ESTABLISHING AN INTERMEDIATE - CARE UNIT IN EDWARD W. SPARROW HOSPITAL

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ESTABLISHING AN INTERMEDIATE-CARE UNIT IN EDWARD W. SPARROW HOSPITAL

By

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A THESIS

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CHAPTER I

INTRODUCTION

Purpose and Scope of This Study

This paper is intended as a pilot study for the establishment of an intermediate-care unit in a general hospital. The writer sincerely hopes that this study will aid those individuals responsible for providing similar care in their own community health centers, wherever they be.

In an attempt to accomplish this goal the following separate but interrelated areas of interest are explored: 1) The great progress which has been made in hospital care and medical science during the past century; 2) A statistical analysis of disease and its evolution since the turn of the century; 3) An evaluation of those community needs felt important in providing an effective program of health care; and, 4) The role of the Federal government in helping to solve a national health problem.

This paper deals primarily with the case study of but one hospital community. The reader's focus is, therefore, purposely narrowed to a consideration of that community.

While it is impossible in a paper of this type to provide a set pattern for organization, establishment, and administration to fit exactly the requirements of each hospital, this study does present

basic concepts that are adaptable to specific situations. It is hoped that in many cases these concepts may assist those who are responsible for the planning of intermediate-care facilities. If this paper provides no more than a stimulus to the minds of those responsible for the future of health care it will have achieved its intended purpose.

Technical Terms Defined

The following definitions are presented in an effort to clarify certain terms used throughout this study. They are taken from the Commission on Chronic Illness, with the exception of "Intermediate-Care," for which the writer proposes a definition for purposes of clarification.

Chronic Illness

Chronic Illness and/or disease comprises all impairments or deviations from normal which have one or more of the following characteristics: are permanent; leave residual disability; are caused by non-reversible pathological alterations; require special training of the patient for rehabilitation; may be expected to require a long period of supervision, observation, and/or care.

Long-Term Patient

Long-term patients include only those individuals suffering from a chronic disease or impairment who require a continuous or prolonged period of care. Included in this group are: patients who are likely to need, or who have received, care for a continuous period of at least 30 days in a general hospital; or, care for a continuous period of more

than 3 months in another institution or at home. In the latter case care includes medical supervision and/or assistance in achieving a higher level of self-care and independence.

Acute Illness

Acutely ill patients include those individuals suffering from an illness of a short and relatively severe course, which does not usually leave a residual impairment or deviation from normal.

Short-Term Patient

Short-term patients include those suffering from acute illnesses who are hospitalized for a period of less than 30 days. Such patients require those acute services usually offered by the general hospital. As contrasted with the long-term patients, these patients commonly require skilled nursing care throughout their period of hospitalization.

Intermediate Care

Intermediate care is defined as service provided for patients requiring hospital care who are not acutely ill. It includes the care of those who suffer from chronic illness requiring long-term hospitalization and those who may be convalescing from an acute illness. Such care makes available skills and services not available at home or nursing unit, yet does not require those costly facilities and services of the general hospital.

Skilled Nursing Care

Skilled nursing care includes those procedures employed in caring for the sick which require some technical nursing skill beyond that which the ordinary untrained person can adequately administer. These may include full bed baths, enemas, irrigations, catheterizations, application of dressings or bandages, administration of medications by whatever method the physician orders (oral, rectal, hypodermic, intramuscular), and carrying out other treatments prescribed by the physician which involve a like level of complexity and skill in administration. They may be provided by either professional or practical nursing personnel, so long as they extend beyond personal care as described below.

Personal Care

This type of care includes such personal services as help in walking and getting in and out of bed, assistance with general bathing, help with dressing and feeding, preparation of special diet, supervision over medications which can be self-administered, and other types of personal assistance of this nature.

Sheltered Care

Sheltered care includes room, board and minimum services of a domiciliary nature. These services may include laundry, personal courtesies as occasional help with correspondence or shopping, and an occasional helping hand short of routine personal care, as described above.

Total Patient Care

Total patient care is defined as the integration of community health care facilities for providing complete medical service upon demand. The "whole man" concept of patient care is synonymous with this term.

CHAPTER II

HOSPITAL CARE IN THE UNITED STATES

Patient care provided in the modern hospitals of this era, when compared with the makeshift hospitals of yesterday, presents convincing proof of the tremendous progress made as a result of man's desire to preserve life. Earliest attempts at providing organized care for the ill by establishing hospitals were sporadic and confined to specific local needs.

Factors Influencing the Growth of the Modern Hospital

Hospital care was first provided in the colonies for sick soldiers in 1658, at the suggestion of a Dutch West Indies Company surgeon.[1] In addition to caring for soldiers, this first recorded hospital also provided care for the company's negro slaves. Another hospital established on Manhattan Island in 1663, was also used for the purpose of caring for slaves and soldiers.[2]

It was nearly a hundred years after these initial attempts to provide organized hospital care for the sick that the first successful general hospital was established. This hospital incorporated in 1751,

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[1]Americana Corporation, The Encyclopedia Americana. New York, Vol. XIV, p. 428.

[2]Malcolm T. MacEachern, Hospital Organization and Management, Physicians' Record Co., Chicago, 1947, p. 14.

was located in Philadelphia.[3] Dr. Thomas Bond, with the aid of Benjamin Franklin, opened the Pennsylvania Hospital, which today stands as a giant memorial to the advancement of modern hospital care in the United States. Another hospital established in 1771, the New York Hospital, is considered the second oldest in the United States. This general hospital apparently fell into the hands of the British during the Revolutionary War and was used as a barracks. It was reopened in 1791.[4]

The Revolutionary War, as have subsequent wars, vividly outlined the results of medical unpreparedness in time of war. Out of the unpreparedness and heavy mortality of such encounters, many of the simple principles of sanitation, ventilation, and modern hospital care have been developed.

The early nineteenth century has been labeled as a period of ignorance, and error, Quackery became almost universal throughout Europe. In the United States surgeons filled the hospital wards with discharging wounds encouraging suppuration as a desirable post-operative occurrence. Hospital care during this period was even more degraded than was medicine and surgery. Pain, hemorrhage, infection, and gangrene is said to have fostered surgery mortality rates up to one hundred per cent. Nurses were recruited from the lower class and often from among criminals. Unlike the religious attendants of the previous century these infidels professed no devotion to service or spirit of

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[3]Loc. cit.

[4]Ibid., p. 15.

self-sacrifice. As was often the case these characters not only abused their patients but exploited them as well. Historical accounts indicate that such conditions continued even until the mid-nineteenth century.[5]

Florence Nightingale, at this time, revolutionized the art of nursing. It was she who during the Crimean War in 1854 successfully organized a military hospital. Her influence was felt around the world and especially did it have an effect in the United States. It would seem that from the efforts of this one woman an important link in the modern concept of hospital care was molded.

Contributions from men such as Pasteur, Lister, Roentgen, Long, Simpson and others, brought to a fitting climax a century of first regression and then great progress. The achievements accomplished during the latter part of the nineteenth century along with the terrible experience of those earlier years has provided this present century with a firm foundation upon which to develop. Hospital care in the United States has continued to grow as the result of past and present experiences.

Surgical techniques were changed considerably with the discovery of anesthesia and the principle of antisepsis. These developments have given impetus to the advancements made in modern hospital care. Other discoveries have similarly influenced the rapid progress made during this era toward preserving and extending the life of man.

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[5]Ibid., p. 16.

Emphasis on Long-Term Care in the General Hospital

During the twentieth century, hospitals have become organizations wherein comprehensive facilities and services may be readily obtained by the physician for purposes of research, diagnosis, treatment and care. Significant of this modern concept of care is that medical progress is today directing considerable attention toward the needs of the chronic long-term patient cared for both at home and in the hospital. In the past the tendency in some cases has been to provide sub-standard medical attention and inadequate housing accommodations for the patient requiring extended care.

The Federal Government, realizing the magnitude of this health problem, is providing large sums of money to aid in building and equipping medical facilities. Undoubtedly, the most progressive health legislative action taken in recent years is the Hill-Burton Act. This act, known also as the Hospital Survey and Construction Act of 1946, was amended by the Medical Facilities Act of 1954, Public Law 482, 83rd Congress. Provision is made in the act for categorical state grants to assist in the construction of chronic disease units, nursing homes and rehabilitative facilities, in addition to out patient diagnostic and treatment centers.

In conjunction with the Federal program, the University of Michigan, School of Public Health is currently conducting a Medical Facilities Survey and Study.[6] This survey and study is being conducted throughout

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[6]University of Michigan, Michigan Medical Facilities Survey, School of Public Health, July 1, 1957.

the State of Michigan. It is designed to provide the Federal Government with a more sound basis upon which to allocate funds for constructing and equipping health facilities. This study was scheduled for completion by July 1, 1957, and was financed through a Federal grant.

It is evident that financial aid for constructing and equipping chronic facilities can be available wherever a true need exists. Every accredited hospital in the United States is either directly or indirectly affected by the distribution of this Federal aid. It is to the progressive institution, realizing the significance of total patient care, that these funds are directed. It is most important then that the alert hospital focus its attention on future patient care demands. In doing so, the inevitable influx of long-term or chronic patients will present no real problem. It is apparent that the general hospital of tomorrow will not be providing total patient care unless adequate provision is made for this type of patient.

Commission on Chronic Illness Points the Way

Changes are continually taking place within the realm of hospital care. For more than six years the Commission on Chronic Illness has studied the community and its relationship to the problem of chronic illness. Although but one segment of the total scope of care rendered by the hospital, chronic illness looms continually more significant in the minds of those bearing the responsibility of our nation's health.

Dean W. Roberts, M. D., director of the Commission on Chronic Illness, in a recent article, spelled out the future of hospital care as concluded by the commission's studies. He states that there is a shift from preoccupation with the accent on the medical emergency, surgery and obstetrics to a focus on the more prevalent chronic illness and rehabilitation services requiring supervision of the patient for prolonged periods of time. The Commission recommends that the community general hospital become the central point in the development of health facilities essential for the long-term patients. Indiscriminate admission and maintenance of chronically ill patients by the general hospital is not the intended purpose of such a program. It is intended rather that a balanced program be established within the community which provides an appropriate place for every type of patient. It is then believed that through proper integration all may receive that amount and quality of care needed.[7]

Dr. Roberts points out that the Commission has rejected the concept of the independent chronic disease hospital. The concept of the acute general hospital is also rejected. In resolving this approach the Commission suggests that for most communities the practical approach is what might be called the general, general hospital. It is described as a general hospital which undertakes to admit and treat those patients who require hospital services for such periods as the services may be needed--whether this be a day, week, a month, or a year.

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[7]Dean W. Roberts, M. D., "The Future of Hospital Care--The General, General Hospital," Hospitals, 30 (February 1, 1956), pp. 38-41.

The Commission on Chronic Illness urges general hospitals to be truly "general" by making available care for both long and short term patients. This is considered by the Commission as a reasonable community responsibility of the general hospital in all areas.

CHAPTER III

INTERMEDIATE HOSPITAL CARE IN INGHAM COUNTY

The reader has thus far been exposed to a brief background of hospital care and its rapid growth in an attempt to justify the vital importance of preparing for the future health requirements of the population. At this point, the reader is invited to narrow his focus to the present needs and future demands of Ingham County, Michigan, (population 203,520, Michigan State Bureau of Census, 1955). Consideration is also given to national health statistics in an attempt to determine health trends and population changes.

Existing Facilities

Exclusive of tuberculosis and mental hospital facilities, there are at present only 162 hospital beds in Ingham County considered by the writer as being adequate for chronic and long-term patients. The Ingham County Hospital and Rehabilitation Center, a long-term facility, accounts for this entire number. An additional 30 beds are soon to be opened to increase the capacity of this hospital. In a recent survey, conducted for future allocation of Federal funds in the state of Michigan, it was noted that 45 beds were designated for long-term purposes at the East Unit of Edward W. Sparrow Hospital. There is a logical contention that this unit is inadequate for chronic and/or long-term care. The writer in arriving at this conclusion solicited

the opinions of several local physicians and the director of the Sparrow Hospital concerning the adequacy of the unit for long-term and/or chronic-care purposes. Each of those men offering an opinion are actively interested and engaged in some phase of chronic care in Ingham County. The consensus of their opinions may be summarized as follows: 1) Inadequate therapeutic facilities; 2) Inadequate service facilities, i.e., dining and recreational areas for ambulatory patients; and, 3) Absence of acute facilities in the event of acute excerbations. Because of the above opinions this unit does not seem desirable as a facility from which intermediate-care might be rendered.

Two other general hospitals are also operating in this area, neither of which offer care specifically for the chronic and/or long-term patients. These hospitals are the Mason General Hospital, a 19-bed facility, and St. Lawrence Hospital with a 276-bed capacity. Other sources of accommodation for the long-term and convalescent type patients of this county come from some 21 licensed convalescent-geriatric nursing homes (Appendix, page 107). In a discussion with Mildred Caldwell, Superintendent of Nurses, Ingham County, it was discovered that these homes are scattered throughout the county and make available nearly 300 beds for semi-professional and non-professional nursing care. Miss Caldwell, indicated that few, if any, of these homes, are directly affiliated with an acute general hospital program. A majority of them provide at the most, only sheltered or personal care. Patients cared for in the Ingham County Hospital and Rehabilitation Center are convalescent to whatever extent is possible and

capable of responding to an active program of therapy and rehabilitation. Often when continuing medical supervision is required, patients may be admitted to this center for a period of convalescence prior to being discharged from the hospital system. It was, however, found that only a few private cases are being cared for in the center with the majority of cases being county welfare of geriatric patients.

Sparrow Hospital, as opposed to nursing home facilities and the County Rehabilitation Center, is capable of playing a consequential role in the active treatment phase of chronic disease. Through the establishment of an intermediate care unit, as proposed in this paper, Sparrow Hospital would be able to provide a continuum of active treatment and care facilities. Such a unit could easily be a prototype of what is inferred by the term "skilled nursing facility" as used in the amended Medical Facilities Survey and Construction Act passed by Congress in 1954. It could provide a type of nursing facility which would be intimately incorporated into the administrative structure of a general hospital.

Although the present situation in this county does not appear serious, the real consideration rests in the demands of future health care. Pages 100, 101, and 104 of the Appendix point up the trend of chronic disease not only in Michigan but throughout the entire nation. It seems evident that a thorough evaluation of health needs must be made in preparing for the inevitable demands of the future.

Need for Additional Facilities

Chronic diseases are today the major cause of illness and disability. They are responsible for over 70 per cent of all deaths (Appendix, page 100). Outstanding examples of those chronic diseases contributing so heavily to this high rate of morbidity and death, excluding tuberculosis and mental disorders, include: diseases of the heart; cancer, vascular lesions affecting the central nervous system; diabetes mellitus; arterio-sclerosis; cirrhosis of the liver; nephritis; arthritis; and asthma. These are but a few of those dreaded diseases which yearly are responsible for nearly a million deaths (Appendix, pages 101, 102) and are directly responsible for the loss of almost a billion days of productive activity during this same period of time. More than 2,000,000 of the 25,000,000 persons in the United States suffering from chronic diseases--other than mental and tuberculosis--require long-term care.[8] Chronic illness is to a great extent replacing acute illness as the major health problem, in the minds of medical researchers.

Acute infectious diseases common in Michigan at the beginning of the present century have, to a large degree, been brought under control (Appendix, page 105). This result has been achieved primarily through the application of medical research findings. In realizing such control over these diseases science has greatly advanced the average life

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[8]American Hospital Association, Planning for the Chronically Ill, 1947, pp. 2-3. (Reprint from October, 1947 issue of Public Welfare.)

span of man. The probability of chronic illness during the later years of man's life has been accentuated. It is noted that the death rate in Michigan due to both chronic and acute infectious diseases compared to the national rate, follow a similar pattern (Appendix, page 101). Both verify the trend toward decreased acute deaths with a corresponding increase in chronic deaths during later life.

We may conclude, then, that infectious acute diseases such as diphtheria, typhoid fever, scarlet fever, whooping cough, dysentery, smallpox, and pneumonia, are rapidly becoming of secondary interest in the field of medical health. As a result of the untiring effort exerted by medical science in conquering the problem of acute diseases the average life expectancy of man has increased from 47 years in 1900 to slightly over 69 years in 1956.[9] This shows a gain of 22 years since the turn of the century. Infant mortality has also been reduced nearly 70 per cent during the last twenty years.[10] The odds of life over death have been literally reversed in man's favor. Since the beginning of this present century the entire concept of health care and man's perspective of life itself appears to have been revolutionized. With ever greater achievements in the medical sciences yet to come it is quite likely that the average age of the population will continue to climb. In all probability, new and more complex problems will result from such advancement in the average age of man.

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[9]George Bugbee, "Population Change and Health Care," Hospitals, 30 (May 1, 1956), pp. 32, 35.

[10]Loc. cit.

The chronic health problem has progressively advanced in importance in Michigan since 1900. There is no indication that this trend will reverse itself. (Appendix, page 104.)

Page 109, of the Appendix, shows the per cent of change in population for the State of Michigan from 1940-1950, to be +21.2 per cent. The population change by county is shown in the Appendix, page 108. Ingham County, it is noted, accounted for an increase of at least 21.2 per cent. Subsequent statistics published by the Michigan Department of Commerce show a continuation of these trends. Although a leveling-off point may be reached, these statistics, nevertheless, illustrate the importance of planning for the future. The population trend of this area, and the increased life span of the average man, in addition to an increasing prevalence of chronic long-term diseases clearly underscores the importance and timeliness of this subject.

One authority[11] suggests the need of the population for chronic hospital beds as 1.7 beds per 1000 population. This does not refer to nursing home facilities. From this ratio a theoretical bed compliment can be deduced for Ingham County as approximately 346 beds. Based on present active available chronic hospital beds (192) the need for acceptable chronic facilities in the county is 45 per cent unmet.

A recent statistical publication[12] shows the nation's need for chronic beds to be about 86 per cent unmet. Additional beds required

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[11]John W. Clissold, M. D., "Meeting the Nations' Health Needs," Hospital Management, 29 (March, 1955), p. 47.

[12]Loc. cit.

in the United States, figured at the rate of 1.7 per 1000 population, number 266,897. Another 5,054 beds are estimated as being needed in territories outside of the United States. From this it is recognized that the problem does not limit itself to any one geographical area, but is rather one of national concern.

Benefits Derived from Adequate Facilities

As chronic illness becomes an increasingly greater factor to the health of the nation, so provision for adequate facilities in which to care for this type of patient becomes of concern. Many progressive communities throughout the nation are thinking in terms of future health needs by planning for and developing adequate total health care programs. Every community is obligated to analyze its own situation in view of its future needs.

Of first concern is the benefit derived by the community as a result of making available to the chronic long-term patients those acute services common in the general hospital. It is anticipated that patients cared for in a unit such as is proposed in this study, as opposed to the conventional means of care, would be returned more rapidly to a productive status. The extent to which patients might be completely rehabilitated is, of course, limited only by the degree of disability.

The objective of all chronic disease programs should be that of providing active continuous treatment for the long-term patient. It is all the more important then that such patients have direct access to

acute facilities provided in the general hospital if intensive continuous service is to be realized. Physical and emotional restoration of the patient would be obtained only within the limits set by his illness. Services such as physio-therapy, occupational therapy, and other rehabilitative services so essential in treating the chronically ill patient would be readily available. Acute services (i.e., x-ray, surgery, laboratory, etc.) are becoming more and more important because of the unpredictable nature of chronic diseases prevalent today. Acute emergency services frequently necessary in caring for certain chronic patients should be readily available whenever indicated. It is perhaps more likely that the physician's attitude toward acute symptoms might be even more alert in the general hospital than in an institution providing care solely for chronic diseases.

Some acute general hospitals having developed chronic care facilities are experiencing increases in net income.[13] Decreased costs per patient day results from providing services where services are actually needed. It is not uncommon to see chronically ill patients requiring, at the most, only personal care, being cared for in the acute wards as acute patients. In actuality, it appears that rehabilitation for many of these patients becomes retarded under such circumstances. It is anticipated that a substantial net cost decrease could be realized in cost per day for patient care. Both the patient and the hospital would, as a result, benefit.

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[13]Eugene Walker, M. D., "Advantages of a Chronic Ward in an Acute Hospital," American Hospital Association Convention Papers, 1947, p. 321.

The Nursing Home in Ingham County

Nursing homes in this country are carrying a considerable portion of the total chronic and convalescent load. A recent survey[14] for licensing of nursing and convalescent homes was made in Ingham County. This survey indicated that those homes which are licensed have met certain requirements as outlined by the State of Michigan Department of Health. It is recognized that many non-licensed homes do exist providing unsatisfactory conditions. In addition to such facilities many patients are being cared for in their own homes while leading a totally unproductive existence.

