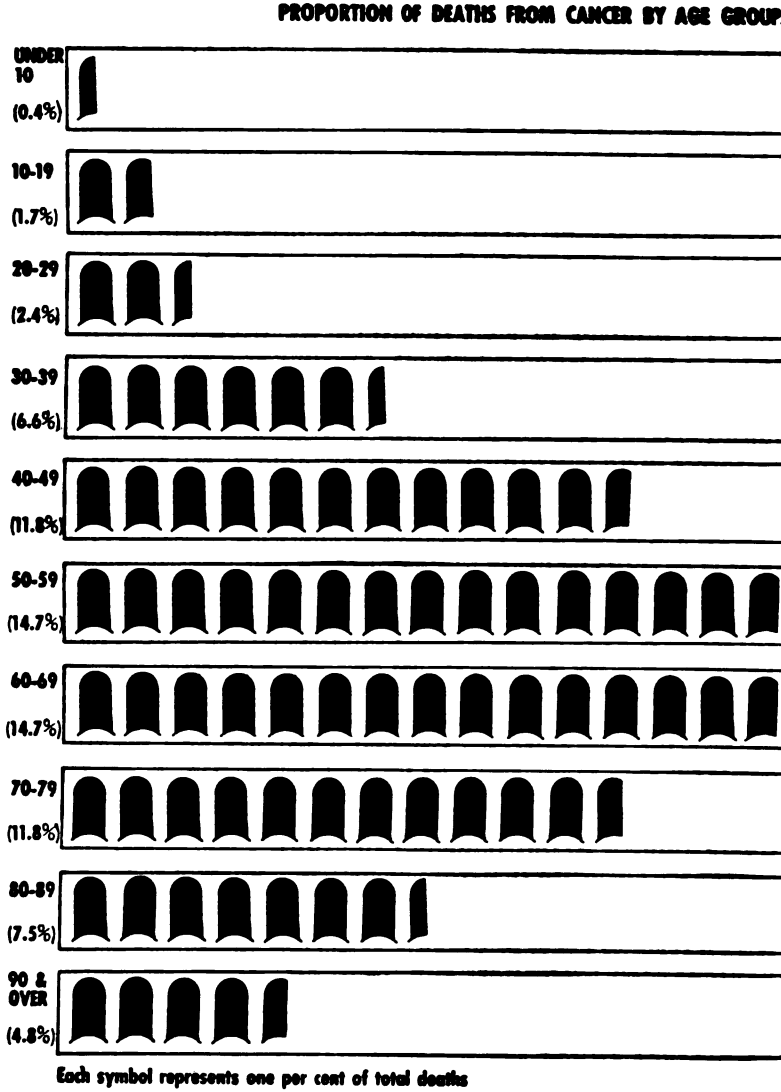
The possibility thereafter exists biologically for the reappearance at some time of a local center of rapidly growing cells which reaches perhaps the rate of growth of the whole body at birth or soon thereafter.

Such a center of rapid, local growth occurring in a balanced body produces a tumor and, if relatively unconfined, a cancer.

In its early stages, then, the tissue of a tumor or cancer is vigorous and free from any "disease" in the ordinary sense of the word. It is impossible for the early stages of cancer to

Digitized by Google

AGE AND CANCER



Digitized by Google

kill, and because the tissue forming the cancer is actually a part of the individual it is not recognized as being a foreign body.

How Does Late Cancer Kill?

Death due to cancer is not referable to any one cause in all cases. Many times it is largely a mechanical matter, as in the obstruction of some vital passageway by the rapidly growing cancer mass. At other times, the cancer may grow to such a size that the blood vessels which bring it food cannot suffice to nourish all of it. Parts of the cancer then deteriorate, die, and cause blood poisoning.

The reason that cancer kills is that it occurs in a body where capacity to feed, house, and support an area of unrestricted growth is limited.

For this reason the final outcome of untreated cancer is always fatal.

Age and Cancer

People of all ages are not equally likely to get cancer. Nor is the kind of cancer the same for all ages. The reports published by the United States Bureau of the Census for 1936 show that in that year 142,538 people of known ages died of cancer in the United States. The ages of the victims are shown in the chart on the opposite page.

It is clear why many people think of cancer as a disease of middle and old age.

The parts of the body most likely to be attacked by cancer may be seen in the following table:

	Number	*Per cent*
Lip	764	0.56
Tongue	1,097	0.81
Mouth	620	0.46
Jaw	950	0.70
Pharynx	912	0.68
Esophagus	2,386	1.77
Stomach, duodenum	27,241	20.31
Intestine	15,634	11.45
Rectum, anus	7,325	5.47
Liver	10,425	7.77
Pancreas	4,440	3.31

Digitized by Google

	Number	*Per cent*
Lungs and other respiratory organs	6,840	5.10
Uterus	16,280	12.14
Breast	13,708	10.22
Male genito-urinary	12,356	9.21
Skin	3,404	2.53
Kidneys	2,075	1.54
Bladder	4,653	3.46
Brain	1,284	0.95
Bones	1,976	1.47
	134,370	

From the reports of the Census Bureau we can obtain further interesting and important facts. Taking the total number of cancer deaths at a single age period as 100 per cent, we can calculate what proportion of that total occurs in different sites.

