XVIX.

HISTORY OF HOSPITALS
and
HOSPITAL SERVICE IN PORTLAND

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AND

HOSPITAL SERVICE IN PORTLAND

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CHAPTER I

REVIEW OF HISTORY OF HOSPITALS by DR. MALCOLM T. MacEACHERN

The practice of medicine in hospitals is growing rapidly. The 1936 survey of hospitals by the Council on Medical Education and Hospitals of the American Medical Association revealed that for the twenty-seventh consecutive year, a net increase of more than 20,000 beds has occurred in the United States. The total number of patients treated in hospitals in the United States in 1936 was 8,646,885, and there were 6,189 hospitals with a bed capacity of 1,096,721 beds.[1]

I think this is a compliment to the men and the institutions which have contributed so greatly to the service of mankind, and I feel there is no history more interesting than that of hospitals. Even the word itself is suggestive of service in its history. It is

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[1] "Hospital Service in the United States" Journal of the American Medical Association; Vol. 108, No. 13; March 27, 1937; p 1034.

derived from the Latin word "hospes" meaning a host or guest. The French word "hospice" is derived from the Latin "hospitium", which was a place in which a guest was received.[1] Hospitals are an outgrowth of the desire to help those less fortunate, and it goes back to the time when there were no organizations for the purpose. A man simply offered his suggestions and remedies to a suffering neighbor.

As civilization progressed from the individual, through the family, the tribe, to an organized community, the welfare of the ill and unfortunate became a community problem. Common responsibility for the unfortunate is a characteristic of modern civilization.

"The story of the birth and evolution of the modern hospital is an accurate index of the triumph of civilization over barbarism, of altruism over egoism, of a slow but certain upward struggle against individualism, and of a progress toward an ideal as characterized by a whole-hearted interest in the welfare of the community as a whole."[2]

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[1] Mac Eachern, "Hospital Organization and Management", p. 6 (footnote).
[2] Ibid p. 1.

The early history of hospitals is closely allied to religion, and while in many instances progress has been prevented by the mysticism and superstitions which were present, we owe a great debt to the priests and scholars of ancient times.

Greek temples were among the first forerunners of the modern hospital. One of these provided refuge for those who were ill as early as 1134 B.C. at Titanus. This temple was dedicated to Aesculapius, the Greek god of medicine. Another Greek temple built at Epidaurus ministered to the sick. Salt, honey, and water from the sacred spring were prescribed. Hot and cold baths were given. Sunshine and gymnastics were prescribed, and what may be called the first clinical records were inscribed on the columns of the temple at Epidaurus. These included the names of patients, brief case histories, and the outcome of the case. Of interest too, is the fact that they had libraries and rooms for visitors, attendants, priests, and physicians.

Hippocrates was born in one of these Greek temples at Kos in 460 B.C., and later became priest-physician at Kos. His theories resembled many of those of today. He used percussion, auscultation, and wrote on fractures. He also described such conditions as epilepsy, tuberculosis, malarial fever, and ulcers. The records of his cases were so complete that in many cases they equalled those of today. Hippocrates is called the "father of

medicine", and much progress was made because he emphasized facts rather than faith.

These Aesculapia or temples spread rapidly through Greece and Rome and it is interesting to learn that the Romans had endowed hospitals, which is revealed by inscriptions upon a tablet dated at the time of Trajan (51-117).

In Hindu literature we find that many centuries before Christ, Buddha appointed a physician for every ten villages and built hospitals for the crippled and the poor. His son built refuges for pregnant women, and those who were diseased. It is known too, that there were hospitals in Ceylon as early as 437 B.C.

About 226 B.C. there were built eighteen institutions for the care of the sick by King Asoka. These hospitals were similar to ours of today in that the patients were cared for gently. Fresh fruits and vegetables were given as well as massages, and the attendants were ordered to keep their own bodies clean. Dr. Mac Eachern states that according to Garrison, the Hindu surgeons were very adept at surgery, and knew every operative procedure, except the use of the ligature.

The Egyptian physicians made use of such drugs as alum, castor oil, and opium, but their hospitals were characterized by faith healing.

In 335 the decree of Constantine closed the Greek and Roman hospitals and many Christian hospitals were

built. These early Christian hospitals reached their peak during the fourth and fifth centuries. It is interesting to know that Fabiola, a prominent Roman matron, endowed a public hospital in Rome in 390 A.D. However, European countries were lax in their care of the sick during the early Christian era. Arabia and Bagdad, on the other hand, progressed. Rhazes, chief physician in Bagdad, was a skilled surgeon. He used sheep's intestines for suturing, and cleansed wounds with alcohol. He also described smallpox and measles, and his is the first account of these diseases of which we have a record.

During the middle ages, religion with its superstitions of that time continued its influence on hospitals. During this period it was sacrilege to open a body and faith was far more important than skill. In spite of this, however, religion had a great influence for good later. Christianity spread and hospitals were again built. The Crusades stimulated this revival especially about 1096, and many hospitals were built.

The next period of hospital growth was in the twelfth and thirteenth centuries. The hospitals of this period were costly, and were often decorated with tapestries and windows of stained glass. During this period three famous hospitals were established in London--St. Bartholomew's in 1137; St. Thomas before 1207; and St. Mary of Bethlehem in 1247, which was the first hospital to be used exclusively for the insane.

The Hotel Dieu of Paris was rebuilt at the beginning

of the thirteenth century and was probably typical of the better hospitals of that period, although two patients generally shared one bed and heavy curtains hung from canopies over the bed. Paris was well supplied with hospitals during the thirteenth century.

Most hospitals during this period were poorly managed. Several patients were crowded into one bed, regardless of whether the disease were mild or highly contagious, and it was not uncommon for patients to awaken to find a corpse lying beside them.

The church edict of 1163 was another blow to the progress of hospitals. This edict forbade the clergy to perform operations in which blood was shed. As a result barbers did what surgery was done. The church also forbade dissection and experimentation. Nursing suffered and the sick were sadly neglected.

One exception to this general deterioration was the Al Mansur Hospital, built at Cairo in 1276. This hospital had separate wards for serious disease, out-patient clinics, and diet kitchens.

The Renaissance proved to be a period of progress. The care of the sick improved, new drugs were discovered, anatomy became a recognized study, dissection was performed, and cross-sectional anatomy was originated by Leonardo de Vinci. Surgery, however, progressed much more rapidly than medicine.

