PONDVILLE HOSPITAL

1927 - 1969

Ernest M. Daland, M.D.

(Massachusetts Department of Public Health)

Post Office Walpole, Mass. 02081

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INTRODUCTION

It is an unusual experience for one person to be able to write about a hospital from its planning stage through a period of operation of 42 years.

The very idea of a State establishing a hospital for cancer patients was exciting, for it had never been done. Indeed, the State of Massachusetts had hospitals for tuberculosis and for retarded people, primarily for custodial care and as a protection to the community. Now it became interested in a non-contagious disease and proposed to treat and care for cancer cases in any stage.

The writer aided in planning the new "Pondville Hospital at Norfolk", was its Chief of Staff for 32 years and has since watched it from a distance for another ten years.

In the following pages I have described in detail those early years when I was actively associated with the hospital. The history of the last ten years has been touched on briefly from the viewpoint of a consultant and may be fragmentary.

I wish to take this opportunity to comment on the extraordinary services rendered by members of the visiting staff over this period of years. At a great sacrifice of time in travelling and, with small monetary reward, these physicians have rendered a great service. There has never been assembled a group of more devoted, interested and efficient individuals.

EARLY STATE CANCER ACTIVITIES

In 1914 Dr. Francis E. Donoghue introduced a resolve into the House of Representatives asking that the Governor appoint a committee to study the various methods of cancer therapy including radium and mesothorium and the needs for hospitalization. This bill passed the Senate but not the House.

In 1914 Representative John N. Levine introduced a resolve asking for the establishment of a State Cancer Hospital under the State Department of Public Health. This was defeated.

In 1919 the State Department of Public Health was granted three thousand dollars to use in making a study of the cancer situation and to cooperate with the Harvard Cancer Commission in making free pathologic examinations on patients suspected of having cancer.

In 1923 the Commissioner of Public Health, Dr. Eugene R. Kelley, pointed out "the need of better hospital facilities for the inoperable group of cancer victims."

In 1925, through the efforts of the Right Reverend Monsignor Ambrose F. Roche, bills were filed in both branches of the Legislature, calling for a state cancer hospital. More interest was shown than previously, but the bills were defeated. However, a resolve was passed which called for an investigation of the prevalence of cancer and the facilities for treatment. This study was made by a committee of four who reported, among other facts, that only one hundred beds were available in the State for the care of patients with advanced cancer. No recommendation for a hospital was made, but it was suggested that existing facilities be expanded. This did not satisfy Monsignor Roche and the other proponents of a cancer hospital, including the Daughters of Isabella, who had been pressing for a hospital for several years.

In 1926 a new bill was introduced and passed by the House and Senate. This bill provided for the construction in Boston of a hospital to cost one and one-half million dollars. The site of the present Veterans Administration Hospital in West Roxbury was considered. However, as no money had been appropriated in the budget, this idea was abandoned. One legislator suggested that there was a group of unused buildings in the town of Norfolk, midway between Walpole and Wrentham, and that this site might be considered.

This group of buildings had been opened as the Norfolk State Hospital on June 1, 1914 on land which was part of the Pond Farm. The property comprised 1200 acres. It was either conducted by or closely supervised by the Foxboro State Hospital as a hospital for patients suffering from alcoholism or drug addiction. Little information can be obtained about this hospital, but it is known that it was leased to the U.S. Government toward the end of World War 1. It was used for the care of shell-shocked and gassed soldiers and later as a vocational school. The federal lease expired in 1924 and the buildings had been idle for several years.

A group of consultants, including several hospital administrators visited the hospital and reported that it was <u>not</u> suitable for a cancer hospital. A bill was introduced by Mayor Mansfield of Boston and amended by Senator John McCormack and passed. It provided $100,000. to recondition the buildings and to open a

state cancer hospital, to be known as the Pondville Hospital at Norfolk. In order to obtain this money it was necessary to abandon a plan to erect a Massachusetts building at the Philadelphia Sesquecentennial Exposition.

Legislation

CHAPTER 391 OF THE ACTS OF 1926, AN ACT TO PROMOTE THE PREVENTION AND CURE OF CANCER AND THE EXTENSION OF RESOURCES FOR ITS CARE AND TREATMENT.

Whereas, it is important for the protection of the public health that immediate steps be taken for the further prevention of cancer and the cure and treatment of persons afflicted with cancer, therefore this act is hereby declared to be an emergency law, necessary for the immediate preservation of the public health. Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

Section 1. The department of public health, hereinafter called the department, is hereby authorized and directed to formulate a plan for the care and treatment of persons suffering from cancer, with a view to taking any necessary initial steps toward the establishment of necessary hospital facilities for such care and treatment by the construction of new hospital buildings, by the use of existing buildings, or by additions to existing buildings. The department shall, from time to time, submit such plan to the governor and council and to the budget commissioner, and shall report its final plan to the general court not later than October fifteenth in the current year, with drafts of such legislation as may be necessary to carry the same into effect, and shall at the same time file copies thereof with the said budget commissioner.

Section 2. The department shall establish and organize cancer clinics in such parts of the commonwealth as it may deem most advantageous to the public health and shall conduct such clinics with or without co-operation on the part of municipalities, local physicians and other agencies.

Section 3. Subject to appropriation, the department may expend during the current fiscal year for the purposes of sections one and two a sum not exceeding fifteen thousand dollars.

Section 4. For the purpose of providing immediate care and treatment for persons suffering from cancer, the department is hereby authorized to make use of the Norfolk State Hospital and may suitably condition and equip the same. Subject to appropriation, there may be expended for the purposes of this section during the current fiscal year a sum not exceeding one hundred thousand dollars. Approved May 29, 1926.

It should be noted that this bill called for the establishment of cancer clinics and that these clinics should be conducted "with or without the cooperation of municipalities, local physicians and other agencies."

Organization

Then followed nearly a year of reconstruction of the old buildings, all of second-class construction. The original arrangement of the hospital consisted of three main central buildings with a group of smaller buildings higher up on the hill, used for segregating small groups of patients. Under the new plan this arrangement was reversed. Two of the central buildings were connected by a new wing and the third building was to be used for ambulatory patients. The smaller cottages were altered for use by the physicians, nurses and other employees and for kitchens and dining rooms. This provided ninety beds for patients. All of the rooms that were built in the connecting wing, as well as those added since, were single rooms, as it was felt that some types of patients should not be assembled in larger wards.

A new operating room was built, although it was thought that very little operating could be done on the type of patient such a hospital would draw. Through a special appropriation, one gram of radium was purchased and an emanation plant set up. The latest type of high voltage X-ray machine (200 K.V.) was installed. It was necessary to purchase complete equipment for the wards, rooms and operating rooms with the exception of a few old beds which were on the premises. Some of these were repaired for temporary use; these were replaced in 1946.

Dr. Lyman Asa Jones, a Health officer in the Department of Public Health, was appointed Superintendent of the Hospital and Miss Elizabeth Ross, Superintendent of Nurses.

The writer was approached late in 1926 with a request for a "list of the equipment required to equip and

conduct a cancer hospital of ninety beds, with an estimate of the cost." This was done and, early in 1927, I was asked to be Chief of Staff and organize a medical staff.

It was then necessary to organize a complete hospital force, from the nurses on the wards to the employees of the power plant and the chefs in the kitchens. The brunt of this work was done by Dr. Jones and Miss Ross with assists by Miss Ardis Tilton, a graduate nurse, and the writer.

A medical staff was the next detail to be considered. Dr. Ernest M. Daland was Surgeon and Chief of Staff. The others were Dr. Isaac Gerber, radiologist; Dr. J. Homer Wright, pathologist; Dr. D. Crosby Greene, laryngologist (due to illness, he never served); Dr. Roger C. Graves, urologist; Dr. Richard Norton, oral surgeon; Mr. J. Cramer Hudson physicist; Dr. Henry Jackson, Jr. internist; Dr. Joe Vincent Meigs, gynecologist and Dr. Arthur M. Greenwood, dermatologist.