When this is done certain very significant facts become evident. The nine commonest sites for cancer at each successive age period can be tabulated in order of frequency as follows:

Age	*0-9*	*10-19*	*20-29*	*30-39*	*40-49*	*50-59*	*60-69*	*70-79*	*80-89*	*90-*
1.	*Kidney*	*Bones*	Diges.*	Diges.*	Diges.*	Diges.*	Diges.*	*Diges.**	Diges.*	Diges.*
2.	Diges.*	*Brain*	Uterus	*Uterus*	Uterus	Uterus	Uterus	Breast	Skin	*Skin*
3.	Bones	Diges.*	Lung	Breast	*Breast*	Breast	Breast	Uterus	Breast	Breast
4.	Brain	*Lung*	Brain	Lung	Lung	Lung	Lung	Mouth	Mouth	*Mouth*
5.	Lung	Kidney	Bones	Brain	Mouth	Mouth	Mouth	Skin	Uterus	Uterus
6.	Mouth	Mouth	Breast	Bones	Kidney	Kidney	Skin	Lung	Lung	Lung
7.	Skin	Skin	Mouth	Mouth	Brain	Bones	Kidney	Kidney	Kidney	Bones
8.	Breast	Breast	Kidney	Kidney	Bones	Skin	Bones	Bones	Bones	Kidney
9.	Uterus	Uterus	Skin	Skin	Skin	Brain	Brain	Brain	Brain	Brain

(Italics indicate periods of greatest prevalence of each type of cancer in relation to other types. Thus in section 40-49, there is not more cancer of the breast than of the digestive organs, but it is more prevalent in these years in relation to other cancer than at other times.)

It will be seen that at different ages there is considerable shifting in the relative importance of different types of cancer. It is, however, clear that cancer of the digestive organs is the most important type throughout most of the life span.

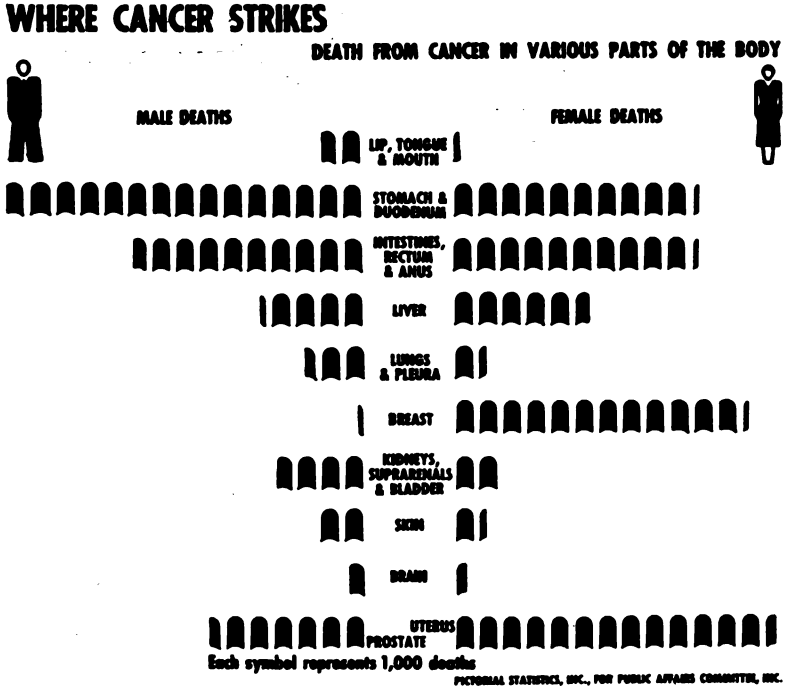
Cancer Among Men and Women

Men and women are affected quite differently by cancer.

* Digestive tracts and intestines.

Digitized by Google

Thus among white people in the United States, the number of deaths in the year 1934 from cancer affecting different parts of the body was as follows:



In a few cases persistent irritation is believed to play an important role. This is true of the lip, tongue, and mouth. The excessive use of tobacco is, of course, more common among men than among women. It is also believed that the greater exposure of the skin, including the lips, to the sun and wind, which farmers and sailors undergo, makes for greater cancer risk.

The more common use of tobacco by men is also blamed by some for the frequency of lung cancer in that sex. The recent increase of this type of cancer among women is attributed to the increased number of women who today inhale tobacco smoke.

It is impossible to say how accurate these opinions are.

Digitized by Google

But they are useful in introducing the general topic of chronic irritation.

Chronic Irritation and Cancer

The various tissues of our body possess to a remarkable degree the ability to resist the harmful effects of physical or chemical agents that tend to upset their proper function. When, however, such irritants are frequently or continuously applied, there are limits beyond which the body cannot go without developing growth of new tissue in an attempt to correct the situation. And there is always a possibility that this new growth will get out of control and become cancerous.

For this reason there are certain general rules that can profitably be followed by anyone who wishes to avoid such irritation.

Mouth, lip, and tongue. Follow the well-known habits of oral hygiene, keeping teeth, gums, tongue, and mouth clean. Exercise proper dental care, having the dentist correct any jagged teeth or ill-fitting plate that might chafe or exert pressure on the tongue, the inside of the mouth, or the gums.

Throat. Avoid eating too hot food.

Stomach. Avoid food or drink that causes any digestive distress. The exact procedure to be followed in this case will naturally vary with the individual.

Intestine and Rectum. Establish habits of bowel regularity. Do not allow hemorrhoids (piles) to continue without being corrected.

Breast. Avoid confining, chafing, or irritating clothing, brassieres, or corsets.

Uterus. See to it that any injuries or tears received during childbirth have prompt and adequate medical or surgical treatment.

Skin. Keep the skin clean and protected from too much exposure to sun and wind.

These rules do not form a guarantee against cancer. But they are valuable as general health measures and certainly cut down the chance of local irritation which often forms the site on which cancer develops.

Among other preventable cancers are those which have a

Digitized by Google

definite relation to certain occupations. Among the groups frequently affected are chimney sweeps, tar workers, dye workers, workers with luminous paints, and mule spinners. In each of these occupations proper protection of the workers can avoid unnecessary contact with irritating substances which otherwise may prove extremely harmful.

Signs and Symptoms Which May Mean Cancer

We should always keep in mind that the chances for success in the treatment of cancer are greatly increased by early diagnosis. This, in turn, is possible only when a person is alert and aware of the signs or symptoms that may mean that a cancerous or precancerous condition is present.

The signs and symptoms are relatively easy to remember. They are, at times, so intimate that they can be recognized only by the person affected.

Consult Your Doctor At Once for . . .

Mouth, lip, and tongue. Any sore that does not heal within ten days to two weeks. Any lump or local thickening. On the tongue persistent white areas, especially in the case of smokers.