The survey showed most licensed homes filled to near capacity. Even though these homes are authorized to operate and meet the requirements as interpreted by those performing the survey, it is improbable that even a few are capable of providing those services most conducive to rapid rehabilitation. Because of their economic situation most of the homes cannot possibly offer services beyond personal or sheltered care. Consequently, in many instances the individual patient becomes lost in the maze of the unproductive millions. The real burden must then be assumed by the general hospital if adequate provision for patient care is to be realized.

Progressive hospitals throughout the country seem to recognize the necessity for providing intermediate accommodations for the patients

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[14]Michigan Department of Health, Inspection and Licensing Survey of Convalescent Homes and Homes for the Aged, Hospital Services Section, 1957.

not regularly requiring acute services and professional care. The preceding discussion vividly suggests the importance of preparing for the future demands of health care in this community.

CHAPTER IV

STANDARDS FOR THE ESTABLISHMENT AND OPERATION OF AN INTERMEDIATE CARE UNIT

Obviously the type and quality of care which a patient care facility may become capable of rendering depends upon a great many factors. In planning for and organizing such a unit certain standards should be adhered to in assuring acceptability for its intended purpose. Legal requirements and professional standards should be investigated. As an essential part of planning, these requirements and standards must be met with respect to the building and services provided. Careful consideration then must be given to the legal as well as professional aspects involved in providing this type of facility.

Provision of Standards for Patient Care

The State of Michigan rigidly enforces certain requirements as outlined for hospitals and their facilities. Any violation of these legal requirements is punishable as provided in the law. The Michigan Department of Health and the State Department of Social Welfare are the two primary organizations responsible for the enforcement of this legislation and should be consulted at the outset. The Department of Health has made available its Rules and Minimum Standards for Hospitals, as approved by the Attorney General. All of the state offices and professional organizations associated with hospitals were involved in

the formulation of this publication making it both authoritative and practical.

Another publication, Rules and Regulations for Inspecting and Licensing of Convalescent Homes and Homes for the Aged, provides additional guidance. The requirements outlined in this publication were prepared by the Department of Social Welfare. Although affecting only those facilities privately operated for profit, these rules and regulations as outlined should be carefully reviewed prior to the establishment of a unit of the type proposed.

A second form of accepted standards or requirements which should be investigated are those of professional organizations in related fields of activity. The Joint Commission on the Accreditation of Hospitals has outlined certain requirements which should be carefully reviewed. For purpose of full accreditation by the JCAH, these specifications must be met. Other professional organizations, as well, should be consulted. The unit should operate in conformity with such standards as those set by the American Association of Nursing Homes, the National Association of Methodist Homes and Hospitals, and, in addition, those official associations of nurses, social workers, dietitians, physical therapist, occupational therapists, etc. Governmental agencies, such as the United States Public Health Service, also require conformity to certain standards and regulations. An institution accepting its responsibility should go beyond the minimum requirements of the law endeavoring constantly to operate in accordance with standards fully acceptable to groups such as those noted above.

Consideration of Basic Standards

Some standards must be recognized in an attempt to provide acceptable patient care. In striving to improve care certain agencies and organizations have done extensive research in preparing those standards by which institutions offering patient care may be guided. Those organizations mentioned above are but a few which continually strive to foster "quality" care as applied to nursing service, diagnostic procedures, medical staff organization, physical facilities, and other components of patient care.

Shown below is a partial list of rules and standards outlined by the Michigan Department of Health in their publication Rules and Minimum Standards for Hospitals. These standards present basic criteria for guidance in this study for the establishment and operation of the patient care unit.

A. The Physical Plant, Facilities, Equipment and Operation

1. Compliance with Codes

a. The hospital shall comply with the local and state building code.

b. The hospital shall comply with the requirements of the state fire marshal.

c. The hospital shall comply with the state plumbing code.

2. Water and Ice Supply

a. A public water supply shall be used if available.

b. The entire plumbing system and all plumbing facilities shall be so designed and maintained that the possibility of back-flow or back-siponage shall be reduced to a minimum.

c. There shall be no physical cross connection between water supply systems that are safe for human use and those that are or may at any time become unsafe for human use.

d. All ice shall be handled in such a way as to prevent contamination.

3. Garbage and Waste Disposal

a. Garbage containers shall be emptied at frequent intervals and thoroughly cleansed and aired before further use.

b. Facilities shall be provided for the disposal of infectious dressings,...and similar materials by incineration or in a manner approved by the state health commissioner.

4. Heating and Ventilating

a. The temperature in patients' rooms shall be maintained at approximately 72°F throughout the entire season.

b. The hospital ventilating system shall be regulated so that objectionable drafts shall not be created.

5. General Maintenance

a. The use of a common towel is prohibited.

b. Storerooms shall be clean and well ventilated.

c. Refrigerated storage space shall be kept at approximately 40°F.

d. Kitchens and utility rooms shall be provided as needed.

e. Insects such as flies, roaches and mosquitoes shall be properly controlled.

B. Patient Care

1. Patient Care

a. All persons admitted to a hospital shall be under the continuing daily care of a physician licensed to practice in Michigan.

b. The hospital shall require that an admitting diagnosis be recorded promptly on each patient.

c. The hospital shall provide personnel, space, equipment and supplies for routine laboratory analyses.

d. The hospital shall employ professional and auxiliary personnel to give patients necessary services.

e. The nursing service and nursing shift shall be in charge or supervised by a graduate nurse, registered to practice in Michigan.

f. Meals shall be prepared and served in a sanitary manner.

g. Rooms for adult patients shall provide a minimum of 80 square feet of floor space per bed.

h. In multiple bedrooms beds shall be at least 3 feet apart.

i. There shall be sufficient equipment for care according to the type of patients accepted by the hospital.

j. Individual linens shall be provided each patient.

k. Rules governing visitors shall be posted in a conspicuous place.

l. Hospitals shall isolate patients with communicable disease, carriers of communicable diseases, or those suspected of having communicable diseases.

m. Hand washing and toilet facilities shall be provided within the isolated areas.

n. The hospital shall make written policies concerning isolation techniques available to all personnel concerned.

C. Records

1. Records

a. The hospital shall require that accurate and complete medical records be kept on all patients admitted.

b. The administrative records of the hospital shall include as a minimum:

1) Records of admission and discharge

2) Patients' records

3) Daily census records

4) Narcotic register

5) Statistics regarding number of deaths, autopsies and consultations.

CHAPTER V

PROPOSED PLAN FOR ESTABLISHING INTERMEDIATE-CARE FACILITIES AT THE EDWARD W. SPARROW HOSPITAL

Before entering into the problem of establishing an intermediate care unit in Sparrow Hospital, the reader is first asked to briefly acquaint himself with the organization of this institution. With such understanding a more thorough evaluation of the study can be accomplished.

Organization of the Hospital

Since November 6, 1912, the Edward W. Sparrow Hospital Association has maintained its status as a non-profit corporation. The American Hospital Association lists the institution in its publication as a general short-term acute hospital.[15] A Board of Trustees composed entirely of men, and a Women's Board of Managers, act as a dual governing body. These two groups are represented by an Executive Committee regarded as the active segment of the dual board. This group is ultimately responsible for the activities of the hospital.

The hospital is comprised of three separately located but integrated units providing hospital service. The main hospital provides facilities for care of medical, surgical, obstetrical, pediatric, and other types

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[15]American Hospital Association, Listing of Hospitals, Hospital--Guide Issue, Part II, 30 (August 1, 1956), p. 166.

of patients common to a large general hospital. It accommodates 251 patients, including adults, children, and new born infants. Oak Park Annex was leased to the hospital in 1948, on a 33-year tenure. This second unit is used primarily for patients unable to secure accommodations in the main hospital. Located several blocks from the main hospital, this 45-bed unit is closely coordinated with the main hospital. The East Unit, a 50-bed facility, provides accommodations similar to those of the Oak Park Annex. Originally the East Unit was organized to accommodate, polio, psychopathic, contagious and convalescent type patients. In addition, this unit presently houses the Physical therapy and Occupational therapy department for the entire hospital.

It is apparent that the location of the East Unit and Oak Park Annex, being geographically separate from the main hospital, presents a patient care problem. Consolidation of the two units with the main hospital appears necessary for maximum efficiency, economy, and adequacy of patient care. By establishing intermediate-care facilities adjacent to the main hospital favorable results could be realized. Adequate provision for care of the chronically ill would provide the community with a more complete centralized health care program.

Selection of Site

In selecting a location for the development of an intermediate-care unit for Sparrow Hospital the writer was confronted with three alternate locations. To justify the final selection these alternatives are briefly outlined. At the outset, it becomes apparent that the extent

to which such a unit is able to meet the needs of its patients and the community is directly affected by its location and the kind of building in which it operates.[16] Of importance, too, is the accessability of such facilities to the main artery of acute medical care. For maximum benefit to the patient and economy of operation the location of this proposed unit in regard to the main hospital building should be a determining factor in selecting the final location.

Alternative I

The first observation which comes to mind is that of negotiating for the outright purchase from the City of the land upon which the present East Unit is situated. This property, if purchased by the hospital, could very adequately allow for considerable expansion in providing for intermediate-care facilities.

Favorable Considerations:

1. The property is of sufficient size to allow for considerable expansion of the present facilities.
2. It is centrally located midway between Lansing and East Lansing.
3. Adequate parking facilities are available.
4. The site could be developed to provide complete chronic care while maintaining some integration with acute facilities of the general hospital.
5. Access to public transportation, churches, shopping area, and University activities is good.
6. Hill-Burton funds could be secured.

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[16]Edna E. Nichelson, Planning New Institutional Facilities For Long-Term Care, Putnam, New York, 1956, p. 228.

Unfavorable Considerations:

1. Decentralization from the main hospital would tend to minimize the degree of control affecting efficiency and economy of operation.

2. Duplication of some facilities would be necessary, i.e., housekeeping, nursing, etc.

3. The "Paper location" of a highway to be constructed to by-pass Lansing.[17]

4. Distance from acute services prohibits maximum integration of facilities.

Alternative II

A second consideration is that of constructing an intermediate care unit adjacent to the main hospital. Such a unit could be constructed at the east end of the main hospital building with direct entrance to the hospital.

Favorable Considerations:

1. Immediate access to all acute facilities of a general hospital.

2. Access to adjacent churches, shopping center, recreational facilities, and public transportation.

3. Possibility of receiving large percentage of total construction cost through Hill-Burton funds.

4. Centralized control with minimum duplication.

Unfavorable Considerations:

1. Would eliminate valuable parking facilities now utilized by staff personnel.

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[17]A recent interview with John Meyer, State Highway Department official, revealed that a portion of this property is a "paper location" through which the U. S. 27 bypass will be constructed. The term "paper location" was defined as being "the most likely spot."

2. Only one-half of this proposed site belongs to the hospital. The other portion is not expected to be available within the near future.

3. Hill-Burton priority would be indefinite with a considerable time and study element involved.

4. Dietary department and ancillary facilities would be located at the extreme end of the building, thus creating a traffic problem for both patients and staff.

5. Limited expansion due to available space and location.

6. Community funds for construction of a new addition on this site could not be easily acquired at this time. The community is at present carrying out a 3-year United Fund Campaign for construction of hospital facilities in the area.

Alternative III

This alternative considers the feasibility of converting the structure presently used as a domiciliary and classroom unit for student nurses and instructors into an intermediate-care unit.

Favorable Considerations:

1. Direct access to acute facilities of a general hospital, by means of a proposed connecting corridor, could be made available.

2. Access to adjacent shopping center, churches, recreational facilities, and public transportation would be good.

3. Would entail little or no financial obligation on the part of the community.

4. Financial assistance from Hill-Burton funds for remodeling purposes may become available on a percentage basis.

5. Direct entrance to main cafeteria area would be possible by way of the proposed connecting corridor.

6. There would be sufficient space for expansion should the need arise.

7. Centralized control could be maintained with minimum duplication.

8. Building lay-out is such that it could be adapted for use as an intermediate-care unit with relative ease.

Unfavorable Considerations:

1. Construction of a new domiciliary unit for student nurses would become necessary (Hill-Burton funds could be secured on a priority basis).

2. Some remodeling would be necessary.

3. Construction of a connecting corridor to the main building would be necessary.

4. Parking facilities would be limited (A problem to be considered in any expansion program on the present hospital site).

The third alternative is selected by the writer as the most acceptably alternative for immediate consideration. In preferring this selection over the second alternative, several factors were considered.

From reliable sources, it is understood that considerable thought has been given to the construction of a new nurses' home, within the near future. This, if accomplished, would allow the present nurses' home to be used for other purposes, undoubtedly some type of patient or employee accommodation. This writer assumes that patient accommodation would, at this time, be preferred. Since this building would eventually be used for in-patient purposes, careful thought should be given to its acceptability as an intermediate-care unit. Favorable considerations for conversion of this building are listed above.

The property described under Alternative II, presents several unfavorable factors which render selection of this site unacceptable.

This site would not allow sufficient area for additional expansion in view of any further requirements. The property is bordered on three sides by a city street. Only if the city were to close off an adjacent street would this property be sufficient in area. It is the writer's understanding that a portion of this property is privately owned and priced unreasonably high.

Another unfavorable consideration which should be further emphasized is the relatively decentralized position of the unit should it be constructed on this site. The writer is thinking primarily in terms of food service and ancillary facilities. Immediate construction plans designate these services for relocation at the extreme opposite end of the existing hospital. It is understandable that such an arrangement would be neither economical or efficient without mention of the effect upon traffic flow and inconvenience to the ambulatory patient.

It is felt that the third alternative, although not free of unfavorable considerations, most adequately meets the needs of the long-term patient in the most efficient and economical manner. The remaining portion of this study establishes those elements, which in the opinion of this writer, are essential to adapting this domiciliary unit to the needs of intermediate care.

Description of Property

The size of the property and type of structure under consideration would be sufficient to allow for expanded facilities should expansion become necessary. The site is situated on the south-west corner of the

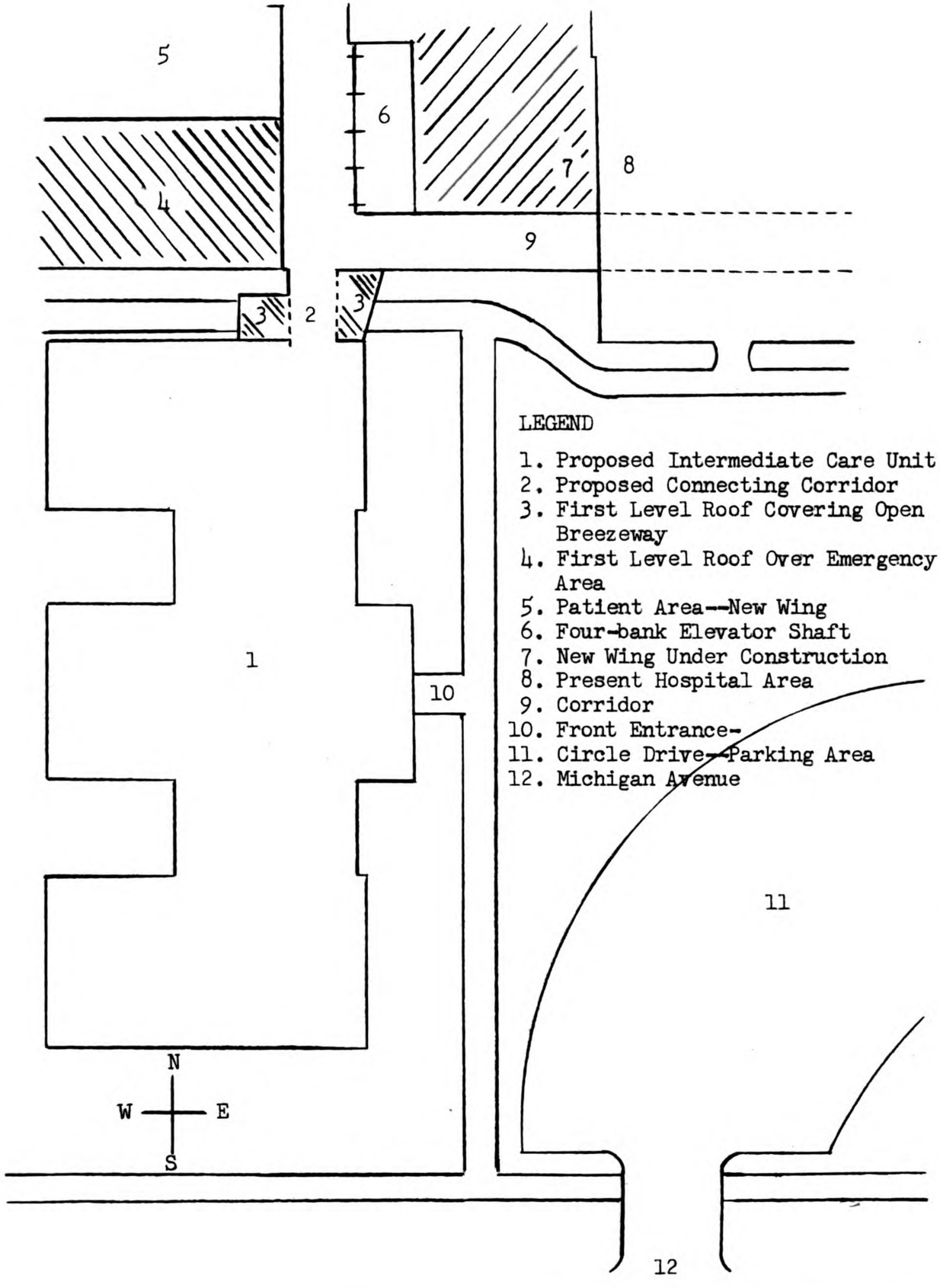
main hospital property overlooking Michigan Avenue, a main thoroughfare. The building is constructed of reinforced steel with brick facing; and, is considered a fire-resistant structure. This E-type structure is rectangular in shape with three wings extending to the rear. Maintenance of the building, as evidenced by its general appearance, has been adequate.

The building is well oriented for sunshine and ventilation with its front face overlooking the landscaped central grounds of the hospital. A balcony above the front porch would allow convenient facilities for patient enjoyment and relaxation. In consideration of future remodeling a portion of the roof area could be easily remodeled as a year-around solarium for patient use.

It is the opinion of this writer that only limited remodeling would be necessary in providing the unit with adequate facilities for chronic and long-term patient care. The three major items of importance being: 1) installation of a nurses' call system; 2) modernization of the present elevator; and 3) construction of an enclosed corridor to connect this building with the main hospital. Minor remodeling needs are considered and proposed throughout the study as the need becomes apparent.

The ground floor, at grade, is two feet above street level, allowing for adequate drainage. Heat, light, and power facilities would be of minor concern since the building has been in continuous operation with adequate utility service. Complete telephone service is presently available at each floor level from a central switchboard located in the main hospital.

Figure 1. Proposed Intermediate-Care Unit--Location Map



It is assumed that a considerable portion of the work necessary in remodeling this building could be supplied by the hospital maintenance department. Only those three major projects listed above should be let out on bid. A considerable saving in cost of remodeling could be expected as the result of such an arrangement.

Patient Accommodations and the Concept of Grouping

After remodeling and final allocation of space the building could easily allow 76 rooms for patient care. In utilizing this number of rooms a total complement of 123 beds could be comfortably installed in the unit. In addition to patient accommodation one area could be blocked off for medical intern and resident accommodations. This section could be located in the south wing of the fourth floor and should include at least five rooms. It is expected that these rooms would be used primarily as single intern and resident quarters with one room set aside for group discussion and educational purposes. At the present time a house adjacent to the hospital is being used for this purpose.

Since those utilizing the facilities of this intermediate-care unit as patients would present varying degrees of disability, consideration should be given to the concept of grouping. By grouping, this writer proposes the predetermination of the types of patients to be admitted to the unit and classification of patients by groups according to the extent of disability or amount of service required. Flexibility in patient classification to any group would seem important since no fine line can be drawn between degrees of disability. For the purpose

of this study four basic groups of patients, according to the amount of service needed and degree of disability, are considered. These four groups are listed below:

I - Ambulatory

II - Semi-ambulatory

III - Bedridden

IV - Special: Isolation

Psychiatric

Children under 15 years of age.

The usual plan, as observed in some institutions, is that of providing one section, or floor, for the fully ambulant patients and a separate section, commonly known as the infirmary for patients who are bedridden. A third section would be set up to care for the semi-ambulatory patient. This latter type of patient would usually be up part of the time or might require some special supervision or care, i.e., regular administration of insulin, close observation because of a heart condition, mild psychiatric illness. A fourth group proposed for this unit includes sub-groups for isolation, psychiatric, and patients under 15 years of age.

Dividing chronically ill and long-term patients into specialized groups in order to more adequately care for patients appears logical and most efficient. However, according to one authority,[18] it should be kept in mind that as the degree of specialization increases

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[18] Ibid., p. 229.

flexibility in utilization of available facilities decreases. As a direct result of decreased flexibility cost of patient care tends to rise.