Consultative Staff

A Consultative Staff was appointed by Dr. George Bigelow, Commissioner of Health. Dr. Robert Greenough of the Massachusetts General and Collis P. Huntington Hospitals was chairman. The other members were William Duane Ph.D., physicist at Harvard, Stephen Rushmore, M.D. from Tufts, and Charles T. Howard, M.D. from Boston University. This committee met on June 24, 1927 and made the following report:

"The general policy for the treatment of cancer cases at the Pondville Hospital was discussed, and the following recommendations are respectfully submitted to the Public Health Council:

1. That treatment by surgery (including electro-thermic methods) x-ray and radium be provided for patients at this hospital.

2. That for the present the use of pre-operative and post-operative prophylactic radiation therapy be left to the discretion of the visiting staff.

3. That complete clinical records of all cases be kept by the visiting staff, including the sociological data required by the State Department of Health, and the use of the abstract record form prepared by the American College of Surgeons for cancer of the Cervix, Breast, Mouth, Ovary and Rectum, together with such other forms as may be adopted by the College of Surgeons or prepared by the Hospital Staff.

4. That radium therapy be adopted as the method of choice in suitable cases of cancer of the cervix and of superficial cancer about the face.

5. That a study of the effects of blood transfusion and of other possible methods of increasing the constitutional resistance of cancer patients, and of the physical and chemical blood changes resulting in such patients, be strongly recommended to the visiting staff."

This committee had but one other formal meeting. At that time Dr. Beale, practicing at Sandwich, Mass., presented a request that the hospital try the use of insulin as a cancer cure. The committee was not impressed and advised against such a therapy. Individual members of the committee were consulted from time to time in regard to specific problems.

Opening of the Hospital

This was the first time that any state had established a hospital for the treatment of cancer. Dedication exercises were held on the hospital grounds on June 21, 1927, with George H. Bigelow, M.D., Commissioner of Public Health presiding. The program follows:

Opening Address.
Alvin T. Fuller, Governor of the Commonwealth of Massachusetts

Cancer and the Medical Profession
John M. Birnie, M.D., President of the Massachusetts Medical Society

Cancer and the Public
Robert W. Kelso, Chairman, Advisory Cancer Education Committee.
Massachusetts Department of Public Health

National Aspects of the Cancer Problem
George A. Soper, Ph.D., Managing Director, American Society
for the Control of Cancer.

The Cancer Clinics
William T. Hopkins, M.D., Chairman, Cancer Committee, Lynn Medical Fraternity.
Cancer and Poverty
John H. Nichols, M.D., Superintendent State Infirmary, Tewksbury.
Service at the Pondville Hospital at Norfolk
Robert B. Greenough, M.D., Chief, Consulting Staff, Pondville Hospital at Norfolk.
The first patient was admitted on June 22, 1927.

Visiting Staff

At the time the hospital was opened and until 1959, the attending staff comprised a group of part-time physicians and surgeons, mostly from Boston and Worcester. Full-time chiefs were appointed in Surgery (1959), Pathology (1962) and Radiology (1965). The services of these part-time staff members consisted of half day visits twice a week or weekly. These "half day" sessions consisted of three to five hour sessions in addition to travel time of an hour each way. Consultants were on call for special cases. All fees were on a per-visit basis.

As chief of staff for thirty-two years, I cannot say enough about the loyalty and efficiency of this group of men and women. In addition to rendering service in the examination and care of the patients, teaching the residents, nurses, and a limited number of students became a habit.

Weekly conferences and ward rounds were made with the residents. Meetings of the entire staff were held monthly, at first in the hospital and, later, as a dinner meeting at a Boston restaurant.

Type of Patients

This hospital was established for the treatment of cancer in any of its stages. This has been interpreted to include all types of tumors, partly because a diagnosis cannot always be made until the whole tumor has been removed and also because removal of benign tumors may prevent development of cancer. It was also decided to treat lesions known to be precancerous.

Within a few weeks of the opening of the hospital, ninety patients were admitted, all with a diagnosis of advanced cancer. It was apparent at once that the admission diagnosis was often wrong. I recall the patient with pyloric obstruction from an obstructing duodenal ulcer and another with gastric symptoms from pernicious anemia. It became the policy to repeat all examinations and to make our own diagnoses.

There were other patients with advanced cancer, many of whom the staff believed were treatable for cure and others who could be palliated.

For a period of two or three months after the opening of the hospital the x-ray equipment was not ready for use, the radium had not arrived and the operating room was not finished. This gave us an opportunity to show what good nursing could do for this unfortunate group of patients with advanced cancer. Sloughing lesions were cleaned up and infection reduced with resulting relief to the patients.

As the hospital became better known, it received many requests for admission of patients who had early, treatable cancer or advanced cancers that could be treated for cure or palliation. It was decided that, with ninety beds and, later, more beds available, an ideal arrangement would be to use one third of the beds for early, curable cases, one third for patients who could be palliated and possibly cured, and one third for definitely terminal care. It was apparent that, if the beds were filled with terminal care patients, we could not accept those who had a better prognosis.

I have found a letter written by Commissioner of Public Health, George H. Bigelow to Dr. John H. Nichols at the State Infirmary at Tewksbury asking why he could not take some of our patients for custodial care. He pointed out that Tewksbury could care for them at one dollar a day while the costs at Pondville were seven dollars a day!

Gradually the policy was placed in effect, of making the one third groups realistic. Preference was given to patients who had already been treated at Pondville. A patient treated for palliation for weeks or months, might finally be admitted for more intensive care. Such patients received preference over those receiving their primary treatment elsewhere. Second in preference were patients living within a fifteen mile radius of the hospital even though they had been treated elsewhere.

Spot checks of the hospital population in 1948 and 1953 showed almost an exact division into the three groups noted. In recent years, the percentage of "untreatable" patients has decreased, for radiation, hormone therapy and chemotherapy can now be used until late in the patient's illness.

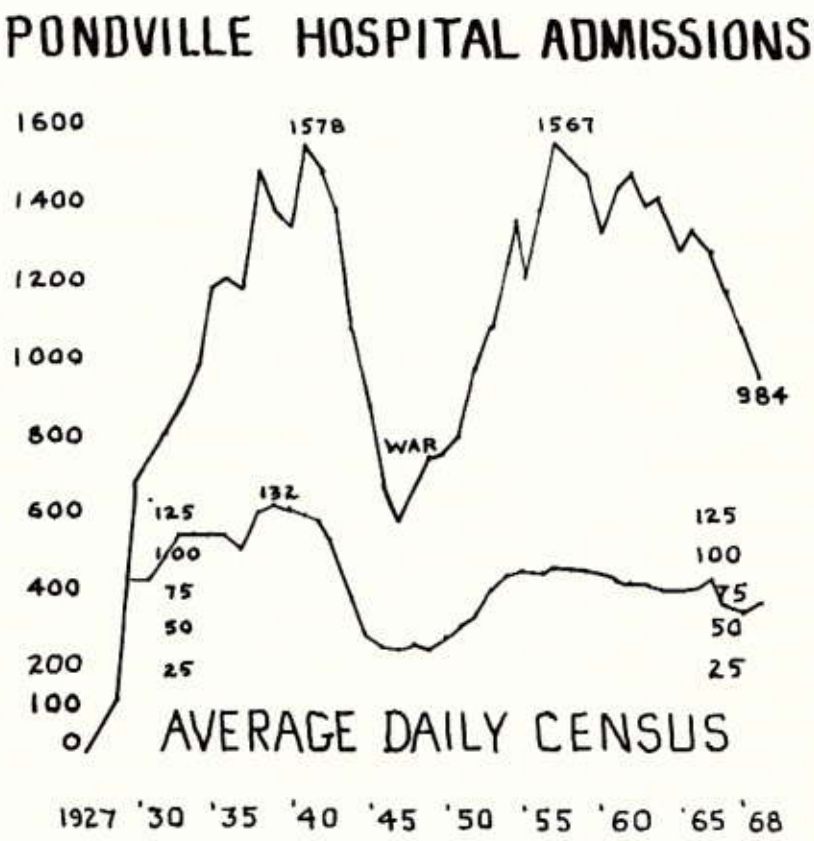
Many patients were referred to us from the State-aided clinics throughout the state. At times, there were as many as twenty of these units, some in hospitals not equipped for radium, x-ray therapy or radical surgery.