Throat. Difficulty in swallowing or hoarseness lasting for more than two weeks, which cannot be explained by a cold or other direct cause.

Stomach and intestine. Distress following eating, especially in those of middle age or older who have not been previously aware of such a condition. Sudden or marked loss of weight without any recognized cause. Distaste for meat. Alternate periods of constipation and diarrhea with no particular change in diet to account for it. In the case of the lower intestine or rectum, the appearance of blood as a rectal discharge or in the stools.

Breast. Any lump, lack of symmetry, persistent soreness of the breast, or colored discharge from the nipple.

Uterus. Any irregular bleeding at any time during life.

Skin. Any lump, or sore that does not heal in ten days to two weeks. Any mole, wart, or wen which develops tenderness, changes its texture, or begins to grow.

Many of these conditions will turn out not to be cancer,

Digitized by Google

but the difference between those that *are* early cancer and those that are not can only be determined by a careful physical examination by a doctor. Generally such an examination should be checked by a microscopic examination.

It is always best to play safe, for early cancer is often, if not usually, painless. This is important.

RESEARCH IN CANCER

CANCER research has changed greatly in the last thirty years. Formerly the meetings of the American Association for Cancer Research dealt chiefly with reports of interesting or unusual hospital cases. The attitude of those concerned was to wait for cancer to appear naturally before they began to study it. Human material was most commonly used. The work was carried on leisurely.

Then with the discovery that mouse-cancer could be successfully transplanted into other mice, the idea of increasing deliberately the supply of cancer available for study began to grow.

Immortality of Cancer

The result was the discovery of what Dr. Leo Loeb has dramatically called the "immortality of cancer." Although the life span of the laboratory mouse seldom exceeds three years, it has been possible by successive transplantations of bits of a single mouse-cancer to keep the cancer growing with undiminished vigor for forty years. There is no evidence that the cancer "ages" or slows down in its rate of growth. The possibility of producing an unlimited amount of cancer tissue from a bit of a mouse which, as an adult, weighed perhaps thirty grams, is certainly present.

Unless infection due to carelessness is introduced, the life of cancer appears to be limitless. We are, therefore, dealing not with a sickly or diseased tissue, but with one which possesses tremendous vigor and power of growth.

Another great forward step was taken when it was found that repeated contact with certain chemicals, notably some of the derivatives of coal tar, irritates the tissues of rabbits or

Digitized by Google

mice and results in overgrowth of the affected area, frequently leading to cancer.

The development of this line of research has been startling and extensive. Today perhaps fifty substances, most of which can be made in the laboratory, can be used to cause cancer. This has opened up fields of research in both chemistry and biology that are still in their early stages.

Genetics and Cancer

Mice have proved to be almost ideal for experimental studies of cancer because in their short life they provide man with a sort of "shorthand version" of his own life history. A mouse a year old is roughly comparable to a man of forty. A mouse two years old is like a person of sixty-five or seventy. One can observe, in a three-year period, the whole span of life of one of these little animals. This saves a vast amount of time, especially as mice of certain strains are very prone to form cancer without artificial treatment of any sort.

Perhaps thirty years ago studies of closely inbred animals showed that after fifteen or twenty generations of brother-to-sister or parent-to-offspring matings a very high degree of biological uniformity is produced. Animals descended from such an inbred line are as like one another as a pair of identical twins.

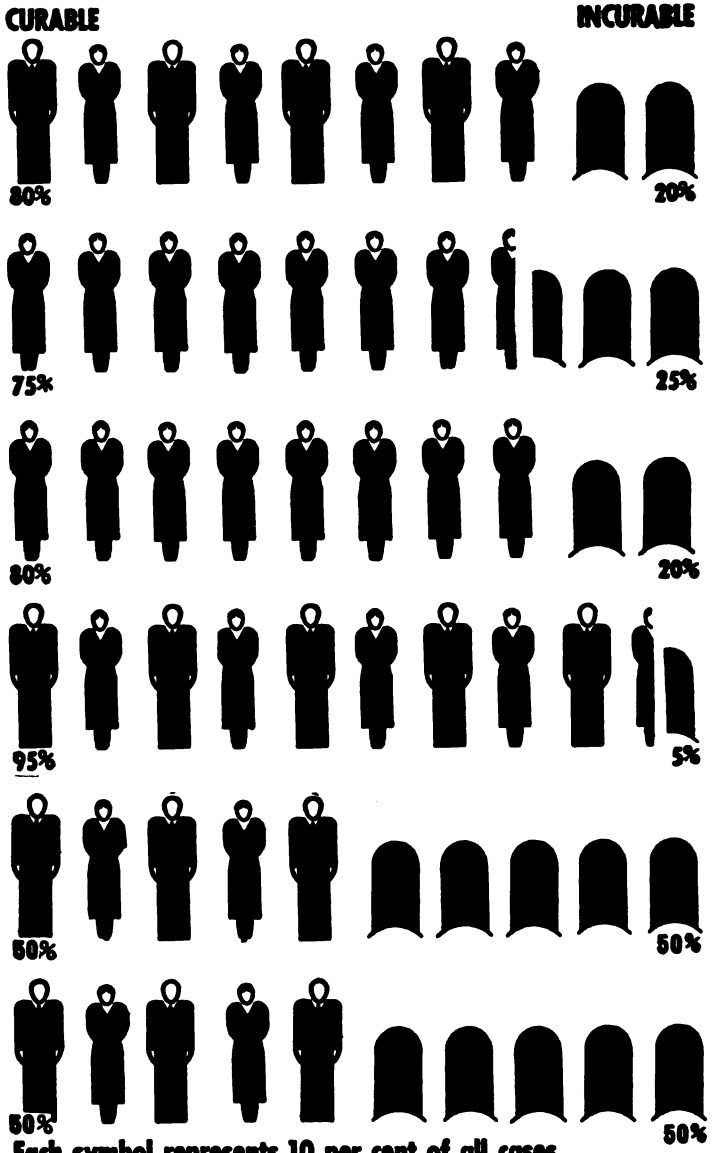
If the continued inbreeding is accompanied by the selection of cancerous animals as parents, a strain can be produced in which 80 or 90 per cent of the offspring develop cancer. If, on the other hand, the selection is away from cancer, strains can be produced in which only 1 or 2 per cent develop cancer.

