CANCER AND THE WORK OF THE NURSE

IN PREVENTION OF CANCER

IV.

Vera Wallace

BIBLIOGRAPHY.

I.CANCER--WHAT EVERY ONE SHOULD KNOW ABOUT IT -BY JAMES TOBEY.

II.HUMAN CANCER -A.P.STOUT.

III.PUBLIC HEALTH IN UNITED STATES-MOORE.

IV.PAMPHLET ON THE PREVENTION OF CANCER -JAMES EWING.

V .PAMPHLET ON THE FOLLOW-UP SERVICES OF LANKENAU HOSPITAL .

VI.CANCER AND ITS CARE ,-- J. EWING, AND EDITED BY THE AMERICAN SOCIETY FOR THE CONTROL OF CANCER.

VII. CANCER MORTALITY STATISTICS IN THE UNITED STATES.1931.

VIIIJOURNAL OF THE MISSOURI STATE MEDICAL SOCIETY,MARCH 1935.

IX .JOURNAL OF THE MEDICAL ASSOCIATION OF GEORGIA ,NOV. 1934.

X .CANADIAN MEDICAL ASSOCIATION JOURNALS.

XI.ALL THE CANCER BULLETINS FROM JANUARY 1930- PRESENT DATE.

XII.CANCER RECORD OF1932- FREDERICK HOFFMAN , L.L.D.

XIII. THE JOURNALS OF THE AMERICAN MEDICAL ASSOCIATION.

XIV. AMERICAN JOURNAL OF SURGERY .FEB. 1935.

XV .IMPORTANT FACTS FOR WOMEN ABOUT TUMORS. AMERICAN SOC. FOR THE CONTROL OF CANCER.

XVI.CANCER OF THE BREAST. G.W.TAYLOR M.D.F.A.C.S.,BOSTON.

XVII.RECENT LITERATURE ON MALIGNANT TUMORS OF THE UTERUS. GARDNER AND FINOLA,CHICAGO.

XVIII.INTERNATIONAL NURSING REVIEW, MAY 17,1935, QUALITIES OF P.H.N.

XIX.PUBLIC HEALTH BULLETIN,MARCH 26,1935.

XX. AMERICAN JOURNAL OF CANCER .THIS YEARS COPIES&DEC.1934.

XXI.BRITISH JOURNAL OF RADIOLOGY ,APRIL ,1935.

XXII. JOURNALS OF NURSING.

BIBLIOGRAPHY.

continued.

XXIII. JOURNAL OF THE MEDICAL SOCIETY ,NEW JERSEY,NOV.21,1934.

XXIV . HYGEIA ,ODD COPIES.

XXV . ORGANIZATION OF A TUMOR CLINIC IN A GENERAL HOSPITAL, BY GEORGE PACK,NEW YORK MEMORIAL HOSP.

XXVI TRANSILLUMINATION OF THE BREAST, MAX. CUTLER. CHICAGO.

XXVII .LETTERS AND PLANS FROM THE NASSAU TUMOR CLINIC, NASSAU COUNTY , NEW YORK.

XXVIII. DIFFERNT LETTERS ON CANCER WORK FROM THE AMERICAN SOCIETY FOR THE CONTROL OF CANCER AND MANY PAMPHLETS FROM THEM.

CONTENTS

CANCER AND THE WORK OF THE NURSE,

IN

THE PREVENTION OF CANCER.

INTRODUCTION.

What is Cancer? What is the cause of Cancer? What should the nurse know about cancer for her part of the work?

Cancer is a growth of cells which have embarked on a career of reckless and ungovernable growth, according to W. Woglum M.D.*[1] Cancer cells unlike normal cells, keep on growing while normal cells cease growing when their function of healing is performed. As the cancer grows ,it contacts a blood vessel wall or lymph channel and the vessel wall breaks. The cells enter the blood or lymph stream and are distributed throughout the body. When the unruly cells reach a point where they cannot go on, they start growing in this location giving rise to tumors or metastases, or they may touch a nerve and cause pain or touch a free surface like the stomach and produce an ulcer.

C.C.LittleM.D.[2]*says that cancer is actually an active and assertive area of the individual in which it occurs and is not an invasion from without by a foreign body. Cancer is more or less biological and not so much pathological.

*[1] American Journal of Nursing,May 1930
*[2] Bulletin of the Amer.Soc. For The Brevention Of Cancer ,Feb./31

Cancer, A.P.Stout M.D.* describes in much the same way as does Dr. Woglum does and says this theory has been generally accepted as such. Dr. Stout has found cancer to be preceded by a relatively long duration ,during which all cells are acted upon by something associated with a process of chronic irritation which results in cellular hyperplasia. The affection is first of local and of invasive nature. The cells are carried to distant regions where they become reimplanted and continue to grow. The invasive growths then reproduce the tissues from which they come but in a more or less atypical fashion.

*Human Cancer, A.P.Stout.

CHAPTER 1.

HISTORY OF CANCER.

The history of cancer is interesting, especially as Burton Lee M.D.* gives it. Long before medical history was written, pathological lesions, including tumors on the fossil bones of extinct animals, were recognized among pleistocene mammals in the cave mammals of Europe. In the "Mesoic Age", the age of reptiles , bones of monosaurs, of dinosaurs and of others of that type, show lesions resembling forms of osteosarcoma and hemangioma of the bone. Later malignant and benign tumors in the soft spots of the bone were discovered, and thus we see that cancer is older than prehistoric man.

In the "Ebers Papyrus", Circa 1500 B.C. the earliest known medical journal, a reference is made to tumors and in 800 B.C. in Nineveh, cancer of the breast is described . Again in 520 B.C. Democedes mentions a cure of the breast by a city physician in Athens; therefore there were public health doctors nearly 3000 years ago and the people realized the need of the services. Hypocrates, the father of medicine employed the terms cancer and carcinoma and described the use of cautery for a reccurrent cancer of the neck. In the time of Christ, Celsus gave his valuable contribution to the work by devising a plastic operation for the lip and performed an operation for cancer of the breast. These same operations are still being done and we can realize the progress these early physicians made in the study. Galen 131*

* Bulletin of The American Society For the Control of Cancer, Aug, 1933.

203 A.D., worked on the theory that cancer was caused by four internal secretions and he also advised surgery for the disease, and classified tumors.

Until the fourteenth century, little more was done . France had prohibited surgery and a man with an incurable disease lost his franchise as well as his life. Guy de Chauliac used cautery instead of surgery. Caxton , in the fifteen century gave us our printing press which helps us now in preventive work, and in the sixteen century, the microscope was discovered and this has aided the study of tumors and cellular construction greatly.

In the nineteenth century cancer work took a new phase. Research work and discovery of new aids took place. Müller , the founder of cellular pathology and student of histology of tumors progessed in his work due to the achromatic microscope which Silligues had invented in Paris in 1824. Virchow contributed to the studies with his books, "Die Cellular Pathologie and Die Krankhaften". Greater still in the latter part of the century were the discoveries of the X-Ray by W.C.Roentgen in 1895 and the radium by Marie Curie in 1898. In th X-Ray a new means of discovery was found , and a new means of treatment in the radium and the work was followed along these lines in the twentieth century by men like James Ewing of New York , in his descriptive pathology of tumors and the Neoplastic Diseases, discussed as to radiosensitivity.

One other seems worthy of mention here and that is Yamagiwa of the Tokyio Imerial University who died in 1930. The studies in coal tar cancer and in inducing cancer in the ear of the rabbit , by Yamagiwa seem to promise some results in this cancer study.