The greatest effect on hospitals was that the sick came to get well, not simply to seek shelter during illness.

During the sixteenth century there was another period of retrogression which continued throughout the seventeenth century, but in spite of this our medical schools developed in such hospitals as did exist. Two other outstanding events occurred during this period of retrogression. One was the discovery of the microscope by Leeuwenhoek; the other, the founding of the Daughters of Charity of St. Vincent de Paul, which proved to be a great contribution to the nursing service.

The eighteenth century brought about another revival in the building of hospitals, some of which were supported jointly by parishes. In 1732, there were one hundred and fifteen of these hospitals, some of which were a combination of almshouse and hospital. Free dispensaries were established, the first of which failed. Nursing during this period was dreadful. Cleanliness was wanting, and patients were robbed and mistreated by the women who cared for them.

In 1727 a machine was invented for pumping fresh air into and foul air out of rooms, which was finally installed in hospitals, and which, was sadly needed.

The hospitals suffered throughout this period, and a revival did not begin until after the middle of the ninteenth century.

The first hospital built on the American continent was built in Mexico in 1524. The second was opened in Quebec in 1639. The first hospital in the United States

was built in 1663. "Old Blockley" was established in Philadelphia in 1732, and is known today as the Philadelphia General Hospital. The first incorporated hospital in the United States was also established in Philadelphia through the efforts of Benjamin Franklin and Dr. Thomas Bond.

Philadelphia also had the first quarantine station for immigrants which was established in 1743.

In 1769 New York with a population of nearly 300,000 had no hospitals. The New York Hospital was built about this time and began giving instruction in nursing under the supervision of Dr. Valentine Seaman. Bellevue Hospital is another hospital of historic interest. It was established first in 1736 with the founding of the New York Workhouse in which one room was devoted to the care of the sick. The Massachusetts General Hospital was established in Boston in 1811.

The hospital movement continued, but in spite of numerous hospitals, the first half of the ninteenth century was a dark period for hospitals. Pain, hemorrhage, infection, and gangrene were rife in hospital wards. Mortality rates for surgery were as high as ninety and one hundred per cent. Nursing was often done by the criminal class, and they exploited and abused the patients.

Hospitals owe a great debt to Florence Nightingale, who in the middle of the nineteenth century was responsible for the revolution of nursing service.

Another great improvement during this time was the discovery of ether by Long and Morton in 1842. Chloro-

form was first used in 1847.

In 1847 the American Medical Association was founded with the objectives of bettering medical education and the elimination of irregular practitioners. Then came the wonderful work of Pasteur and Lister, the study of cytology by Schwann and Henle, and research as to etiology of disease by Koch, Loeffler, and von Behring.

After the Civil war came great improvements in the segregation of patients and in ventilation of hospitals.

The first American nursing schools were established in 1873 at Bellevue, New Haven, and Massachusetts General.

Between 1880-1890 the tubercle bacillus was discovered. Pateur vaccinated against anthrax; the cholera bacillus was isolated by Koch; diphtheria was treated with antitoxin; the tetanus bacillus and the parasite of malarial fever were isolated; and inoculation for rabies was successful.

The beginning of asepsis came in 1886 with Bergmann's invention of steam sterilization. Rubber gloves were first used in 1890-1891, an important factory in surgical asepsis.

In 1895 the X-ray was discovered by Roentgen.

The result of all these wonderful contributions was a rapid development in hospitals. Since 1873 the population of the United States has doubled, but the number of hospitals has multiplied forty-two times. We have had many more inventions such as the electrocardiograph, improved treatment in diseases of metabolism and nutrition, and the discovery of hormones.

Nursing education has had a corresponding development and has eliminated almost entirely the exploitation of the student and the patient.

Medical education has made rapid strides, and in 1934 there were seventy-seven medical schools in the United States which are approved by the Council on Medical Education and Hospitals.

In 1918 there was begun a movement for the standardization of hospitals by the American College of Surgeons. In 1918 only eighty-nine hospitals in the United States and Canada could meet the requirements. In 1934, two thousand eighty-four hospitals were on the approved list.

Some of the requirements are:

1. An organized, competent, and ethical medical staff.

2. Regular staff conferences for review of clinical work.

3. Fee splitting is barred.

4. Accurate and complete clinical records must be kept.

5. Adequate diagnostic and therapeutic facilities must be provided.

The best way to describe the progress of hospitals during the twentieth century would probably be to say there has been a "growth of a hospital conscience". The patient of today takes precedence, and our hospitals are planned to meet the patient's needs--both physical and mental, and to meet the needs of the community. Our hospitals of today have a great responsibility in striving

toward that end--the needs of the community, and they have a wonderful opportunity because our people are ready and willing to cooperate. Today the patient enters the hospital willingly feeling that he will receive health and the best that medical science can offer.

CHAPTER II

THE MODERN HOSPITAL

Our hospitals of today are not only institutions in which to shelter the sick. They are built with the intention of rendering many services and their functions are wide and varied. As a result, we have many divisions of hospital service. The problems in creating and operating hospitals are the same the world over, but the growth of our communities have created new demands and new needs; and to meet these we find our hospitals of today divided into different types depending on their relationship to the community as a whole.

Hospitals may be classified broadly into two groups; first, the general hospital, which may be divided further into those for charity, those for charity and pay patients, and those which only accept pay patients; second, the special hospital, which may also be divided into the three groups. Our hospitals of today go much further in dividing their services. They may be grouped into two main classifications--clinical, and ownership and control.

Dr. Mac Eachern gives the following classification of hospitals according to clinical services, and ownership and control:[1]

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[1] Mac Eachern, "Hospital Organization and Management", p. 35

"CLINICAL

"I General

"II Special
- Medicine
  - Internal Medicine
  - Nervous and Mental
  - Tuberculosis
  - Children
  - Communicable
  - Venereal
- Surgery
  - Eye, Ear, Nose and Throat
  - Orthopedic
  - Diseases of Women
  - Cancer
  - Industrial
- Maternity
- Chronic and Incurable
- Convalescent

"OWNERSHIP AND CONTROL

"I Governmental
- Federal
  - Army
  - Navy
  - Veterans Administration
  - United States Public Health Service
- State
- County
- City

"II Non-governmental
- Church
- Fraternal Order
- Community
- Private--not for profit
- Private--for profit"

A general hospital may render all the services listed under the clinical classification, but as medicine has advanced the tendency has been to divide the services into different departments. In very large institutions the different departments are conducted in separate buildings, each department limiting its services to the group indicated by its name. Each hospital under the clinical group

may be further classified according to its ownership and control. Indeed, our hospital is not completely classified until we have placed it under the proper heading in each classification. As an example we may take the Shriners' Hospitals throughout North America. They are specialized hospitals for the care of children. Their services are orthopedic only. They are non-governmental, are owned by the fraternal order, "The Imperial Council of the Ancient Arabic Order of the Nobles of the Mystic Shrine of North America". They are not operated for profit and are controlled by a board of trustees, which has general charge of the entire system of hospitals, but a local board of governors operates and manages each individual unit. They are maintained by a small annual contribution from each member of the organization.