Some problems could be expected to develop as a result of the grouping system suggested above. Gradual transition of some patients from one group to another as the degree of disability subsides or increases would likely give rise to emotional problems and behavior difficulties. This is inevitable because with most chronic diseases infirmity and disability gradually increases. As a result, this type of patient tends to resist the transition from one group to another. This is particularly evident if such a move is interpreted as indicating increased loss of ability for self-care.[19] Grouping facilities in this unit should be so arranged that the number of times a patient must be moved to a new location could be held to a minimum, consistent with patient requirements.

It should be expected that additional specialty groups may be designated from time to time. Such would be the case if one or more of the chronic diseases suddenly became prevalent, as in the case of a polio epidemic. In this instance a specified area should be designated to accommodate those polio patients admitted to the unit.

It should also be expected that patients with objectionable illnesses would occasionally be admitted to this unit for intermediate care. Adequate provision for care of offensive ailments is necessary.

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[19] Ibid., pp. 230-232.

Patients with offensive odors, such as is common to oral cancer, would usually require an above average amount of care. Such patients would normally be admitted as bedridden patients and assigned to a private room. In selecting the room or rooms to be used for this purpose consideration should be given to effective ventilation and proximity to other patient's rooms. Single-bed rooms should, in most instances, be provided. Deodorizing machines, which would contribute considerably to the comfort of both patient and personnel, should also be considered in preparing for this type of patient.

Single-bed rooms for the mentally disturbed and for terminal cases are also desirable and should be provided in this unit. To prevent undue injury in case of attempted escape by mentally disturbed patients consideration should be given to placing the psychiatric ward as near ground level as is practical. Adequate security measures should be taken as a preventive measure in minimizing the possibility of injury. Isolation from the mentally alert patients must also be anticipated in consideration of the nuisance factor. This ward or section for pschiatric treatment should be situated so that the area might easily be divided from normal patient area.

The figures given in Table I are highly significant for purposes of planning facilities for this unit. Assuming a 90 per cent occupancy the following patient load, based on degree of disability could be anticipated:

TABLE 1

PERCENTAGE DISTRIBUTION OF CASES WITH RESPECT TO CARE REQUIRED*

Type of Case	Per Cent
1. Requiring minimum care only: Includes only board, room, laundry, housekeeping service, general health supervision, a responsible person on call, and having medical and nursing care available in case it should be needed	7.4
2. Requiring chiefly personal attention and routine care: Large amounts of care may be needed but most of it is of a simple type which can be given by aides, attendants, and matrons with general supervision by the physician and professional nurse	34.0
3. In need of regular nursing services	58.6
TOTAL	100.0

*Since 1944, the Central Service for the Chronically Ill of the Institute of Medicine of Chicago has maintained an informational service through which help is provided in arranging long-term care for individual patients. Some 17,000 patients known to the organization represent almost all gradations of need. They may be regarded as roughly typical of the entire group of persons requiring such care, with the exception of persons in need of care because of tuberculosis or mental illness. These figures tabulated from records on the cases have been reviewed and compared year by year. Comparisons were made in relation to figures drawn from studies made in other locations, including, among others, a study of the characteristics of patients in nursing homes in the state of Maryland (see News Letter, Commission on Chronic Illness, October 1953), a summary of experience in Cleveland, Ohio (Goodman, J. I., M. D., Causes of Disability in Patients with Chronic Disease, Journal of the American Medical Association, Vol. 152, August 1953, No. 14, 1336-38), and unpublished studies made in California, Texas, and a rural area in Michigan. The comparisons showed so little variation between localities that, for purposes of planning institutional facilities, it appears that these figures may be accepted as a generally reliable indication of the type of patients in need of long-term care in institutional facilities in the United States.[20]

[20] Ibid., p. 15.

	Patients	Per Cent
1. Requiring minimum care only	9	7.4
2. Requiring chiefly personal attention and routine care	42	34.0
3. In need of regular nursing services	72	58.6
Total	123	100.0

Another set of figures provide additional guidance in determining a bed distribution ratio. Distribution of patients, according to their ability to move about is noted in Table 2.

TABLE 2

PERCENTAGE DISTRIBUTION BY ABILITY TO MOVE ABOUT OF PATIENTS SEEKING LONG TERM CARE IN INSTITUTIONAL FACILITIES*

Type of Case	Per Cent
Ambulant and mentally alert	8.9
Ambulant but mentally confused	16.9
Ambulant with help	11.9
Semi-ambulant	30.1
Bedridden	32.2
Total	100.0

*American Hospital Association, Listing of Hospitals, Hospital--Guide Issue, Part II, 30 (August 1, 1956), p. 166.

Ambulant and mentally alert patients comprise less than 10 per cent of the anticipated patient load. These are patients who are physically and mentally capable of caring for their own needs without close supervision or assistance. Nearly 17 per cent, as indicated above, are also ambulant but would require constant supervision as a safeguard against hazards which might be encountered if left alone. Another 12 per cent of all patients requiring intermediate care, as indicated above, are able to be up and around with some degree of assistance. Most of this group could be expected to get around, aided by crutches or walkers, on a level surface for short distances. Semi-ambulant patients seeking long-term care in this unit could be expected to total approximately 30 per cent of all patients admitted for care. This group would require, for the most part, only routine and personal care. As indicated above, between 30 and 35 per cent of the anticipated patient accommodations should be set aside for bedridden patients. Although not acutely ill this type of patient would require complete nursing care.

With the ambulant but mentally confused patient supervision throughout the entire day should also be maintained. Being capable of getting about without aid yet not alert enough mentally to control their own activities, these patients actually require a considerable amount of non-professional supervision.

These factors are significant to the over-all patient distribution and organizational planning of this intermediate-care unit.

In converting the nurses' home for use as an intermediate-care facility each floor should be carefully evaluated in view of its intended use.

Ground Floor--Treatment and Administrative Facilities

The present lay-out of the ground floor would in general be acceptable for administrative and treatment purposes. However, certain minor adjustments would become necessary in providing adequately for all the needs of the patient. Figure 2, page 46, shows a proposed scheme for this floor. The facilities located at ground level are at present being used for administrative and classroom purposes. In addition to classrooms and offices there are three lounge areas, several utility closets, a spacious lobby, and an auditorium situated on this ground floor. At present there are no living accommodations at this level and no such accommodations would be necessary with convertion of the unit for intermediate-care purposes.

The present Physical Therapy section could be conveniently re-located in the south wing at this level. In selecting an adequate location and allotting space for physical therapy, consideration should be given to several important factors. The recognized purpose of any Physical Medicine department is to provide a means by which every patient within his physical and mental limitations, may become capable of being useful to both himself and society.[21] It is expected that

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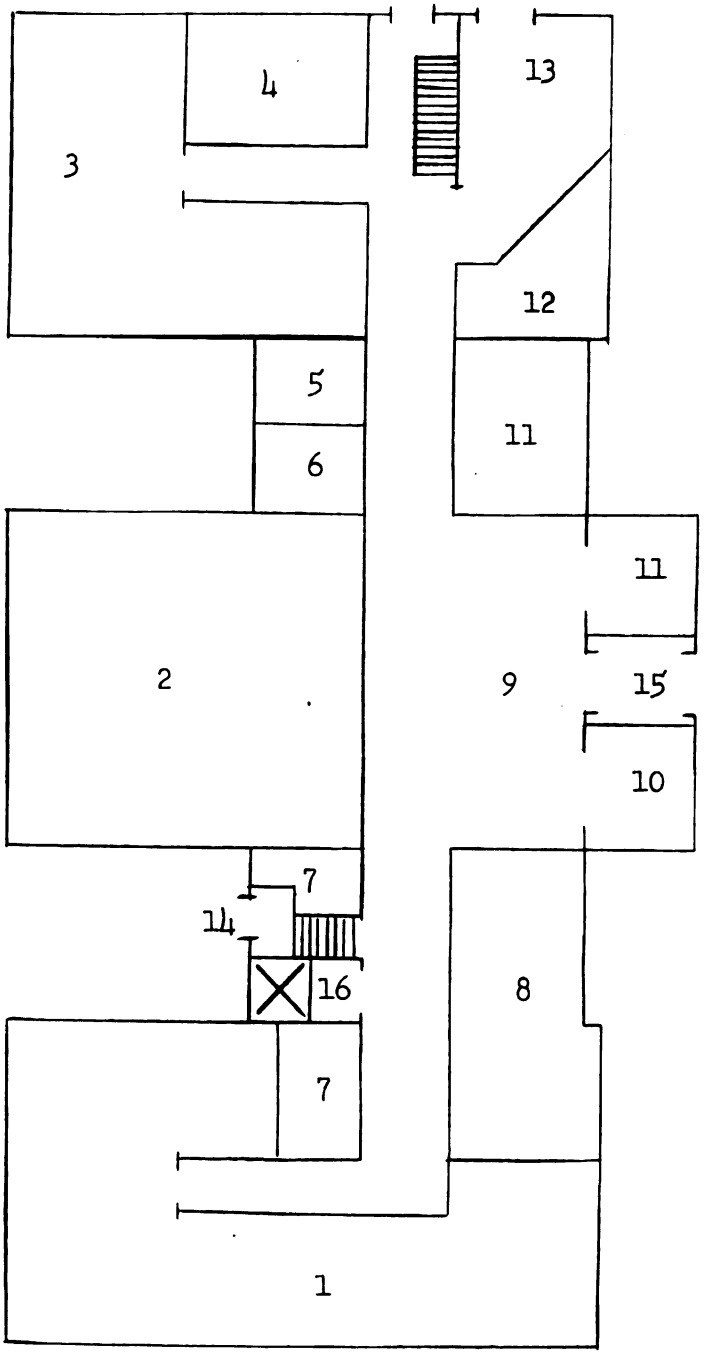
[21]United States Employment Service and American Hospital Association, Job Description and Organizational Analysis for Hospitals and Related Health Services, U. S. Government Printing Office, Washington, 1952, pp. 396-398.

Figure 2. Ground Floor



LEGEND

1. Physio-Therapy Suite
2. Auditorium
3. Occupational-Therapy Suite
4. Service Room
5. Lavatory
6. Kitchen
7. Storage
8. Lounge
9. Lobby
10. Reception Office
11. Social Service Office and Interview Room
12. Barber-Beauty Shop
13. To Connecting Corridor
14. To Rear Recreation Area
15. Main Entrance
16. Elevator

during pre-ambulation the physical therapist would spend considerable time at the patient's bedside. It may then be assumed that as the patient becomes progressively more ambulant and sufficiently able to be transported further rehabilitation would be more effectively provided within the physio-therapy treatment rooms. It seems most important that, at this stage, the patient be provided with adequate facilities capable of allowing for maximum rehabilitation. It is for this reason that careful consideration should be given to allotting sufficient space for use of the physio-therapy section in accommodating the needs of a top quality Physical Medicine department.

Five large rooms with an adjoining office are located in the south wing of the ground floor. The physio-therapy equipment needs could be adequately provided for in this area. This suggested location would allow for adequate ventilation and maximum sunlight. It would also be accessible from an outside entrance adjoining the suite of rooms. Sufficient water facilities are presently available as are electrical outlets, thus minimizing necessary revision. One area located to the front of the suite is presently being used as an extension to the main lounge. Construction of a partition could be easily accomplished to separate the area from the main lounge.

No real problems would be anticipated in locating the therapy equipment for maximum efficiency in this area of the building. This writer is of the opinion that the proposed location for both the physio-therapy and occupational-therapy sections would prove workable.

Occupational Therapy is the other section of the Physical Medicine department for which space should be allotted on this ground floor. The location suggested consists of three rooms situated in the north wing.

This type of therapy suggests a dual purpose.[22] Its first purpose is that of providing vocational exercises, diversional activities and entertainment for both ambulatory and non-ambulatory patients. A second objective is that of teaching personal activities of daily living to those who have, through disuse of limbs, lost the habit. To adequately provide for those facilities necessary for maximum rehabilitation sufficient space could be provided in the north wing of the ground floor. The three rooms suggested for this purpose would allow sufficient work area and storage facilities in anticipation of future demands. By locating this section adjacent to the corridor, connecting the main hospital with this unit, patients with acute illnesses could easily take advantage of its rehabilitative facilities. It is assumed that a majority of the patients would be encouraged to participate in many of the therapeutic activities.

The three rooms which could be assigned for occupational therapy purposes are nicely oriented for sufficient ventilation and natural sunlight. For outpatient convenience the area would be accessible from an outside entrance located at the north end of the main corridor and adjacent to the main hospital emergency entrance. This section, as

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[22] Ibid., pp. 393-395.

the physical therapy section, would be conveniently situated just off the front lobby.

One room suggested for the occupational therapy section could be used as a patient laundry room equipped for washing, drying and ironing of personal clothing by the patients. Many patients would undoubtedly be hospitalized for long periods of time and wear their own clothing throughout the entire period of hospitalization. A double benefit could be accomplished. The hospital would be relieved of this additional laundering of personal items while the patient would benefit therapeutically from performing one of the routines of daily living.[23]

Medical Social Service is another service which undoubtedly will become progressively more important to the voluntary non-profit hospital. The social worker in this type of unit should be expected to contribute considerably to the welfare of both the patient and his family. Indirectly, the department should aid the administrative and medical staff by preventing or relieving behavior difficulties that frequently create complications in caring for patients.[24]

With the responsibilities of the Medical Social Service department in mind consideration should be given to proper location for maximum effectiveness and convenience of the service. Two locations, one in the main hospital building and the other in this unit, were considered. Primarily because of its proximity to those patients who would utilize

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[23]Thomas P. Galbraith and John W. Cronin, M. D. "Planning Multiple Disability Rehabilitation Facilities," Hospitals, 30 (March 16, 1956), p. 53.

[24]Nicholson, op. cit., p. 150.

its services to the greatest extent, locating the Medical Social Service department in the proposed unit would seem most practical. The area suggested for the Social Service Office would be adjacent to the main lobby. It includes two rooms, one of which could serve as an office and the other for the purpose of interviewing patients and their families. If additional counseling space should become necessary at a later date another room adjoining this area could be utilized.

A Visitor Reception Area could be located in a small room directly accessible from the front entrance and adjoining the main lobby. From this office the nurse in charge of the unit could easily coordinate the various activities and functions related to patient care. This office could, in addition, serve as a reception or information center for the unit. A buzzer system is presently in operation from this office to each room in the building. This system would, however, be of little or no value as a communication device following the conversion of the building. All direct communication to the various nursing stations throughout the unit should be by inter-departmental telephone as is now in operation throughout the hospital. An audio paging system throughout the unit could also be installed.

Parlor and Lobby facilities would be accessible from front and side entrances. Upon entering the building by the front entrance, visitors would immediately be in an attractively decorated lobby. To the left or south side of this lobby would be French doors leading to a conveniently located parlor with comfortable lounging area. The only remodeling to affect this area would be a proposed partition in the

parlor which, as previously discussed, would allow for one additional room for the physical-therapy section. Just off the corridor leading from the main lobby to the proposed physio-therapy section is the house elevator. This elevator in its present condition is a "self-operated" device and extends to all floors. Modernization of this facility is discussed in a subsequent section.

An auditorium with a seating capacity of approximately 200 is located on the ground floor level. Entrance to the auditorium could be made from the lobby. It is presently used primarily as an assembly area for student and professional educational activities. This auditorium could continue to serve as an assembly area for staff, patient and community functions. It should be anticipated that considerable use would be made of it for audio-visual therapy as controlled by the Physical Medicine department.

Miscellaneous Areas located at this level would include storage rooms for equipment and supplies, a barber shop, toilet accommodations, and a "snack" kitchen which could be situated adjacent to the auditorium. In addition to these facilities a small service room located in the north wing would continue to provide maintenance space and a hot-water boiler.

Personal appearance, as a strong force affecting the morale of both patients and staff, is recognized as being most important. Provision should be made in this unit for care of the nails, haircuts, shaves, and shampoos for male patients, and for washing, waving, and

cutting of female patients' hair when so desired.[25] Portable equipment should be made available for those patients who are bedridden. It is suggested that a commercial barber or hair stylist be contracted for this purpose or the area leased under specified conditions to a qualified individual for such purpose.

First Floor--Accommodations for Ambulatory and Semi-Ambulatory Patients

Fifteen patient rooms could be located at this level. All but three of these rooms would have adjoining toilet and bath accommodations. As indicated by the Patient Accommodation Chart (page 81), these 15 rooms would allow for a 27-bed patient capacity. The entire floor could be served from one nursing station centrally located adjacent to the library room. A floor scheme, page 53, presents a suggested plan for this level.

The room presently used as a school of nursing library is centrally located at this level. This room is attractively decorated and could be used for patient-staff library needs. Few problems would be anticipated in the actual process of converting this room from its present status as a student library. It could be made equally accessible to those acute patients located in the main hospital by means of the proposed connecting corridor. Adequate lighting and ventilation would be no problem since sufficient window area borders the room. French doors on one side of this room would allow direct entrance to a roof

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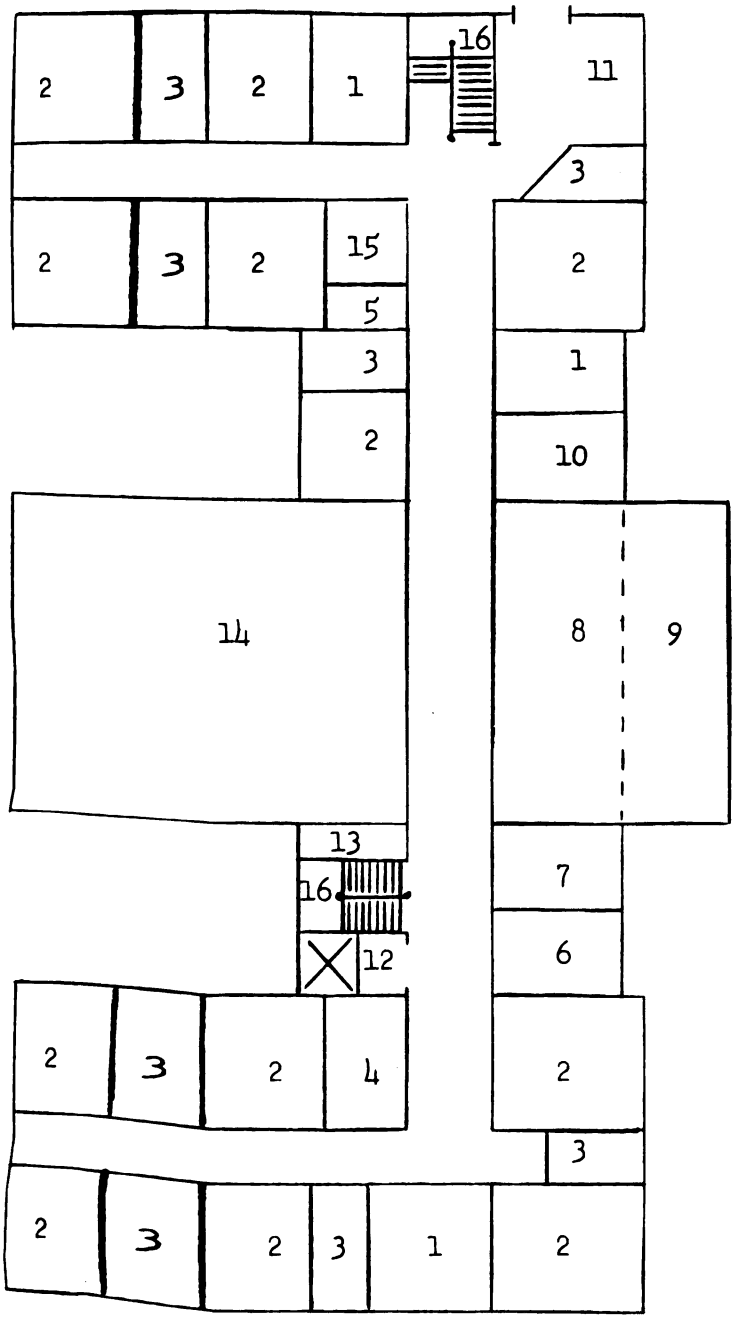
[25] Ibid., p. 254.

Figure 3. First Floor



LEGEND

1. One-Bed Room
2. Two-Bed Room
3. Lavatory and Closet Area
4. Storage
5. Linen Room
6. Treatment Room
7. Nursing Station
8. Library
9. Sun Porch
10. Patient Lounge
11. To Connecting Corridor
12. Elevator
13. Kitchenette
14. Upper Part of Auditorium
15. Incinerator and Clothes Chute Room
16. Stairwell

terrace overlooking the hospital grounds and Michigan Avenue. Current newspapers, magazines, and approved books could be made available for the convenience and therapeutic benefit of all patients wishing to take advantage of this library's services.