Dr. Bandaline*tells us that the first cancer hospital was founded by Jean Godinot in France, in 1740, equipped with twelve beds, which was later moved to La Buerie and attached to the Hopital St. Louis, in 1779. The people had objected to a cancer hospital .In England the first work in cancer was done by the Middlesex Hospital in 1791, and this Cancer Charity has become very famous. The first institution for cancer in The United States was sponsored by Benjamin Franklin in 1751, before the work in England and the work is still more rapidly progressing here under capable men who carry on as soon as conditions allow. Some of my nursing experience has been at "The Memorial Hospital for the Treatment of Cancer and Allied Diseases", in New York."The Barnard Skin and Cancer Hospital" of St. Louis, Missouri and"The Pondville Hospital"at Norfolk Massachusetts are dong excellent work, as is the Lankenau Hospital of Philadelphia and many others and many of the American universities are taking up this work.

Cornell University is affiliated with "The Memorial Hospital", New York and this offers an excellent opportunity to students who might wish to go further in the study of the disease, because this hospital has the average number of patients and has the latest and fullest equipment for the work.The Institute of Cancer Research Work , at Columbia University is doing considerable research work and much the same type of work is being done by the Cancer Commission of Harvard Uni-

* Bulletin of The American Society fo the Control of Cancer ,Nov./31

versity, Hospital and Laboratory, Boston Massachusetts. The Cancer Institute of the University of Minnesota has a hospital of fifty beds and an out patient department and these are ones of which the work has interested many people.

Tumor Clinics are being started in many places and are carrying on the work with other organizations, as is the Nassau Tumor Clinic in Nassau County, New York State.Later I shall discuss the work of some of these organizations but now it is interesting to tell of the work in other countries. J. Spies M. D.* gives a history of foreign work. In France , in 1842 the Association of the Ladies of Calvary, at Lyons took up cancer work and in 1908 the French"Association for the Study of Cancer", too, became interested.Ten years later the Franco- Anglo- American"League for the Control of Cancer"was started, and in 1919 the Radium Institute , as part of the famous Pasteur Institute did its part. In 1921 the City Council of Paris created services of radium therapy and in 1922 the Governmant organized cancer centers. A select group of medical men were chosen by the Government to assume responsibility for diagnosis and the application of proper therapy. X-Ray and radium was placed in the centers and France has reaped many benefits.

Belgium adopted the French System in 1924, and with 95% of the annual output of radium , of the world, coming from Belgium, there is an excellent chance there. Besides the radium output, the four medical schools have each an official center for cancer

*Bulletin of the American Society for the Control of Cancer,Nov./31

and the fifth is connected with the Brussels Surgical and Radiological Institute, which started as the Red Cross Center. Each center must have a complete surgical service and radiological department laboratory. A yearly expense report and a yearly inspection by government officials is made. People are urged to go to these centers for treatment and Provincial Assemblies vote credits of money.Universities are held responsible for the appointment of the directorate and selection of important personnel and acquisition of an ample physical plant (that ia the site and bedspace). A surgeon, a pathologist, a physicist and an internist are to form the nucleus of the organization. Small diagnostic clinics were maintained in places supported by local means , and from these centers, they were sent to the cancer center for diagnostic confirmation , for treatment and for study. Cases were also followed by nursing associations and organized charities and some of these are ; the Red Cross, the Departments of Public Health and somtimes the League Against Cancer. One phase which stands out , is the system of the Providentia Insurance Company , in the way it pays a small amount annually for an examination of its policy bearers , at various intervals. The members afflicted with cancer have been allowed to select their own physician and hospital and the charges are paid by the insurance company.

There are two university cancer centers in Belgium , the one at the University of Louvain with a completely centralized system and a director for its head. The new medical school is

built around the Institute. The university of Brussels has a different method, in that a professor of surgery, a professor of pathology and one of radiology form a triumvirate which heads the official center alloted to the university and whose plant is part of the municipal hospital. The patient remains under the charge of the head of the municipal hospital from which he comes, while he is treated at the center.

England attacks the problem of cancer from the angle of surgery, pathology and investigation and research. The Cancer Free Hospital, of the Department of Cancer, of the Middlesex Hospital was one of the first interested in the work. In 1900 the Royal College of Surgeons and the Royal College of Physicians created the Imperial Cancer Research Fund. In 1921, work with radium became accepted and in 1923, the British Empire Cancer Campaign stimulated the interest in this cause. In 1924 the London Association of the Meical Womens Federation appointed a Cancer Research Committee. The next great move was in 1928, and radium was bought by England and her colonies as a thanksgiving offering for the recovery of King George and with this money special cancer departments were created in some of the oldest hospitals in England. The International Conference on Cancer which was held in London in 1929, helped stimulate the people and authorities to do further research and treatment.

Germany since 1900, has done more in research and in teaching physicians and lay people than she has in doing work with radium , because of money shortage. Nurses and midwives have been taught so that they may inform the people of the early

manifestations of cancer and have taught them to consult a doctor as early as possible. The Cancer Institutes of Hambourg and of Heidelburg are for research only. The radium supplies are meager so the Berlin Institute uses Mesothorium because it can be manufactured in Germany. The X-Ray equipment is comparatively adequate and the government appropriates small amounts of money for the work,,as well as placing representatives on the"Central Committee For The Control Of Cancer".Lately the Reichstag has been planning for cancer organization and a means of securing and allocating radium.

Sweden has a program for caring for cancer patient and for trying to make perfect the details of a splendid organization. The Radiumhemmet in Stockholm, which was founded in 1910, has been famous for its work. The professor who started this cancer center turned over the work to Stockholm. Now the government pays the fares of the poor , to the Radiumhemmet , so that all may receive the proper care. In 1924 , laboratories for research and physics were started and now form a part of the medical school, in a clinic of radiology. In this clinic accurate statistics have been available and this has has needed for knowing the percentage of cures and what has been done along the work. The University of Lund is also doing its best for cancer and the work is all being helped by the King.The state and medical schools seem to be all doing well in cancer studies and actual work.

We see from the preceding chapters , the need of cancer studies and work is being more realized every day. So far , Cancer comes second highest as the known cause of death and

little do we know how much higher the rate might be if statistics were accurately kept and if cancer were made notifiable. Dr. C. C. Little tells us that one in every seven , over the age of thiry, dies of cancer and tht cancer should be notifiable. Dr. Voegtlin*[1] P.H.D Chief of the Division of Pharmacology in the United States Public Health Service , says that cancer is one of the most important problems just now and that 100,000 people die in the United States each year from cancer. Just here it seems appropriate to mention the stress which Haven Emerson M.D.*[2] places on the indispensability of cancer case statistics , in saying that an intelligent understanding of the social or demographic experience with any particular disease or cause of death , as distinct from its personal and cellular , or biochemico- physical manifestations, requires at least three kinds of factors expressed in what is called statistical terms namely:

(1)- Deaths in Relation to Population, called Death Rates.

(2)- Cases in Relation to Population , and this is called Case Incidence Rates.

(3)- Deaths in Relation to Cases and this is called Mortality Rates.

Dr. Emerson says further that if such rates are availablr for a population group for a period of time , on the basis of total population or total cases, it is possible to learn whether changes in these gross rates are occurring, suggestive of increase or decrease in loss of life from the disease or its incidence or severity. After determining these changes the information is broken

*[1] Bulletin of the American Soc. For The Control Of Cancer, Feb./34.
*[2] Bulletin of the American Soc. For The Control Of Cancer, Jan./34.

down into more exact fractions , by using populations groups limited to a certain age period, one or other civil state or race or occupation by which means the selective distribution of either the disease itself or the deaths from it is disclosed. Then the age or death rates are calculated.By going further the difference between fatality of cancer at different stages of clinical recognition , or with or without operative treatment or before and after educational methods to persuade people to avail themselves of early diagnostic and treatment services may be distinguished .