Thus, we could take any hospital and classify it according to its services, ownership, and control.

I believe the clinical classification of hospitals is self-explanatory, but I think it would be helpful to elaborate somewhat on the classification of hospitals according to ownership and control. Heretofore hospitals have simply been spoken of as public or private, but these terms are not accurate. Hospitals, with a very few exceptions, are public in that they are directly or indirectly owned by the community and have a definite relation to the community. If they wish support from the community, they must give service which will entitle them to it.

Governmental hospitals may be owned by federal, state, county, or municipal governments. There is a grave danger in government ownership of hospitals, that of needless expense and a lack of efficiency because of the interest of politicians. This danger should always be guarded against and should be eliminated as far as possible by the appointment of boards to manage the hospitals. These boards must be free to act independently, regardless of the political organization.

Federal hospitals are owned and controlled by the federal government. Various departments of the government control certain federal hospitals. They are supported by taxation.

The department of the army controls the army hospitals. They treat only men enlisted in the army, and the patients are treated by army doctors. There are both general and special hospitals under this department.

Navy hospitals are similar. They are under the department of the navy and treat only naval men.

The hospitals under the Veterans administration care for the men who have seen war service. The have three types of hospitals, general, tuberculosis, and neuro-psychiatric hospitals. The physicians and surgeons are employed by the veterans administration. The administration of veterans affairs in Washington, D. C., is responsible to the president of the United States.

The hospitals under the United States Public Health Service are general hospitals, and are under the department of the Treasury.

State hospitals are owned by the state, and are controlled by some organization which is responsible to the state government. The medical staff is very often closed, and the doctors usually devote their entire time to this service.

County hospitals are owned by the county, and are controlled by that government or by a board which is appointed. County hospitals may be general or specialized, and are usually organized to care for the indigent in the community. Local doctors usually make up the medical staff, and as a rule are not compensated for their services.

Municipal hospitals are very like county hospitals, except that they are owned and controlled by the city.

Church and fraternal hospitals are alike. In one the church owns and controls the hospital, in the other the fraternal organization. They are supported by subscriptions, endowments, and by patients. They may be controlled by the organization or by a separate governing body.

Community hospitals are owned and controlled by the community, but are not in any way controlled by the government of the community. They are supported by fees from patients and by subscriptions. They are controlled by a board of trustees or governors.

A private hospital organized not for profit is usually incorporated. It is very much like a community hospital. The responsibilities of management and of financing are assumed by a group of citizens who organize a

stock company. The stock issued does not bear interest, so in reality stock owned in such a company amounts to a gift. Control is vested in a board of governors which is chosen by the stock holders.

A private hospital which is organized for profit is very much like a business organization. Control is usually retained by the owners, but if there are many stockholders a board of directors might be chosen to control and manage the hospital. A private hospital may fill a very definite need in a community if there are enough wealthy people in the community to support it. The medical staff is very often a closed staff. All patients in this type of hospital pay at least the cost of their services.

Hospitals regardless of their classification have certain functions to perform. The most important and primary function of any hospital is to care for those who are ill or injured. The patient must be considered above all else. To serve patients properly and adequately should be the first objective. If this objective is attained, the other functions will alutomatically be fulfilled as they are necessary in order to adequately care for patients.

Before enumerating other functions, I will mention a few requirements which are necessary in order to give adequate care to patients. First of all a hospital should be equipped to care for all groups in the community, the

wealthy, those of moderate means, and those who must be cared for without charge. Accomodations of different kinds are not only needed to satisfy the desires of those being cared for. They are a necessity so that all who are seriously ill, physically or mentally, may be cared for properly. Further, the hospital must be clean and the surroundings as pleasant as possible so that patients may be at ease both physically and mentally.

Facilities must be provided by the hospital so that the doctor may be aided both in diagnosis and treatment of his patients.

The personnel must be carefully chosen. It is necessary that people be selected with special training for various departments, and personality must be seriously considered if the patient is to be served in the most efficient manner.

Another problem in adequately caring for patients in the hospital of today is presented in the food service. Diet is so closely associated with the treatment of many diseases today that it is a problem in itself. It is not sufficient that food which is appetizing and plentiful be served patients. The relation of diet to disease demands that a dietitian, who understands diet and disease and who is capable of cooperating with the physician be engaged to supervise this service.

Adequate nursing care must be provided. This varies greatly in each individual hospital. Local conditions must

be considered, and each hospital must work out this problem to fit its needs.

Another responsibility of the hospital in providing for adequate care of the sick lies in the selection of the medical staff. The welfare of the community must be guarded by a careful selection of the medical staff of a hospital. The problem of choosing this staff in a new organization is a difficult one, because very often the governing body is not capable of passing judgment on the eligibility of physicians. In this case the hospital must seek aid from a few doctors in whom they have confidence; or if there is a local medical society, that organization should be consulted. As the institution grows, the responsibility of choosing further members of the staff should be shared by the medical staff. The physicians on the staff have a very definite interest in the hospital, and are anxious to maintain high professional standards, therefore, they are best fitted to aid the governing body in the selection of new appointees. The staff, however, must constantly audit its work and check if they find any phase of their work to be below standards of the reputable, ethical hospital.

There are three other major functions of hospitals. They are the education of doctors, nurses, and other workers in the hospital; to aid in the prevention of disease and the promotion of health; and to promote scientific research in the field of medicine.

The time spent in the hospitals by graduates of medical schools is a very essential part of the education of

doctors. The value of this period is safeguarded by standards set up by the Council on Medical Education and Hospitals of the American Medical Association. Hospitals registered by the American Medical Association and approved are listed each year by the association. They are investigated and if approved for internship, that is indicated in their list of registered hospitals. The student and the medical profession are both benefited as a result of these standards. The education of the student is promoted and the reputation of the profession as a whole is safeguarded.