In 1937, a sister institution, the Cancer Section of the Westfield Sanitorium at Westfield, Mass. was opened. Patients from western and northwestern Massachusetts were sent there rather than to Pondville.

There are 36 communities within a 15 mile radius of the hospital. In 1955, it was noted that 40 percent of the hospital admissions and 60 percent of the out-patient population were from this area.

During the early years, 15 to 18 percent came from the Boston area but since World War II this number has gradually decreased. There have been relatively few patients from northeastern Massachusetts, as these patients appear to go to the Boston hospitals.

The greatest source of patients is from that portion of the state east of Worcester, south to the Rhode Island line and from southeastern Massachusetts, Fall River, Taunton, New Bedford and the Cape. In 1967, patients were admitted to the hospital from 100 cities and towns.



The treatment of cancer patients has changed in recent years. Many hospitals are now equipped with advanced radiation facilities. There are also many more surgeons and internists quite capable of caring for these patients. There are about 100 physicians practicing in the state who have had a year or more training at Pondville or Westfield and many others who have had special training for lesser time or in other institutions.

As a result, the routine operative and radiological cases are treated in their own communities. Admissions to Pondville consist more and more of problem patients or of those requiring therapy not available in the local areas.

The hospital construction allows for segregation of males and females on separate floors. There are insufficient toilet facilities to have men and women on the same floor. There are no "private" rooms, although there are many single rooms which the sickest patients occupy.

There has never been any plan to segregate the treatable cases and the terminal patients in separate wards. Patients observe new patients coming in for treatment and going home relieved and this has been good for their morale. With a ward for terminal patients, it is difficult for physicians and nurses to show the same interest they show to others. However, for convenience and efficiency in nursing, the post-operative patients are grouped in certain areas.

Charges

Originally, the charges for hospital care were $1.50 a day if the patient paid his own bill or $2.50 if he were a city or town dependent. Gradually the charges have been increased to $3., $5., $15., $25., rising finally to $65. a day in 1969.

With the development of Blue Cross, Insurance, Medicare and Medicaid Plans the hospital has not benefitted from the amounts these plans would properly pay. For this reason, the rates were raised. However, no patient is refused treatment for inability to pay. Some patients pay only a nominal amount and others nothing. Over ninety percent of the patients have some type of third party coverage.

The hospital has never collected Blue Shield fees or medical fees under Medicare and Medicaid.

In the Out Patient Department there has never been any charge for diagnostic or follow-up visits.* However, if the patient receives any type of treatment in the out patient a charge of $3. is made. For x-ray therapy there is a maximum charge of $25.

These free visits to the follow-up clinic have been much appreciated by the patients. It is one of the reasons that it has been possible to secure about a 98 percent follow-up of patients treated. The follow-up clinic is not only of great advantage to the patient, but it allows the physicians to see the results of their treatment and to detect early any signs of recurrent disease.

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*As this is written I learn that there is now a charge of $12. per clinic visit. These rates were determined by the Rate Setting Commission of Massachusetts.

THE DEPARTMENT OF SURGERY

The Visiting Staff from 1927 to 1959 served on a part-time basis. At first there was one surgeon, a gynecologist, a urologist and a laryngologist on the staff. As the number of patients increased, more men were appointed in each of these departments and others for the special services. In 1959, on the resignation of Dr. Daland as Chief of Staff, Dr. W. Bradford Patterson became a full-time Chief of Professional Services. Dr. Masao Yatsuhashi succeeded him in 1963 and still occupies that position. There were two residents in Surgery, later increased to four.

Operating Rooms and Operations

The original operating room was a large room on the second floor of the administration building. In 1930 this room was divided into two smaller rooms.

In 1935 a new building was constructed directly behind the old building. On the third floor above the dining rooms, four large operating rooms, an anesthesia room and a central supply room were built. Air conditioning for the unit was added about 1950. Later a room for minor surgical procedures on out patients was established.

The hospital is equipped to do all types of operations for tumors and cancers of any region. There have been a great number of minor surgical procedures, such as cancer of the lip or skin, usually performed on an ambulatory basis. In contrast, there have been an increasing number of radical cancer operations.

Among these are radical neck dissections alone or combined with resections of tongue, lip or jaw, mastectomies, resections of the lung and esophagus, radical hysterectomies, bladder resections with diversion of the urinary stream, hysterectomies combined with removal of the bladder or rectum, or both, and radical lymphadenectomies.

Few brain operations are performed. Our neurosurgeons prefer to carry out such procedures in Boston hospitals where they have residents in neurosurgery.

During some years the total number of operative procedures has been as high as 2000 with about twenty-five percent classed as majors. In recent years the totals have been around 1500 with thirty-five to forty percent majors. In 1968 there were 506 majors and 681 minors.

THE DEPARTMENT OF RADIOLOGY

Until 1965 the Department of Radiology was conducted by a group of visiting radiologists from Boston, Worcester and other cities. These men made four to six visits per week. Much of the routine work was done by residents, some in attendance for a full year and later by residents on affiliation from other hospitals, usually for a period of six months.

In 1965, Dr. Ronald J. Messer was made full time Chief of this Department and he has two residents in Diagnostic Radiology and one in Radiotherapy. There are also two visiting radiologists on a part-time basis. The Department is now affiliated with the Boston University Department of Radiology at Boston City Hospital with residents and a part-time physicist from that hospital.

Today there is a trend to separate Diagnostic Radiology and Radiotherapy. However, both are combined in this hospital under one head. The radium is also under control of this group. The actual use of radium in this hospital has been carried out mostly by surgeons, gynecologists and urologists, with consultations by the radiologists.

Miss Ardis Tilton was the first nurse in the department and she carried on for many years until her death from cancer. Miss Helen McDonald, who worked with Miss Tilton for many years, has been in charge of this department since then and has carried on very ably.

X-ray Diagnostic Equipment

1927	1 unit located on 2nd floor of Administration Building. Type of machine unknown.	
1931	G-E unit in basement below Wd. C.	Replaced in 1946
1933	Portable unit (from Wrentham State School)	Replaced in 1946
1937	Cystoscopic unit	Replaced in 1946
1946	G-E Diagnostic and Fluoroscopic unit with 500ma rotating anode tube (Moved to Bigelow Bldg. 1954) (Replaced by Picker Diagnostic machine - 1960)	Replaced in 1960
1946	Portable Westinghouse unit	Replaced in 1964
1949	Picker Diagnostic and Fluoroscopic Machine	In use
1954	Cystoscopic unit (2) with control stand, located in O.P.D.	In use
1957	G-E Diagnostic and Fluoroscopic machine with equipment for laminograms and lymphangiograms	In use
1960	Picker Diagnostic and Fluoroscopic machine (This replaced G-E Diagnostic Machine - 1946)	In use
1964	Portable G-E X-ray Machine (from N. Reading Sanatorium)	In use
1967	G-E unit for Mammograms	In use
1968	Keleket Diagnostic and Fluoroscopic machine with cine with connections for Sanchez Perez cassette changer and AmPlatz Injector for special procedures.	In use

X-ray Therapy Equipment

1927	200KV water cooled unit located on second floor of Administration Building in room now used as chapel. Barium plaster in walls was the only protection.	Replaced in 1930

1930	Picker unit 200KV installed in basement below Wd. C.	Replaced in 1948
1940	G-E 200KV unit installed in basement	Replaced in 1948
1948	2 G-E (Maximar) units, 250KV, installed in basement. Moved to Bigelow Building 1954 (These two machines replaced the 1930 Picker 200KV units and the G-E 200KV units - 1940)	In use
1954	120KV Picker Superficial Unit - installed in Bigelow Building	In use
1954	2 Mev Vandergraf installed in special room of basement of Bigelow Building. Original vacuum tube cooled by dry ice on constant vacuum pump was replaced by sealed tube 1966.	In use

Radium

Before the hospital was opened, the legislature authorized the purchase of a gram of radium. About 875 mg. was purchased in the form of radium bromide in solution. This was installed in a safe in a special room. The emanation from this radium was collected by a system of pumps designed by Professor William Duane and duplicating equipment previously made by Duane for the Curie Institute and for the Collis P. Huntington Hospital in Boston. This radium emanation, later called radon, was collected daily in tiny capillary tubes which were inserted in steel jackets for use in treating cancer patients. This radon lost about one-sixth of its value each 24 hours, with a half-life of 3.85 days. This required constant measurement of the tubes to check the values.