A room adjacent to the library could be utilized for eye, ear, nose, and throat treatment. Dental treatment could also be administered here. The room should not be intended for out-patient purposes, but used specifically for those in-patients requiring its facilities during their course of hospitalization. For visual testing a long narrow room directly across the hall could be used. This room is at present being used as a kitchenette.

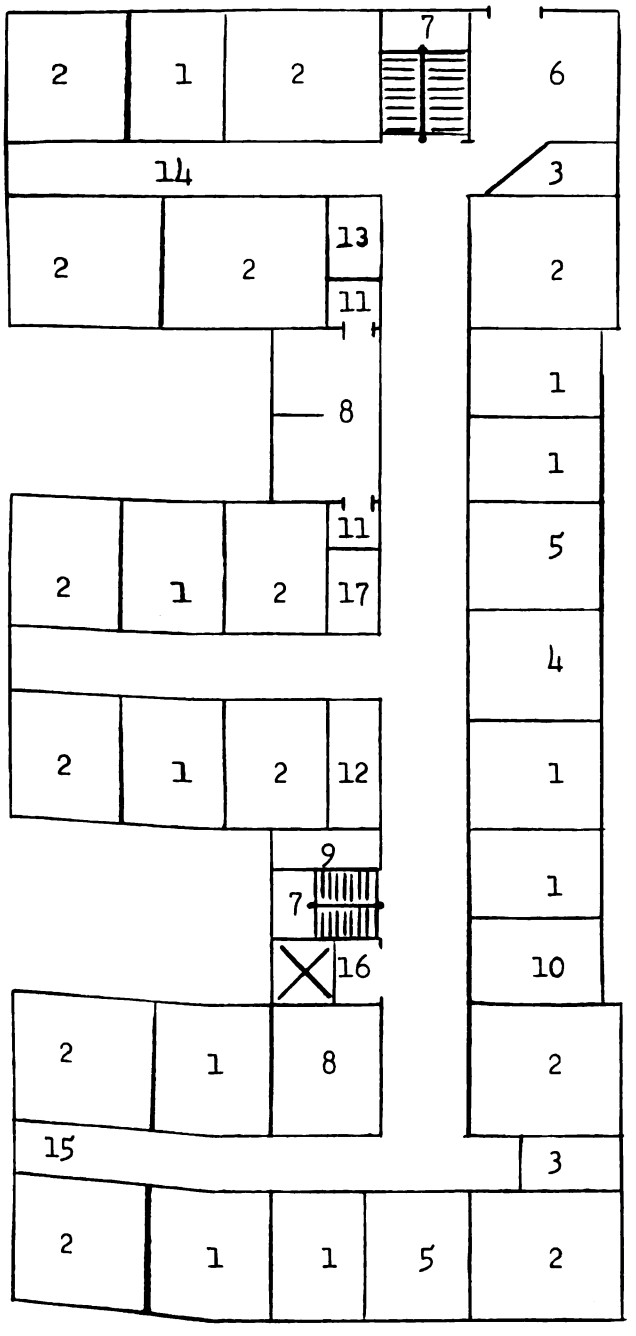
Second Floor--Accommodations for Bedridden, Isolation, and Psychiatric Patients

Most of those patients requiring regular nursing care could be accommodated at this level. In addition to the bedridden patients facilities should also be made available for isolation and psychiatric care. Psychiatric patients would be admitted for diagnostic purposes rather than for permanent, long-term care.

A total of 23 patient rooms with a capacity of 37 beds could be made available in this second floor nursing unit. The unit should be divided into two sections with a main nurses station and a sub-station, the latter located near the isolation area. Figure 4, page 55, shows a proposed floor scheme.

Flexibility is recognized as an important consideration in planning accommodations for both acute and chronic patients. This aspect and

Figure 4. Second Floor



LEGEND

1. One-Bed Room
2. Two-Bed Room
3. Lavatory and Closet-Private
4. Treatment Room
5. Nursing Station
6. To Connecting Corridor
7. Stairwell
8. Lavatory
9. Kitchenette
10. Employee Lounge
11. Bath Tub Room
12. Linen Room
13. Incinerator and Clothes Chute Room
14. Mental Ward
15. Isolation Ward
16. Elevator
17. Storage Area

the process of grouping patients according to degree of disability is discussed in a subsequent section of this study.

Two of the three specialty sub-groups felt necessary for this intermediate-care unit could be located on this floor. They are, as mentioned previously, isolation and psychiatric wards. The suite of rooms suggested for isolation purposes includes 2 rooms which, according to need, could easily be expanded to include a third room. The rooms suggested for this purpose are located on the south wing of this second floor. They are well oriented for sunshine and natural ventilation. Special consideration should be given to the particular needs of the patient when selecting an area to be used for isolation purposes.

Such accommodations should be apart from the non-isolated areas to minimize any possibility of inter-patient contamination. If, at some future time, complete seclusion of the area proposed in this study becomes necessary, a partition could be easily constructed with access to the ward by means of a door in the partition.

In converting the building for patient care purposes, lavatories should be installed to provide for adequate patient hygiene. Such facilities would especially become necessary in areas where chance of contamination and spread of contagious diseases is evident. It follows that adequate cleaning facilities should also be made available for those employees coming in contact with these isolated cases.

The proposed psychiatric ward includes 3 rooms having a 5-bed capacity. One room, a private accommodation, could be used primarily for those patients having violent or incompatible tendencies.

The ward should be situated as far from the nuisance of the commercial thoroughfare, Michigan Avenue, as possible. This would be primarily for the benefit of the patient, and secondarily, to minimize unfavorable public opinion. It has been observed that patients with most mental disorders require surroundings devoid of nuisances for therapeutic reasons. The ward area suggested would be located in the north wing of this floor overlooking an inner court of the hospital grounds. For patient protection bars should be installed at each window in the ward.

By locating the psychiatric section in this area, the possibility of public curiosity or criticism could be minimized since this location would not be observed by the general public. The primary reason, however, for selecting this area for the use of mental patients is because of its central, yet isolated, location. Acute facilities of the general hospital would be readily available, by means of the proposed connecting corridor.

As in the isolation ward, a complete lavatory should be installed to accommodate mental patients. Since complete lavatory facilities are presently available directly below both this ward and the isolation ward, the expense of installing the new facilities could be minimized.

Third Floor--Accommodations for Semi-Ambulant, Children and Bedridden Patients

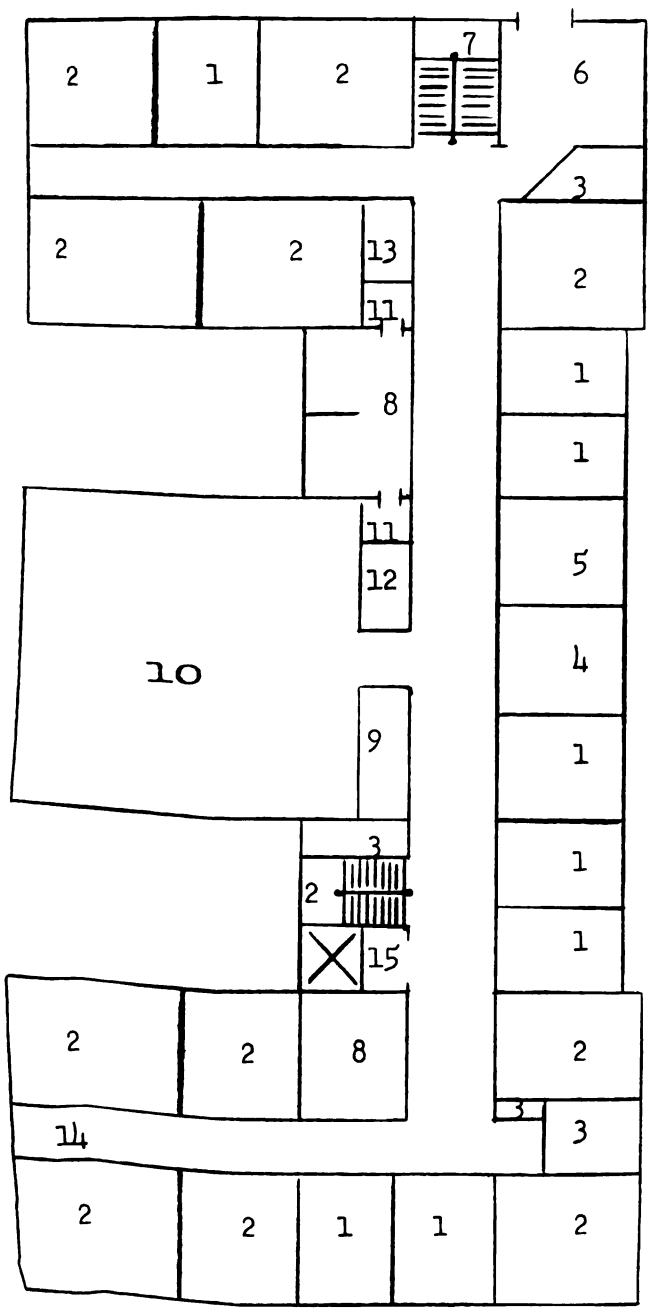
This nursing unit should be planned to accommodate the "overflow" from the other three floors with emphasis on semi-ambulatory patients.

A ward for children under 15 years of age could be located in the south wing. The total of 19 patient rooms proposed for this level would allow a 30-bed capacity. In addition to patient room accommodations, there is presently located at this level a large recreation room. This room could be equipped exclusively for those patients desiring its facilities. It occupies the entire center wing at this level and includes a small kitchen which would be of some therapeutic value if maintained under proper supervision (see floor scheme, Figure 5, page 59).

By placing mainly ambulatory patients in this nursing unit a greater proportion could be encouraged to take advantage of the recreation room facilities. These patients should be able to spend at least part of each day on their feet. Most of them, however, would require some degree of supervision or physical assistance. Bedridden patients and children housed at this level could also be conveniently situated for easy access to the recreation area. This room and its facilities should be made accessible to every type of patient accommodated in the building. Some inconvenience could be anticipated, however, in transporting patients to this area who might require partial or total conveyance. The childrens' ward planned at this level would present no problem of inconvenience because of its nearness to the recreation area. Children unable to transport themselves could be easily carried or wheeled to the room.

The south wing at this level would be adequate as a children's ward. This ward, as proposed, would include four rooms allowing for an 8-bed complement. The rooms could accommodate up to 4 additional beds

Figure 5. Third Floor



LEGEND

1. One-Bed Room
2. Two-Bed Room
3. Storage and Closet Area
4. Treatment Room
5. Nursing Station
6. To Connecting Corridor
7. Stairwell
8. Lavatory
9. Kitchenette
10. Recreation Room
11. Bath Tub Room
12. Linen Room
13. Incinerator and Clothes Chute Room
14. Children's Ward
15. Elevator

should extra space be required. One survey,[26] Conducted in an Eastern state, indicates that approximately 6 per cent of the total bed capacity in a long-term facility should be set aside for children under 15 years of age. Another survey conducted as a joint program by the Commission on Chronic Illness and the Instructive Visiting Nurse Association of Baltimore, Maryland, verified this percentage. The unit suggested in this study would normally be capable of providing 6.5 per cent of the total bed capacity for this specialty group.

Fourth Floor--Ambulatory Patients

Accommodations at this top floor level should be primarily for those patients who are mentally alert and physically capable of caring for their own personal needs. Since flexibility is important in a unit operated for the purpose of patient care, other types of patients could, however, be admitted to the floor. It is felt essential that care be exerted in screening patients, other than the ambulatory, to this nursing unit. One of the main objectives in grouping patients according to degree of disability should be to provide care where it is actually needed, i.e., "skilled nursing care" for the bedridden, "personal care" for the semi-ambulatory, and "sheltered care" for the fully ambulatory and mentally alert. Since fully ambulatory patients usually do not require skilled nursing care this floor could be staffed

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[26]Harriett L. Wilcoxin, "Study of Long-Term Illness Patients Under Care of Public Health Nursing Services," Connecticut Health Bulletin, 68 (January, 1954); 68 (October, 1954).

primarily with unskilled personnel who should, of course, be supervised by a professional nurse.

Patient accommodations at this level would consist of 19 rooms with a 29-bed capacity. None of the rooms on this floor would have access to private lavatory facilities. As on second and third floors, two conveniently located lavatories would be accessible for patient needs. These two lavatories should adequately provide for the needs of both male and female patients. A proposed floor scheme is shown on page 62.

In addition to patient housing at this fourth floor level five rooms in the south wing could be used as lounge space for intern and resident physicians. No adequate quarters are now available for these members of the professional staff. For an institution which is continually expanding and maintains a house staff of more than 20 intern and resident physicians, such consideration would seem justifiable. These physicians, by means of the connecting corridor, would have convenient access to all parts of the main hospital building yet would be rather secluded from the main flow of hospital traffic.

Integration of Intermediate-Care Needs with Acute Facilities

The needs of chronic and/or long-term patients are complicated by the multiplicity of ailments or diseases which may affect the chronic-type patient.[27] It has been established that most chronic patients

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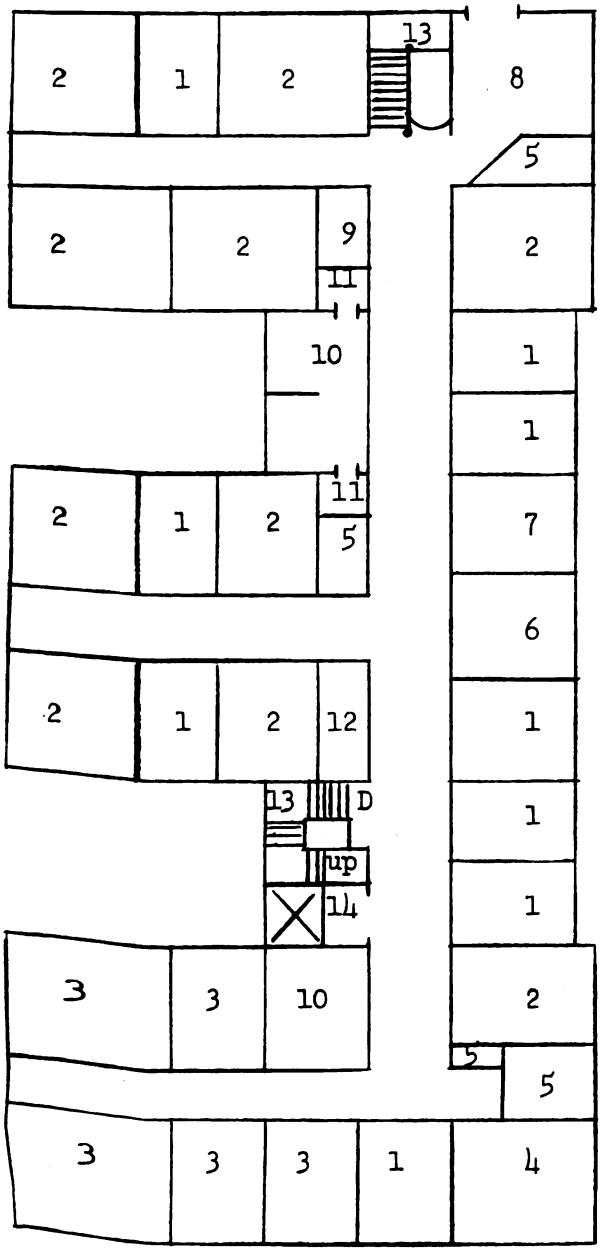
[27]Dean W. Roberts, M. D., "Hospital Unit for the Long-Term Patient," The Modern Hospital, 83 (September, 1954), p. 68.

Figure 6. Fourth Floor



LEGEND

1. One-Bed Room
2. Two-Bed Room
3. Intern Quarters
4. Patient Lounge
5. Storage and Closet Area
6. Nursing Station
7. Treatment Room
8. To Connecting Corridor
9. Incinerator and Clothes Chute
10. Lavatory
11. Bath Tub Room
12. Linen Room
13. Stairwell
14. Elevator

can be treated best under the auspices of a general acute hospital with its technical and scientific orientation.[28] Problems are expected to exist in organizing and maintaining adequate integration. Many of these same problems would, no doubt, prevail in any given hospital situation without regard to type of service rendered.

A broad range of institutional services would be necessary in order to provide for the complete requirements of the long-term patients. Unless these services are gauged for both acute and chronic care, maximum effectiveness in caring for the chronically ill patient cannot be achieved.[29] Adequate integration of services would depend, to a large extent, upon a basic understanding of the needs of the intermediate-care patient.

A patient admitted with a chronic disease diagnosis would require, not only those services commonly available in a general hospital, but additional facilities as well.[30] Examples of these additional services include comprehensive dental care, intensive social service casework, physical medicine, religious ministry, vocational guidance, and recreational therapy. Provision for such service should be anticipated in planning for the complete integration of acute and chronic care facilities.

It should be expected that patients accommodated in this intermediate-care unit might be subject to episodes of acute illness or

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[28]Martin Cherkasky, M. D. "The General Hospital is the Place for the Care of the Chronically Ill," The Modern Hospital, 79 (July, 1952), pp. 98, 100, 102.

[29]Roberts, op. cit.

[30]Leonard A. Scheele, M. D. "New Opportunities for Planning Health Facilities, Hospitals, 30 (March 16, 1956), p. 38.

exacerbations of their chronic conditions. Such conditions would require facilities of the general hospital. By proper integration of chronic facilities with acute services a readymade means would be available for accurate diagnostic evaluations leading to a definitive diagnosis. From such evaluations an appraisal of the potentialities for rehabilitation could be accomplished in addition to services required for treatment.[31] It is evident then that proper service at the proper time should be the prime objective in maintaining a smooth functioning program of service integration.

Those services involved in this problem of integration may be listed as follows:

1. Physio-therapy
2. Occupational Therapy
3. Medical Social Service
4. Dental
5. Eye, ear, nose and throat
6. Nursing
7. Dietary
8. Pharmacy
9. Laboratory
10. Electrocardiography and basal metabolism
11. Outpatient clinic
12. Outside service groups, i.e., visiting nurse association, and various welfare agencies.

These services would, for the most part, comprise the nucleus around which should evolve the entire program for the integration of medical service. Coordinating efforts of the various services should result in a well-integrated program consisting of periodic diagnostic re-evaluations of the patient's condition, treatment, and rehabilitation

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[31]Roberts, op. cit.

progress. In essence, continuity of patient care would be the result of such a program if properly administered.

Continuity in care is considered important to the patient's health and his well-being. It may be even more important to his feeling of security and his emotional health. With continuity of patient care comes functional specialization.

Provision for specialization of facilities in this unit should not be carried beyond the point of absolute necessity. At every point where separate personnel or services must be used, provision should be made to assure a smooth transition for the patient from one facility to another. The fewer changes that a patient must make throughout the entire period of his diagnosis, treatment, rehabilitation, and care, the less suffering he will experience, the fewer duplications and gaps will exist in services, and the lower will be the total cost of providing adequate care.[32]

Recreational Therapy Facilities

Recreational therapy activities should be provided in this unit for all three groups of patients--ambulant, semiambulant, and bedridden. These activities should be in conjunction with the Department of Physical Medicine. Supervision for these activities would be delegated through the Chief of Physical Medicine to a committee assigned specifically for this purpose. This group should be held responsible for coordinating

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[32]Nicholson, op. cit., pp. 34-37.

prescribed patient recreational activities according to prearranged schedules in cooperation with the nursing staff.

Those who actually administer this type of therapy may well be members of a volunteer group under the direct supervision of a professionally trained individual. The Ladies Auxiliary of Sparrow Hospital is especially designed to provide service of this nature. The entire recreational therapy program, it is recognized, could not be placed in the hands of volunteer groups. Nevertheless, with proper supervision, many of the activities could be handled by voluntary workers.

The following types of therapeutic activities are suggested for incorporation into the overall program of recreational therapy:

1. Radio and television
2. Library and bed-side reading
3. Music
4. Movies
5. Religious functions
6. Lectures
7. Public visiting
8. Game area (inside and outside)
9. Outdoor areas for sitting, walking, watching traffic, etc.
10. Barber and beauty shop
11. Canteen

The activities outlined present a diversification of activities in which any patient, depending upon degree of disability, would be able to participate.

For the purpose of recreational therapy several locations may be considered. The entire center wing of the third floor, as previously mentioned, would allow ample room for games, visiting, television, radio, musical activities, etc. The room is at present being used by the student nurses for similar activities. Conveniently situated off

the room is a small kitchen which, as previously mentioned, could be made available for patient use with proper supervision.

An air-conditioned auditorium, as described earlier in the study, is located at ground level. The auditorium is accessible from the main lobby by two French doors. Capable of seating approximately two hundred persons, this room would be adequate as an assembly area for religious, secular, and staff events. An attractively draped stage enhances the value of the auditorium for diversified activities.

The patient-staff library, centrally located at first floor level, is another area which should be utilized for recreational therapy. This library could provide literature on a loan basis to those patients requesting reading material. An experienced librarian could be secured to act as coordinator of the library program. The library is presently in operation and maintains a lending status with state and municipal public libraries. This arrangement could be continued. For the convenience of the staff as well as the patients current popular newspapers, magazines, and books should be made available.