The education of nurses is an educational function of the hospital of equal importance, but it has not been regarded as such in the past. The relationship of the nurse to the hospital has been one of apprenticeship and it has only been in recent years that nursing has been regarded as a profession. As a result nursing education is still undergoing many changes. Hospitals are only very gradually coming to realize that nursing must be placed on an educational basis and that certain requirements must be met if the hospital is to conduct a good school of nursing.

Nursing began as an apprenticeship and the first instruction of which there is any record in the United States was given in New York City by Dr. Valentine Seaman about 1798.

In the year 1880 there were fifteen schools for nurses in the United States and there were graduated in that year one hundred and fifty-seven students. In 1930 there were

over nineteen hundred schools and more than twenty-five thousand nurses were graduated that year.[1] What is the reason for this great increase? There was no way for a nurse to get her training except through an apprenticeship in the hospital. There were no standards which had to be met, and hospitals soon learned that a school of nursing was a solution to nursing care. Nurses were exploited and patients were cared for at a very low cost to hospitals. They were glad to have students, because students rendered valuable services.

Schools and nurses increased so rapidly that the nursing profession became alarmed at the problems arising, and it is through the efforts of members of the profession that nursing education has progressed as rapidly as it has.

Nursing is gradually being placed on a higher educational level, and it is for this reason that hospitals must meet certain requirements if they are to conduct good schools of nursing. Education is always expensive and should be a public responsibility. Hospitals should not bear the cost of nursing education out of funds collected from patients.

A good school of nursing is defined by the Committee on Standards of the National League of Nursing Education as follows: "A good school of nursing is an educational institution which should have as its primary function the preparation of professional nurses". Nursing education is gradu-

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[1] Brown, "Nursing as a Profession", p. 17

ally developing to meet the above definition, and hospitals are slowly coming to realize that this is necessary in order that both patients and nurses may be served better. Hospitals have been reluctant to change their relations to nursing for economic reasons, but the nursing profession has advanced in spite of this fact, and is looking forward to the day when nursing will be on a par with other professions educationally. This result is inevitable, because one of the primary aims and objectives of both the nursing profession and hospitals is the same--better and more adequate care of patients.

In the prevention of disease and the promotion of health, the hospital should work very closely with the public health authorities, and should report immediately any information they may have regarding communicable disease. The hospital should also educate all personnel regarding promotion of health, and a periodic health examination should be required by all employees.

Hospitals may render a real service to humanity if the promotion of research is felt to be a service and function of hospitals. To be able to do this, the hospital must have a good medical records department, in addition to various diagnostic and clinical facilities. Research in medicine is hampered greatly by the fact that it cannot make direct experimentations on the human body. Research must necessarily depend on records, and it is in this field that records prove to be of greatest value.

The hospital, too, benefits by having a good medical records department. It enables those interested to evaluate the work done in the hospital, to determine the quality of work, deficiencies, and means by which they may be corrected. The records provide a means of making an inventory, not only of the amount of work done, but of the quality as well.

It is difficult to determine the importance of each function of the hospital. Each one is essential if adequate care is to be rendered to patients and I feel sure that if adequate facilities for diagnosis, good food service, adequate nursing care, the education of personnel, the prevention of disease and promotion of health, and scientific research are all a part of the aims and objectives of our hospitals of today, our patients will be served satisfactorily and adequately; and our hospitals will continue to progress scientifically.

CHAPTER III

REVIEW OF STUDY OF HOSPITAL SERVICE IN PORTLAND by the PORTLAND COUNCIL OF SOCIAL AGENCIES

This chapter is a review of a study made of the economic and social aspects of of hospital service in Portland under the auspices of the Portland Council of Social Agencies. It was published in the Commonwealth Review, Volume XII, No. 1, March 1930. It was the only study which I was able to find on hospital service in Portland, and I have followed it very closely because of the statistics given.

The largest item of expense for medical care in the United States is the cost of hospitalization. The American Hospital Association estimated that in 1930 about $5,000,000,000 were invested in hospital equipment, and that equipment valued at millions is being added each year. Dr. W. S. Rankin has estimated that the cost of new equipment added annually is $750,000,000.

In 1930 there were about seven thousand hospitals registered by the American Medical Association, and each year the demand increases for hospital accomodations. From 1923-1930 the number of hospital beds increased over 150,000.

The purpose of this survey was to determine the costs of hospital service to individuals and to the community, also the distribution of various kinds of hospital service in Portland.

The Survey Committee included all hospitals in Portland which had a bed capacity of twenty-five or over, which were the following:

City Isolation Hospital
Doernbecher Memorial Hospital for Children
Dr. Robert C. Coffey's Clinic and Hospital
Emanuel Hospital
Good Samaritan Hospital
Multnomah County Hospital
Multnomah County Tuberculosis Pavilion
Portland Convalescent Hospital
Portland Medical Hospital
Portland Open Air Sanatorium
Portland Sanatarium
Sellwood Hospital
Shriners' Hospital
St. Vincent's Hospital
United States Veterans' Hospital

The above hospitals are under public and private auspices. Smaller hospitals were not included either because they did not care to be, or because their records were inadequate.

The population figure used for Portland in this study was 300,000.

It was found that for the entire group of hospitals 36.3 per cent of the patients served were non-residents. Where 25 per cent or more of the service of any one agency was rendered to individuals outside the metropolitan area of Portland, that percentage was deducted from the service and financial figures of that hospital.

Following is quoted a classification of income, which was used by the committee, and which was for residents only. This classification was quoted by the committee from "Volume and Cost of Social Work" by Clapp:

"1. Earnings for Service Rendered
We exclude all receipts from public revenue or tax funds. We include payments by or on account of beneficiaries for service rendered. We include payments from employers, relatives, lodges, insurance, etc.

"2. Public Revenue (Tax Funds)
We include all payments from governmental bodies, whether as subsidies, per capita payments, or refund for cost service to individual beneficiaries.

"3. Endowment
We include all current net income from endowments and other invested funds. We include net rental from property owned but not used for work of agency,.... We include legacies used for current expense and payments from foundations and trust funds.

"4. Contributions
We include all contributions in money for current expense purposes. We exclude those for buildings, endowment, reduction of mortgages, or other capital account ...."