Radium emanation was measured in millicuries, one millicurie having the same radiation value as one milligram of radium element. It was the custom to pack several tubes of the emanation in lead applicators for the treatment of cervical cancer, for the treatment of the spleen in myeologenous leukemia and for the treatment of nodes in lymphoma. Such therapy required many hours.

It was also possible to collect the radon in tiny glass capillary "seeds" for insertion into cancers; later gold "seeds" replaced the glass. Because of the short half-life of the radon, seeds that were inserted into a tumor did not require removal. Usually these seeds contained from one to three millicuries.

With the development of x-ray therapy machines and techniques, the use of radium has declined. The radon collecting system was dismantled in 1967. The chief use of radium now is in cancer of the cervix and fundus.

With new techniques the style of radium needles has changed. The early needles of steel wall gave way to platinum-irridium needles. At one time, needles were used extensively in inoperable breast cancers, and this called for long needles (5 to 6 cm.) with two or three milligrams of radium. For use in cancer of the tongue, 10 mg. of radium were used in 3 cm. needles. At the present time, in gynecological procedures, capsules containing 5 or 10 mg. and less than 1 cm. long are used.

THE DEPARTMENT OF MEDICINE

The Department of Medicine has been of increasing importance during the first forty years of this hospital. Originally the physicians on the Medical Service provided the medical care for all patients including the surgical patients and the surgical complications. As time has gone on, more and more interest has developed in various groups of patients. The lymphomas have been cared for by this group and the Departments of Surgery and Radiology consult with them. Much of the therapy has been by irradiation. The medical group has also taken care of the leukemias and other blood disorders. Dr. Henry Jackson, Jr. was in charge of the medical service for many years and later was replaced by Dr. Dudley Merrill, who is still in charge and is particularly interested in the lymphoma group. Dr. Rita Kelley has been much interested in the hormone therapy of cancer. She did some of the original work with Dr. Ira Nathanson and has been carrying on their work. Dr. Kelley's Hormone Clinic is one of the largest in the country. Many publications from this department have been recorded and are now accepted as authoritative.

Chemotherapy is another function of the Medical Service; this requires a good deal of time to supervise the treatment of a great many patients. Dr. Rita Kelley and Dr. Christiaan Khung are in charge of this phase of therapy.

In the near future it is hoped to have a full-time Chief of Medicine.

THE DEPARTMENT OF PATHOLOGY

During the first year all pathology specimens were sent to Dr. J. Homer Wright in his laboratory at the Massachusetts General Hospital. In 1928 Dr. Shields Warren became Chief of the Service. Dr. Warren and his associates at the New England Deaconess Hospital made two or three visits to the hospital weekly. Much of the routine work was carried out by a resident, under the supervision of the attending pathologists.

It was not until 1962 that a full time pathologist was appointed to run the department. Dr. Max Levene was named to the position and a year later Dr. Robert McAuley succeeded him. He has had two residents and a visiting pathologist working with him.

In a hospital of this type there are many deaths and through 1968 there have been 6,746. There have been 4,342 autopsies, a percentage of 64.3 of the total deaths. From this material there has accumulated a vast amount of information in regard to cancer and its complications, information that is retained for the use of present and future staff members. There have been many publications from this department.

A great deal of the pathologist's time is spent on the study of surgical specimens and biopsies. In 1968 there were 1,269. The pathologist is always available for frozen section examinations in the operating room. In 1968 there were 182 such examinations.

RESIDENCY TRAINING

One of the richest rewards in the operation at Pondville Hospital, over the years, has been the training of physicians in the care of cancer patients. In the preliminary planning for the hospital, nobody seemed to have thought what this might entail.

When the hospital opened in 1927, two physicians just out of their internships were selected as residents in surgery for one year. As the hospital increased in size, more residents were added, positions being created in the departments of pathology, radiology, urology, and medicine. As the positions became more in demand, it was possible to select physicians with more training. Physicians who had served one to three years as residents elsewhere came for a final year. While Pondville could not offer a full residency course in any department, the positions were approved as a supplemental year or two of a three-year residency.

Nearly all the residents resided at the hospital. Some were married and occupied small apartments on the hospital grounds; others lived in nearby towns. These physicians practically lived with cancer for a year. The hospital was small enough so that the physicians who admitted a patient could participate in surgery, study the pathology sections, observe the laboratory tests and the diagnostic and therapeutic radiology and sometimes attend the autopsy. This type of training gave these physicians a complete picture of the cancer patient. Attendance at the out-patient clinics allowed him to follow these patients and to see similar patients who had been treated previously.

Surgical residents performed a great deal of surgery under close supervision. Residents in Radiology frequently came for a year in therapy to supplement previous training. Residents in Pathology were interested in getting a year of concentrated training in tumor pathology and in studying autopsy material.

More than two hundred physicians have had this training and are using their knowledge in treating cancer patients in private practice. There are nearly one hundred in Massachusetts alone and they are leaders in cancer work in their hospitals.

In recent years, most of these residency positions have been filled by affiliation with Boston hospitals. Physicians are sent to Pondville for four or six months as part of a four year program. Many of these residents acquire a good deal of knowledge from this affiliation, but one does not get the complete Pondville picture in less than one year.

At Pondville students and residents have an opportunity to see and care for patients with all types of cancer and all stages of these cancers. One learns the natural history of a given cancer, how it can be diagnosed and how treated. By following similar patients treated in previous years one sees many patients cured by the methods used; one also sees the failures by these methods.

The concept that people with cancer are people is fundamental. As such they have families, jobs and personal problems. Cancer patients are subject to all the other diseases and ailments that effect others.

All patients are carefully evaluated by free consultation with the various departments. A decision is

made as to whether the treatment will be surgical, by radiology methods, by hormone therapy or by chemotherapy and as to what other medical problems must be met. Total patient care is the rule.

Teaching

Pondville Hospital does not have any direct affiliation with any of the three Boston Medical Schools. However, nearly all members of the staff are members of the faculty of these schools. Medical students in small groups have come to the hospital with their instructors and have visited the clinics and made ward rounds.

For two years there was a rotation of Boston University Medical School seniors for two weeks stay at the hospital. This was satisfactory for students and staff, but it was stopped when a new administration took over.

For many years students at Tufts School of Dentistry have attended the Head and Neck clinic in order to become familiar with oral cancer. Each student attends at least two sessions.

It is interesting that many medical students were so impressed by the work at the hospital that they later applied for residencies.