The Death Certificate could be more complete and accurate and state fully that the patient had cancer and that the outcome was death. Better statistics do come from cancer clinics and from the clinics and hospitals should be reported to central offices, that is of centers of official health agencies or to local cancer societies. The way the statistics might be arranged is as follows:

(1)- For-Death Rates:

The ratio of all cancer deaths in the year to the population is usually expressed as the number of deaths per 100,000 of the population.There must be an adjustment to the standard million population for age and sex, and corrected for non residence, for state rates , for urban and rural rates by the eighteen age groups , by rates for male and female , for white and colored, for occupation and anatomical site or cyrological characteristics.

(2)-For General Cancer Incident Rates:

The ratio of cases of cancer diagnosed to the population is usually expressed as cases per 100,000 of the population and corrected for non residence and adjusted for age. There is no chance for national bases yet, but where incidence is learned by a state-wide clinic service or from the experience of a group of physicians or from hospitals through voluntary exchange, the same kind of rates might be possible as under the death rates.

(3)-For Case Mortality Rates:

The deaths from cancer are for each 100 cases of cancer known of and is usually expressed as per cent. These rates are taken from where there are known a particular series of cancer deaths have occurred; they can then be calculated from records of clinics, of hospitals and of individual surgeons.

While we are discussing statistics and cancer needs, it would be well to stress the importance which Dr. Voegtlin gives to the fact that cancer claims each year in the United States the large number of 100,000 victims and that this number is increasing. Cancer is therefore becoming one of the most important public health problems and the public health nurse is bound to take part in this work. Later this will be discussed. Cancer work is progressing more favorably as the need is understood and will continue so as soon as the lay people are given the necessary information and instruction and the public health nurse will be able to do her share.

CHAPTER II

THE CLASSIFATION OF CANCER.

The Classification of Tumors seems necessary for any one interested in cancer work and especially for nurses , so that the nurse may know the particular tumors which affect the different parts of the human body.J. Ewing says that a wholly satisfactory classification of tumors is not possible and that the most useful one is that one based on cellular structure, the tumor being named according to the tissue which it most resembles. Many classifications have been given and the one which James Ewing gives in " A Handbook For Nurses", seems to cover the needs and a few explanations by Dr. A.P.Stout , given in his "Human Cancer" gives sufficient information for any work the nurse may do.Lay people are constantly asking what certain terms mean and a simplified classification is just as useful to them and is as follows.

Classification of Tumors.

1. Connective Tissue Tumors.
   A- Benign.
      (a) Fibroma- This tumor is composed of fibrous tissue in various parts of the body, is composed of adult cells and has collagen and argyrophile reticulin fibres . These tumors are seldom found attached to sheaths or incapsulated and often are found where glands of the glands of the skin are surrounded by the fibrous growth due to injury or scar tissue.

      (b) Chondroma-These tumors are composed of auricular cartilage and are less common in occurence but are common to joints, to breast and to the nasal cavity, and are neoplastic and destroy bone growth.

      (c) Osteoma- These tumors are composed of bone and are more common than chondromas, and occur in all parts of bone , the orbit , nasal, maxilla and the mandible.

(d) Lipoma- A common tumor , not always incapsulated but composed of fibrous tissue and they are found in skin and subcutaneous tissue, and they grow to an enormous size either single or multiple fatty tumors . When malignant these tumors become fibrosarcoma , mysosarcoma and lipo-sacomas.

B-Malignant

Sarcoma- This is a cellular tumor composed of any connective tissue cells in disorderly arrangement.

ll. Muscle Tissue Tumors

A- Benign

(a) Myxoma-These tumors are composed of smooth muscle tissue and are related to the fibroma and are characterized by the occurrence of mucous material in the intracellular spaces, in large quantities and they cause a widespread separation of the cells and the tenuous collagen fibres which are present. These tumors grow slowly.

lll. Epithelial Tumors

A- Benign

(a) Papilloma- These tumors are composed of surface epithelium and are little raised rough spots or warts in the epithelium. These papilloma may be anywhere and wherever they may be rubbed or irritated, they need close watching.

(b) Adenoma- These tumors are composed of grandular epithelium and may be found anywhere in the epithelium.

B-Malignant

(a) Epithelioma- composed of squamous epithelial cells in disorderly arrangement.

(b) Carcinoma which are composed of glandular epithelial cells in disorderly arrangement and may be anywhere in the body , even in the lungs and here they are hard to detect because they act like so many other diseases which attack the lungs.

lV. Endothelial Tumors

A- Benign

(a) Hemangioma .These tumors are composed of blood vessels and arise from the sheaths of blood vessels, the femoral, the carotid, the axillary , the popliteal and the heart. These are the tumors which cause the frequent hemorrhages, especially in the throat.

(b) Lymphangioma- These tumors are composed of lymph vessels and are in all parts of the body.

B-Malignant

Endothelioma -This tumor is composed of endothelial cells in disorderly arrangement , this attacks the lining membranes as the serous , the pleura, the synovial and other internal surfaces. The brain tumor is the one which develops in the pia mater and altogether this type is quite prevalent.

V.Pigmented Tumors

A- Benign

Nevus- This is a pigmented mole. If this is the blue type, often it becomes cancerous. Some of these moles are never malignant but they are usually of a lighter colored type.Any change of color or size or ulceration is very dangerous and needs close attention.

B-Malignant

Melanoma- This is a pigmented tumor derived from moles, which is more like carcinoma than sarcoma and extends into adjacent lymph nodes and some authorities even believe they are of epithelial origin.

Before leaving the classification of tumors it would be better to state that all tumors or new growths are divided into the two groups, benign and malignant as we see the above gives. Th benign ones are comparativey harmless most authorities state, and are self contained and grow slowly. Benign tumors slowly invade adjacent parts. Malignant growths grow into the tissues about and may destroy the tissue and they are dangerous in any part of the body. The benign tumors are dangerous in any vital organ of the body, Malignant tumors are called cancer .

The terms Carcinoma and Sarcoma seem to cause discussion and nurses and lay people commonly ask the meanings, as well as the differentiation. Carcinoma in its limited sense means

a malignant new growth of epithelial of gland cells infiltrating the surrounding tissues, according to the definition given in "Stedmans Medical Dictionary";while Sarcoma is a tumor usually highly malignant, formed by proliferation of imperfectly differentiated cells of the vegetative or the embryonic type- is a malignant connective tissue neoplasm of the muscles and no one can really say from where they come because so many tissues are involved in its infiltration.

CHAPTER III

PROGNOSIS FOR CANCER.

The prognosis and curability of cancer seems to come next in thought and James Ewing M.D. says that to a great extent cancer is a curable disease, and that the disease depends for its cure either upon its removal from the body or the destruction within the body. "When cancer is within e easy reach and is localized, it may be removed with great hope of cure, but when deep-seated it is not so simple and not so certain as to what is the best procedure",says Dr, Ewing and adds that the cure depends upon early treatment.

Dr.Franklin H, Martin presented in the yearly Symposium, a paper on the curability of cancer , for the "Clinical Congress of The College of Surgeons",Boston ,October 17, 1934, in which he stated that if all cases of cancer could be diagnosed early and treated promptly, the annual death rate would be reduced at least 33% per year. For the years 1932, 1933,and 1934 the cancer cures reported, amounted to 24,440 and the people thus convinced of the possibility of cures will seek early cures.In the same cancer bulletin of April, 1935 in which this was reprinted we see the notice of death of Franklin Martin,who was Director General of the American College of Surgeons, a man so able to give us direct and well chosen information as to this possibility of cure and we realize the loss this will be to the world.Dr. Martin stated that cures for cancer of the cervix are highest in number , being 7,455 while cancer of the breast comes second

with 6,467 cures. The figures show either better work by the doctors or more knowledge on the part of women or the fact that the variety of means of cure are proving satisfactory.