The committee found in their survey that the total income for local work of Portland hospitals was $1,775,043.94, or $5.85 per capita. It was secured from the following sources, and again it is for residents only:

Source	Amount	Percent
Earnings	$1,262,492.99	71.9
Public Revenue	437,642.11	24.9
Contributions	39,272.77	2.2
Endowment	15,636.07	.9
	$1,755,043.94	99.9

The per capita income from each of the four sources was found by the committee to be as follows:

Source	Per Capita
Earnings	$4.208
Public Revenue	1.459
Contributions	.131
Endowments	.052
	$5.85

The committee found that hospitals have a larger earning capacity than any other type of welfare service, the reason being that hospitals serve all classes of the community, the rich as well as the poor.

They found also that the income from public revenue far exceeds income from contributions and endowments, which is in conformity with a nation-wide tendency. Public agencies have accepted to a great extent the responsibility for supporting unearned needs in all lines of welfare service.

Contributions for operating expense are only considered for the Shriners' Hospital for Crippled Children. Its entire income is from this source. In all others the contributions are negligible.

At the time the committee made their survey only three hospitals in Portland had an endowment income. I do not know if this figure has increased since.

The income from public revenue was derived from the following governmental agencies:

Source	Amount
City government	$ 31,698.05
County government	202,000.00
State government	71,444.06
Federal government	132,642.11
	$437,642.11

$1,609,305.04 or $5.364 per capita was the total amount spent by Portland hospitals for resident service. Total expense is the total current expense and does not include capital items such as new buildings, payments on mortgages, etc. Portland hospitals at the time the survey was made spent $1.66 less per capita that St. Paul and $1.68 more than Indianapolis. Portland ranked third in the cities compared by the committee. Each city ranked the same for both total income and total expenditure. The following table from the survey gives the per capita expenditures for eight cities:

City	Per Capita Expenditures
St. Paul	$7.026
Minneapolis	6.835
PORTLAND	5.364
Kansas City	5.261
New Orleans	4.911
Rochester	4.852
Toledo	4.324
Indianapolis	3.681

The average day cost per patient for any hospital is arrived at by dividing the total operating cost during a certain length of time by the total number of days of care given during the same period of time.

In Portland the cost per day varies from less than $2.00 to more than $6.00. This variation is due to the wide variation in items included in computing per diem cost. Interest on capital investment, for example, was not uniformly included. Repairs and replacements were not included by all.

At the time this survey was made the fifteen hospi-

tals studied had 1,437 beds available for local service, or 4.79 beds for every thousand population. The committee found that Portland ranked sixth in beds per thousand population when compared with the other seven cities, as follows:

Cities	Beds per thousand
St. Paul	7.75
Minneapolis	6.49
New Orleans	6.38
Kansas City	5.46
Rochester	4.81
PORTLAND	4.79
Toledo	3.50
Indianapolis	3.46

The above table would seem to indicate that Portland did not have a sufficient number of hospital beds when the survey was made. St. Paul had 2.94, Minneapolis 1.70, and New Orleans 1.59 more hospital beds per thousand population than Portland. This does not necessarily indicate too few in Portland. A city situated in the Northwest where the climate is particularly favorable to health; where the infant mortality rate is low; and where the population is largely native white; may not need as many hospital beds as cities where these conditions do not exist.

The following table taken from the report shows that Portland ranked fourth in per capita days of care:

Cities	Per Capita days of care
St. Paul	2.03
Minneapolis	1.53
Kansas City	1.49
PORTLAND	1.37
New Orleans	1.36
Rochester	1.33
Toledo	.92
Indianapolis	.90

It was found that Portland hospitals ranked higher in per capita days of care than in beds per thousand population. Portland used its hospital beds more than New Orleans or Rochester, where hospitals ranked lower than Portland in per capita days of care and higher in beds per thousand population.

If all beds available in Portland for resident service had been occupied every day in the year, the total number of days would have been 524,504. The actual number of days they were occupied was 412,094; which was an occupancy of 79 per cent.

It was found, in general, that those cities which ranked high in the number of beds ranked low in their occupancy. Those which ranked low in number ranked high in occupancy. Indianapolis was found to be the exception. It had the lowest number of beds and a low percentage of occupancy. The following table from the survey gives the percentage of occupancy of the cities which were used for comparison.

Cities	Percentage of occupancy
PORTLAND	79 %
Rochester	77.9
Kansas City	74.6
Toledo	71.8
St. Paul	71.7
Indianapolis	71.2
Minneapolis	64.6
New Orleans	63.4

The standard average which the American Hospital Association believed should be taken for the year when this survey was made, was 80 per cent occupancy. This figure

was taken to allow for the fluctuation caused by seasonal peaks.

There were found to be wide variations in the occupancy of different hospitals, from 23.4 per cent to 100 per cent. The large general hospitals which represented 80 per cent of the bed capacity for the city were found to have a percentage of occupancy of 85.3 per cent; the reason for this being that as a group, general medical and surgical beds are well utilized.

The number of beds available for different services is an important item. There may be an over-supply of one kind of service and too few beds available for another kind of service. If this is the case a large number of beds does not mean adequate hospitalization. Following is a table which shows how the 1,437 beds in Portland for residents were distributed when this survey was made:

Type of Service	Number of beds	
General Hospitals	1,271	
Children		78
Maternity		160
Orthopedic (children)	40	
Communicable disease	70	
Tuberculosis (outside Portland)	56	
	1,437	

According to the above table Portland was not over supplied with general hospital beds. Dr. Haven Emerson, an authority on public health, says that five beds per thousand population are necessary for adequate hospitalization of general medical and surgical cases.

At the time of this survey, in addition to the 1,271 beds in the above table, smaller non-standardized hospi-

tals provided 40 general hospital beds and the United States Veterans' Hospital, completed late in 1928, added about 50 general hospital beds for local service. This made a total of 1,360 general hospital beds.

Multnomah County Hospital in February 1928 was filled to capacity 27.5 days and in March 1928, had a 100 per cent occupancy for the entire month. The county hospital gives only free care, so those who could not be admitted may have had difficulty in obtaining care in the hospitals which did not give free care, although they may have had beds which were not occupied. Conditions were not so acute in the other general hospitals. During the month of highest occupancy, one large general hospital had a margin of 968 days of care, another a margin of 720 days care.

"On the basis of these facts, it is evident that there is an inadequate number of general hospital beds for free care, and with private hospitals 100 per cent occupied during certain periods of the year, there is only a small margin to take care of an increasing population."