Nursing

Nursing has played a very important role in the treatment of patients at Pondville. To Miss Elizabeth Ross goes the credit of organizing and directing the nursing during the first few months. She held the title of Superintendant of Nurses; later the title was changed to Principal of the School of Nursing, and more recently to Director of Nursing. That position has been filled by the following:

Elizabeth Ross, R.N.	1927
Veronica M. Beauregard, R.N.	1928-1931
Mary A. Rogan, R.N.	1931
Mary A. Eppling, R.N.	1932
Dorothy Silver West, R.N.	1933-1941
Alice T. Carney, R.N.	1941-1945
Gertrude T. Carney, R.N.	1945-1950
Lois Lipphardt, R.N.	1950-1953
Rose Griffin, R.N.	1953-1955
Emelia A. Larocque, R.N.	1956-1960
Pauline Martin, R.N.	1960-1969

The nursing personnel at first consisted of graduate nurses and attendants, the latter with little or no previous hospital training. In 1929 a training school for attendants was started, but this was given up after a few years. In 1944 and again in 1945 a Special course was given in training nurses aids. In 1949 the training school was reactivated, under Mrs. Jessica Anderson, this time as a training school for Licensed Practical Nurses, a school recognized by the State. The first class was graduated in 1950 with one or two classes graduated each year since. Many of these trainees have remained to work in the hospital.

The nursing staff now consists of registered nurses, licensed practical nurses and attendants.

During the first few years the nursing staff lived in several isolated cottages. In 1949 a new dormitory for nurses was built with accommodations for 100, with recreation rooms, class rooms for the school and an auditorium in the basement.

It has always been difficult to obtain a sufficient number of nurses and attendants. A number of the nurses live at home in surrounding towns and several married nurses have been employed on a part time basis.

Salaries paid nurses and attendants, as a rule, have been lower than in other hospitals. This fact plus the fact that the hospital buildings are ancient and lack modern facilities has made it difficult to attract and hold the type of nurses that is needed.

It should be stated, however, that the nursing service has been of a high order and that many devoted nurses have spent the best part of their lives in this service.

Social Service

The social worker plays a very important place in a hospital of this type. It is quite essential that she get to know the patient, his background, the relationship of his family and also about plans for the future. Ordinarily there have been two social workers; frequently nobody could be found for a third position. During the early years the social worker also doubled as the admitting officer, but later the admitting office was conducted independently. Particular mention should be made of several workers who devoted many years to this service:

Jennie Dixon	1928-1929 (Chief)
Neil A. Fountain	1929-1957 (Chief)
Mary Swasey	1930-1933
Gertrude Fletcher	1933-1943
Alice Crays	1958-1966 (Chief)
Cynthia Reed (1941-1966)	1966- (Chief)

The social workers handle all references of patients from the hospital. They are also responsible for the excellent follow-up system.

OUT PATIENT DEPARTMENT

Part of the State Cancer Program authorized in 1926 included the establishment of cancer clinics throughout the state. No provision for such a clinic was made for the Pondville Hospital. On the very day the hospital opened, the wife of one of the employees asked where she could go for examination of a lump in her breast. Since there was no space for such a clinic, the office of the Surgeon in Chief was hastily transformed into an examining room and the office of the radiologist became the waiting room.

In 1930 an addition was made to the original buildings by adding a connecting building between the main hospital and the isolated building of the original three. Rooms for patients were provided on the first and second floors. The basement provided an Out Patient Department and a new radiation facility.

In 1935 another extension of the buildings provided several more examining rooms. The clinic had increased in size during this time. The record attendance in our Thursday afternoon clinic was 184 patients admitted and examined and notes dictated over a three hour period. It was customary to have three surgeons, an internist and a radiologist in attendance at each clinic, in addition to three or four residents.

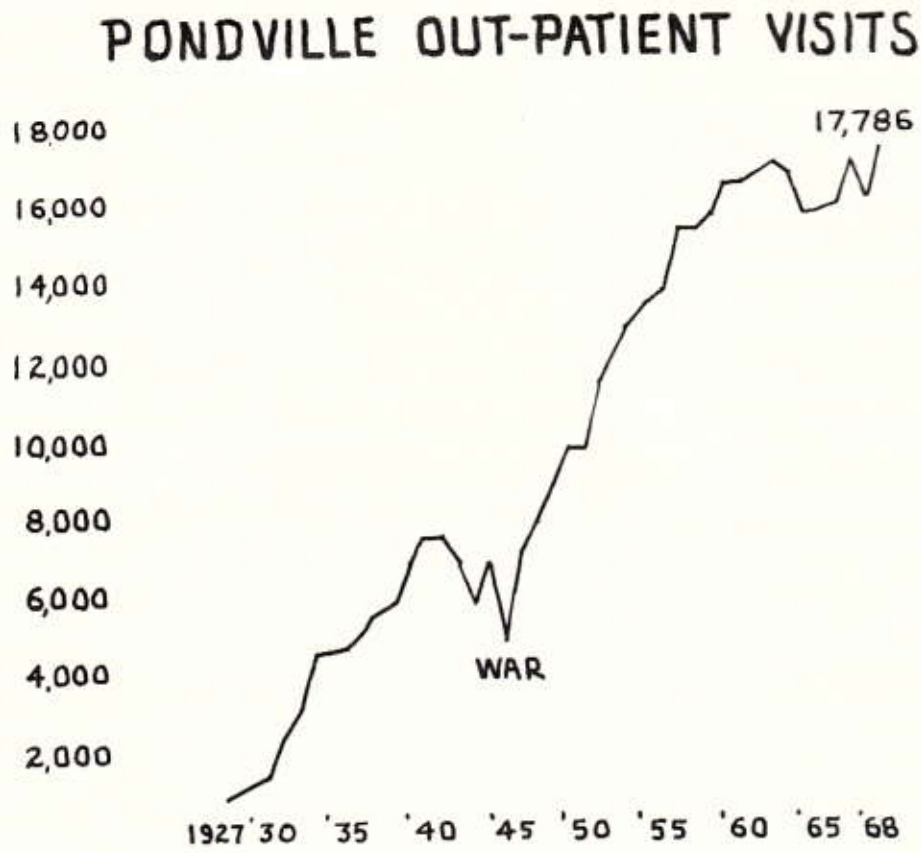
As far as possible all new patients were examined in this clinic. Special clinics were later established for follow-up of house patients. These included clinics in medicine, urology, gynecology and nose and throat. Still later the large Thursday clinic was divided with a Monday afternoon clinic. Radiological and thoracic follow-up clinics were also opened.

In 1953 the Bigelow Building was opened. The entire first floor was occupied by the Out Patient Department. In addition to a large waiting room there are sixteen examining rooms, each with two adjoining dressing rooms, two cystoscopic rooms with x-ray equipment and a small conference room also used for a head and neck clinic.

The number of patients visiting this clinic has increased steadily. From the original single Thursday afternoon clinic, the clinic now conducts sessions five days a week. The total number of visits for 1968 was 17,786.

Much of the credit for the organization and the conduct of this department belongs to Miss Lucille McCauliffe who was the Supervisor in charge for many years until her retirement in 1968.

Originally any patient who applied was admitted for Out Patient examination, if there was a reasonable likelihood of tumor or cancer. In later years, it has been required that he be referred by a physician. There was no charge for examination but, if treatment was given, a charge was made. Recently, according to a new ruling, a charge is made for each clinic visit.



OUT PATIENT CLINICS – 1969

Monday	9:30	Gynecology Follow-Up
	10:	Radiotherapy
	1:30	New Patients
		General Surgery
		Head & Neck
		Chemotherapy
Tuesday	9:30	Dressings and Sigmoidoscopies
	1:30	Gynecology
		Breast (medical)
Wednesday		
	8:30	Urology
	9:	Chemotherapy
	11:30	Radiotherapy
	1:	Radiotherapy Follow-Up (skin)
Thursday	8:30	Neurosurgery (twice a month)
	9:30	Dressings and Sigmoidoscopies
	10:	Radiotherapy

	1:30	New Patients General Surgery Head & Neck Medical Radiotherapy Skin (chemotherapy)
Friday	8:30	Ear, Nose & Throat Thoracic Dental

Records

From the onset, the hospital records have been excellent and unique in that there is an original and a carbon copy of each record. All records have been preserved and are available for study.

The writer recalls an inspection of the hospital by the Public Health Council. While several members were touring the hospital wards and operating rooms, Dr. Roger Lee said he wanted to inspect the records. He went to the record room and asked to have a few records picked at random from the files. After reading these records carefully he announced, "This is a damn good hospital" and left.