The biologist has thus been provided with invaluable research material. Today this is being extensively used. The largest laboratory for this purpose is the Roscoe B. Jackson Memorial Laboratory at Bar Harbor, Maine. Here a colony of between 50,000 and 60,000 mice of some thirty inbred strains is used for experiments on cancer and allied subjects and for distribution to other research laboratories all over the United States.

The mice are individually identified and a complicated and accurate system of records follows them throughout their

Digitized by Google

EARLY CANCER IS CURABLE

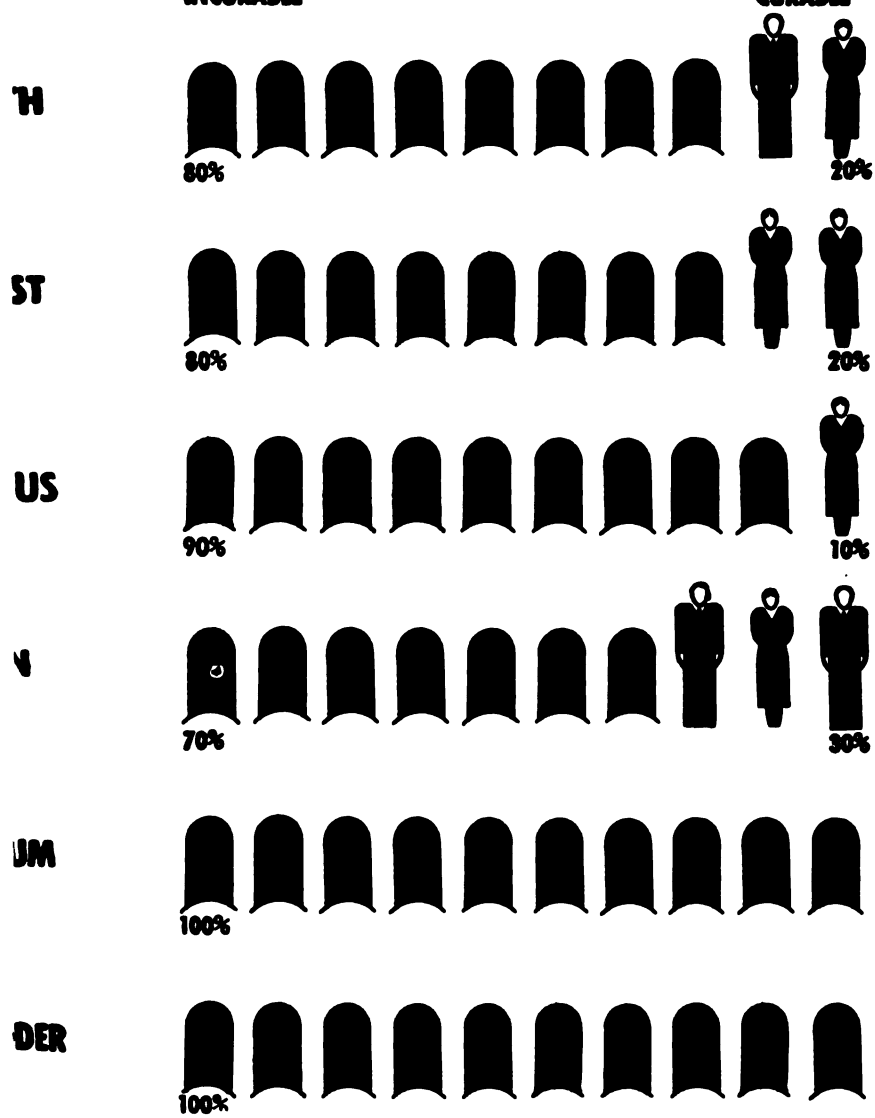


Each symbol represents 10 per cent of all cases

PICTORIAL STATISTICS, INC., FOR PUBLIC AFFAIRS COMMITTEE, INC.

Digitized by Google

RESULTS OF LATE TREATMENT



is "early" if it is taken while the cancer is limited to the particular organ nd has not caused degenerative changes.

Digitized by Google

lives. In some of the strains continuous observation has been practiced for more than a hundred successive generations. This is possible because one can obtain from four to five generations of mice in a year. The advantage gained is obvious.

Heredity and Cancer

Our experiences with mice naturally lead us to ask about the importance of heredity in human cancer. This is far from a simple question.

Pedigrees showing a very marked tendency for certain types of cancer to appear in various families have been recorded in medical literature over many years. It is not, however, clear what the experiences of these exceptional families mean for the rest of us.

The influence of heredity has been easily and strikingly demonstrated in mice. This, however, is largely due to the close inbreeding which serves to intensify and to stabilize the role which heredity plays. A similar condition does not and cannot exist in man. We do not at present know of any specific hereditary factor that leads to cancer.

We are certain that cancer as such is not passed directly from parent to offspring. Heredity does, however, seem to be related to the frequency of cancer in various parts of the body.

This type of inheritance is so complex and so uncertain that it very largely can be forgotten by the individual. In other words, we can sum up the situation as regards heredity and human cancer by the following statement: There is evidence that the tendency to form cancer in man may be inherited, but the tendency is so indirect that *heredity of cancer need not be a source of worry to any person.*

Future research should be carried out to give us additional facts in order that any more definite hereditary tendency to form cancer may be discovered if it exists. We are still in the early stages of the problem.

Tissue Cultures

There are several other fields of research on cancer in which considerable progress has been made. One very important one is tissue cultures.

By the use of a very skillful technique devloped some

Digitized by Google

years ago, it has been possible for investigators to grow cultures of cancer cells outside of the body.