Perhaps the prognosis for cancer as given for different parts of the human body by men well qualified to know would be good here.Dr. Russel Ferguson states in his paper on the " Relation of Pathology to Surgery in the Cancer Problem", which the American Society For the Prevention of Cancer reprinted in their bulletin, that extrinsic tumors of the larynx responds well to X-Ray and that it may be the means of a new cure. The Cancer Commission of the California Medical Association state the prognosis for malignant tumor of the thyroid is still not good, and that the prognosis for cancer of the rectum ,anus and recto- sigmoid depends upon the stage of the disease, the grade of malignancy of the growth and the percentage of operability.Dr. Claude Dixon of the Mayo Clinic says that 30-35 per cent of the rectal cancers are operable and the prognosis good in many cases , but that true osteogenic sarcoma is fatal in spite of all that is done.

Dr.Healey says that cancer of the cervix , has a poor prognosis but if untreated ends in death after two or three years. Drs. George Gardner and George Finola of the North Western University Medical School, Chicago, say that the prognosis in cancer of the uterus depends upon the extent of the lesion and that the best prognosis is limited to the cervix

where there is free mobility of the uterus. Cure is most probable in women of average weight.

The Cancer Commission of California gives assurance of cure in many cases ; they say that in cancer of the stomach the prognosis is good if there is complete removal of the tumor or the lesion and that for tumors of the nerve, the benign tumors can be removed by surgery and result in cure. This report was reprinted in th "Bulletin "*, February,1935. The Commission repobt also states that tumors of the eyeball canc often be cured without sacrifice of the eyeball and at the least life can be saved by removal of the eyeball before metastases has occurred.*[2]

For Cancer of the breast , G.W.Taylor F.A.C.S., Boston, Massachusetts , claims that the prognosis is more favorable in cases of outer quadrant growths , than in inner quadrant growths. The prognosis is good if no metastases are present elsewhere than in the axilla, and that about thirty per cent of all operations result in a five year cure. Dr.Stout claims that mammary gland cancer is frequent and operable and is of great importance, since there is a better chance for early diagnosis and early removal. Single tumors are dangerous and Dr. Stout says many lesions are left untreated when an early diagnosis would have ended in cure undoubtedly.

For the skin, the prognosis for tumors seems best of all and most authorities claim many cases of skin cancer can be prevente . Dr. Ewing goes into this matter thoroughly as

*Bulletin of the American Society For The Control Of Cancer.
*[2]Bulletin of The American Society For The Control Of Cancer, Oct,1934.

as does Twort, when Twort tells even what oils affect the skin and which ones may be avoided and what may be prevented as taken from his studies in occupational cancers. Dr. Kennedy in an article reprinted from "Hygeäa", July 1934, claims that cancer is easily recognized on the skin and that it is deplorable that so many deaths should occur when the prognosis is good in so many cases-of skin cancer when it is local and curable.

Most authorities are dubious about a cure for cancer of the aesophagus and give a poor prognosis. In the salivary glands the growths are rarely malignant but if malignant, the prognosis is poor.

There have been many prognoses given by Dr. Stout for cancer in his book "Human Cancer", and they might well be li listed here, as follows:

Oral Cavity--Prognosis good for small amount and bad for large amount and depends upon the situation, and the metastases, and these form 4.5 % of all cancers diagnosed.

Aesophagus-- The prognosis is poor as far as is known, and this is on of the most fatal sites.

Stomach--- Three per cent of these may be possibly cured and many ulcers and lesions may be cared for early and make prognosis more favorable, as it depends now on metastases, location and which curvature of the stomach and as yet the prognosis is better fo the lesser curve.

Liver-- Single tumors have better prognosis even if malignant.

Gall-Bladder-If the gall bladder alone is involved , the prognosis is better but usually it is not discovered until there is extension and this is not so good.

Pancreas-- This is too far gone , as a rule , when discovered , to be very favorable.

Uterus-- The prognosis depends upon the age and extent of the tumor, the differentiation of the tumor and an early diagnosis. If there is a history of bleeding for months it is bad. 1-3 months bleeding good prognosis , 3-6 months bleeding less favorable an after 12 months bleeding tha prognosis is bad, but helps.

Cervix--- Prognosis here depends upon age and extent. About 3/4 of the deaths could be prevented if diagnosed early and treated in earl stages. It is not so good if more than the cervix is involved and there is bleeding for any length of time from the uterus.

Ovaries--- This is usually poor. The papillary Cysto adenomas may be removed of unruptured and prognosis will then be good .

Testes---- Poor .Very often these tend to be malignant and fatal because because of metastases present when discovered.

Kidney---- Fair.

Bladder--- This depends upon the site , the extent of metastases and the infiltration.

Vulva and Vagina- Treatments are disappointing and prognosis is not so good ; the best prognosis is after operation.

Uterine Tube and Broad Ligaments- Prognosis poor because this is usually discovered too late.

Prostate and Seminal Vesicles-- The prognosis here depends on the type of growth and presence of absence of extension.

Skin-- Better than any other if treated early.

Connective Tissue-- They are radiosensitive but prognosis is not known.

Bones --- True osteogenic sarcoma is bad,,and the diagnosis is hard to make. Ewings tumor, Endothelial Myeloma responds to high voltage X-Ray so that is better.

Blood Vessels-Questionable because they depend upon so much.

Heart-- For heart lesions and cacncers the prognosis is bad.

Nasal Cavity --Grave Prognosis for this but better than for for heart cancers.

Larynx-Better prognosis than for nasal cavity.

Lungs-No known prognosis is made so far for lungs, as in cancer of the spleen.

Visual Apparatus-
Retina- Has a good deal of metastasis and may die of these .

Neck- There is not so much danger of becoming malignant but the treatment must be very extensive and there is that danger.

CHAPTER IV.

PRECANCEROUS LESIONS.

Precancerous means a condition which may be associated with cancer. Dr. Stout says,"It is possible to connect a great many lesions with cellular hyperplasia and some of these have been focuses of origin for cancer". The lesions are called Pre-Cancerous Lesions and are important in the way of saving lives, or at least of preventing the cancer from developing too far for treatment.

The greatest cause of these lesions is irritation,as in poor fitting plates of teeth, a jagged or ill fitting tooth,and these must be emphasized by the nurse who works with the patient. The continued use of an irritant over an area, first causes an invasive growth outside the irritated area and the growth later metastasizes ,according to Dr.A. Stout and by connecting this up with the stages of the cancer in the body, we would be able to deal more easily with the cause,he says. The treatment would be the removal of these lesions by whatever means is best and Dr. Stout claims this could be done easily if the people knew the needs.

Pigmented moles are important precancerous lesions and they lead to Melanotic Sarcoma, especially the black ones. Some authorities say they are a form of epithelial tumor wh which is really carcinoma and should not be neglected, especially on the hands and feet. A dark color, a warty scaling or the active growth of hairs are important indications for removal.Senile keratosis or scaly patches of old people which is often squamous epithelial are common starting points

for cancer of the skin. Irritants of any kind, but ones particularly as arsenic and coal tar products affect the skin of the young person as well and any change in the skin should have prompt treatment. Chronic ulcers and fissures of the skin caused by burns or old scar tissue in burns or syphilitic scars give rise to cancer. Mule spinners cancer of the scrotum, due to the use of oils on machinery and that of chimney sweeps , due to the soot as an irritant is also common.*

Dr. Kennedy*[2] gives and interesting article on skin cancer, the ease of diagnosing it and the results. About 2.6 % of the population of the United States die of skin cancer and this is deplorable because it is easy to cure in the early stages. Occupational cancer is common and the lesions on the skin may be detected early. Tar cancer is the commonest and occurs among tar distillers , gas stokers, creosote workers , benzine distillers , kerosene workers ,pitch workers and dye workers Arsenical cancer is found among Paris Green handlers, among crude oil handlers and then old burns and scar tissue develop lesions which require attention.