Other areas within the building which could be used for purposes of recreational therapy include patient lounges on first, second and fourth floors, a visitor lounge at ground level, and an occupational therapy section which is proposed at ground level.

Recreational facilities outside the building would also be quite adequate for the needs of the patient. The main hospital grounds offer an interesting and pleasant atmosphere. Benches could be made available at strategic locations for those unable to take advantage of walking

over the grounds. To the rear of the proposed intermediate-care unit an enclosed tennis court has been constructed. This court would allow ample space for outside games and sunning during the warmer seasons of the year. Direct access to this court could be had from the building by way of a rear door adjacent to the location suggested for the physical therapy section.

Another form of therapy concerns personal appearance. Since personal appearance is a strong force affecting the morale of both patients and staff, provision should be made at ground level for a barber-beauty shop. The area designated for this purpose would be equipped, decorated, and operated like any other small commercial barber shop or beauty parlor. This service could be made available to all patients admitted to the hospital.

For patients capable of controlling their own activities and who are able to be up for extended periods of time, many community services should be made available. Both Protestant and Catholic churches are within close proximity to the hospital. A shopping area is only a short distance away. Other local activities could occasionally be made available for interested patients. Transportation should, from time to time, be provided for those interested in certain activities sponsored at Michigan State University. Cultural programs such as those scheduled in various lyceum courses would be of considerable therapeutic value to many patients.

Service Department Facilities

Many of those services which appear to affect the patient only indirectly, such as maintenance and housekeeping, are actually quite essential to the over-all program involving total patient care. From this it is apparent that in contemplating the construction of a new hospital unit great care should be exercised in planning for lay-out, equipment, and those facilities upon which the effectiveness of the unit depends. This is equally true in adapting a building for a use other than that for which it was originally intended. In addition to careful planning of physical layout, substitution and improvisation becomes important. As with the conversion of this building, the establishment of various facilities and services become entirely dependent upon the existing physical layout and available facilities.

Because this building was originally constructed as a nurses residence only a minimum amount of major remodeling would be necessary in preparing it for its proposed use. With the construction of a connecting corridor, duplication of service department facilities could be practically eliminated. Essential services such as laundry, housekeeping, food service, maintenance, medical records, and others could be centralized in, and controlled from, the main hospital building. No service department need be duplicated in the proposed unit. The increased bed capacity would make it necessary to have additional personnel in some departments while in other departments no appreciable increase would be necessary.

Entrance and Exit Areas

In addition to the main entrance leading to the lobby, two other means of entering and leaving the building at ground level would be available. The front or main entrance is located at the front center of the building. At the present time this entrance is well lighted, attractive, and easily reached from the visitors' parking area as well as from the main thoroughfare. A second entrance at this level is located at the north end of the building. This could suffice as a service entrance as well as a patient admitting entrance. From this door an open passageway would lead to the main hospital building. Directly above and serving as a roof for this passageway would be the proposed connecting corridor. The third means of entrance to this unit would be the door, mentioned previously at the rear of the building adjacent to the proposed physical therapy section.

On each of the four proposed patient floors would be three methods of entrance or exit. At the north end of each floor access could be had to a stairwell leading to the ground level and outside entrance. An elevator would be available toward the center of the building. Another stairwell located to one side of the elevator would also be accessible. All modes of exit or entrance in the unit would be well lighted and strategically located for maximum convenience and safety.

Storage Areas

Adequate storage facilities for both the patient's personal belongings, and hospital equipment should be carefully analyzed.

In addition to drawer space and closets for clothing and other personal items used regularly by the patients, a central storage area should be considered on each floor as a convenience to all concerned. Trunks, off-season clothing, and other possessions brought to the hospital by patients should be placed in these rooms and identified for safe-keeping. To minimize storage problems, each patient should be encouraged to bring to the hospital only those personal articles essential to daily use.

In addition to centralized patient storage at each floor level, an area should also be designated for equipment storage, i.e., wheel chairs, stryker frames, apparatus, etc. Storage facilities for other than routinely used supplies should continue to be maintained in the main hospital storeroom controlled by a central supply clerk. Any supplies requisitioned from this central supply room should be placed in assigned shelves or closets until put into circulation. Adequate storage shelves and closets should be available to each nursing unit for this purpose. All of the departments represented in this proposed unit should be provided with sufficient storage facilities according to their needs.

Food Service

Food service to this intermediate-care unit could be provided from the central kitchen and cafeteria. The dining and kitchen facilities located at ground floor level in the main hospital building could, upon completion of the present building program, provide adequately for the

needs of the proposed unit. A recent addition to the dining area, doubling its space, has greatly increased the seating capacity. An addition to this department was purposely planned with expansion of patient accommodations in mind. In the very near future a completely new kitchen is to be constructed concurrently with the construction of an 106-bed acute wing. These new and considerably enlarged food service facilities are to be constructed with even further expansion of patient accommodations in mind. From this projected expansion program it is evident that food service for patients who may be housed in the intermediate unit would be of minor concern.

A portion of the dining area could be designated for patients who are ambulatory. Consideration should also be given to scheduling of patient meals so as not to coincide with the main flow of the employee meal periods. This presents no real problem but should require some degree of control.

Those patients who would be unable to take their meals in the dining area should be served in their rooms. Heated carts, as presently used for patient food service, could also be utilized in conveying warm food to the unit's patient areas. For the purpose of uniformity in procedure the same food service system presently in use should be continued for patients in the new unit. The procedure is basically as follows:

1. All food prepared in central kitchen
2. Patients' food preference acknowledged
3. Cold food placed on individual trays and conveyed on cart to patient area

4. Warm food placed in heated cart and conveyed to patient area
5. Warm food placed on prearranged individual tray and served
6. Special diet trays prepared entirely in the special diet kitchen and transported directly to the patient in "meal pack" containers
7. Beverages served directly from portable thermos containers.

All food for patients in this unit would be conveyed by elevator directly to the patient floor in the main hospital. From this area the carts would then be transported by way of the proposed connecting corridor to the corresponding floor in the intermediate-care unit. This process would be both convenient and efficient since the proposed connecting corridor would enter the main hospital adjacent to the 4-bank elevator area presently under construction.

Administrative Facilities

The administrative functions of this unit should not be separate from those corresponding areas of activity in the main building. Final responsibility for this unit should rest with the parent department. Since the departments represented in this unit would be autonomous with those of the main hospital, little duplication of facilities or personnel should be necessary. Functional control of the entire unit could be directed from the main administrative offices. In actuality, this unit would be treated simply as a closely integrated wing of the main hospital plant.

Admission and discharge of all patients in this unit should be accomplished through the main admitting offices. The same would be

true of ancillary services required in providing for patient care. Medical records should also be processed in the same manner as they are now processed and through the same offices. The medical records section is scheduled for relocation in the present building program as are some of the other departments. The new location assigned to this section should be sufficient to allow for adequate work and storage area in view of any future hospital expansion.

Other administrative space should be provided in this unit. For the convenience of patients housed in the unit and their relatives, one area should be set aside for interviewing purposes. This room should be accessible from the main lobby of the unit. The main office of the unit, as pointed out previously, could be situated to the left of the front entrance. This location would be directly accessible from the main lobby. Administrative space for the department of Physical Medicine, as previously mentioned, would also be located at ground floor level, but adjacent to the physical therapy section.

Throughout the entire unit it may be assumed that the Ladies Guild, a volunteer group, would continue to carry on the program which they now sponsor. The reception area could be partially staffed by these ladies. Their services should also be solicited for the library, canteen and recreational program. Because of the type of patients anticipated in this unit, considerably more of those duties usually performed by professional personnel could be accomplished through volunteer groups.

The Nursing Unit

Nursing units for care of the long-term or chronically ill patient should ideally range from 20-30 beds.[33] As shown by the Patient Accommodation Chart, page 81, the suggested number of patient beds per nursing unit in the proposed intermediate-care facility would range from 27 to 37 beds.

On the second floor (37 beds) the nursing unit could be divided into two sections to comprise a main nursing station and a sub-station. The sub-station on this floor would then provide service primarily to those patients accommodated in the proposed isolation area. In addition to the isolation ward, care could also be rendered from this sub-station to surrounding rooms assigned to the station. In breaking down the patient load of this floor into two sections the number of beds for one section would then fall well within the range as suggested above with 23 beds. The other section, a specialty area, would provide care to a maximum of 11 patients.

On each of the other three floors (first, third and fourth) only one nursing station centrally located should be provided. From this station the entire floor could be adequately controlled. Each nursing station should be equipped to care for those types of patients to be accommodated on the floor. Grouping of patients according to degree of disability and assigning each group to a specific area would be a unique feature of this patient care unit.

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[33] Ibid., p. 227.

Logically it would seem most expedient to house the more ambulant type of patient at progressively higher levels. With this in mind the bedridden patient would be accommodated at the lowest patient level. For practical reasons, however, the lowest patient housing level in this unit is suggested for the ambulant or semi-ambulant patient requesting more luxurious accommodations.

On the first floor all of the rooms except three private rooms would have direct access to lavatory facilities. The three private rooms without lavatory facilities would be in close proximity to joint toilet facilities thus presenting no inconvenience to the patient. An outside porch would also be available from this level as would be the patient library. In addition to these conveniences, the entire corridor floor could remain carpeted as it is at the present time. Rooms at this level are also carpeted. Obviously the bed-ridden patient, unable to control his activities, could not take advantage of such facilities. These facilities are presently available at this level and could remain intact for the convenience of patients.

The facilities of the other three patient floors should be equally adequate and conveniently located for the patients' benefit. Unless additional lavatories are installed, only three rooms on the second floor would have direct access to private facilities. Those patients without direct access to private lavatories at the second, third and fourth floor levels would use one of the two joint lavatories available at each level.

The nursing stations on the floors would require some attention in making them suitable for their intended purpose. Adequate shelving and cupboard space should be installed for storage of equipment and supplies. Each station should also have access to running water and refuse disposal facilities. Other equipment such as desks, chairs, chart racks, etc., should be installed for the convenience of the professional staff.

Segregation

Closely allied to the concept of patient grouping according to degree of disability is the problem of segregating senile patients from those who are mentally alert. Segregating those who might possibly be rehabilitated from those who cannot be rehabilitated. And, of course, segregating according to sex.

As previously stated, patients with a marked psychosis should be admitted to the mental ward only on a diagnostic basis. Senile patients who present no symptoms indicating potential danger to themselves or to others could be cared for in the same facilities with other elderly or chronically ill people. In this unit certain rooms may be designated for those senile patients, who from time to time, could not be placed side by side with those who are mentally alert. However, no specialized area would be necessary for the purpose of senile patients alone since the purpose of this unit is not that of providing care solely for the geriatric type patient.

An important factor to consider in segregation might be the desirability of a separate unit for those who could become rehabilitated.

A separate unit for this type of patient is, however, not generally advisable.[34] Such a section separated for rehabilitation might imply that only certain patients should receive rehabilitation services. Those patients housed in other sections of the institution it may appear, would not be worth rehabilitating, thus being destined to purely custodial care. Patients admitted to this building should be assigned to the different nursing units on the basis of the kind and amount of care which they may require. Within the nursing unit these patients should then be assigned to rooms on the basis of their personalities and congeniality of interest. In most instances the age differential must be carefully considered prior to room assignment. It is the observation of this writer that compatibility of patients assigned to one room is of paramount importance in a hospital situation. This fact would appear to be even more important under long-term circumstances. As a result of such considerations, administrative problems concerning patients could be expected to be minimized while concurrently increasing patient susceptibility to rehabilitation.

Segregation according to sex is an important factor which must be considered for the benefit of the patient. For the convenience of those patients cared for in this unit segregation according to sex of the ambulant and semi-ambulant patients capable of providing for their own personal hygiene should be favored. Bedridden patients should also be accommodated according to sex.

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[34] Ibid., p. 233.

Nursing Unit Corridor

Corridors throughout any hospital building should be well lighted and attractively decorated. The homelike atmosphere and general appearance of the corridors in this unit would necessitate a minimum amount of remodeling or redecorating.

On each floor the main corridor, running the length of the building, is 9' in width. Corridors in the three wings extending to the rear of the building are 6' wide. One authority[35] states that an ideal measurement for hospital corridors varies from 7'6" to 8'0" in width, and in addition, suggests that doorways to patient rooms should ideally be 3'10" wide. In this unit all of the doorways are standardized at 3'0" in width. Considering the benefit which would be derived from enlarging each doorway the estimated cost of approximately $100 each seems prohibitive. To confirm the possibility of transporting a patient by standard stretcher into a patient's room, a test was made. A standard stretcher used for transporting patients was wheeled from the 6' corridor through a 3' doorway into one of the typical rooms designated for patient accommodation. No particular inconvenience or obstruction was encountered in the process of this experiment.

A question may be raised concerning the use of carpeting in a unit such as considered in this study. One authority[36] suggests that carpeting and/or rugs be limited in use to a library or parlor. By using an

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[35]Committee on Designing, Constructing and Equipping of Public Hospitals in Canada. A Guide to Hospital Building in Ontario, University of Toronto, 1954, pp. 256, 257.

[36]Ann Friend. "Carpeting Long-Term Facilities," Hospitals, 30 (May 1, 1956), p. 24.

attractive synthetic type of flooring in halls, the expense and hazards involved in the use of carpeting would be eliminated.

Asphalt tiling could be used to replace the carpeting on all of the corridor floors. Because of its relative durability, cleaning qualities, and original cost (approximately 20¢ per square foot, installed) this type of flooring is suggested as being the most practical for the intended use. Other types of tile should also be considered and compared price-wise. Ceramic tile is currently priced at $2.75 per sq. ft., installed, and rubber tile at 75¢ per sq. ft., installed. From this a comparative cost figure could be reached bearing in mind the relative durability and practical aspects of each type of flooring.

Installation of handrails throughout the patient corridors could be expected to serve a dual purpose. In addition to the patient safety factor involved, such handrails strategically located and at a height convenient for patients to grasp easily would encourage self-rehabilitation on the part of the patient. Handrails could also prevent damage to walls and bases resulting from frequent bumping by wheel-chairs, stretchers, and various other forms of equipment.

Patient Rooms

It is recommended[37] that a minimum of 100 sq. ft. per patient bed be allowed in patients' bedrooms with at least a 3'0" clearance on each side of the bed. In rooms housing more than one person it is also recommended that 6'0" or more be allowed between beds. With these

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[37]Nicholson, op. cit., p. 209.

recommendations in mind, a suggested Patient Accommodation Chart for this proposed unit is shown in Table 3.

TABLE 3

PATIENT ACCOMMODATION CHART

	Floor					
	I Ground	II Ambulant Semi-Amb.	III Bedridden	IV Semi-Amb. and Chil.	V Ambulant	Total
1. Bed Capacity	-	27	37[a]	30	29	123
2. No. of Rooms	-	15	23	19	19	76
3. 1-Bed Rooms	-	3	9	8	9	29
4. Multi-bed Rooms	-	12	14	11	10	47
5. Special	-	—	5[b]	4[c]	—	9

[a]Divided into two nursing units

[b]Isolation - 2 rooms; psychiatric - 3 rooms

[c]Children's Ward - 4 rooms

As indicated in this table, patients could be accommodated in 47 multi-bed rooms, and 29 private rooms located on the first, second, third and fourth floors. Sufficient storage space would be available for personal items within each room. In addition to closet and drawer space allotted each patient, a central storage room, as previously pointed out, should also be made available at each floor level. Patients wishing to make use of this facility could be assigned a cubicle for their own personal belongings.

Building Facilities and Proposed Remodeling

Planning the conversion of this building for long-term patient care necessitates careful consideration of the needs of those individuals who may utilize its facilities. Even though the building in its present condition is remarkably well constructed for relative ease in converting for long-term use, certain factors should be considered in adapting the building for its intended purpose.

Traffic-flow would be an important aspect contributing to the efficiency of such a unit. The building being remarkably well laid out, should present no real problem in this respect. With wide corridors throughout the building, stairwells at the end of each main hall, a building elevator, and direct access to a bank of four elevators in the main hospital building, both vertical and horizontal traffic would be provided for adequately.

Location of stairwells merits special consideration. The stairwells in this building are conveniently situated. Constructed at the north end of the main corridor on each floor is a stairwell. The other stairwell, also extending to the top level is located next to the elevator shaft toward the middle of the building. These stairwells are presently provided with several safety factors. The steps are constructed of non-slip material. Handrails are also installed. At the entrance to each landing are exit lights clearly indicating the location of the stairs. Both stairwells are adequately lighted and well constructed for safety.

Connecting Corridor

To allow direct passage from this proposed intermediate-care unit to the main hospital building, a 5-level connecting corridor should be constructed. For direct passage from the front parking area to the emergency suite, now under construction in the new wing, it is suggested that this connecting corridor at ground level be designed as an open breezeway. This in effect would allow direct access to the emergency area without entering the hospital building. The five-story corridor should be constructed in harmony with the over-all hospital design. It should also be constructed of reinforced steel with brick facing. As noted on page 37, the corridor would enter the new wing of the main hospital adjacent to the bank of elevators. One room would be eliminated on the north-east corner of the intermediate-care unit at each level to allow for adequate passageway into the unit.

An architectural firm, O. J. Munson, of Lansing, Michigan, estimates the cost of constructing such a corridor between the two buildings at $16 per sq. ft. of floor space. The distance between the two buildings is 17'0", and the width of this proposed corridor would be 15'0". Total square feet, based on 4½ stories (open ground floor), would be approximately 1147 sq. ft. From this an approximate total cost of $18,352 would result.

Elevators

At present one elevator is being operated between all floors of the proposed patient unit. It may be assumed that the main traffic

load for this unit would be taken care of by a bank of four elevators, to be located in the new 106-bed acute wing. The unit would then be accessible by way of the recommended connnecting corridor.

Cost for complete replacement of the present elevator in this unit by a larger standard size hospital elevator would appear to be prohibitive, approximately $35,000, as quoted by the Otis Elevator Co., Lansing, Michigan. Remodeling of the present elevator could be accomplished at a cost of approximately $20,000.

The elevator, after remodeling, should be automatic with a self-leveling device in addition to fully automatic closing mechanisms. It should be adjusted so that its operation could be maneuvered slowly and easily by disabled patients. Special safety devices should also be installed to avoid danger should a patient operating the elevator become confused or frightened. Under normal circumstances, it should be capable of lifting 1800 lbs., rising 200 ft. per minute, and transporting a capacity of 12 people at one time.

Ramps

Only limited use of ramps should be considered in this unit. Placement of some ramps at strategic locations is most important and should be considered. Although only two ramps are suggested for construction in the entire unit, these two ramps are considered a very necessary convenience for the disabled and wheel chair type patient.

Without a ramp it would be necessary for patients wishing to take advantage of the tennis court recreation area to walk up a 4-step incline and then down another 4 steps to the outside area.

A ramp should be constructed at such a point for the benefit of those patients who might have some difficulty in maneuvering the steps. Another ramp should be constructed just outside the front entrance. At this point entrance is made by descending two steps to the front door of the unit. The steepness of incline or decline should be carefully considered in view of the types of patients using the ramp. An incline or decline, in excess of 5 degrees, should be avoided.

Nurses' Call System

A nurses' call system identical to that now in operation in the main hospital should be installed in this unit. The present system used in the main hospital consists of a locking button type calling station located at the bedside of each patient. When operated a dome corridor lamp station immediately lights up. Concurrently with the illumination of this dome light another light appears on the nurses' call annunciator in the nurses' station. The annunciator is designed for use at the nurses' stations to indicate to a nurse the room or bed calling. In addition, a mild toned buzzer gives audible notice of the call and may be silenced simply by touching a switch mounted at the bottom of the annunciator.

In each patient lounge a wall station should also be installed. This type of station is commonly used in solariums, lavatories, and lounges, where no cord set is required. The station should be equipped with the same push mechanism as is used in the cord type bedside station. Each lavatory should also contain an emergency call mechanism.

Reasons for proposing this type of system over other systems investigated (centralized radio system and centralized television system) are as follows:

1. For the sake of uniformity throughout the hospital
2. Comparatively low original cost
3. Low upkeep and maintenance cost
4. A simple but yet effective system
5. Relative ease of installation.

For technical details concerning this system the reader is referred to Edwards and Company, Inc., Norwalk, Connecticut. The Barker-Fowler Electrical Company, of Lansing, Michigan, submitted an approximate cost to include installation of the system in this unit. The projected cost of approximately $11,000 compared favorably with two other contractors quotations submitted on a similar system.

Miscellaneous Facilities

Many of those facilities essential to the operation of a hospital unit are presently provided in this building. Facilities such as incinerator, laundry chute, fire alarm apparatus, telephone service, and utility rooms are a few of those items already available for effective operation. Other services common to an acute general hospital would also be readily available to this unit, i.e., maintenance service, laundry service, linen supply, garbage disposal, central supply, and general storeroom.