Portland had a sufficient number of beds for maternity cases at the time of this survey if we accept Dr. Emerson's standard of 45 beds for each one hundred thousand of population to hospitalize 30 per cent of all maternity patients.

Portland had at this time 160 beds for maternity cases.

In the general hospitals there were 78 beds set aside for children's care. These beds were all in children's wards. In addition Portland had 40 children's beds for

orthopedic cases. The demand exceeds the supply for orthopedic cases. Doernbecher Memorial Hospital for Children can only use one third of its beds for this type of care, and there is always a long waiting list. The Shriners' Hospital which has only orthopedic cases has an occupancy of 100 per cent at all times.

There is no sanatorium for tuberculosis patients in Portland, and at the time of this survey, there was an ordinance forbidding the care of tuberculosis patients in general hospitals in Portland. In 1927-28, in spite of the ordinance, 76 tuberculosis patients died in Portland hospitals. Taking an average of a five year period (1924-1928), the annual number of deaths from tuberculosis in Portland was 216. The standard for the National Tuberculosis Association, at the time of this survey, was that a sanatorium bed for each annual death was a minimum requirement to meet the demands of the tuberculosis population.

Portland tuberculosis patients are cared for in the nearby private sanatoria, in the County pavilion at Troutdale, and in the state sanatorium at Salem.

Forty per cent of the population in the state sanatorium from 1926-28 were from Portland. The state sanatorium had 190 beds, so this gave Portland 76, its just portion of the entire quota. In 1928, however, 45 per cent of Portland applicants could not be admitted.

The Portland Open Air Sanatorium, the largest private sanatorium had an average of 21 beds occupied in 1928 by

Portland patients, and the West Hills Sanatorium had five beds occupied by Portland patients.

The Multnomah County Pavilion had 35 beds. It was originally planned to care for the tuberculosis patients in the county farm, and is in no way adequate to meet the needs of the city of Portland.

The United States Veterans' Hospital, completed after July 1928, had facilities for caring for 20 tuberculosis patients from Portland.

This made a maximum of 157 beds for the care of tuberculosis patients of Portland. This was 59 beds less than the minimum standard of the National Tuberculosis Association.

The state tuberculosis sanatorium at the Dalles has probably relieved in part these crowded conditions.

The Oregon Tuberculosis Association found that of 144 deaths within the city limits in 1928, 36 deaths occurred in hotels, lodging houses, flats, and poor residences; which means that approximately one-fourth of the deaths occurred in unsuitable places. One hundred thirteen or nearly one-third of the cases were unsuitably housed. Presumably all of these people should have been in a sanatorium, and probably would have been had there been enough beds available in Portland. These conditions show that there is a real need for a tuberculosis sanatorium in Portland.

Occupancy of communicable disease beds in Portland is low, probably due to the fact that no Portland hospital is

equipped to care for communicable disease. The 70 beds for communicable disease were all at the City Isolation Hospital, supported almost entirely by municipal taxes.

There is a significant measure of volume in the division of hospital service into "free", "part pay", and "pay". The reason for this is that hospitals serve individuals in the community whose economic status varies a great deal.

The number of beds and days of care are classified on the basis of the definitions which were outlined by the American Hospital Association in Bulletin #66 published in 1926.

"A pay patient is one whose average assessed charge per day equals or exceeds the average cost per patient per day.

"A part pay patient is one whose average assessed charge per day is less than the average cost per patient per day.

"A free patient is one against whome no charge is assessed irrespective of the type of occupancy."

In Portland the hospital beds used for resident service were found by the committee to be divided as follows:

Pay beds	602	41.9%
Part pay beds	305	21.2
Free beds	409	28.5
Not allocated	121	8.4
	1437	100 %

The free care given by Portland hospitals was found to be 150,876 days, which was found to be 36.6 per cent

of the total, although only 28.5 per cent of the beds were free beds. If every free bed were occupied 100 per cent of the time, the maximum of free care would be 149,285 days. Beds definitely designated as free beds gave 137,901 days of free care. In addition 12,975 days of free care were given by hospitals which had no classification for free beds. Hospitals with no income from public revenue, contributions or endowment gave 3,000 days of free care.

Below is a table giving the total number of days during a twelve month period. Because of differences in which the large general hospitals classified their pay and part pay cases, the two classifications are combined:

Free days	150,876
Pay and part pay	261,218
Total days	412,094

Portland hospitals had 602 pay beds and 305 part pay beds according to a classification of average cost. About one-half as many beds render service below cost, as beds rendering services where charges are equal to, or more than cost. The table below taken from the survey shows what patients paid for hospital service in Portland:

Rate	Number of beds
$2.00 to $2.99	346
3.00 " 3.99	215
4.00 " 4.99	200
5.00 " 5.99	183
6.00 " 9.99	84
	1028

The above table included 907 beds which were both pay and part pay, and in addition 70 beds for the City

Isolation Hospital, and 51 beds for Doernbecher Memorial Hospital for children, which beds were not classified as pay or part pay.

As a whole the rates charged by Portland hospitals were not high, only 84 beds having a rate of $6.00 or more per day. In many cities service is not considered high-priced until it is more than $10.00 per day.

Following is the summary of the study made by the committee. It is quoted from the last two pages of the study:

"The original purpose of the study was to take a census of the Portland hospitals and to compare data with that of seven other cities in the United States. Very early in the survey difficulties were encountered in obtaining comparable figures, and as a consequense several of the comparisons were omitted. The comparative rankings which are included can be taken as suggestive only. Some time has elapsed since the completion of the study, 'Volume and Cost of Social Work' by Clapp, from which most of the comparable figures were obtained. There are undoubtedly qualifying circumstances in each of these cities which explain a part of the differences. Cities with a large negro population and highly industrialized cities need more beds; education to hospital usage varies in different parts of the country and, as has been pointed out, there is a wide-spread lack of uniformity in hospital accounting and reporting practices.

"The committee believes that groups interested in planning a future hospital program should take the following conclusions and considerations into consideration:

"1. Income for Portland hospitals for local service amounts to $1,755,043.94. This sum is received largely from earnings. Public revenue (tax funds) provides approximately 25 per cent of the total income. The percentage received from contributions and endowments is very low.

"2. Hospital expenditure is $45,738.90 less than hospital income. The small surplus of income over expenditure is due to the fact that eleven hospitals out of the fifteen included in the study are non-profit-making institutions. The ultimate standards which a modern hospital accepts are medical standards and service to the community, rather than profit-making.