Such cultures can be observed and studied under the microscope much more readily than one can observe conditions inside the living animal. Moving pictures can be easily taken and preserved as a record of the nature and extent of growth. As a result much has been learned about the activity of the cancer cell.

It has been found that these cells can move in the same general way as primitive single-celled animals. This gives the cancer cell a certain power of invasion of surrounding tissues and adds one more quality to the impressive list of characteristics which it possesses.

Chemical Characteristics

One of the most difficult fields of cancer research is that which deals with the internal chemistry of the cancer cell. A living cell is a sort of self-sufficient unit which is able to perform almost miraculous functions.

It can receive through its surrounding envelope food material which it can then transform into substance of its own making. It can store such material until a certain point is reached, after which it begins to reorganize its own material as a dual system which later breaks apart to form from its original substance two "daughter cells" of equal size.

It can give off certain waste products which it no longer needs in order to fulfill its normal functions.

To some extent all of these activities can be measured and recorded. In this way certain general differences between cancer and normal cells have been observed and are being studied. The future development of this phase of research will undoubtedly be great and important as more accurate methods of observation are discovered.

Internal Secretions

The body possesses several glands which pour secretions of a particular sort into the blood. These secretions have in them chemical substances called *hormones*. The importance of such hormones to the development and function of the body

Digitized by Google

in general and of cancer in particular cannot be overestimated.

Among the glands of internal secretion, the sex glands of both male and female have been made the object of extensive study. The relation of the sex glands to cancer is already a matter of recognized importance and forms the basis for much present research.

Having observed that, in mice, cancer of the breast in males is practically unknown, research workers decided to investigate further. Male mice, of a strain in which over 80 per cent of the females developed breast cancer, were operated upon and the male sex glands were removed. Still no cancer of the breast resulted. This, however, might have been due to the fact that in male mice the total amount of breast tissue developed is exceedingly small, so that the opportunity to form breast cancer in that region is not great. Another step was, therefore, necessary. This consisted of transplanting beneath the skin of the castrated males, one female sex gland (ovary) from a sister animal. In many cases the transplanted ovary persisted and grew as though it were still in a female body. In such "feminized" males the breast tissue developed to the same degree as that observed in virgin females. In these "feminized" animals cancer of the breast developed in about the same proportion as that seen in virgin females.

When, however, the same experiment was tried in a stock of mice in which the normal females naturally did not have breast cancer, the feminized males did not produce breast cancer.

Other glands of internal secretion, such as the pituitary, the adrenals, the thyroid, and the spleen, can be removed and the effects on cancer and on the chemical characteristics of the individual can be observed. This type of biological and chemical research is producing extremely significant and important results.

Support of Research

In spite of almost unlimited prospects of progress, the support of cancer research is still painfully inadequate. It may be interesting to mention some of the major organizations and institutions active in this field.

Digitized by Google

There exists an American Association for Cancer Research, a loosely built organization, national in scope. Its governing body is a council to which one member is elected annually for a seven-year term. This Association holds an annual meeting at which papers reporting the results of scientific research are presented. It has strong branches in New York and other cities, and others are being organized.

The United States Government has set up a National Advisory Cancer Council of six appointed members and the Surgeon General of the United States Public Health Service as ex-officio chairman. This Council passes on applications for grants-in-aid for research from various parts of the country. It has at its disposal between $100,000 and $200,000 per year. It also advises the United States Government concerning its own program of cancer research which will chiefly be housed in the new National Cancer Institute at Bethesda, Maryland. A number of research and training fellowships are also recommended by the Council. It also deals with the use of radium and with other clinical topics.

Among state institutions, the one at Buffalo, New York, is outstanding. In addition to caring for cancer patients it has a state-wide diagnostic service, and it carries on excellent research in the fields of biology, physics, and chemistry.

Yale University houses a very extensive and important unit for cancer research. The chief source of funds for this work is the Jane Coffin Childs Fund which, it is hoped, in the future will consist of a capital of some $10,000,000.

The work of Columbia University's well-endowed Institute of Cancer Research is also significant.

Among the more active local centers for cancer research are the Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Maine; the Lankenau Hospital, Philadelphia; the Memorial Hospital, New York City; the Huntington Hospital, Boston; the Barnard Free Skin and Cancer Hospital, St. Louis; and the Strong Memorial Hospital, Rochester, N. Y.

These and other institutions have many problems of importance which, owing to the lack of adequate financial support, await experimental attack.

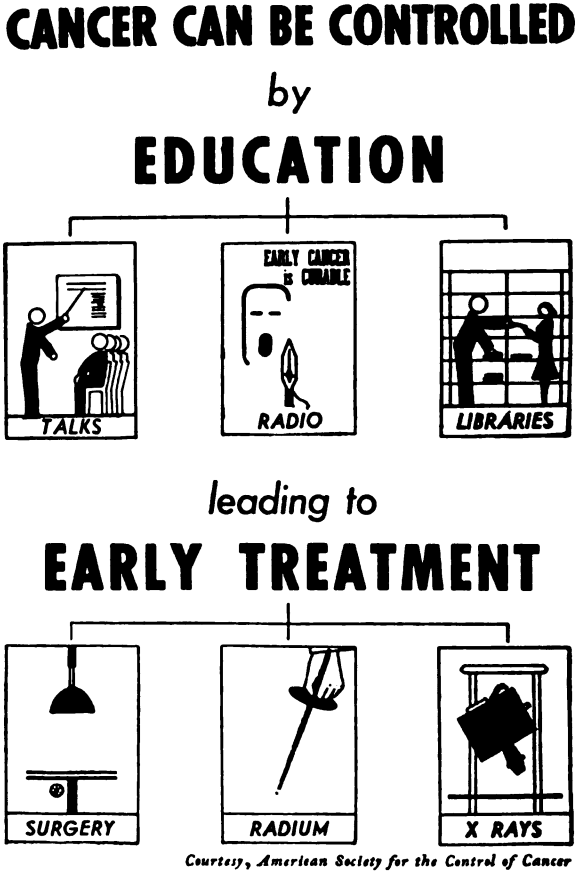
When we recall that approximately a million dollars per year have recently been given by the American public for

Digitized by Google

research in infantile paralysis, a disease that kills only a tiny fraction of the death toll from cancer, we are impressed with the fact that more knowledge of the existing needs in cancer research is called for and it is hoped this will produce increased funds.