Staffing--Professional and Non-Professional Personnel

It is expected that one resident physician and an intern could adequately supervise the care of 122 long-term patients, assuming 100 per cent occupancy. This may be compared to the usual ratio of one intern to twenty-two patients on the acute medical-surgical wards of the general hospital.

Personnel needs of this unit could be expected to vary from time to time depending upon the types of patients admitted and the amount of care demanded. Other factors which would also affect the ratio of personnel to patients are: kind and amount of labor-saving equipment provided, the adequacy of selection and supervision of employees, and the quality of persons employed.

It is felt that a minimum number of full-time professional nurses would be required for this type of care. Consequently a higher ratio of practical nurses and aides to professional nurses could be selected in caring for patients admitted to this unit.

Based on a 90 per cent occupancy (100 average daily census) the projected ratios shown below are considered adequate by the writer in reflecting the staffing needs of this proposed intermediate-care unit.

TABLE 4

PATIENT-STAFF RATIO

	Ratio	Number of Personnel
Patient-professional nurse	13:5	9
Patient-practical nurse	5:3	23
Patient-aide and/or orderlies	4:9	25

These ratios allow for days off, sick leave and annual leave. They include all personnel assigned, exclusive of supervisors. A 40-hour week, 8-hour day is assumed. A general nurse supervisor, an assistant supervisor, and one relief supervisor would be assigned to the overall supervision of the unit.

It is this writer's opinion that, exclusive of nursing service personnel, the percentage of additional employees necessary to the successful operation of the other departments would at the most not exceed 15 percent of the present employee load.

CHAPTER VI

FINANCIAL RESOURCES AND COST ANALYSIS

It is impractical within the scope of this paper to go into the details of the complex problem of financing the cost of establishing an intermediate-care unit and provision for continued income for operation. Nevertheless, some basic consideration should be given to such an important aspect in attempting to justify the establishment of such a program in conjunction with this general hospital.

In being realistic concerning the concept of establishing an intermediate-care unit in a general hospital it is apparent that the motivating interest stems from the desire to provide a more complete health program for the community. Yet, one other motivating interest cannot be taken lightly--that of greater economy in cost per patient-day. Consideration of these two motivating interests has a dual effect. Both the community and the hospital reap the resulting benefit of decreased cost of hospitalization and increased health care.

The cost factor involved in the establishment of a new medical facility, second only to the values derived from its effectiveness and productivity, becomes most significant. Cost is of great importance throughout the entire process of planning developing, and operating a facility as proposed in this study.

Source of Funds

Several means of acquiring financial aid for the converting of this building to the needs of intermediate care should be evaluated.

1. Federal aid through the Hill-Burton program
2. Public contributions
3. Legacies
4. Operating surplus
5. Loans
6. Foundation or industrial grants.

These and other sources should be exploited in an effort to accumulate sufficient funds. For each source the availability of funds would undoubtedly be contingent upon the hospital's ability to meet certain requirements. These requirements should be investigated and discussed in detail to determine eligibility.

Estimated Costs

The figures below show a cost estimate for converting at current prices. It is highly probable, that, as the time approaches for definite cost commitments, the final total would be higher than that shown. The same may be said of projected operating expenses, should the establishment of this unit be realized. Continually rising costs render a projected cost analysis worthless, except as it provides a guide at various stages of the planning process.

TABLE 5

CONVERSION COST ESTIMATE

1. Modernize elevator	$20,000
2. Nurses' call system	11,000
3. Connecting corridor	18,500
4. Asphalt tile for corridors	962
5. Movable equipment and furnishings	16,000
6. Original inventory of supplies	11,000
7. Reserve to cover initial operating deficit	13,500
8. Miscellaneous expenses	10,000
Total	$ 100,962

Explanation of Cost Estimates

1. As estimated by the Otis Elevator Co., Lansing, Michigan

2. As estimated by the Barker-Fowler Electrical Company, Lansing, Michigan

3. Estimated at approximately $16 per sq. ft. for approximately 1147 sq. ft. of area--Munson Architectural Firm, Lansing, Michigan

4. Estimated at 20¢ per sq. ft. (installed) for 4812 sq. ft. Installed on first, second, and third floor corridor halls only

5. Estimated cost of furnishings and equipment needed in addition to that which would be moved in from the East Unit. Most of the furnishings now used in the rooms of this domiciliary unit could continued to be used for patient purposes.

6. Includes estimated initial costs of towels, sheets, medical supplies, and other items ready for use upon admittance of the first patient.

7. To cover initial deficit due to low occupancy during the first three to six months of operation.

8. To cover costs of additional lavatories, ramps, a partition in the present lounge area, moving costs, and any additional insurance required.

Operating Budget

In projecting a budget for the operation of the proposed intermediate care unit the relationship between quality and cost is emphasized. To sacrifice good care for low total costs does not seem reasonable. Yet a facility serving only those patients requiring non-acute care should operate at lower costs than one serving the seriously sick or acute patients. Good care should not be sacrificed, for the amount of care provided should be determined directly by the amount of care required.

Edna Nicholson suggests in her book, Planning New Institutional Facilities for Long-term Care,[38] five factors which influence operating costs. These factors are:

1) The kinds of patients accepted for care, with particular reference to their physical condition, mental alertness, and the amount of service required.

2) The standards at which the services of the institution are maintained.

3) The location of the facility as this affects wage and price levels.

4) The adequacy of the building and equipment as these influence the efficiency with which the necessary activities can be maintained.

5) The competence with which the institution is managed and operated.

With these factors in mind a proposed operating income and expense budget is distributed among the various items as shown below.

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[38] Ibid., p. 339.

TABLE 6

INCOME AND EXPENSE BUDGET--FIRST FISCAL YEAR

			Approximate Per Cent
INCOME:			
1. From patients' fees		$385,440	99
2. Miscellaneous		4,000	1
	Total	389,440	100
3. Deficit covered by Reserve		13,110	
	Total	$402,550	
EXPENSES:			
(Based on normal fiscal year at 80% occupancy)			
4. Payroll		277,900	67
5. Food Supplies		59,550	14
6. Plant maintenance and operation:			
Heat, light, power	11,000		
Laundry	10,000		
Maintenance, repair	10,000		
Water and gas	1,000		
		32,000	8
7. Drugs, medical and nursing supplies		25,000	6
8. Miscellaneous		20,550	5
		415,000	100
9. Less 3% to allow for initial period of low occupancy		- 12,450	
	Total	$402,550	

Explanation of Budget Items

1. Patient Income - Based on an average $12 per patient day at an anticipated first year occupancy of 72 per cent. Includes both in-patient and out-patient fees paid either by patients and their families from their own resources, or on behalf of patients by welfare agencies and others.

2. Miscellaneous Income - Includes income from vendor machines, barber and beauty shop, and funds received in the form of contributions and income from endowments.

3. Deficit Covered by Reserve Fund - This deficit would be provided from the reserve set up in the original Conversion Cost Estimate--Reserve to cover initial operating deficit.

4. Payroll - Based on a normal 80 per cent occupancy. Adequate personnel coverage must be maintained despite the anticipated low daily census during the early part of the initial year.

Estimated Payroll

Position	Number of Employees	Average Annual Wage or Salary Rate	Total Annual Cost
R. N.'s - Supervisor	3	$3,600	$10,800
R. N.'s - General and Head Nurse	9	3,360	30,240
Licensed Practical Nurses	23	2,760	63,480
Aides, attendants, and orderlies	25	2,520	63,000
Clerks	7	2,640	16,480
Housekeeping (janitors)	11	2,400	26,400
Social Service	2	4,200	8,400
Physio and Occupational therapists	6	4,550	27,300
Intern	1	3,600	3,600
Others (i.e., X-ray, laboratory technician, dietary and laundry help, etc.)			28,200
		Total	$277,900

The above payroll estimates are based on the average rates paid, as of June 1, 1957. "Other" payroll is based on an approximate 10 per cent of total annual payroll of departments other than those listed.

5. Food Supplies - Includes raw food costs and supplies at 56¢ per patient meal, and based on 80 per cent occupancy. Does not include labor costs involved in food preparation (106,215 meals at approximately 56¢ per meal).

6. Plant Maintenance and Operation - These figures are based upon the past operating experience of the building as a domiciliary unit. Appropriate adjustments are made to compensate for anticipated additional expenses.

7. Drugs, Medicines, and Nursing Supplies - Based on approximately 6 per cent of total budgetary expenditures.

8. Miscellaneous Expenses - based on approximately 6 per cent of total budgetary expenditures.

9. It should be expected that during the early stages of operation the occupancy of this unit would be somewhat below normal. Due to this low occupancy the cost of operation would also tend to be less than normally anticipated, however, not in direct proportion. Most expenses should be expected to remain fixed while others tend to vary with percentage of occupancy.

The relationship between anticipated cost and quality of care is again emphasized. As stated by one writer, the most economical care is that which returns a person as quickly and as fully as possible to the highest attainable state of health and social effectiveness.[39]

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[39]Robert L. James, "Factors for Consideration In Establishing A Chronic and Geriatric Unit in a General Acute Hospital," Unpublished M. A. thesis, Northwestern University, 1955, p. 26.

CHAPTER VII

CONCLUSIONS AND RECOMMENDATIONS

1. This study presents an approach for one community to the problem of providing adequately for the needs of the chronic patient. As a pilot study it may be of value to other communities faced with a similar health care problem. Although but one small part of the national scene this one community could well serve as a prototype for others who have a growing concern over future health care needs.

2. Chronic illness is the challenge of our time. Those individuals responsible for the health needs of the community must recognize this in planning for total health care.

3. As the population has grown progressively older, chronic disease has increased steadily. The real difficulty lies not in lack of knowledge concerning these diseases, but rather in the absence of facilities where the modern care concept for the chronic and aged sick can be carried out.

4. The present inadequacy of chronic facilities in some areas throughout the nation presents a serious problem. Although this problem in Ingham County, does not at present appear alarming, it is the demands of the near-future which must be carefully evaluated.

5. The continual shift of population throughout the state and nation gives steady rise to the frequency of chronic disease.

6. The construction of hospital facilities for the chronically ill has been encouraged by the passage of the Hospital Survey and Construction Act. This act provides federal aid for such facilities up to a maximum of two beds per 1000 population.

7. In planning facilities for care of the chronically ill plans should be made for the community as a whole and not for the indigent alone. All sections of the population must be served.

8. On a local, state, and national basis the loss of manpower, wage and tax revenues, as a result of chronic disease, appears astounding. These costs, in terms of economics, present a problem of national importance.

9. The general hospital of today can provide a solution to this problem by planning for the health care needs of the future. It is recommended that hospital facilities for long-term illness be established in close proximity to general hospitals. The establishment of an intermediate-care unit in a general hospital environment would make available care for the "whole patient." Proper care for the chronic ill, aged, and the patient convalescing from a serious operation or medical illness should be the primary function of the intermediate-care unit.

10. The need for intermediate-care facilities should be carefully considered and evaluated in all communities throughout the nation. This paper presents one community where special study should be given to such a program. However, in all planning, bear in mind the importance of planning for progress.

INTERVIEWS

1. Caldwell, Mildred, Supt. of Nurses, Ingham County, Lansing, Michigan.

2. Duxbury, Doris, Chief of Statistics, Michigan Department of Health, Lansing, Michigan.

3. Fausey, Glen W., Director - Edward W. Sparrow Hospital, Lansing, Michigan.

4. Fowler, Bob, Engineer, Barker-Fowler Electrical Company, Lansing, Michigan.

5. Hesse, Charles, Supervisor, Department of Physical Medicine, Edward W. Sparrow Hospital, Lansing, Michigan.

6. Larson, A. C., Director - Hinsdale Sanitarium and Hospital, Hinsdale, Illinois.

7. Magdalen, Sister M., R. S. M., Director - St. Lawrence Hospital, Lansing, Michigan.

8. Meyer, John, Supervisor for the Michigan State Highway Department, Lansing, Michigan.

9. Rush, Lillian, Associate Director of Nursing Service, Edward W. Sparrow Hospital, Lansing, Michigan.

10. Stanley, Arthur L., M. D., Assistant Director, Ingham County Chest Hospital, Lansing, Michigan.

11. Stien, George, Sales and Service Manager, Otis Elevator Company, Jackson, Michigan.

12. Swartz, Frederick C., M. D., Lansing, Michigan.

13. Tableman, Betty, Administrative Analyst, Michigan Hospital Survey and Construction, Lansing, Michigan.

14. Wolcott, Lester E., M. D., Director of Ingham County Hospital and Rehabilitation Center, Okemos, Michigan.

APPENDIX

TEN LEADING CAUSES OF DEATH IN MICHIGAN
1900, 1955
CHRONIC DISEASES INCLUDED AMONG 10 LEADING CAUSES AS PROPORTION OF ALL DEATHS

1900

		Number	Percent
1.	Diseases of Heart	2,936	8.7
2.	Tuberculosis	2,500	7.6
3.	Pneumonia	2,388	7.4
4.	Diarrhea & Enteritis (under 2 years of age)	2,337	7.2
5.	Accidents	1,740	5.4
6.	Cancer	1,460	4.6
7.	Apoplexy	1,259	3.9
8.	Nephritis	1,061	3.3
9.	Typhoid Fever	869	2.7
10.	Bronchitis	802	2.5
	Total (10 causes)	17,265	53.3
	All other causes	15,188	46.7
	Total Deaths	32,453	100 %

These 4 Chronic Diseases are 20.5% of all Deaths

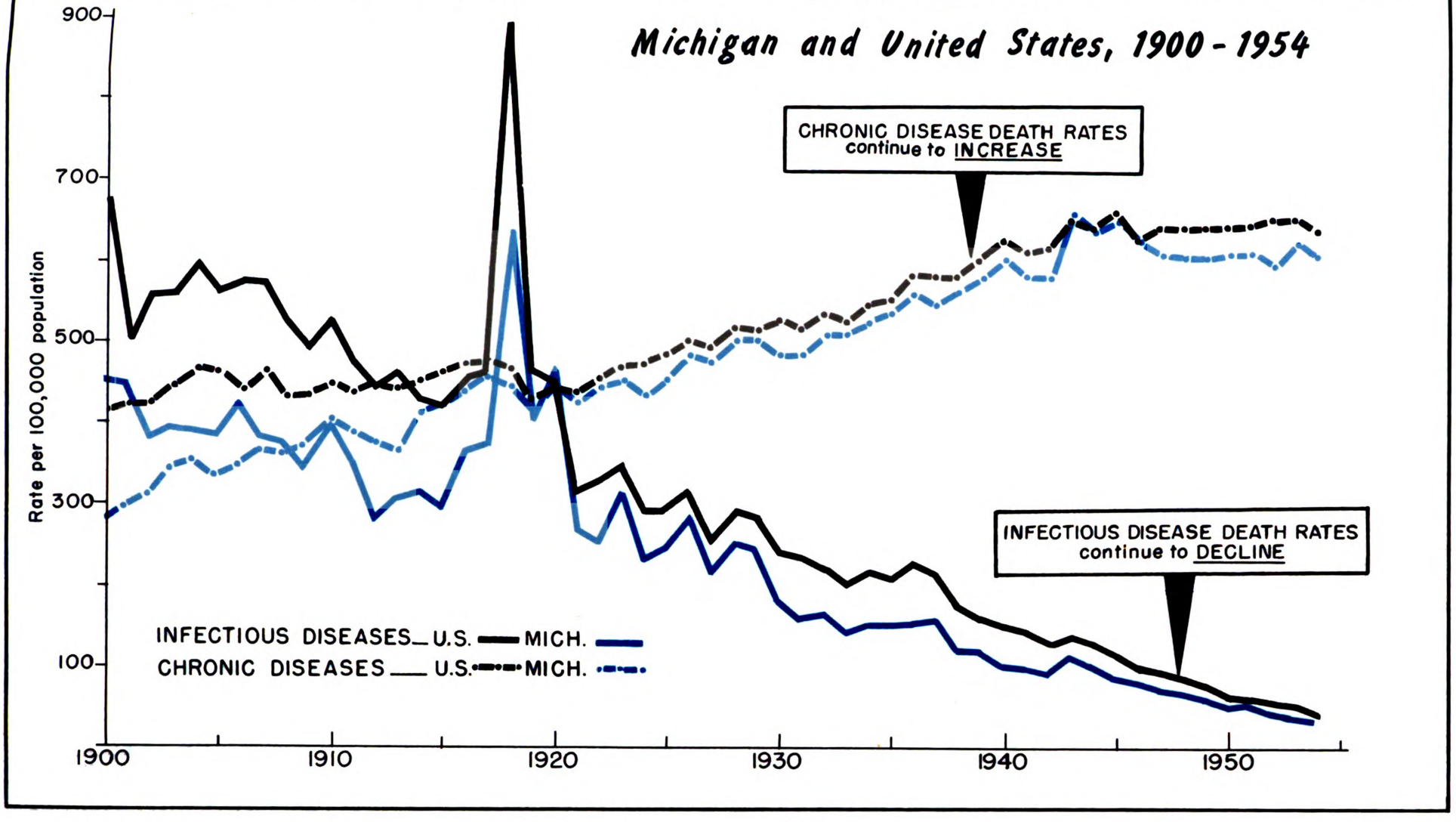
1955

		Number	Percent
1.	Diseases of Heart	23,440	37.2
2.	Cancer	10,297	16.3
3.	Vascular Lesions Affecting C.N.S.	7,382	11.7
4.	Accidents	4,213	6.7
5.	Pneumonia and Influenza	1,599	2.5
6.	Diabetes mellitus	1,415	2.2
7.	Immaturity (unqualified)	1,272	2.0
8.	Arteriosclerosis	1,237	2.0
9.	Congenital malformations	1,013	1.6
10.	Cirrhosis of Liver	805	1.3
	Total (10 causes)	52,653	83.5
	All other causes	10,434	16.5
	Total Deaths	63,087	100 %

These 6 Chronic Diseases are 70.7% of all Deaths

DEATH RATES DUE TO CERTAIN CHRONIC & INFECTIOUS DISEASES☆

Michigan and United States, 1900 - 1954



☆Includes diseases with corresponding Sixth Revision Detailed List Numbers as follows:

Chronic Diseases – Cancer (140-205), Diabetes (260), Vascular lesions affecting central nervous system (330-334), Diseases of heart (410-443), Chronic and unspecified nephritis (592-594), Ulcer of stomach or duodenum (540,541), and Cirrhosis of liver (581).

Infectious Diseases – Typhoid fever (40), Scarlet fever (50), Whooping cough (56), Diphtheria (55), Tuberculosis (1-19), Dysentery (45-48), Malaria (110-117), Syphilis (20-29), Measles (85), Pneumonia & influenza (480-493), Diarrhea, enteritis, and ulceration of intestines (543,571,572).

Source of United States data: Building America's Health, Vol. III, Table 36, and Vital Statistics of United States, Vol. II, III.

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TEN LEADING CAUSES OF DEATH
DISTRIBUTION BY AGE GROUPS
MICHIGAN, 1953

CAUSE	TOTAL	PERCENT	NUMBER				PERCENT				
			Under 15 Yrs	15 44	45 64	65 & Over*	Total	Under 15 Yrs	15 44	45 64	65 & Over*
All Causes	62,087	100	6,305	5,760	17,327	32,695	100	10.1	9.3	27.9	52.7
Diseases of heart	22,425	36.1	28	1,026	6,881	14,490	100	0.1	4.6	30.7	64.6
Cancer	9,904	16.0	190	884	3,892	4,938	100	1.9	8.9	39.3	49.9
Vascular lesions of c.n.s.	7,045	11.4	27	219	1,594	5,205	100	0.4	3.1	22.6	73.9
Accidents	4,375	7.0	791	1,540	873	1,171	100	18.1	35.2	19.9	26.8
Pneumonia and influenza**	1,777	2.9	477	134	343	823	100	26.9	7.5	19.3	46.3
Diabetes mellitus	1,419	2.3	6	79	465	869	100	0.4	5.6	32.8	61.2
Arteriosclerosis	1,270	2.0	-	4	62	1,204	100	0	0.3	4.9	94.8
Immaturity	1,114	1.8	1,114	-	-	-	100	100	0	0	0
Congenital malformations	951	1.5	838	59	41	13	100	88.1	6.2	4.3	1.4
Nephritis and nephrosis	820	1.3	40	140	247	393	100	4.9	17.1	30.1	47.9
All other causes	10,987	17.7	2,794	1,675	2,929	3,589	100	25.4	15.2	26.7	32.7

* Including 31 of unknown age.
** Excluding pneumonia of newborn.

The four leading causes of death accounted for approximately 70% of all deaths. The first three of these, heart, cancer and vascular lesions occurred largely among the older age groups, with only 5%, 11% and 4%, respectively, under 45 years.