Dr.Kennedy stresses the wen as potential cancer and says that every person almost , has one mole on some part of the body which may at some time change into cancer, because we cannot be sure which are not benign. The blue nevus which is warty and raised is dangerous and if there is any change in it , should be removed. Burns cause scars that are dangerous especially if from chemicals, radium, X-Ray or ulcers of long

*Bulletin of the American Society For The Prevention of Cancer, Dec.1934.

[2] * Bulletin of the American Society For The Prevention of Cancer, Nov. 1934.

standing type, which may become irritated, as old scars are the base for Squamous-cell epithelioma . Basal- cell epithelioma start as a wart, a scab or a scale. The most likely type to become malignant is the black mole which suddenly changes in diameter or in elevation . The blue naevi of infancy will spread and may later become malignant and just here it is interesting to note that one of the Dionne quintruplets was born with a naevus on the hip and that it was removed by operation by a doctor from John Hopkins.

Probably the best way to list these precancerous lesions would be as they follow through the body and Dr. Stout has has done this in his "Human Cancer", as follows:

Oral Cavity--

Lips- superficial cracks of fissures which heal with difficulty.

Tongue- leukoplakia(hyperplasia which is whitening of mucouc lining) and often comes from syphilis.

Others are mixed salivary gland tumors, mucous cysts and lymphangiomas which lead to childhood malformations of macrochiela (permanent swelling lips and mouth). There are also Angiomas.

Dental Apparatus-
Ill fitting teeth, jagged teeth,and cysts are the cause here.

Salivary Glands-Simple Retention Cysts are the lesions which start trouble.

Asophagus- Chronic irritation , hot foods are blamed for the pre cancerous lesions cause.

Stomach-- Chronic gastric ulcer, gastritis with epithelial hyperplasia , adenomatous polyps seem to be the prelesions .

Liver and Intra hepatic Bile Passage--Cirrhosis and hyperplasias, parasitic irritation and hemangiomas seem to be the most important here.

Gall Bladder--These are chronic inflammation and gall stones.

Intestines and Rectum-- Colitis,diverticulas,intestinal parasitism ,intramural cysts, metaplasia and old scars may cause trouble.

Mammary Gland-Cellular hyperplasia(chronic mastitis), irritations of different kinds, perhaps Pagets Disease and the lipomas are those of the mammary gland.

Uterus --Cervical erosions and chronic inflammatory lesions cause cancer it is believed, as do polyps,endometrial hyperplasias and leukoplakia,tuberculosis and hyditidiform moles.

Vulva and Vagina--The precancerous lesions here are moles, epithelial hyperplasia, papillomas and epitheliomas.

The above list is by no means as complete as Dr. Stout gives it , but it does give a representative list of the precancerous lesions. For anal cancer, Dr.Curtice Rosser,* Dallas,Texas,gives chronic colitis, multiple polyps, preexisting adenomas ,some chronic irritations and fistulae.

* American Journal Of Surgery, February, 1931.

CHAPTER V.

PRESENT WORK IN PREVENTION.

At present the work in preventing cancer is being done by cancer societies, such as the American Society For The Prevention 0f Cancer, by medical societies, as the Medical Association of Georgia,by hospitals such as the Cancer Memorial Hospital,New York, by universities such as the University of Minnesota, by research institutes ,such as Columbia University New York, by lay people interested in the work and by private doctors, public health authorities, nurses and most important of all by some of the patients themselves by their co-operation which is so necessary.

People are now beginning to realize the need of cancer work and are being convinced of the benefits of early diagnosis and treatment.Dr. H.Pancoast has said that the present means of treatment are as follows:

I Surgery.
II Irradiation by means of X-Ray.
III Combination of surgery and irradiation.
IV Electro- thermic treatment or a more refined way of heat control.
V Caustics.
VI Internal administration of heavy metals in the colloid state.

Many cases of cancer could be prevented Dr. Pancoast says if an early examination and diagnosis could be made by these methods which follow:

I General medical care.
II Preventive measures
(a) By avoiding irritants.
(b) By removing precancerous lesions.

III Operative procedures ,by which to induce functional rest , as in the case of the stomach there is the gastrostomy.
IV Neuro-surgical procedure.
V General Cleanliness.

The work in prevention in cancer has been extremely noteworthy in the last three decades as Dr.Woglum* has said and some of the outstanding features are as follows:

First Decade.
I--The limits are now defined within which malignant tumors can be transplanted.
II-A method of protecting mice against inoculation has been found.
III-The resistant power to various agents has been compared and its cultivation in vitro has been begun.
IV-The hereditary nature of cancer in mice has been foreshadowed.

Second Decade.
I--The growth rate of the cancer cell was assessed and two methods of producing lesions in fowls were discovered.

Third Decade.
I--Another means of inciting malignant growth was reported and a good start was made on the study of the carcinogenic agent in tar.
II- The intensity and duration ,required to initiate neoplasia,has been determined.

Chas. Geschеckter M.D. adds his portion by saying that renewed direct emphasis has been placed on periodic pelvic examinations and we see that Dr. Martin last year gave a more hopeful prognosis for cancer of the uterus than other doctors had given in years previous.

The use of low voltage X-Ray therapy for skin lesions of necrotic or cancerous types has now been made safer by combining interstitial and external irradiation by lesser doses over longer periods of time and electro-surgery has improved.

*Bulletin of the American Society For The Prevention Of Cancer Feb.1931.

For occupational cancer the outlook is much better. Louis Schwartz of the United States Public Health Service has published advice to the industrial workers a great deal of information as to the hazards of American industries for cancer and lists these as common to workers in rubber industries, oil workers,dye workers,tar workers, chemical plants, silk industries and radium plants, as well as many others. Cancer needs much watching and the authorities are deeply interested and are instructing people as to types of cancer peculiar to the work of each. Doctors along with public health authorities and medical associations are placing special emphasis on preventive aspects of cancer and are doing all that is possible to help with this work.

Cancer statistics are being more accurately kept lately and are being turned into proper statistically minded centres and treatments are being done earlier ,with better facilities for this preventive work which is becoming a live and recognized problem of the present day.

It is interesting to know that Mule Spinners Cancer of the scrotum has been controlled.* Dr. C.C.Twort of the Cancer Research Department of Manchester England and his brother Mr. J.J.Twort , who is a geologist ,say definitely which oils are safe for use and which must be discarded. A mixture of lanolin and olive oil applied to the body before and after working with machinery now prevents precancerous lesions of Mule Spinners Cancer.

All authorities agree that certain irritations cause

*News of Interest .Cancer Bulletin of the Amer.Soc. For The Control of Cancer.Dec.1934.

certain cancers and many have definitely defined which kinds. Dr, R,S.Ferguson*of the Memorial Hospital New York gives an interesting paper on cancer and says that many a doctor finds that his education has been sadly neglected when it comes to knowing the phases of cancer in different organs of the body. The doctor believes that cancer ,say of the breast, is cured by operation and after operating on a young woman he is upset by her death after two years post operative treatment and he then finds out that cancer of the breast is not a single disease, and he had not been taught to recagnize the different forms of cancer of the breast.This would be the case of the nurse too in cancer preventive work, if her education of symptoms and suspicious looking lesions were neglected.

There is unendless work the nurse may do in educating herself for preventive work in cancer .

There is great need of education as well for the lay person and this work in cancer prevention and then the work will surge ahead.People do not understand how much work is being done by the cancer hospitals, the tumor clinics and by private doctors who have given so much time to try to find a cure. Few people know where to go for treatment or where to get information .They do not realize that American Societies have such a splendid form of campaign against cancer and that they are being aided by colleges, hospitals, research men all along and by private individuals who have sadly seen its need.

*Bulletin..The American Society For The Prevention Of Cancer, March 1930.

Let us list here some of the organizations interested in the preventive work in cancer in the United States. They are as follows:

The American Society For The Prevention Of Cancer, New York.

The Public Health Service, Washington D.C.