"3. Per diem cost for hospitals in Portland varies from less than $2.00 to more than $6.00. Presumably a high per diem cost is due either to poor management or to a high grade of service. The inconsistency of accounting practice from one hospital to another makes it impossible to compare per diem cost from one city to another.

"4. The total number of hospital beds in Portland is low and their average percentage of occupancy is higher than in any other city with which Portland was compared. The number of beds for some kinds of service was found adequate for immediate needs, for other kinds of service in-

adequate. Present hospital facilities will not take care of a rapidly growing population.

"(a) There is an under-supply of general hospital beds during certain periods of the year. This is especially true in hospitals rendering free care and part pay care.

"(b) Maternity beds are adequate for the present.

"(c) The demand for orthopedic beds is greater than the supply.

"(d) General hospitals are not equipped to care for communicable diseases. The only provision for this type of care is at the City Isolation Hospital.

"(e) There is urgent need for a tuberculosis sanatorium in Portland to take care of the many patients who are now unable to obtain care. The obsolete ordinance, prohibiting the establishment of a tuberculosis sanatorium within the city limits and the admission of tuberculosis patients in general hospitals, should be repealed.

"5. Although 150,876 days of free care are given by Portland hospitals, the percentage of free care is lower in Portland than in several of the cities with which Portland hospitals were compared.

"(a) More adequate provision should be made for those unable to pay ordinary hospital charges, who are nevertheless able to make some payment.

"(b) Hospitals giving a large amount of free care and care at reduced rates should have an organized social service department which would make financial,

social, and environmental investigations.

"6. A nation-wide concerted effort should be made to persuade hospitals to adopt a uniform accounting system.

"7. A large part of the service of Portland hospitals is given at a rate below cost. By far the largest number of beds are provided for low prices service, where the rates are less than $3.00 a day. A considerable number of moderate priced beds are available where rates vary from $3.00 to $5.00 a day. Only a small number of beds are provided for high priced service.

"(a) The percentage of occupancy appears to be exceptionally high in the moderate priced beds.

"The committee hopes that out of this study will grow continued discussions of problems which are important to the entire community as well as to those directly interested in hospital development and administration. Society at large is served by the rapid restoration of the sick to health and economic efficiency. The responsibility for providing adequate hospital facilities for Portland is a collective responsibility."

CHAPTER IV

HOSPITAL SERVICE IN PORTLAND 1936

During the fall of 1937, I was very fortunate to have the opportunity of visiting the hospitals of Portland, and I shall endeavour to make a summary of some of the facts I learned. My information is very limited, however, since I had no opportunity to learn anything of the economic and social aspects of hospital service.

I visited twenty-nine hospitals in all, hospitals as used her including the larger general hospitals; specialized hospitals such as the Shriner's Hospital for Crippled Children, one hospital for the care of mental patients, and the Portland Open Air Sanatorium for the care of tuberculosis patients; hospitals for convalescent patients, minor surgeries where patients are also hospitalized if necessary; maternity homes; and the Louise Home which is a juvenile hospital for girls afflicted with venereal diseases.

I have divided the hospitals which I visited into two groups according to their bed capacity. I have placed those having a bed capacity of less than twenty-five in the first group, those having a bed capacity over twenty-five in the second group.

There were nine organizations in the first group, that is, the group having a capacity of less than twenty-five beds. Of these nine, two were charitable institutions supported by private agencies. The other seven were privately owned; three were incorporated, one was a partnership, and three were not incorporated.

The bed capacity, daily average number of patients, and services for 1936 were as follows:

Bed Capacity	Daily average No. patients	Service	No. beds
9	5	General Surgical	9
10	5	Obstetrical	10
9	5	General Surgical	9
6	2	General Surgical	6
7	6	General Medical	7
6	not given	General Medical	6
9	7	General Medical	9
15	5	General Medical	15
23	15	Obstetrical	23
94	50		94

The daily average number of patients was not given in one case. For the eighty-eight beds remaining, there was a daily occupancy of fifty, or 56.8 per cent. The standard average which the American Hospital Association believed should be taken in 1928 was 80 per cent. This means that the smaller hospitals in Portland are operating on a much smaller capacity than the average.

These beds were classified as follows:

General Surgical	24	25.53 %
General Medical	37	39.36
Obstetrical	33	35.11
	94	100.00 %

Only two of these nine hospitals gave me their average day cost, so I am unable to make any comparison regarding cost. None had a pathological laboratory of its own.

All laboratory work for this smaller group was sent out to other laboratories. Three did not have graduate nurses in charge of the nursing service. Two had an anesthetist employed full time. There were eighteen graduate nurses employed in all.

The other group of hospitals which I visited consisted of twenty instituions having a capacity of twenty-five beds or over. The two largest had a capacity of 400 beds.

This group may be classified clinically, and according to ownership and control as follows:

Clinical		Ownership and Control	
General	11	Governmental	
Special		Federal	2
Internal Medicine	1	State	1
Nervous & Mental	1	County	1
Tuberculosis	1	City	1
Childrens	1	Non-governmental	
Communicalble disease	1	Church	5
Venereal	1	Fraternal Order	1
Orthopedic (children)	1	Private, not for profit	3
Maternity	1	Private, for profit	6
Convalescent	1		
	20		20

The bed capacity, daily average number of patients, and services for 1936 were as follows:

Bed Capacity	Daily average No. patients	Service	No. beds
400	358	General Medical	116
		General Surgical	167
		Orthopedic	47
		Obstetrical (including bassinets	70
400	360	General Medical	286
		General Surgical	114
350	280	General Medical	58
		General Surgical	210
		Obstetrical	62
		Pediatric	20

Bed Capacity	Daily average No. patients	Service	No. beds (cont.)
330	330	General Medical	99
		General Surgical	123
		Obstetrical	60
		Genito-urinary	48
320	305	Nervous and Mental	320
320	246	General Medical	56
		General Surgical	100
		Orthopedic	34
		Obstetrical (including bassinets)	110
		Nervous and Mental	20
110	Not given	General Medical and Surgical	110
110	102	General Medical	30
		General Surgical	56
		Obstetrical	24
45	37	Venereal	45
75	55	General Medical and Surgical	75
75	35	General Medical	35
		General Surgical	35
		Obstetrical	5
65	40	General Medical	65
60	40 ?	Communicable Disease	60
50	50	Orthopedic	50
50	35	Tuberculosis	50
43	Not given	General Medical	12
		General Surgical	17
		Obstetrical	14
40	40	Obstetrical	10
		Pediatric	30
35	25	General Medical	15
		General Surgical	12
		Obstetrical	8
30	10	General Medical	20
		General Surgical	10
25	13	General Medical	25
2933	2361		2933

Out of this total of 2,933 beds there were 153 for which no daily average number of patients was given. This means that there were 2,780 beds with a daily average number of patients of 2,361 or an average occupancy of 80.5 per cent. Occupancy varied from 52 per cent to 100 per cent.