EDUCATION

THE third great subdivision of the campaign against cancer is that of education. The reason for this will be apparent to those who have read the sections of this pamphlet which deal with treatment and research.



Courtesy, American Society for the Control of Cancer

Digitized by Google

At first the medical profession itself presented an obstacle to educational efforts. There was among the rank and file of its members a somewhat surprising and serious amount of pessimism. The ordinary general practitioner in a small or medium-sized community sees only three or four cases of cancer per year. These have usually represented advanced stages of the disease and have therefore offered little chance of permanent improvement. As a result of this situation, the profession took a somewhat fatalistic attitude towards cancer. This reaction was, in turn, communicated to the laity and reflected itself in the fear with which the ordinary man or woman viewed the menace of the disease.

The task was, therefore, a double one. It was necessary to change the attitude of the doctors and to provide the layman with such information as he might need to enable him to take part intelligently in the conquest of the disease.

American Society for the Control of Cancer

For these purposes there was organized in New York in 1913 a national body known as the American Society for the Control of Cancer. This today is the one great national organization primarily engaged in cancer education. Its central office is at 350 Madison Avenue, New York City.

For a number of years the Society attempted to organize local branches in various states, but soon found that such branches would be ineffective until the organized medical profession was more active in assuming responsibility. In order to bring this about it was necessary to convince state and county medical societies that early cancer was curable in most cases.

Intensive educational campaigns on cancer of the breast and of the uterus were held on successive years. Literature, films, exhibits, and speakers were provided for many state and county societies. Slowly at first, but with increasing momentum, the profession responded. It abandoned its former pessimism and began to take a new interest in fighting cancer.

Cancer committees of state and county societies began to come into being and continued the educational work among medical men. Through all of this development several medical field representatives of the American Society for the Con-

Digitized by Google

trol of Cancer were moving about the country stimulating and directing the local interests and activity wherever it was desired.

The importance of the cancer committees of the state medical societies cannot be overestimated. In several states excellent booklets dealing with cancer have been prepared by them and have had wide distribution among the profession. These booklets have not only provided the doctors with the latest information on the diagnosis and treatment of cancer but have, by so doing, helped to change their attitude towards the disease.

American College of Surgeons

Perhaps the greatest factor in producing a more cooperative point of view among the medical profession has been the American College of Surgeons. This national organization, with its central office in Chicago, has had a tremendous influence on the establishment of high standards for the personnel and equipment of cancer clinics throughout the country.

A few years ago there was only a handful of such clinics. Today there are more than three hundred. The College inspects them at intervals and places its seal of approval only on those which maintain the standards which it has established.

The educational effect of this has been very great. Intelligent people today demand much more adequate examination and diagnosis in cases of suspected cancer than they did before they had been in contact with well-equipped clinics.

Lay Educational Efforts

Recently, the American Society for the Control of Cancer, having surveyed carefully the development of medical education, believed that the time had arrived for launching a permanent national program for the education of the public on cancer.

The relative increase in the number of older persons in our population has made the control of cancer increasingly more important. A growing general interest in public health, augmented by the Government's brilliant attack on the

Digitized by Google

venereal diseases and by the well-organized "Birthday Balls" in the fight against infantile paralysis, also was of assistance in setting the stage for such a campaign.

Cancer, however, presents certain unique characteristics which affect the type of educational campaign which must be undertaken. Fear is a very important element. Its presence makes necessary an impersonal type of presentation of facts which in themselves are of a highly personal character. Confidence must be created and maintained by giving only accurate information and by rigidly discouraging speculation and rumors, which upset the public and arouse false hopes.

The balanced relationship between surgery and radiology must be understood and used in order to prevent over-enthusiastic exponents of either from attempting to monopolize the clinical field.

The need of careful and accurate physical examination and the ineffectiveness of superficial diagnosis is a delicate matter which requires an intelligent lay opinion to spur the profession to its best efforts.

A set of rules for such examinations, prepared by Dr. Frank E. Adair of the Memorial Hospital in New York,* has proved to be of great value in summarizing the necessary steps. These are as follows:

1. Examine the lips, tongue, cheeks, tonsils, and pharynx for persistent ulcerations, the larynx for hoarseness, and the lungs for persistent coughing.
2. Examine the skin of the face, body, and extremities for scaly, bleeding warts, black moles, and unhealed scars.
3. Examine every woman's breasts for lumps or bleeding nipples.
4. Examine the subcutaneous tissue for lumps on the arms, legs, or body.
5. Investigate any symptoms of persistent indigestion or difficulty in swallowing. Palpate the abdomen.
6. Examine the lymphoid system for enlargement of the nodes of the neck, armpit, or groin.
7. Examine the uterus for enlargement, lacerations, bleeding, or new growth. Make a bimanual examination to determine the condition of the ovaries.

* In *Southern Medicine and Surgery.*

Digitized by Google

8. Examine the rectum, and determine the cause of any bleeding or pain.
9. Examine the urine microscopically for blood.
10. Examine the bones and obtain an X ray diagnosis of any bone which is the seat of a boring pain, worse at night.

The effect of inadequate examination is often tragic. In large hospitals scarcely a week goes by without the record of advanced cancer cases, the early detection of which was missed by hasty or superficial examination leading to a false sense of security and, therefore, to delayed action.

Cancer education must also be tactful. In many types of the disease the danger signals are matters of the greatest intimacy. Only the prospective patient can recognize these danger signals and must, therefore, be the person to report them. In several sites, such as the breast and the uterus, a sense of false modesty may prove to be an ally of death.