Some of the institutions are:
Memorial Hospital, New York, with bed capacity of one hundred and four beds and its famous out patient department and research laboratories.
Pondville Hospital ,Norfolk Maasachusetts ,capacity of 125beds.
Mercy Hall ,312 Watson Street Detroit, Michigan.
The Cancer Institute of The University of Minnesota--50 beds and outpatient department.
The Cancer Committee of Harvard University .
Bernard Free Skin and Cancer Hospital, St, Louis, Missouri.
The Lankenau Hospital,Philadelphia ,Pennsylvania, with its well known follow up service.

The work at The Memorial Hospital ,New York is familiar to me because some of my nursing experience was gained there and it is more than true that it is an excellent hospital, with a wonderful and expert staff of physicians and surgeons, a qualified and interested staff of nurses, a famous out patient department , an adequate amount of radium, an expert number of X-Ray technicians ,adequate research laboratories and pathologists and last but by no means least a fine social service. J.Ewing M.D. and Burton Lee M.D. have been in charge of the research departments and that speaks for it sufficiently well.Lately I understand ,much better and more modern types of equipment has been set up there and the hospital is more than ever qualified to carry on the work.

If such men as Howard Taylor Sr.M.D.,New York, are interested in this work it will surely represent good work, and the work will be advanced.

Tumor Clinics now are being advised as having the needed facilities for preventive work and follow-up work in cancer. In many places already they are doing excellent work and are getting the cooperation of organizations in that locality, where they are established. The Nassau County Tumor Clinic, Nassau County, New York State, is carried on in this way and is as follows:

The tumor clinic is under the approval and more or less control of the American Society for The Control Of Cancer, but is independent of outside help. The secretary manger is Mr. Neff, a full time lay secretary of the Medical Society. The service is a full time service by a medical director who is advised by consultants from the Memorial Hospital of New York, N.Y. Special surgical and bacteriological services are given by local physicians , appointed from the three local hospitals of the county . Patients are admitted only on written applications of their family physicians who are also kept informed of the progress of the case. There is 100% cooperation , with medical men, and all the various local agencies. All funds h have been donated and the hospital has been been built this way. The local Cancer Committee provides the radium and the executive control ; the local Tuberculosis Hospital provides the beds and the nursing care; the boards of public welfare and other relief agencies pay the bills of those patients who are unable to meet their own expenses; the monies collected for the general hospital care goes to the Tuberculosis Hospital to compensate it for its expenses in providing hospital facilities and nursing care; the fees collected for X-Ray and

and radium treatments are sufficient to enable the clinic to pay for its pathological work ,its full time medical resident its X-Ray technician, its nurse and social worker and the routine clinic expenses; the professional services are rendered on a voluntary basis through the cooperation of the local medical society and the staffs of the local general hospitals and the local visiting nurse associations and public health associations cooperate by assisting in transportation of patients to and from the hospital.

This clinic is primarily a teaching one ,because it is a demonstration to the lay people that something can be done for cancer and also it affords an opportunity for the medical men of the county to study neoplastic diseases. To keep to this plan, no patient is admitted who is not provided with a written request from a practicing physician and that physician is kept informed of the progress of his patient right along. Once a week a conference is held,open to any physician in the county for the purpose of discussing diagnosis and treatment of new patients and presenting all interesting follow-up cases. Up to November 1934, when this article appeared in the "Journal of the Medical Society of New Jersey" 567 patients had been treated and that was in less than two years. From private physicians there had been 473, from dentists 179, and there were 84 from other hospitals.

The nurse-social service worker attends all of the conferences and the is present on the days of admitting new patients and also calls on the people in their homes for follow-

up and to assist the family in the care of such patients as do not require hospitalization.

The parts not supplied me by the"Journal of the Medical Society of New Jersey " were sent to me by Mr.Neff, the secretary of the Nassau Tumor Clinic and you could tell that his whole heart was wrapped up in his work and that he was going to do all in his power to make it successful.

The outstanding things in this work shows :

1-That intelligent cooperation can be securedif the work is worth while.

2-That clinics for the care of such patients can be conducted without interfering with the proffessional rights of physicians or the financial rights who are practising in the community.

3- That if all help assist the proffessional group rather than to compete with it , the doctors will give their hearty support, to the lay group.

An interesting article on the Nassau Tumor Clinic is given in"The Nassau Medical News" for March 1934.

Another interesting article on prevention is given by G.T.Bernard M.D. Augusta, Georgia* on the preventability of cancer.He says there is no such thing as benign tumors ; all are growths representing a period of cell activity and that even lipomas will become sarcomas and that advanced cancer is dangerous and doubtful, and even early cancer is doubtful in its prognosis .He claims that the precancerous lesion where accessible can be destroyed and its eradication is nothing but good surgery, good practice and good sense.

*Journal of the Med. Ass. of Georgia, Nov. 1934.

Follow-up work in cancer is done as a rule from outpatient departments os hospitals or from clinics and the social service departments employ nurses or nurse-social workers to do this work,to work under the doctors orders and relieve the doctors of this responsibility of this end of the work.This follow-up work may be the work of public health nurses and this takes in many branches; it may be educational work ,it may be treatments or it may be to check up on return patients but it is the work of the nurse.

The direct educational end of cancer work is conducted by associations who are able to finance the work and we have mentioned some before , as the College of Surgeons New York, and the others who are interested and literature is being sent out upon request and lectures are being given; research workers are giving the results of their long hard studies on cancer cures and campaigns are being conducted and the public is being interested in this great campaign, against cancer.

CHAPTER VI.

THE NURSES WORK IN THE PREVENTION OF CANCER.

An ounce of prevention is worth a pound of cure, especially in cancer control and the nurse can and does play no mean part in prevention , if she is conscious of her wonderful opportunities along these lines.

Let me repeat that in the United States registration areas alone , 125,000 persons die of cancer annually and the death rate is steadily increasing here and in other countries as well, Frederick Hoffman L.L.D. consulting statistician for the United States tells us,*and that is about one in every seven over thirty years of age. Most authorities claim this rate is deplorable and unnecessary because if cancer is detected early and properly destroyed ,the death rate would be noticeably decreased.

Doctors ,patients and nurses must cooperate to decrease this number of advanced cancer cases. The patient must learn what to do,where to go and then follow carefully the orders of the doctor. The doctor and nurse must influence the patient to cooperate and they as well, must do all possible to allay the patients dread of long treatments, because often it is fear which prevents the patient from coming for treatments and it is also the lack of knowledge of cancer cures.

The nurse has an excellent approach to patients, whether in hospital work, in field work, in work in the homes, in industrial nursing,in the teaching of student nurses or in preventive work in cancer. A little message of the great possibilities of cancer cures now known, a grain of confidence

*Cancer Record of 1932.Reprinted fromThe Spectator,April,1933.

gained at an appropriate time does have unestimated results on the patient if the nurse will realize this fact. There is no approach to cancer patients which the nurse does not have. The doctor does his work and gives his treatment and leaves the rest to the nurse or family and the nurse in both parts of the work plays an important role.

In the public health field the contact made by nurses, is unlimited, because families, industrial workers, old people patients and well people come under her watchful eye and their trouble are taken to the nurse ,usually first; they believe in her and feel that she will understand.

In the industrial field the nurse approaches those frequently affected by occupational cancer and she can advise them and instruct them to carry out the doctors orders. Often the visiting nurse has this work.

In county health nursing, almost all these problems of preventive work are those of the nurse; often she must find the patient and lead him to know the need of the doctor and she must enlighten those who have no chance of getting to centres where lectures by doctors are given or men interested in cancer work are present . Then it may be the nurses responsibility to see that the patient reaches the centre where he is being treated. It is the work of the nurse to know where to get in this preventive work and how.