A hospital does not have good records just by accident. It is a combined effort by members of the visiting staff, the resident staff and the staff in the record room. All of the operations and all of the out-patient examinations are dictated and transcribed.

Miss Jean Histon, who has been in charge of the Record Room for many years, has been responsible for keeping the records. She has maintained a high standard in the face of marginal physical facilities and a difficult Civil Service system supplying her assistants. Official inspecting teams from the Joint Commission on Accreditation of Hospitals, The American Medical Association and the American College of Surgeons have frequently praised our records.

From the time the hospital opened until December 31, 1969 a total of 54,854 patients have been seen.

Although carried out in a different department, another valuable part of the records is the wide use of photographic material in picturing lesions before, during and after treatment. The Pathology department also makes use of this method of recording information.

Alumni Organization - The Daland Society

Many physicians who had participated in the Residency Program were now practicing in New England. From time to time "reunions" were held consisting of a clinical program at the hospital and dinner at a nearby inn. In 1951 it was suggested that this be an annual affair and that a formal organization be established for the 25th anniversary the following year. Dr. Grantley Taylor suggested that the organization be called "The Daland Society." Beginning with 1952 The Daland Society has met yearly for an afternoon session at the hospital, followed by a dinner. All men who have had a residency of six months or more and all members of the attending staff are automatically members of the society. There are upwards of one hundred physicians who attend the meeting each year.

NEW CONSTRUCTION AND ALTERATIONS

1930	Connecting wing with the third of the original buildings. Twenty-five rooms for patients, new radiation facilities and out patient department in basement. Operating room divided into two rooms.
1931	Recreation Building constructed from old laundry. $6,000.
1935	Further extension of twenty-six patient rooms and doubling size of out patient. New "Service Building" from P.W. funds, $167,000., with living quarters for Resident Physicians. Four Operating Rooms and Dining Rooms and Kitchens.
1936	Recreation Building condemned and closed.
1947	Power Plant with automatic coal stokers; later changed to Oil - $210,000.

1949 Nurses Residence with 100 rooms. Facilities in basement for Nurses Training School and Auditorium seating 150. $480,000.
1949 Research Laboratory in old storehouse from grant by American Cancer Society of $10,000.
1951 December 6th. Bigelow Building started.
1953 Bigelow Building. $1,400,000. Six additional beds.

Basement
- Two Million Volt X-ray Therapy
- Radium Plant
- Autopsy Rooms
- Animal Laboratories

First Floor
- Out Patient Department Waiting Room
- Sixteen Examining Rooms
- Two Cystoscopy and X-ray Rooms

Second Floor
- X-ray, Diagnostic and Therapeutic
- Medical Library

Third Floor
- Pathology Laboratories
- Blood Bank

Fourth Floor
- Research Laboratories
- Conference Room

TALK OF MOVING THE HOSPITAL

Whenever funds have been sought for the enlargement or reconstruction of the hospital, the question has arisen whether Pondville should be continued in its present location.

In 1945 the Department of Public Health, which had been developing a Chronic Disease program for many years, announced plans to build an 800 bed hospital for chronic disease in the Middlesex Fells and a site was chosen. It was planned to replace several other State hospitals including Pondville. A site was chosen but the land was found not suitable because of a rocky ledge. It was then decided to build in Jamaica Plain as the Lemuel Shattuck Hospital and to close Pondville, Lakeville and Rutland Hospitals; 200 beds would be allotted to cancer.

There was great opposition to the closing of Pondville. Representative Telford had introduced a bill for a new building at Pondville to provide facilities for enlarging the out patient department, new facilities for radiation, pathology and research. A million dollars was finally appropriated for this facility and that was deducted from the amount to be used for the Lemuel Shattuck Hospital, which was erected with 600 instead of 800 beds.

In 1950 there was a further move to close the hospital, but the people of southern Massachusetts fought it successfully. In 1957 Governor Furculo announced it was not to close.

In 1963 the subject was again raised, this time because of a realization that the old buildings housing the patients must be replaced. Those buildings of 1914, of second class construction, simply have not improved with age and are no longer adequate or safe.

Many people had thought of Pondville as being located away out in the country. However, there has been a rapid increase in the population in the area served south of Boston. The construction of new highways had made it much easier to cover distances. The completion of U.S. Highway 495 from Salisbury to Foxboro, a circumferencial highway, has brought Pondville Hospital within 1½ hours travel from practically any part of the State.

A NEW HOSPITAL

In 1963 Representative Paul Cataldo of Franklin introduced a bill providing for building a new hospital of 150 beds. This bill met with loud approval from the people from the area south of Boston. The Senators and Representatives from the district were in favor and money was appropriated for the plans.

In 1964 Representative Cataldo introduced a new bill calling for funds to build the hospital based on the new plans. As a result of the bill the funds were provided in the capital outlay program. $6,275,000 was appropriated but, when bids were submitted there was not enough money. With the increased cost of building, it was estimated that the hospital as planned would cost $9,300,000.

In 1967 Dr. Henry Kolbe was appointed Superintendent. Dr. Kolbe has had a vast experience in hospital management and construction in this country and in several foreign countries. He reviewed the plans with the architects. I quote from a recent memo from Dr. Kolbe. "The scope of the new hospital was reviewed and it was determined that $1,600,000 would be needed over the original appropriation. This was appropriated by the Legislature in 1968. Bids were solicited in 1969 and construction of the new hospital commenced in August 1969. The new hospital will provide new accommodations for in-patient care with a bed capacity of 140. All patient and administrative services will be located in the new building. The Bigelow Building and the Nurses' Home will be retained and it is planned that the former will be utilized essentially for research purposes. The old in-patient care areas will also remain but not be utilized. It is hoped that these areas can be eventually renovated for research purposes. The service building will also be retained and may subsequently be renovated for utilization as an extended care facility."

Finally, it has happened! Excavation started in August 1969. Official Ground Breaking Ceremonies were held on October 22, 1969. Construction will require slightly more than two years.

PUBLICATIONS

The primary purpose of this hospital has always been the care of the cancer patient. In doing this, a vast amount of clinical impressions and facts has been accumulated. Unusual case reports with the lessons to be learned have been presented in medical publications. Surveys of the case histories, methods of therapy and the results have been made in a great many types of cancer. Through these studies, standardized methods of therapy have been recorded for the use of the hospital's present and future staffs as well as those in other institutions.

Among the diseases studied and the results recorded are the various types of lymphoma, malignant melanoma, cancer of the bladder, breast, cervix, lip, mouth, penis, rectum and uterine fundus. There have been many publications on the use of hormones in the treatment of breast cancer.

As of August 1, 1969 there have been a total of 291 publications in the medical literature.

RESEARCH LABORATORY

Requests for a Research Laboratory were made to the State for several years, but were always turned down due to lack of State funds. In 1948 a grant was made by the Massachusetts Division of the American Cancer Society in the amount of $10,000. A Laboratory was set up in an abandoned storehouse, equipment was purchased and an animal colony started. The entire amount of the grant was not used because the State made an appropriation for research the following year. Dr. Lloyd C. Fogg, an anatomist and biochemist, was in charge of the Laboratory. Some of his original work was done with Mr. Russell Cowing, physicist, and dealt with the effects of x-ray therapy on normal and malignant tissues in mice and rats. Dr. Fogg died in 1960.

When the Bigelow Building was opened in 1953, the entire fourth floor was given over to research and named the Ira T. Nathanson Research Laboratories. The animal colony was located in the basement. At the present time the animal colony consists of hamsters 250, rats 45, mice 4,000. All these animals are purebred strains and this is considered to be an exceptionally large stock of strains extremely suitable for experimental work.