There is also a need for repeated or, in fact, of continuous contact with educational material. New groups of individuals are constantly reaching the age at which the danger of cancer increases. For these as well as for those already in the more dangerous age groups, eternal vigilance is the price of freedom from unnecessary risk. Patience and attention to what may seem to be unimportant details are necessary for successful cancer education.

For all these reasons it seemed that women, who are the chief sufferers from cancer, should be the leaders of a continuing educational campaign.

The American Society for the Control of Cancer, in reviewing possible national organizations of women which might be used for this purpose, found several that were promising. The General Federation of Women's Clubs was the largest and most prominent, but the American Association of University Women, the National Federation of Business and Professional Women's Clubs, the nursing organizations, the medical auxiliaries, the various religious groups and others were also important.

All of these have been interested and enlisted in the fight to cut the death rate from cancer.

In addition to discovering the origin and nature of differ-

Digitized by Google

ent types of cancer and preventing their occurrence, these groups are working to obtain the best treatment available for every cancer patient. This must be achieved regardless of the patient's means or the stage and nature of the cancer. It can be attained only by the organized cooperation of public and private agencies, both individual and organized.

The Women's Field Army

The active interest of existing organizations, although of great value, was not enough to insure the development of a sufficiently comprehensive and versatile campaign against cancer. Some particular organization was very definitely needed. For that purpose the American Society for the Control of Cancer created, as a part of its activity, a national body of women known as the Women's Field Army Against Cancer.

The main objective of this group is the education of lay persons, especially women, concerning the danger signals of cancer; what to do about them and what the outcome of prompt action may be. In order to accomplish this result most successfully an enlistment campaign is conducted annually in April. During this campaign as many persons as possible are asked to join the Field Army.

Membership is a dollar, of which seventy cents are retained by the state in which the enlistment was made, to be expended there under a budget prepared and administered by the state unit of the Women's Field Army. The other thirty cents come to the National Society to be used by it in the planning and preparation of educational material, the conduct of national publicity concerning the Field Army, and the salaries and expenses of its field representatives who largely are engaged in Field Army activities.

April was picked as the best time for the enlistment drive after conferences with leaders in the cancer control movement all over the country. It was felt that the spirit of sacrifice and of newly aroused hope attendant upon the Easter season naturally lent itself to the development of the proper attitude of the public towards the cancer problem.

The value of April as the focal point of the campaign was materially strengthened and established by the action of Congress which definitely designated that month of each year as

Digitized by Google

Cancer Control Month and authorized the President to issue a proclamation to that effect.

There have been three annual enlistment drives of the Women's Field Army. Each has shown an encouraging growth and extension of activity and interest. There are today approximately 135,000 women actively interested in this work.

Forty-six states and the District of Columbia have divisions of the Field Army under volunteer leadership of public-spirited and able women who have seen and accepted the opportunity and responsibility which the situation offers.

The form of a military organization adopted by the Field Army has been enthusiastically accepted by the vast majority of those contacted. It has been possible to show that the active fight against such a great menace as cancer requires the same qualities as those needed in any great war with a powerful enemy.

The American Society for the Control of Cancer as the parent organization is studying carefully the various problems presented in different parts of the country, and is attempting to develop a consistent and well-integrated plan of attack. It has recently consulted the commanders of state divisions and the medical chairmen of executive committees, under the direction of which each unit operates, to find out the attitude of state units on the following lines of activity:

1. *Adult education.* It is urged in every state that the program of adult education be continued and extended. The press, radio, motion pictures, meetings, and individual contacts can all be used to advantage. Steps must be taken not only to introduce the topic to interested individuals, but to maintain interest.
2. *Education in schools.* A program of talks on cancer in the junior and senior high schools as well as in colleges is extremely important. High school students can receive cancer information logically and impersonally, perhaps as a part of a general course on science or biology. Special emphasis is placed on the natural incidence of cancer and its biological nature as a growth process. An indirect effect of informing students is that their parents at home receive valuable educational material.
3. *Following up hospital cases* after treatment for cancer to determine what becomes of them is an important function,

Digitized by Google

at present largely neglected but which can be fulfilled by members of the Women's Field Army.

4. *Preparation and financial support of educational exhibits* with models, charts, and illustrations to be placed in high schools, colleges, museums, and large hospitals.
5. *Cured cancer clubs.* The organization and maintenance of clubs made up of persons who can present adequate evidence that they have been treated for and have subsequently remained free from cancer for at least a five-year period is an important educational adjunct to the other work.
6. *Periodic health examinations.* The encouragement of periodic health examinations and the building up of organizations to make such examinations more general among women is a splendid objective for Women's Field Army units. Many thousands of precancerous conditions and of cancer cases might be promptly detected and receive early treatment should this objective be attempted.
7. *Educational motion pictures.* Assistance in preparing material for and in creating educational motion pictures dealing with research, treatment, and education in cancer control is an important need and can be greatly facilitated by cooperation of Women's Field Army units.
8. *Recognition.* Adequate recognition by some type of decoration in the case of women who by their activity have educated and so saved the lives of others is encouraged.

In addition to these objectives there is, in some states, very definite pressure to make the members of the Women's Field Army units take up some practical and definite work in connection with the aid of indigent cancer patients. Wherever this is encouraged, care is taken to make sure that the State Medical Society favors not only the general project, but the detailed way in which it is being carried out. In no case is such activity allowed if it is contrary to the expressed agreement of the medical profession.

The following objectives have been found to be of interest in this connection:

1. To make available funds for the transportation or care of indigent cancer patients under the direction of the medical profession.
2. To purchase surgical or radiological equipment or supplies for hospitals or clinics approved by the American College of Surgeons.

Digitized by Google

3. To raise funds for the support of clinics, hospitals, or other cancer control units.

What You Can Do

If the brief summary of facts on cancer control which this pamphlet contains has aroused sufficient interest so that you wish to do your part in the conquest of this disease, there are certain very definite steps which you can take without delay.

First, write to the American Society for the Control of Cancer, 350 Madison Avenue, New York City, and free literature will be sent to you.