In hospital work the nurse has the most valuable as well as the easiest place to get in her cancer work. The nurse here gets to know , if properly instructed and she

is observant, the varieties and symptoms of cancer and may lay the foundation for her teaching of relatives and friends just what cancer cures mean if detected early and treated.

The private duty nurse may well, with her care of the patient and her close relation with the patient study the co course of cancer , its needs in nursing care and by acquaint-herself with the proper knowledge ,give valuable aid to patients and those with whom she works.

There is almost no limit to the opportunity the nurse has in preventive work in cancer. It is true the nurse may not diagnose ,proscribe, or operate but she can educate the people whom she meets, in cancer problems if she has authentic information and just at present that is on of the greatest problems.The nurse has that sympathy and understanding which does gain the trust of her patient and her remarks and advice will be well taken.

No one but a doctor or a nurse knows the little responses that are given in answer to the nurses kindness and interest in her patient and the work in cancer prevention may well be taken up by the nurse. A disease , so sad , needs nurses who are tactful and understanding of sickness of heart and mind, as well as of body,and nurses do understand.

The work of the hospital nurse or the clinic nurse will be different from that of the public health nurse because her problems come directly to her .If the nurse in this work could realize what an opportunity is hers, what a preventive program she could carry out, for her patients and her friends at large.

The industrial nurse, the visiting nurse and the county nurse and public health nurse in general have the vaguest sort of work in cancer preventive work.The field is unlimited and so far almost unexplored. It will first be necessary to have the right kind of nurse, one who loves her work and understands it, whose patients problems are never too insignificant and one with unlimited patience. The nurse must be prepared for this work, must be able to give authentic and accurate facts and must be well informed as to the trends of cancer and especially suspicious symptoms and possible care of certain types of cancer. The patients or public must not be given false hopes or information. Her work will partake of persuading suspicious cases to be seen by their doctors and of urging re-examinations and of giving accurate information to the public.

There is no need to dwell on the care of the hospital patient ,because Miss Anne FerrisR.N.,Directress of nurses of the Memorial Hospital New York , under whom I had my class work in my training school and some graduate nursing experience , has given in the Journal of Nursing July 1930, a very excellent article on the nursing care of patients. It does seem right to say here that hospital nurses should know suspicious symptoms and the care of cancer patients, so that they may be noted and reported at once to the doctor. Little suspicious lesions may later be great cancers. The nurse must have unlimited patience with signs of nervousness in patients because there may be something in these

nervous symptoms, a cancer in somepart of the body pressing on a nerve or a new condition arising in some other part of the body ; we cannot be sure and it the nurse will need to have understanding and nursing ability to do this nursing well.

One look in on the chapel of the Memorial Hospital,New York , on Sunday afternoon when services are being held , will give give you all the understanding and pity for these cancer patients that is needed.The picture is printed on my memory,so well that I shall never forget it.Let me tell you of one Sunday in particular.

In July,1928 I had a patient at Memorial Hospital and she wished to attend the service. I went with her. The chapel is small and beautiful. On this particular Sunday the music was provided by a blind organist of New York and a violinist . The minister and I were the only two besides the musicians, who were not patients. About thiry patients attended the service-some,without legs ,some without an eye, noses gone, some with only one arm, all ages and sexes , all advanced cases of cancer and in many cases hopeless cases . The opening hymn was :

My hope is built on nothing less ,than Jesus blood and righteousness,

The patients sang as if they had all the hopes in the world for cure and my prayer was that they might-if not these people here, then others in the near future.My heart was touched as I sang with them and how I wished that I might do something to give patients that hope. How I wished then I had been a

doctor or pathologist or someone who could try for a cure for cancer and I resolved if my chance came I would do all I could in preventive work.

My patient was a sweet little elderly lady who was in the hospital for treatment and one who had patience and unlimited courage. My courage and understanding could not match hers; she could stay there without weeping ,while I, as hard as nurses must appear at times,could not remain. I made an excuse to my patient and went outside to weep.

The hospital nurse has hard work in cancer cases;; it may be months of monotonous boric acid warm dressings or of saline; it may be hemmorrhages at any time, it may be long feeding cases where all food taken will be pureed first or given certain procedures before eaten and the nurse must see to these and her treatments are not easy at any time.Here nursing counts and not drugs.Here the nurse can get in her teaching, by telling her patient what to do on leaving the hospital and perhaps by teaching prophylactic means,prevent other complications of cancer.Training schools should have special courses in nursing procedures for cancer work, and prevention, just as the student is taught to know what to do in communicable disease of pneumonia of maternity work.

The nurse in any branch of nursing, must have some

idea of symptoms to do any kind of good work and of cancer symptoms this is just as necessary, and J.Ewing gives this idea when he says that everyone must know causes to know a disease and prevent it, and this is given by Dr. Ewing in his pamphlet "Prevention Of Cancer". The nurse must be trained to know causes and symptoms ; it is her field.

Some of the symptoms of cancer in the different parts of the body are given as follows :

Lips-- scabbing tumors or cracks that will not heal.

Larynx--persistent hoarseness.

Esophagus-no symptoms are seen or noted until the tumor has started to obstruct.

Liver- These are lossof weight,jaundice without alcoholic stools.

Stomach-Mild ,constant dyspepsia.

Breast- lumps and discharge ,sometimes it is watery or fluid or bleeding.

Gall Bladder-There are seldom symptoms until there is obstruction.

Pancreas- The symptoms are vague, usually there is mild mild indigestion ,pain and jaundice or ther may be diarrhoea.

Intestined and Rectum -Here there is abdominal discomfort or pain, a change in the habitual action of the bowels and often there is mucus and blood in the stools.

Cervix-Bleeding between menstrual periods of after the menopause is common in these lesions and later it is accompanied by pain and vaginal discharge.

Vulva and Vagina- Here there is pain,urinary frequency and vaginal discharge and often itching.

Uterine Tubes and Broad Ligaments- There are seldom any in the early stages but later there is a

watery
watery or sero-sanguinous discharge and an irregularity in menstruation.

Ovary- There are no early symptoms and later pressure is felt.

Testes-- There is swelling and a dragging sensation.

Prostate Gland-- Painful urination is usual and retention of urine.

Penis- Pain and a discharge accompany this.

Kidney- Haematuria is usual and there is loss of weight and a pain in the flank.

Bladder -There is haematuria and painful urination early.

Skin-- These are varied and may be change in color, or hyperplasia or scaly patches or may be scabbing or may be bleeding and these will need further discussion.

Bones -Pain is usually first and then there is interference with function and later swelling and fever.

The above list is a very simple list of the symptoms and will give just an idea of the importance of them, as nurses might like to know them, as Dr.Stout gives them in his book "HUMAN CANCER".

A second part of the work of the nurse in prevention of cancer is the part I want to stress next. This is the work of the public health in prevention of cancer. The field is large and the problems are many. The nurse must be mentally and spiritually big enough for this task, because it involves a great deal of study and reading as well as work.

The first problem will be to get a good survey of the field; if she has community groups already formed they will help with this because they know the community and are the ones whom the program will benefit. It must be a program

to suit the needs of the community, the doctors, and it must be one that is wanted there. The work will be hard and discouraging many times but if she realizes a small amount of success at first, that must satisfy her and make her realize the value of the work. The program must be thorough even if small at first and it must be put on with the cooperation of the community groups as well as those outside, who are interested in cancer campaigns, because it will be a big task at best.

The educational program may first have to be introduced and later the prevention will be suggested as the needs arise, if the nurse is awake to her opportunities to present the program, because preventive work just naturally follows educational programs if it is needed in that particular place and I believe that cancer preventive work is needed everywhere. The doctors will suggest needs to her, her committees will have people who need the care and lay people will do more than their share if it is a good program, but it must be a well thought program and must be carefully carried out. The cancer societies will give her all the help she needs .