Since the original 1948 grant of $10,000, various agencies and foundations have awarded over $1,000,000. to Pondville Hospital. About 70% of the monies were for clinically oriented research projects and about 30% for laboratory oriented projects. For the clinically oriented projects approximately $660,000. came from the National Institutes of Health and $11,000. from the Damon Runyon Fund between 1959 and 1969. For

laboratory oriented projects, approximately $176,000. came from the National Institutes of Health, $104,000. from the American Cancer Society, Massachusetts Division, $51,000. from the American Cancer Society National Office and $21,000. from the United States Public Health Service.

Most of the recent work done in the research laboratories has been done by Dr. Charles A. Apffel in collaboration with Dr. John H. Peters of the Harvard School of Public Health and Dr. Barry G. Arnason, who is now the Assistant Professor at Harvard Medical School. Dr. Apffel's original grant with Dr. Patterson was for studies in the biology of cancer cells. Dr. Apffel has outlined the following purposes and results of his studies.

Purpose:

A. Demonstration, identification and isolation of a factor contributed by the host (animal or cancer patient) and necessary (limiting) for the growth of cancerous cells and tissues.

B. a. Use of this factor or of material containing it as antigen for immunization against cancerous tumors.
   b. Use of the same material for the treatment of already existing tumors.

Progress toward goals:

a. Awareness that an immunogen is sometimes present in the liquid phase of certain ascites tumors. Immunity of mice to the corresponding tumor could be achieved with whole ascites ("induction of tumor immunity with tumour cells treated with iodoacetate" C.A. Apffel, B.G. Arnason and John H. Peters. Nature 129: 694-96, 1966) and with cell free ascites tumor fluid (Immunization with sulfhydryl-alkylated tumor material) C.A. Apffel and B.G. Arnason, Proc. Amer. Assoc. Cancer Res. 7:3, 1966).

b. After numerous unsuccessful attempts to extract as active immunogen from solid tumors, it was postulated that the immunogen must be present in the serum of animals bearing solid tumors. This was indeed found to be the case and significant immunity to solid tumors could be brought about using the serum of tumor-bearing animals together with Freund's adjuvant (unpublished).

c. Basing on first results of fractionation indicating that the tumor factor (and immunogen), what we were looking for was a serum glycoprotein, and we postulated that it must be synthesized by the liver. It was also postulated that the factor may be found in the liver of normal animals and in certain normal secretions such as saliva, colostrum, and sperm plasma. We have been rewarded by the finding that the factor exists indeed in normal liver, lactoserum and saliva and we are now capable of inducing at will high degrees of tumor immunity using extracts from these materials.

d. Using such techniques as immunoelectrophoresis and immunofluorescence, we have been able to demonstrate the existence in the serum of tumor-bearing animals and in the coating of tumor cells of alpha and beta glycoproteins of the liver.

In 1967 we published with Dr. John H. Peters a paper "Rejection of lethal ascites tumors after subcutaneous inoculation: a phenomenon of antigenic expression?" in the Journal of the National Cancer Institute 39: 1129-1139, December 1967.

This was our second paper demonstrating that, under certain privileged circumstances, tumor antigens can be brought to be operant and to bring about the rejection of otherwise tolerated and deadly tumors. More evidence was produced that the fluid surrounding the tumor cells must contain a factor which inhibits any immune defense against cancerous growth.

During 1969 the work was continued as previously with the collaboration of Dr. John H. Peters and Dr. Barry Arnason. Again the purpose was as follows:

a. Investigation, demonstration, identification and isolation of host-contributed factors of tumor growth.

b. Use of these factors in a native or chemically altered state for immunization and immunotherapy.

Activities: A chapter under the title: "Tumors and Serum Glycoproteins. The "Symbodies"," by Charles A. Apffel and John H. Peters was contributed to the Review: "Progress in Experimental Tumor Research", F. Homburger, S. Karger published, Basel, New York. It is in press and will appear this year

in Vol. 12, p. 1-54.

The review is concerned with changes in serum glycoprotein profile of malignancies. It is an attempt to clarify their significance and to investigate interactions of malignant cells with increased or abnormal glycoproteins contributed by the host. The authors have aimed at understanding the pathogenic mechanisms underlying this particular host-tumor relationship. For the first time, a comprehensive survey of the pertinent literature has been made. The review with its 373 references, has collected, connected and integrated a host of data scattered throughout the world literature. Data from our own laboratories at Pondville have been incorporated. One intended purpose has been to make workers in the field aware of investigations similar to their own, done elsewhere, to avoid duplication and to bring about a more concerted pursuit of similar goals.

During the first months of 1969, another paper was written under the title: "Regulation of antigenic expression" by C.A. Apffel and J.H. Peters. It was submitted to the Journal of Theoretical Biology (J.F. Danielli, F.R.S. chief editor) and rapidly accepted for publication. This article is now in press. It is a concretion of concepts that have emerged from our work on immunology of tumors at Pondville and from the study mentioned above on "Tumors and Serum Glycoproteins". A novel system of immunoregulation has been conceived and proposed: one on the peripheral level, acting on antigenic expression. Basing on experimental data from our laboratory and from many others, it suggests that one biological role of glycoproteins may be to repress antigens. Attention is drawn to relations which appear to exist between the carbohydrates of polysaccharides, proteoglycans and glycoproteins, their capacity to bind water or to form gels, and antigenic expression. It emphasizes the association of antigens with such compounds as a link unifying highly diversified examples of tolerance by hosts with intact immunological reactivity. Mechanisms are analyzed by which antigenic determinants can be repressed. Such mechanisms would involve Coulombic repulsion, competitive H-bonding, macromolecular exclusion, i.e.,, interception, allosteric distortion and colloid protection. Several situations are scrutinized where the proposed system of antigenic repression can be reasonably postulated to be instrumental. One is cancer, where tumor cells are tolerated in spite of tumor-specific transplantation antigens (TSTA) and, sometimes (in transplanted tumors), histocompatibility antigens which they do not share with the host.

Dr. Apffel's report for 1969 summarizes his progress and goals. "Progress toward goals: The investigations during previous years, as recorded in our earlier publications, had brought us to postulate the existence of one or more limiting factor(s) necessary for tumors to grow and being contributed by the host. The existence of such (a) factor (s)was now confirmed to our satisfaction. Whilst one factor (F_1) appears to be produced in increased quantities by tumor-bearing hosts, it was synthesized even by the normal organism. Means used for extraction and purification were both of chemical and physical nature. Chemical means were differential precipitation with alcohol, perchloric acid, trichloracetic acid, barium acetate, zinc acetate (or sulfate) and rivanol. Salting out was performed at various molarities of ammonium sulfate. Physical means consisted of gel filtration on G-sephasex, column chromatography on DEAE with gradient elution and ultrafiltration in Diaflo pressure chambers through graded membranes under various pressures of nitrogen. This work has been conducted by us under ACS Grant No. T-408 until termination of this grant on March 31, 1969."

"We have continued the work recorded in our paper entitled: Rejection of lethal ascites tumors after subcutaneous inoculations a phenomenon of antigenic expression? J. Nat. Cancer Inst. 39: 1129-1139, 1967. After several fruitless attempts, we have been able to achieve with dispersed live tumor cells of solid syngeneic tumors host-reactions and rejections similar to those observed with ascites tumors (as described in our above mentioned paper). The tumor cells were suspended and incubated in native isogenic serum and in fractions thereof, separated by ultrafiltration. The ultimate experiment was carried out under twelve different modalities with twelve groups of ten animals."

"A few tentative conclusions were drawn from these results:

a. One more confirmation that some host-contributed serum protein (s) is or are required for tumor growth.
b. Two factors, carried by serum, might be involved: one of low molecular weight, the other with a mol. weight of 100,000.

c. Citrate most likely complexes bivalent cations required by the interaction of the small molecular factor with the surface of tumor cells.

d. The Hageman factor (coagulation factor #12) is required for the observed rejection of tumor inocula. The early appearance of these reactions (second to fourth day after inoculation), the role of factor XII (known to be involved in anaphylaxis), their prevention by citrate are outstanding feature. The latter fact suggests that the reactions may be related with the localized Schwartzman phenomenon rather than allograft reactions."