However, in the fourth leading cause, accidental deaths, 53% were under 45 years of age. With the exception of deaths due to immaturity and congenital malformations, which occur largely in infancy, accidental deaths is the only one of the ten leading causes with approximately half (53%) of the deaths in the age groups under 45 years. The fifth cause, pneumonia and influenza, and the tenth cause, nephritis and nephrosis, follow in line in this respect; 34% of the pneumonia and influenza deaths and 22% of the nephritis and nephrosis are under 45 years of age.

It is interesting to note that diabetes, the sixth leading cause of death, and heart disease, the first leading cause, follow a similar percentage distribution of age at death.

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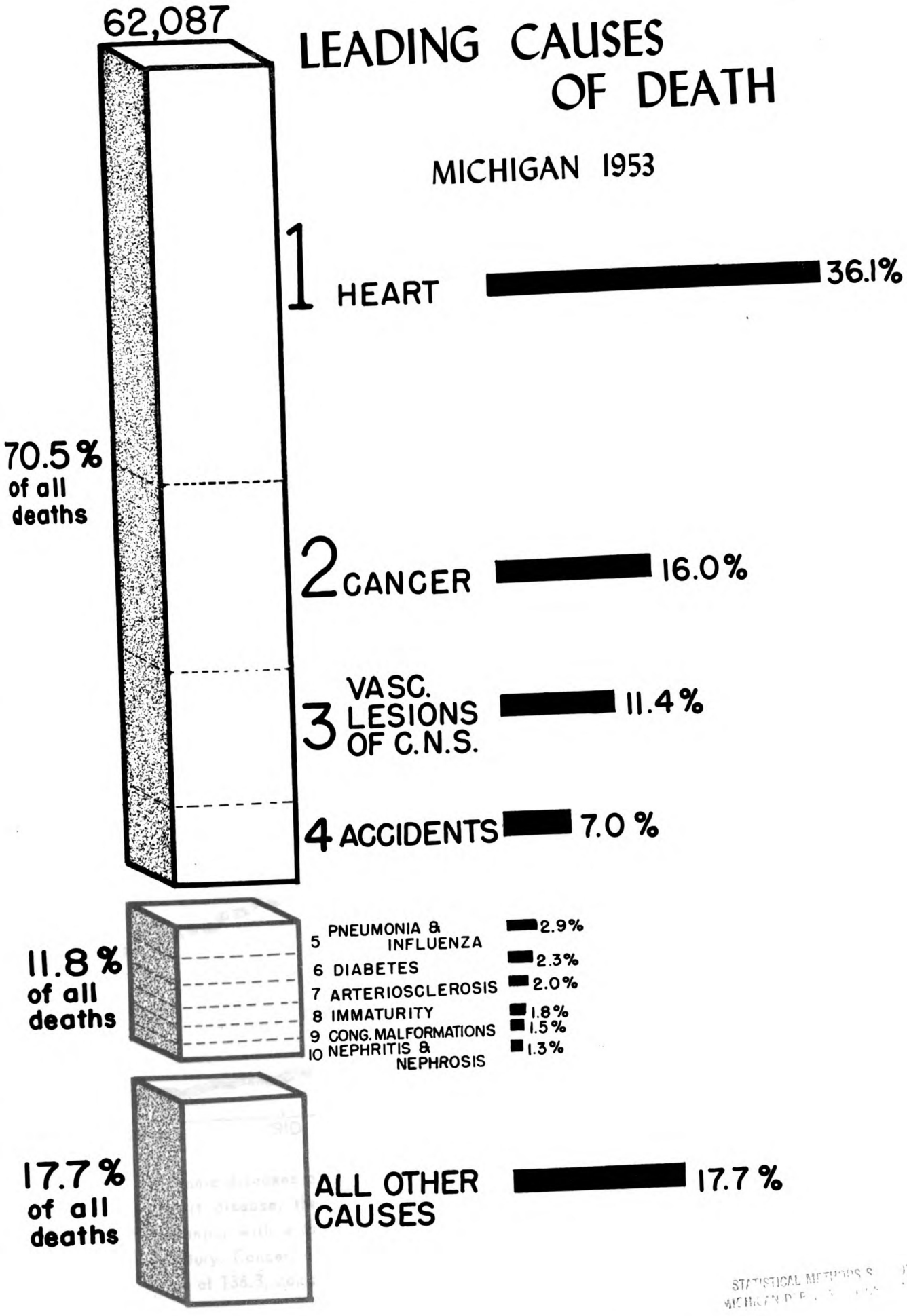

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Rate per 100,000 population

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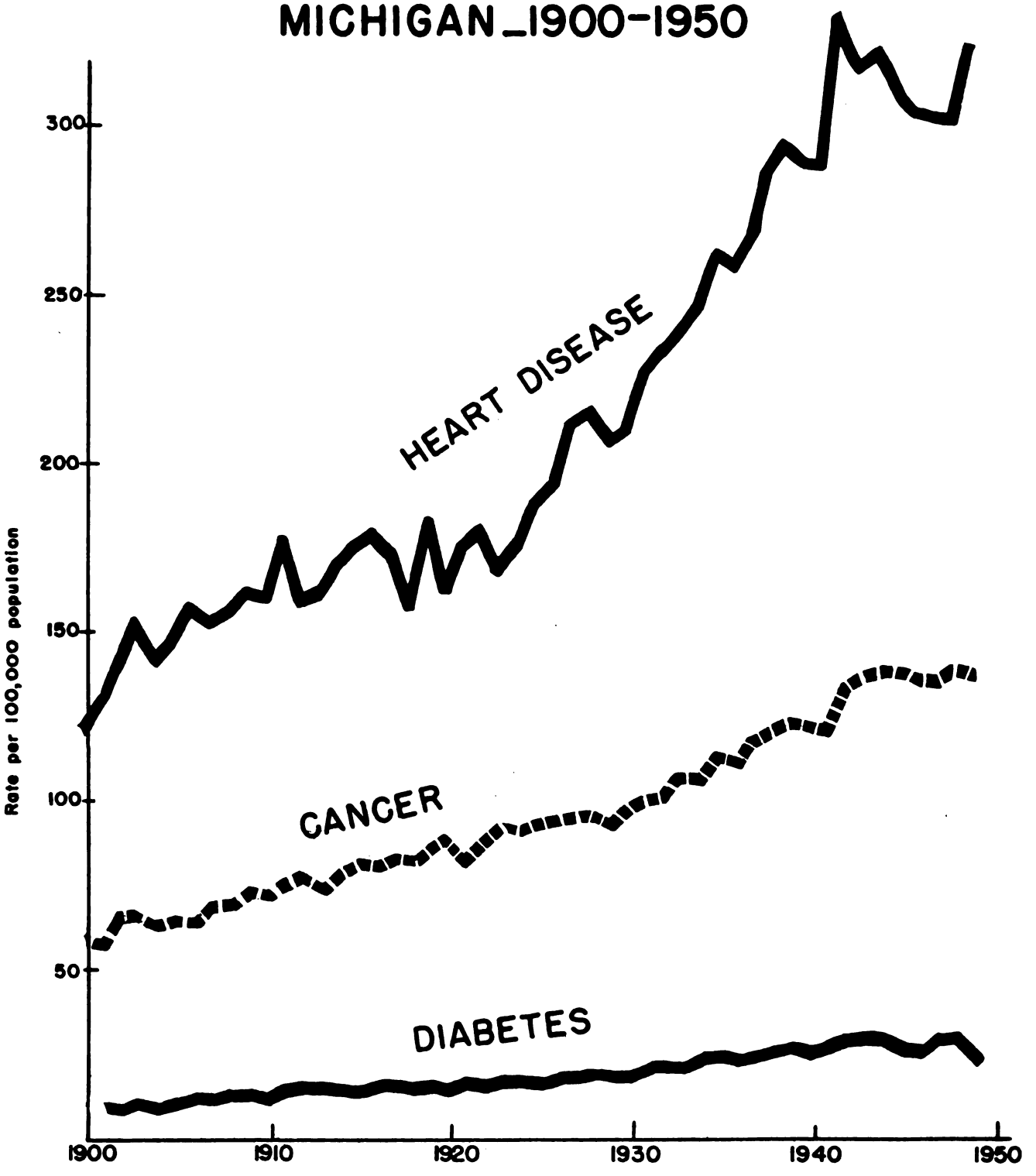
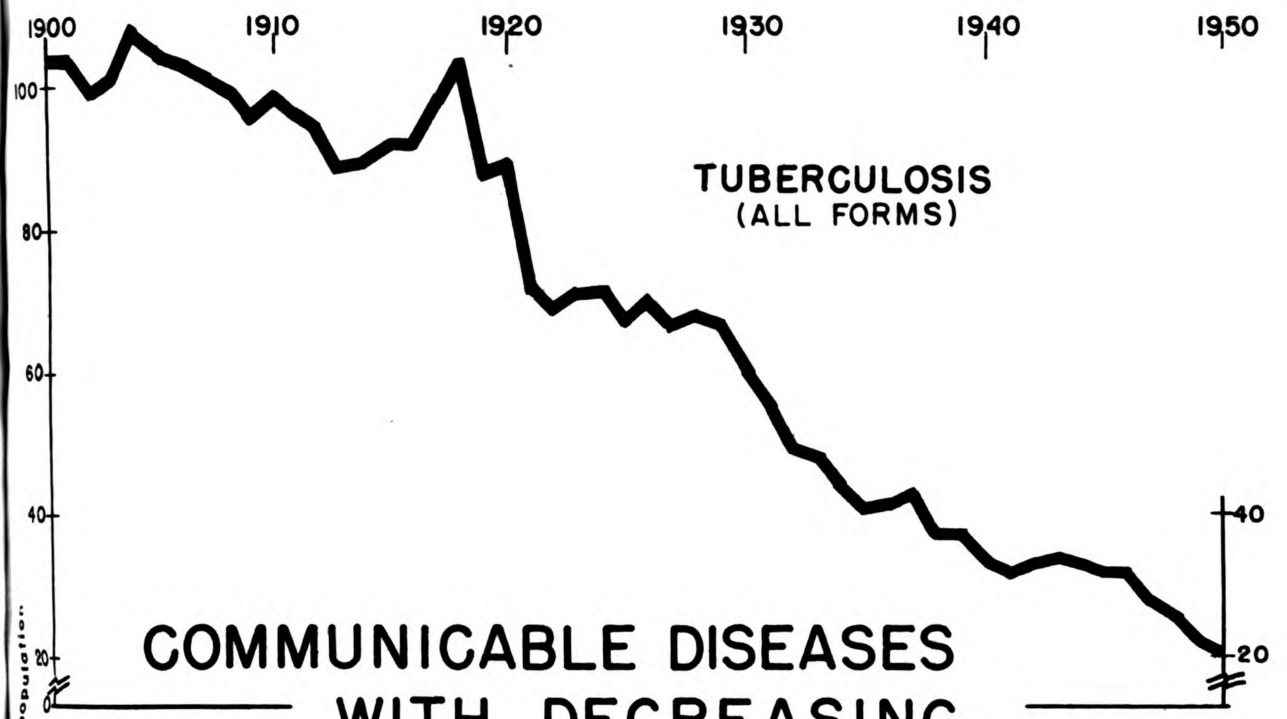
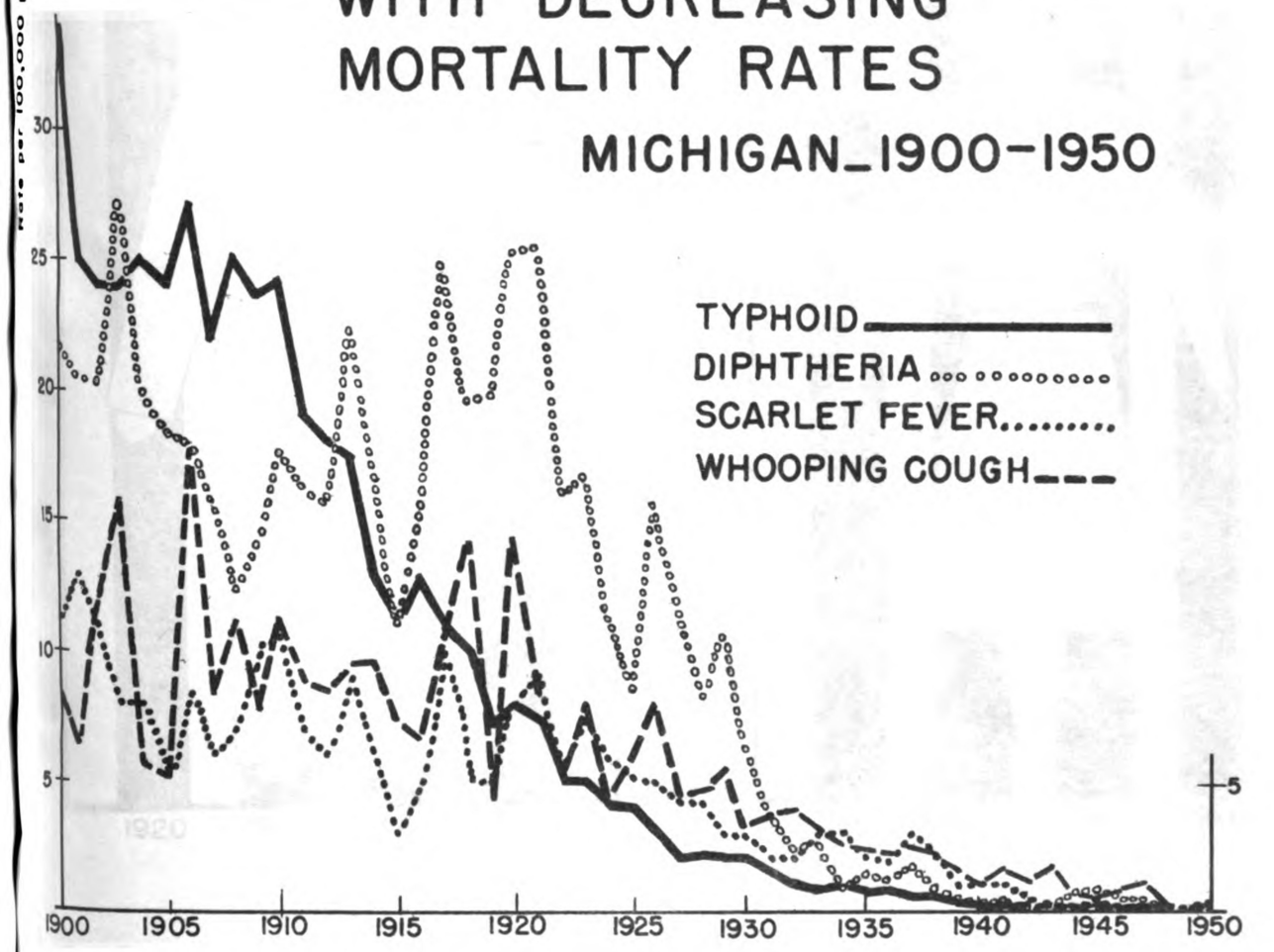
CHRONIC DISEASES WITH INCREASING MORTALITY RATES MICHIGAN_1900-1950



Chronic diseases appear to be among the major problems of health in the future. Heart disease, the leading cause of death since 1900, has been steadily increasing with a rate today nearly three times the rate at the beginning of the century. Cancer, also one of the leading causes of death, today has a mortality rate of 136.3, compared with 60.3 in 1900.



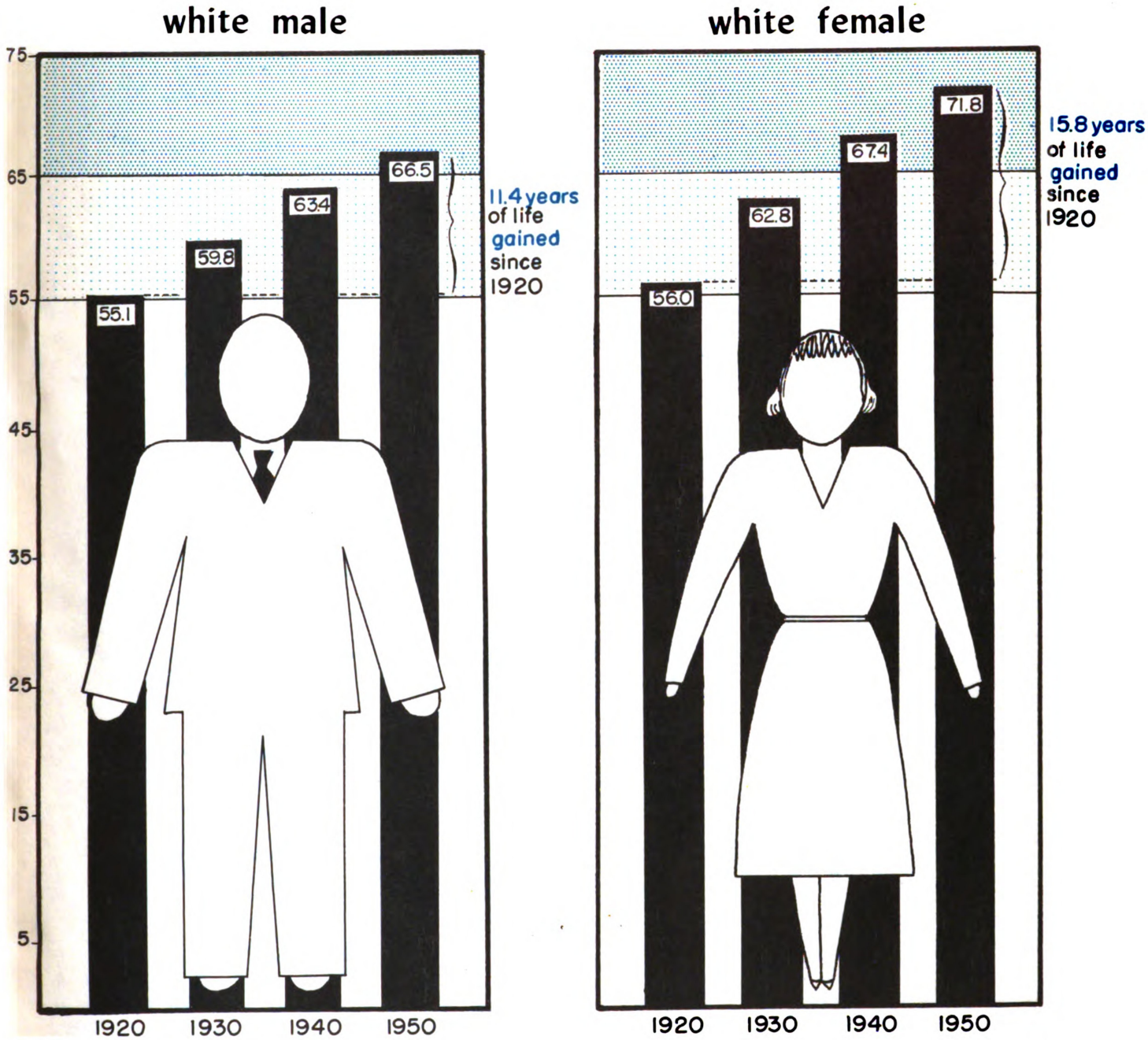
COMMUNICABLE DISEASES WITH DECREASING MORTALITY RATES



Progress in the field of preventive medicine during the past half century has reduced the mortality rate due to communicable diseases to negligible proportions. For example, had the 1900 Tuberculosis mortality rate of 103.3 prevailed today, there would have been 6,582 deaths due to Tuberculosis instead of the 1,270 recorded for 1950.

LIFE EXPECTANCY LENGTHENS

MICHIGAN, 1920---1950



Note: Data for total population not available for all years.

Source: U.S. Bureau of Census Life Tables.