The organizations with which the nurse will work ,depends on those needs of the community and those already established. The likely organizations will be the hospital authorities and staff in the community, the public health authorities, the community groups,the clinics established,perhaps some industrial groups and her people.

The hospital authorities and staff will be important allies in the work. Much of the present preventive cancer work is done in hospitals and out-patient departments and her work may be done here or from the hospital at least. The public health authorities are also aids;the state health associations and others like that are her own comrades in the program,,and will furnish means of entry for the nurse and h her work, find out her limits as to procedures and help her all they can. They are dependable.

The community groups are in this same list;they will give individual and friendly as well as financial aid. The nurse committees, the educational groups , the boards will a strive to make the work a success,because after all it is for them.

Cooperation with the doctors of the community is most necessary and they must be consulted as to the nurses program, because after all they are the ones with whom the nurse works and they are acquainted with the field and the work.

We must come down to the actual work of the nurse in the field,her schedule, her limits , her records, her program, her contacts and what work she must stress.

To be a good public health nurse in cancer work ,she must have a good psychology of her people ,know the policies of the organizations with whom she works and the right services and policies to follow.The main idea is to get good results with no waste of time on wrong cases .The right people must be

consulted for aid and she must know what is expected of her by the community.

The nurse must know where to get information for those interested and she must know how to give proper treatments and dressings and general and special advice to patients in the field when the doctor asks this service.

The schedule of the nurse will depend upon the hospital or clinic or the needs of the doctor in the community where she works. Her visits may tally closely with the doctors check-up or it may be more frequent in visits if necessary. The information she gets must be recorded carefully and kept on good comparable forms, because they will be needed for one who follows in the work, the doctor or clinic and for statistical purposes in preventive work. Other organizations too, may want these records.

Examinations will probably be done in clinical form and may not be her work at all but she will often be allowed to be present, or it may be part of her work.

Meetings must be conducted, committees will have to be arranged and patients needs and visits carefully provided for, and that they get any information they may desire. There will be many home visits made for treatments and advice.

Prevention will be educational in a major amount and it will have to be done along these lines. The nurse must teach that cancer as a rule does not develop in healthy tissue, that it usually starts in tissue affected by chronic irritation, inflammation or other disease, scars which have been

present for many years,or at least months.* It may be stressed that many cases of skin,mouth,breast of uterus can be prevented if properly treated and removed. The danger of small scaly pigmented patches that appear on the face of older people is important as are the flat, blue black moles at birth, which may later become irritated and cause cancer. The nurse may urge that the patient see a doctor about these. The industrial worker may be advised as to the dangers of cancer from work with tar,arsenic,radium,X-Rays,petroleum and dye and rubber works.

Bad teeth,the excessive use of tobacco,syphilis and ether chronic infections cause cancer of the mouth which could be prevented to a large extent with good dentristry and a clean mouth.

Any discharge from the nipple needs an immediate examination and one lump is always serious, one more so than many.

For the cervix and uterus periodic examinations are stressed.Repairs must be made for injuries at childbirth and infected organs removed James Ewing says. Dr Ewing claims a lot of the prevention is up to the individual himself,because they do not always follow the doctors advice.

For prevention of cancer of the mouth the nurse may teach the patient to gargle his mouth once a day as Dr. Ewing suggests./ Hot baths the nurse may teach, will help prevent follicle cancers and some skin cancers. For the flat warts and pigmented moles advise the patient to see his doctor.

The patient must be told to eat slowly, keep the mouth

*WHAT EVERY ONE SHOULD KNOW ABOUT CANCER. THE AMERICAN SOC. FOR THE CONTROL OF CANCER.

clean ,have the food not too cold and beware of alcohol so that cancer of the Esophagus might be prevented. For the stomach he must be advised about gluttonous eating and chronic constipation. He must always guard against con-constipation because it prcedes cancer of the rectum. The nurse must tell her patients that the question of heredity has not yet been determined but to be careful if there is a history of it in the family. Nurses may also teach patients to take care of early injuries, especially in women and they may advise the patient how to avoid unnecessry irritation, which clothes may produce, of work or medicines, and educate them as to control agencies. The nurse may teach the patient what to watbh for, means of prevention and where this literature may be had; she may stress the cancers which may be prevented and encourage the patient to tell whomever is near if they feel they have any suspicious symptoms, that it is wisdom to do this early.

The work in prevention in cancer which the nurse may do, is along the above lines ;clinical research and examinations are out of her field and hers must be the educating and urging of the patient mainly and the understanding of the patients problems and her good work in teaching avoidance or getting the patient to go for correction of various forms of irritation of inflammation which arises.*

The industrial nurse must know and be able to tell her patients which tars and oils and dyes are dangerous and in general advise tham as to the hazards and the preventive means.

*Cancer and Its Care. American Society for The Control Of Cancer .

CHAPTER VII.

INTERESTENG CASES OBSERVED, & PREVENTED.

Case Number One.

Mrs. S. is now eighty years of age,healthy looking and very active ,moves like a young girl and is mentally very active, but is underweight ,weighs only 96 pounds and is 5feet 6 inches tall. Mrs.S. has a history of pernicious anemia but nothing else except has had trouble with her gall bladder but has not had an X-Ray taken because she does not want an operation and her doctor says this condition is just of recent date and does not believe he would operate unless more develops. The gallbladder only bothers her at times. Mrs.S. is the mother of ten children ,all live births and grew up well and healthy. Mrs.S. has a prominent roman nose and has worn glasses for a number of years as she claims she has has trouble with the vision in the left eye, that it never was as good as the right eye.

Ten years ago,Mrs. S. noticed that the skin on the bridge of her nose was rough and scaly and drew her daughters attention to this . Her daughter immediately sent her mother to good Clinic,, where they told Mrs. S. that it was caused by her glasses and used electicity on it. Her doctor did not say what it was. Four years ago the daughter again noticed a scaling of that same place and this time sent her mother to a skin specialist and the doctor told her that it was an epithelioma and gave three treatments ,three packs of radium ,each pack for five minutes, one each month. Then

Dr.M. gave Mrs.S. radium salve to apply night and morning if any irritaion appeared and to come back if there was any return of brown scaly patch. Her doctor advised as to the danger of these things but so far there has been no return and the doctor also advised a change of the type of frame of glasses which Mrs. S. followed.

Up to date there has been no return symptoms and the patient is very happy.

Case number two.

Miss G. was a school teacher 40 years of age, 5 feet 7 inches tall and weighed 189 pounds, was cranky and irritable and said that was not natural for her. She complained to me of constant constipation and bleeding hemorrhoids. I advised her to see her doctor and she did. Her doctor advised her after a rectal examination to go to Dr.M. which she did. Dr.M. treated Miss G.for three weeks by local rectal applications of ointments and ordered oil enemata at home. Later Dr.M. operated on Miss G. for polyps and ulcer of the rectum. For one and one half years later Miss G. went once or twice a week to Dr. M. for treatments for colitis caused by a parasitic infection of some kind . Now her bowel action is normal again, her constipation is relieved ,she says she is not nervous and she is happy that that trouble is over, because it might have been very serious Dr,M says.

CHAPTER VIII.

POSSIBILITIES IN THIS FIELD FOR NURSES.

At the present time the nurses work in cancer prevention has not been separately stressed. This work more or less goes in with public health nursing in general of with clinic and hospital nursing, but medical men and laymen are getting more interested in cancer prevention and soon it will be properly organized and it will occupy a large field in the preventive work.This work is one of the momentous problems in medicine and is rapidly being taken up. This work is one in which all organizations can and will cooperate as has been shown by some established clinics and hospitals in their way of carrying on and that is one of the wonderful things and the other is the need of this prevention of cancer.

Shortly the nurse in cancer preventive work will take a definite place and it will be well for the student nurse to realize this or for the public health nurse and to be prepared to do this work. The time will not be far in the future and the nurse ready for this work will be given first choice in this important work.

Finis.