"Future Plans: The small molecular factors F_1 has been purified to a certain degree. Purification has not yet reached the stage where an exact characterization of the corresponding protein has become possible. Further purification by means of gel filtration, chromatography and preparational sone electrophoresis on acrylamide gels is planned."

"The second factor (F_2) with a molecular weight above 100,000 has no tumor immunogenicity. It is presumed to be immunoglobulin A (IGA) but this postulate remains to be ascertained.

ACKNOWLEDGEMENT

I wish to thank all those who have helped me assemble this material and especially:
Miss Evelyn Kapinos, who served for thirty years as Secretary to three Superintendents.
Miss Helen McDonald of the X-ray Department.
Dr. Masao Yatsuhashi, Chief of Professional Services.
This book has been prepared without cost to the Hospital or State. The Daland Society has paid the cost of printing and mailing.

Ernest M. Daland, M.D.

Commissioners of Public Health

George H. Bigelow, M.D.	1925-33
Henry Chadwick, M.D.	1933-38
Paul J. Jakmauh, M.D.	1938-43
Vlado A. Getting, M.D.	1943-53
Samuel B. Kirkwood, M.D.	1953-58
Roy F. Feemster, M.D.	1958-59
Alfred L. Frechette, M.D.	1959-

Superintendents

Lyman A. Jones, M.D.	1927-29
George M. Sullivan, M.D.	1929-34
George L. Parker, M.D.	1934-59
Claire W. Twinam, M.D.	1959-67
Henry Kolbe, M.D.	1967-

PONDVILLE HOSPITAL STAFF

Chief of Staff		
Ernest M. Daland	1927-1959	
Chief of Professional Services		
W. Bradford Patterson	1959-1963	
Masao Yatsuhashi	1963-	
General Surgery		
Ernest M. Daland	1927-1959	Then consulting
Grantley W. Taylor	1928-1955	Died 1966
Horatio Rogers	1929-1948	
Valmore Pelletier	1931-1936	
Richard Wallace	1933-1958	Died 1959
Clifford Franseen	1936-1937	
Thomas Anglem	1937-1945	
Ira T. Nathanson	1940-1954	Died 1954
Gerald B. Garcelon	1948-	
Frank C. Wheelock, Jr.	1953-	
James Cross	1955-1962	Died 1962
William P. Rogers, Jr.	1954-	
Frank Cahill	1955-	
Eugene Guralnick	1957-	
Joseph E. Murray	1959-	Consulting
Andrew G. Jessiman	1960-1962	
Chester Rosoff	1960-1966	
Donald B. Shahon	1960-	
Peter Mozden	1960-	
Charles Reynolds	1966-	
Eugene McDonough	1967-	
Edward Kondi (Chemotherapy)	1969-	

Alternates		
Frederick Davies	1958-1960	
Martin Bellinger	1957-	
Medicine		
Henry Jackson, Jr.	1927-1946	Died 1968
Eugene C. Glover	1931-1932	Died 1932
Ovid O. Meyer	1932-1932	
Dudley Merrill	1932-	
Maxwell Finland	1933-	Consulting
Rita Kelley	1951-	
Thomas C. Hall	1956-1968	
John Freymann	1957-1964	
Joseph Petranek	1961-	
Hans Nevinny-Stickell	1962-	
James L. Tullis	1962-	Consulting
Hugh Pyle	1963-	Consulting

Larry Nathanson	1964-	
Robert W. Carey	1965-	
Christiaan L.D. Khung	1965-	
John Cavins (Skin chemotherapy)	1969-	
Edmund Klein (Skin chemotherapy)	1969-	

Alternate

Thomas Chalmers	1948-1961	

Radiology

Isaac Gerber	1927-1928	Died 1952
Richard Dresser	1929-1937	Died 1965
Charles Dumas	1930-1955	Died 1955
Max Ritvo	1939-1943	Died
John Turner	1937-1939	
William J. Elliott	1937-1939	
Edward C. Vogt	1939 .	
Oscar Peterson	1943-1944	
Morris Zeltzerman	1945 .	
George White	1946-	
H. Peter Mueller	1945-	
Merrill Sosman (Chief)	1948-1959	Died 1959
Milford Schulz	1954-	
James B. Dealy, Jr.	1960-	
Ronald J. Messer (Chief)	1965-	
James Potchen	1965-1966	
George Farrell	1966-1968	
Martin Nissell	1967-1969	

Alternate

Jack Spencer	1936-1937	

Radiation Physicists

J. Cramer Hudson	1928-1943	Died 1943
Archie Grant	1938 .	
Robert Butler	1940-1946	
W. Edward Gauntlett	1941-1946	
Russell F. Cowing	1943-	
Charles J. Spalding	1945-	
Jacob Spira	1968-	

Anesthesiology

Sidney Wiggin	1936-1937	
Joseph Tartakoff	1938-1946	
Howard L. Elliott	1945-1946	
Leo Hand	1949-	Consulting
Francis Audin	1949-	Consulting
Dante Adelizzi	1958-1969	Consulting
Charles Hauck	1959-	
Edmund Neves	1965-	

Biochemistry		
F.H.L. Taylor, Ph.D.	1934-1941	Died
Dentistry		
Emanuel Kline	1928-1931	1943-1944
Harry W. Harding	1931-	
Dermatologist		
Arthur M. Greenwood	1927-1935	Died
Gynecology		
Joe V. Meigs (Chief)	1927-1959	Then Consulting Died 1963
Langdon Parsons	1931-1965	Then Consulting
Howard Ulfelder	1946-	
John B. Graham	1953-1954	
Thomas Green, Jr. (Chief 1959)	1957-	
Arthur L. Herbst	1965-	
Laryngology		
D. Crosby Greene	1927*	Died
Carl H. Ernlund	1927-1948	
Daniel Miller	1946-1956	Then Consulting
John Frazee	1948-1959	
Louis E. Griffey	1958-	

*Due to illness, no active service.

Neurosurgery		
John S. Hodgson	1928-1953	
Donald D. Matson	1953-1969	Died 1969
Edgar Bering	1953-1968	
John Shillito	1958-	
Francis Rockett	1964-	
Larry Page	1968-	
William Heisey	1969-	
Opthalmology		
Hugo Riemer	1930-1954	Died
Karl Riemer	1955-	
Oral Surgery		
Richard H. Norton	1927-1936	
Walter Guralnick	1949-	
Orthopedic Surgery		
Paul Norton	1965-	
William Kermond	1965-	
Pathology		
J. Homer Wright	1927-1928	Died 1928
Shields Warren	1928-1957	Consulting until 1965
Paul Doege (Autopsies)	1928 .	

Laurence Sophian	1928-1929	
William Lewis	1929-1930	
Ralph Irwin	1930-1931	
Olive Gates	1936-1948	Then Consulting
Samuel Hicks	1948-1962	
Sheldon C. Sommers	1950-1961	
John L. Tullis	1954-1959	
James T. Duhig	1959-1966	
Max Levene (Chief)	1962-1963	
Robert L. McAuley (Chief)	1964-1969	
Gilbert H. Friedell	1964-	
Mayo E. Brown, Ph.D.	1966-	

Thoracic Surgery

John D. Stewart	1938-1940	
Richard Sweet	1940-1949	Died 1962
J. Gordon Scannell	1949-	
Earl W. Wilkins, Jr.	1958-	
John F. Burke	1960-	
John M. Head	1967-	
Ashby C. Moncure	1969-	

Alternate

Edwin Salzman	1964-	

Urology

Roger C. Graves (Chief)	1927-1957	Then Consultant
Charles C.J. Kickham (Chief 1957)	1931-	
Weston T. Buddington	1938-1963	
Edward M. Mahoney	1960-	
Charles Smallwood	1968-	

Chief of Research Laboratories

Lloyd C. Fogg	1949-1960	Died 1960

Director of Laboratories

Carl Harris	1954-	

Printed in U.S.A.