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STATISTICAL METHODS SECTION

CURRENT LIST OF LICENSED HOMES FOR AGED
CONVALESCENT HOMES
1956

Beadle Convalescent Hospital
1300 High Street, Lansing
23 men or women

Bogue Nursing Home
425 Ann Street, East Lansing
15 women

Buehler Convalescent Home
2095 Hamilton Road, Okemos
5 women

Capital City Convalescent Home
616 S. Capitol Ave., Lansing
27 men or women

Cedars Convalescent Home
614 S. Walnut, Lansing
14 men or women

Emmons Convalescent Hospital
427 W. Hillsdale, Lansing
17 women

Fairview Convalescent Home
1217 N. Grand River, Lansing
11 men or women

Ferris Convalescent Home
6311 Quail Street, Haslett
5 women

Holben Nursing Home
315 W. Genesee Street, Lansing
17 men or women

Holloway Nursing Home
231 E. Oak Street, Mason
20 women

Holt Nursing Home
4233 E. Delhi, Holt
21 men or women

Lilly Nursing Home
241 State Street, Mason
6 men or women

Maple Shade Convalescent Home
322 W. Chestnut St., Lansing
18 men or women

Northrup Convalescent Home
313 S. Main Street, Leslie
13 men or women

Poston Convalescent Home
514 W. Maple Street, Mason
8 men or women

Robart Nursing Home
118 E. Oak Street, Mason
21 men

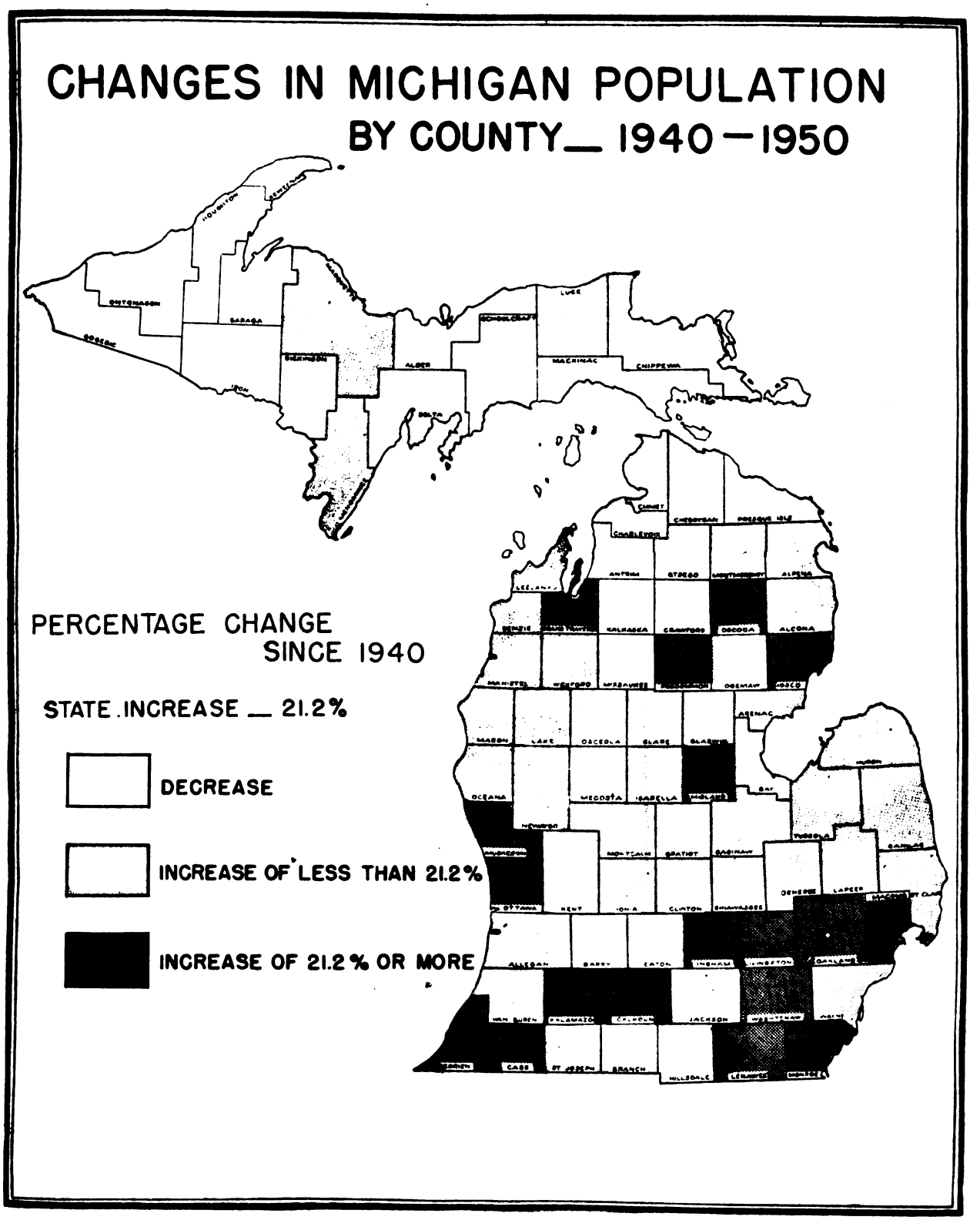
Roselawn Hospital
404 W. St. Joseph, Lansing
29 men or women

Shady Lawn Convalescent Hospital
721 N. Chestnut, Lansing
14 men or women

Sunset Haven
Dansville, Michigan
5 women

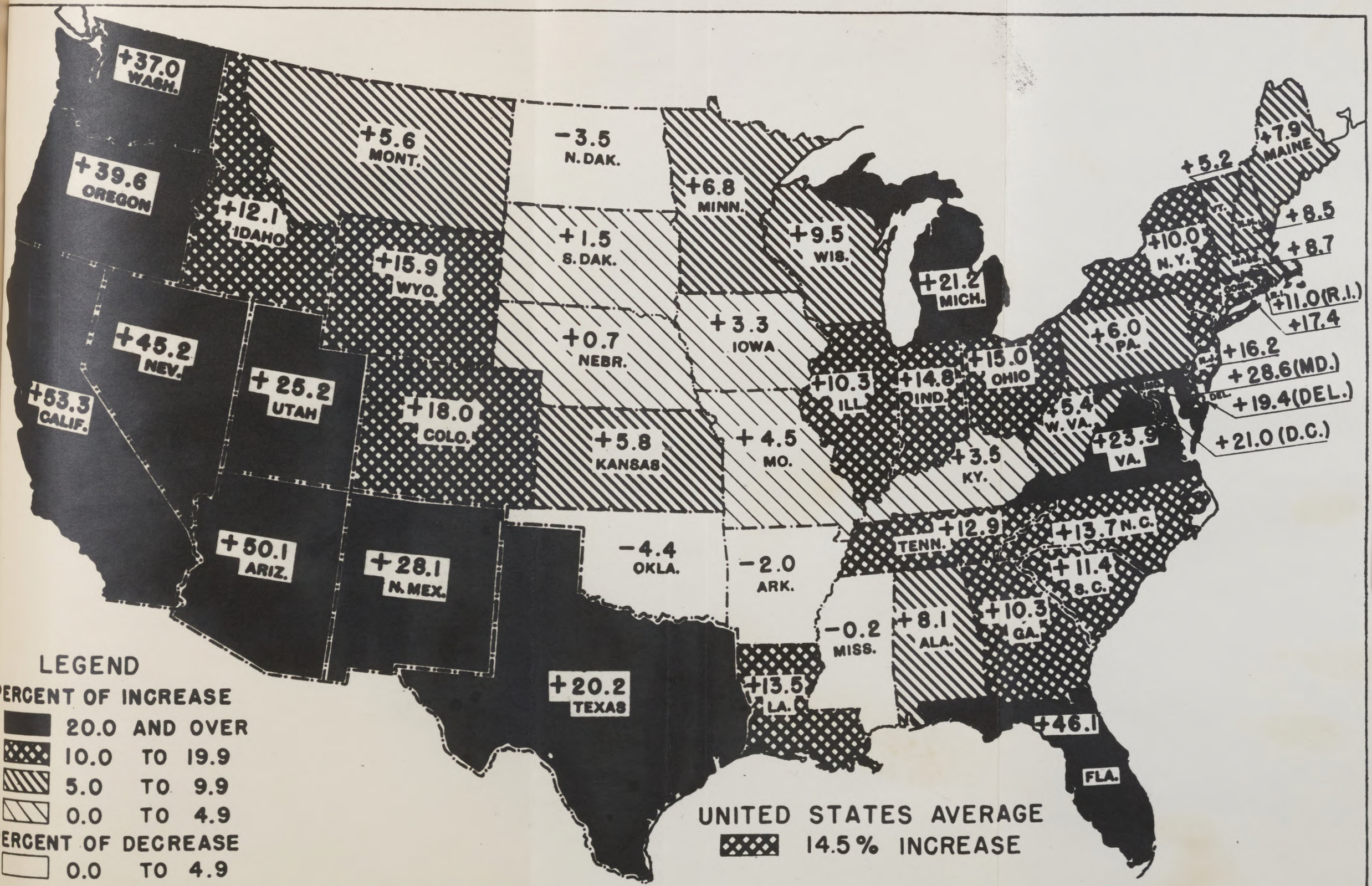
Williamston Convalescent Home
503 Middle St., Williamston
6 men or women

LaMott Nursing Home
Leslie
5 women



Most of Michigan's 21.2% population increase during the past decade occurred in the lower peninsula, particularly in the lower half. Only 4 of the 68 counties in the lower peninsula, all located in the upper half, decreased in population whereas there were population decreases in 11 of the 15 counties in the upper peninsula. It is interesting to note that while Detroit increased by 13.9%, the surrounding counties of Oakland, Washtenaw, and Macomb increased by 55.9%, 66.6%, and 71.8%, respectively. Macomb county ranks highest among all counties with increases in population. Although the Wayne County increase was only 20.8% this represents more than 1/3 of the population increase in the State.

PERCENT OF CHANGE IN TOTAL POPULATION OF STATES: 1940 TO 1950

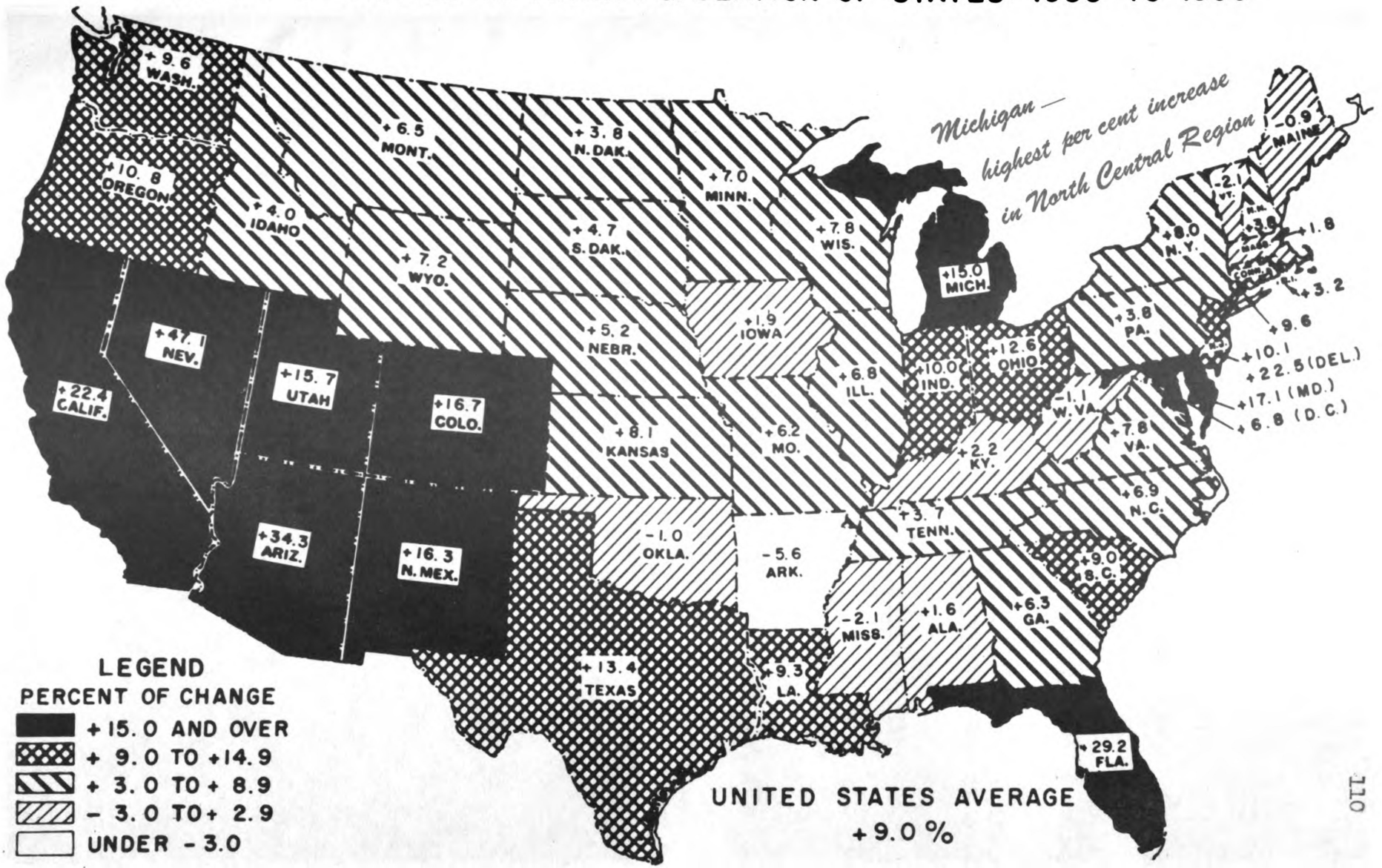


DEPARTMENT OF COMMERCE

BUREAU OF THE CENSUS

PERCENT OF CHANGE IN TOTAL POPULATION OF STATES: 1950 TO 1955

PERCENT OF CHANGE IN TOTAL POPULATION OF STATES: 1950 TO 1955



MAP: COURTESY OF BUREAU OF CENSUS

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BIBLIOGRAPHY

Books

Americana Corporation, The Encyclopedia Americana, New York, Vol. XIV.

Commission on Chronic Illness, Care of the Long-Term Patient--Chronic Illness in the United States. Harvard University Press, Cambridge, Vol. II, 1956.

Committee on Designing, Constructing and Equipping of Public Hospitals in Canada, A Guide to Hospital Building in Ontario, University of Toronto, Toronto, 1954.

Goldman, Franz, Public Medical Care--Principles and Problems, Columbia University Press, New York, 1945.

MacEachern, Malcolm T., Hospital Organization and Management, Physicians' Record Co., Chicago, 1947.

Nicholson, Edna E., Planning New Institutional Facilities for Long-Term Care. Putnam's, New York, 1956.

United States Employment Service and American Hospital Association, Job Descriptions and Organizational Analysis for Hospitals and Related Health Services, U. S. Government Printing Office, Washington, 1952.

Articles, Reports, Periodicals

American Hospital Association, "The Future of Hospital Care--the 1956 Convention in Review," Hospitals, 30 (October 1, 1956).

_____, "Planning for the Chronically Ill, 1947." (Reprint from the October, 1947, issue of Public Welfare).

_____, "Listing of Hospitals, Hospitals-Guide Issue, Part II, 30 (August, 1956).

Bluestone, E. M., M. D., "What Stand Should the General Hospital Take on Chronics?" Hospital Management, 79 (May, 1955).

_____, "The Chronic: They Belong in General Hospitals," The Trained Nurse, January, 1945. (Reprint)

_____, "Long-term Illness in Modern Society," Journal of the American Medical Association, 133 (April 12, 1947).

Bluestone, E. M., M. D., "Long-Term Illness and the Hospital of the Future," Bulletin of American College of Surgeons, 32 (September, 1947).

Bugbee, George, "Population Change and Health Care," Hospitals, 30 (May 1, 1956).

Commission on Chronic Illness, Commission On Chronic Illness Adopts Recommendations for Long-term Patients. Chronic Illness News Letter, 6 (January, 1955).

Cherkasky, Martin, M. D. "The General Hospital Is the Place for the Care of the Chronically Ill," The Modern Hospital, 79 (July, 1952).

Clissold, Walter N., "Meeting the Nation's Health Needs," Hospital Management, 79 (March, 1955).

Conner, James F., M. D. "How We Set Up Our Intermediate Hospital Unit," Hospital Management, 79 (May, 1955).

Cronin, John W., M. D., and Galbraith, Thomas P. "Planning Multiple Disability Rehabilitation Facilities," Hospitals, 30 (March 16, 1956).

Feigenbaum, Arthur, "An Administrator Considers Care of the Chronically Ill," Hospitals, 29 (September, 1955).

Friend, Ann, "Carpeting Long-term Facilities," Hospitals, 30 (May 1, 1956).

Goldman, Franz, "Adequate Care of the Chronically Ill," Connecticut State Medical Journal, 11 (January, 1947).

James, Robert L., "Factors for Consideration in Establishing a Chronic and Geriatric Unit," Unpublished M. A. thesis, Northwestern University, 1955.

Kendell, H. Worley, M. D., Schaeffer, Joseph, M. D., and McManamin, Hugh J., M. D.,"Rehabilitation Unit for the General Hospital," The Modern Hospital, 83 (September, 1954).

Kresscher, Herman, M. D., "Problem of the Chronically Ill Patient," Journal of the American Medical Association, 127 (April 21, 1945).

Kausen, Frank H., M. D., "Treating the Whole Man," Hospitals, 27 (January, 1953).

Krueger, Dean E., and Roberts, Dean W., M. D. "Characteristics of Long-Term Patients," Hospitals, 30 (August 1, 1956).

Lawrence, P. S., "An Estimate of the Incidence of Chronic Disease," Public Health Report, Government Printing Office, Washington, Bull. 63, January 16, 1948.

Mayo, Leonard W., "Hospitals Must Focus on Long-Term Problems," The Modern Hospital, 86 (March, 1956).

Perrott, Georg St. John, "Problem, Chronic Disease," Psychosomatic Medicine, 7 (January, 1945).

Roberts, Dean W., M. D., "The Future of Hospital Care--the General, General Hospital," Hospitals, 30 (February 1, 1956).

_____, "One in Eight Is a Long-Term Case," Hospitals, 29 (January, 1955).

_____, "Hospital Unit for the Long-Term Patient," The Modern Hospital, 83 (September, 1954).

Rusk, Howard A., M. D., and Dacso, Michael, M., M. D., "The Dynamic Approach to the Care of the Chronic," Hospitals, 29 (January, 1955).

Scheele, Leonard, M. D., "The Job of the Community," The Modern Hospital, 83 (September, 1954).

_____, "New Opportunities for Planning Health Facilities," Hospitals, 30 (March 16, 1956).

Schmidt, Carl K., Jr., "Financing Care for Public Assistance Patients," Hospitals, 30 (August 1, 1956).

Schoenfeld, Harvey, "Caring for Patients With Prolonged Illness," Hospital Management, 77 (March, 1954).

University of Michigan - School of Public Health, Michigan Medical Facilities Survey (Survey to be released for publication, July 1, 1957).

Walker, Eugene, M. D., "Advantages of a Chronic Ward in an Acute Hospital. Convention Papers--A. H. A., 1947.

Wilcoxin, Harriett L., "Study of Long-term Illness Patients Under Care of Public Health Nursing Services," Connecticut Health Bulletin, 68 (January, 1954) and 68 (October, 1954).

Wolfe, Clifford, "Rooms for Long-term Patients," Hospitals, 30 (April 1, 1956).

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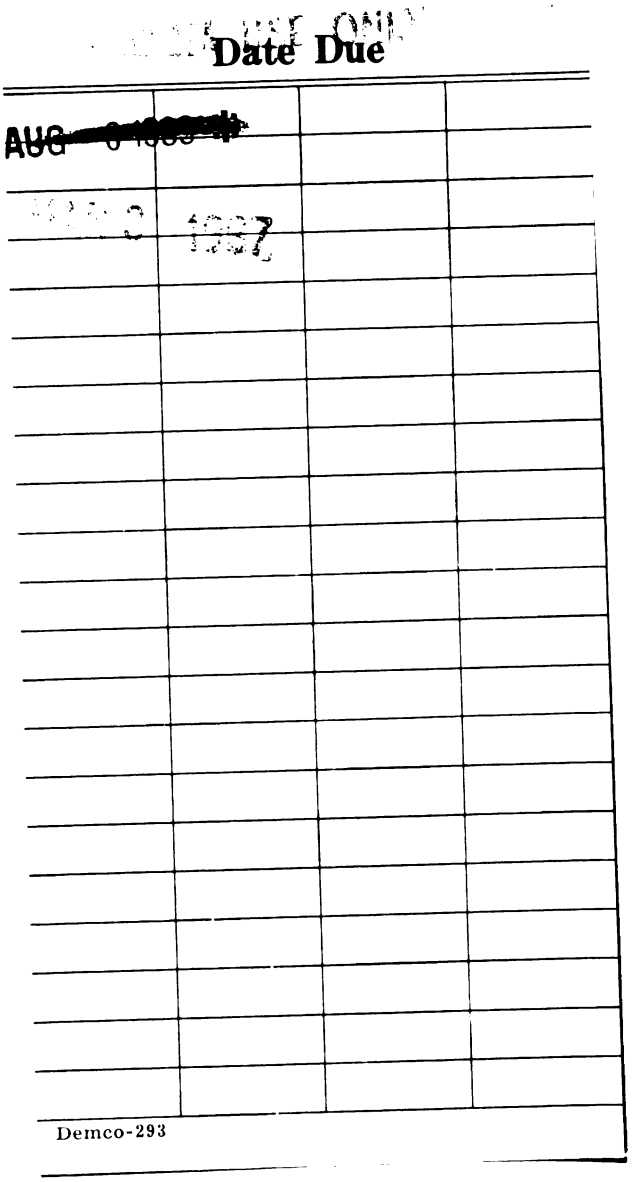

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