The beds in this group were classified as follows:

General Surgical	904 Beds	30.82 per cent
General Medical	915	31.20
Orthopedic	131	4.47
Obstetrical	363	12.38
Pediatric	125	4.26
Nervous and Mental	340	11.59
Venereal	45	1.53
Communicable Disease	60	2.05
Tuberculosis	50	1.70
	2933	100.00 per cent

The population of Portland for 1936 was estimated at 325,926 by the Polk Directory Service. Deducting 405 beds which are in homes for wayward girls and beds which are used only for patients from Alaska, we have 2,528 beds remaining. This would indicate that this group of hospitals provides approximately 7.75 beds per thousand population. This figure would indicate that Portland was well supplied with hospital beds. Seven hospitals in this group were not approved by the American Medical Association. Deducting the 333 beds which were in this group of seven, we have 2,195 beds remaining, or approximately 6.73 beds per thousand population which were approved by the American Medical Association. These figures are only estimates, however, because a certain percentage of these beds served non-residents. I do not know what percentage did serve non-residents, and I realize that throughout my summary, the figures are only

estimates because of a lack of a great deal of information which I did not have access to.

None of the seven hospitals not approved had pathological laboratories. Ten of the thirteen on the approved list had their own laboratory facilities, the three remaining sent a part or all of their work out to other pathological laboratories.

Five hospitals had schools of nursing approved by the Oregon State Board of Nurse Examiners. One had students affiliating for their work in pediatrics. The bed capacity and number of students in the hospitals having schools of nursing were as follows:

Bed Capacity	Number of Students
400	156
350	101
330	85
320	144
110	55
1510	541

The five hospitals having schools of nursing were also approved for a general internship, the fifth year in medicine, by the Council on Medical Education and Hospitals.

Four hospitals were approved for certain residencies in specialties for graduates in medicine who had already had a general internship or its equivalent in private practice.[1]

There were 527 graduate nurses employed in this group of twenty hospitals. I do not know how many of this number

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[1] The Journal of the American Medical Association; Volume 108, No. 13; March 27, 1937; p. 1060.

were registered in the state of Oregon, nor do I know how many under-graduate nurses were employed in addition. I do, however, know that there were 28 nurses employed who were not graduates, also that one of the smaller hospitals in this group was entirely staffed by women who were not graduate nurses.

There were 1,207 people employed full time, and 22 people employed part time. This figure was exclusive of the 541 student nurses in five of these hospitals.

Visiting the hospitals of Portland was an experience which I thoroughly enjoyed, and one which I feel was very profitable. I feel that too often we are content with our own position, and we do not learn what others in the same field are doing. It seems to me that each hospital has some individual devices, which could be profitably used by others if they knew of them. Many times those who have some device feel that it fits their particular need, but is not of enough importance to share with others.

Another part of this experience which I thoroughly enjoyed was contacting people I had never met before. It was my first experience of this kind, and I was surely happy to learn how gracious and kind they were, and I am most grateful to those whom I interviewed and from whom I received information.

Hospitals in Portland vary greatly as they do all over, but I feel that they will continue to progress, because of the interest of the medical and nursing professions. I be-

lieve it is through their efforts that our public will be educated to accept only the best of what the twentieth century can offer, and to realize the importance of the great public service which our hospitals render all over the world.

BIBLIOGRAPHY

Weir: Personal Reminiscences of New York Hospital 1866-1900

Portland Council of Social Agencies: "Economic and Social Aspects of Hospital Service in the City of Portland." Commonwealth Review, A Journal of Applied Social Science; Vol. 12, No. 1, March, 1930.

Mac Eachern, Malcom T.: Hospital Organization and Management. Chicago: Physicians Record Company, 1935

Committee on Curriculum of the National League of Nursing Education: A Curriculum Guide for Schools of Nursing. Second Revision. New York: National League of Nursing Education, 1937

Cutter: "Early Hospital History in the United States". California State Journal 20, 272, 1922

City of Portland: Ordinance #68633, and #67689.

Fifield: American and Canadian Hospitals. Chicago; Physicians Record Company, 1937.

Coldwater: "Early Hospital History in the United States". Modern Hospital, November 1924.

Questionaires, personal visits made.

Doane, Joseph C.: "Hospital Control of Nursing Schools". Forty-first Annual Report of the National League of Nursing Education, 1935

Brown: Nursing as a Profession. New York: Russell Sage Foundation, 1936.

Gray, Carolyn E.: "Nursing Education in Colleges and Universities". Forty-first Annual Report of the League of Nursing Education, 1928

Council on Medical Education and Hospitals of the American Medical Association: "Hospital Facilities by States and by Control, by Type of Service, and Growth of Hospitals". Hospital Service in the United States, 1935 Census of hospitals, published 1936; pp. 787-93.

Council on Medical Education and Hospitals of the American Medical Association: "Hospital Service in the United States". The Journal of the American Medical Association, Vol. 108, No. 12; March 27, 1937: pp. 1035-60.

Neergaard, Charles F.: "How Many Hospital Beds Are Enough?" The Journal of the American Medical Association, 108;13. pp. 1029-32; March 27, 1937.

Committee on Standards of the National League of Nursing Education: Essentials of a Good School of Nursing. New York, National League of Nursing Education, 1936.

Clendening, Logan: "Evolution of the Modern Hospital". Journal American Hospital Association; Vol. 12, No. 2; February, 1938; pp. 15-21.

Shapira, Sadie: "The Hospital's Place in Community Organization". Journal American Hospital Association; Vol. 12, No. 2; February, 1938; pp. 48-50.

Schwitalla, Alphonse, Father: "The Business of the Hospital and the Hospital Business". Transactions of the American Hospital Association; Vol. XXXVII, 1935; pp. 399-404.

Ponton, T. R.: "The Responsibilities of the Governing Body". Hospital Management, November 1937; pp. 14-17,32.