Second, get in touch with the division of the Women's Field Army nearest to where you live, familiarize yourself with its program and participate in it.

Third, learn the signs and symptoms that may mean cancer and the suggested rules of hygiene which, if followed, diminish the likelihood of its appearance. Act on both of these and spread information concerning them to others.

Fourth, establish the habit of obtaining regular periodic physical examinations at intervals of one year or less.

Fifth, organizations doing research in the field of cancer and institutions offering approved types of treatment deserve your support. If you join the American Society for the Control of Cancer you will receive its monthly *Bulletin* which will keep you up to date.

Remember above all that whatever effort you make may save not only the life of someone dear to you, but your own.

FOR FURTHER READING

Books

Curie, Eve, *Madame Curie.* New York, Doubleday, Doran & Company, Inc., 1938

Editors of Fortune Magazine, *Cancer: The Great Darkness.* New York, Doubleday, Doran & Company, Inc., 1937

Little, C. C., Sc.D., *Civilization Against Cancer.* New York, Farrar & Rinehart, Inc., 1939

Tobey, James A., P.H., *Cancer: What Everyone Should Know About It.* New York, Alfred A. Knopf, 1932

Digitized by Google

Articles

Ferguson, Russell S., M.D., "When Cancer Is Not Guilty." *The Reader's Digest.* New York, October, 1939

Marcosson, Isaac F., "The Cured Cancer Club." *The Reader's Digest.* New York, September, 1939

The two articles in *The Reader's Digest* have been reprinted together and may be secured from the American Society for the Control of Cancer.

Ratcliff, J. D., "War On Cancer." *McCall's.* New York, July, 1939

"The Truth About Cancer." *Look Magazine.* New York, April 11, 1939

Pamphlets

The following pamphlets just issued or revised in 1939 by the American Society for the Control of Cancer are suggested: (Single copies free. Prices on quantity orders upon request)

What Everyone Should Know About Cancer. A comprehensive summary of essential facts, 22 pages.

Answers to the Public's Questions on Cancer. Replies to 76 questions most frequently asked by laymen, 12 pages.

Cancer And Its Care. Handbook for nurses, revised in 1939, suitable for those desiring clear, technical information, 48 pages.

Cancer Periodicals

Quarterly Review of the New York City Cancer Committee of the American Society for the Control of Cancer. New York City Cancer Committee, 130 East 66th Street. $1.00 a year. Articles for the lay reader.

National Bulletin of the American Society for the Control of Cancer, 350 Madison Avenue, New York, New York. $1.00 a year. Articles for lay and medical readers on recent progress in cancer control.

Digitized by Google

THIS pamphlet is the 38th of a series published by the Public Affairs Committee. The other titles available are listed on the back cover.

A million and a half of these pamphlets have been sold. Busy men and women are finding them valuable time-savers in keeping up with important questions of the day.

You may subscribe to the pamphlet series, as you would to any magazine. For $3 you may have 36 issues, and for $2 any 24 consecutive issues. Those that have been published will be sent immediately, and the balance as they appear monthly.

The publication of the Public Affairs Pamphlets is one of the activities of the Public Affairs Committee, whose purpose as expressed in its Constitution is "to make available in summary and inexpensive form the results of research on economic and social problems to aid in the understanding and development of American policy. The sole purpose of the Committee is educational. It has no economic or social program of its own to promote." The members serve in a personal capacity and not as representatives of their respective organizations. Publication of a pamphlet does not necessarily imply the Committee's approval of the statements or views contained in it.

The Committee

Robert P. Lane, Chairman
Lyman Bryson, Vice Chairman
S. M. Keeny, Secretary
Luther Gulick, Treasurer
Raymond Leslie Buell
Frederick V. Field
William F. Foster
Harry D. Gideonse
Francis P. Miller
Felix Morley
George Soule
Ordway Tead

Maxwell S. Stewart, Editor of the Pamphlet Series
Caroline C. Rounds, Assistant Secretary
Marion Humble, Educational Publicity

All rights reserved. No part of this pamphlet may be reproduced without permission, except short passages of no more than 500 words in length, which may be quoted by a reviewer or commentator, with full credit to the Committee. For permission to use longer excerpts, write to the Public Affairs Committee, Incorporated, 30 Rockefeller Plaza, New York, N. Y.

First Printing, December, 1939

Printed in the United States of America

Digitized by Google

Digitized by Google

PUBLIC AFFAIRS PAMPHLETS

INCOME AND ECONOMIC PROGRESS
SECURITY OR THE DOLE?
CREDIT FOR CONSUMERS
THE SOUTH'S PLACE IN THE NATION
THE SUPREME COURT AND THE CONSTITUTION
THIS QUESTION OF RELIEF
RESTLESS AMERICANS
DOCTORS, DOLLARS AND DISEASE
FARMERS WITHOUT LAND
COLONIES, TRADE AND PROSPERITY
SAVING OUR SOIL
WHY WOMEN WORK
HOW WE SPEND OUR MONEY
CAN AMERICA BUILD HOUSES?
YOUR INCOME AND MINE
YOUTH IN THE WORLD OF TODAY
INDUSTRIAL PRICE POLICIES
BEHIND THE SYPHILIS CAMPAIGN
MACHINES AND TOMORROW'S WORLD
HOW GOOD ARE OUR COLLEGES?
WHO CAN AFFORD HEALTH?
OUR TAXES—AND WHAT THEY BUY
AMERICA AND THE REFUGEES
SCHOOLS FOR TOMORROW'S CITIZENS
TOWARD A HEALTHY AMERICA
COOPERATIVES IN THE U. S.
THIS PROBLEM OF FOOD
WHAT MAKES CRIME?
JOBS AFTER FORTY
DEBTS—GOOD OR BAD?
STATE TRADE WALLS

For quantity rates and list of new titles write:

PUBLIC AFFAIRS COMMITTEE, INC.

30 Rockefeller Plaza New York, N. Y.

Digitized by Google