A study of dietary management in hospitals
by Florence Leone Lloyd

A THESIS Submitted to the Graduate Committee in partial fulfillment of the requirements for the degree of Master of Science in Home Economics at Montana State College
Montana State University
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Abstract:
The dietitian has been accepted on the staff of well organised hospitals throughout the United States during the last fifteen or twenty years and has proved her value from both an economic and a scientific standpoint .

Montana Is adequately supplied with hospitals, but the hospitals have been slow in adding dietitian service to their facilities in caring for the sick. The larger hospitals have been employing trained dietitians for some time, but most of the smaller institutions, even some of those maintaining training schools for nurses have been functioning without such service. Whether or not it is financially feasible for these smaller Institutions to include a dietitian as a member of their staff seemed a problem worthy of investigation. More definite information concerning the dietary situation in this State, and a comparison of these conditions with those of other States was needed as a basis for any recommendations intended to improve the dietary service for the smaller hospitals.

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IN HOSPITALS

by

FLORENCE LEONE LLOYD

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INTRODUCTION

The dietitian has been accepted on the staff of well organized hospitals throughout the United States during the last fifteen or twenty years and has proved her value from both an economic and a scientific standpoint.

Montana is adequately supplied with hospitals, but the hospitals have been slow in adding dietitian service to their facilities in caring for the sick. The larger hospitals have been employing trained dietitians for some time, but most of the smaller institutions, even some of those maintaining training schools for nurses have been functioning without such service. Whether or not it is financially feasible for these smaller institutions to include a dietitian as a member of their staff seemed a problem worthy of investigation. More definite information concerning the dietary situation in this State, and a comparison of these conditions with those of other States was needed as a basis for any recommendations intended to improve the dietary service for the smaller hospitals.

The Bozeman Deaconess Hospital was without trained dietitian service in the fall of 1932 and the hospital administration cooperated in making this study possible through employing the writer as a part time dietitian and allowing the hospital to be used by her as an institutional laboratory.

This thesis, which is essentially a study of the hospital dietary situation in Montana, consists, first in a survey of a group of hospitals representative of the country as a whole; second, the securing of data from representative Montana hospitals through personal visits for the

purpose of observation, methods and management; and third, to organize and develop the dietary department within the Bozeman Deaconess Hospital with the hope that it might supply a suggestive standard to other small hospitals in improving this aspect of their service.

HISTORICAL REVIEW

A. Origin of Hospitals.

The word "hospital" originated in early Christian days when it was used to "designate a place where strangers and visitors were received and cared for." (9:p. 478). Whether hospitals originated before the Christian Era is a much debated question.

There is some evidence of the existence of "valetudinaris" or dispensaries for sick soldiers in pagan Rome, but no definite proof is available. India has a tradition that there was a hospital for the wounded Red Branch Knights who lived 3000 B.C. at Tera, but evidence does not justify this claim. The best sources of information indicate that the Hotel D'ieu was the first institution established for strictly hospital purposes. It was founded in 660 A.D. by St. Landry, Bishop of Paris, near the Notre Dame Cathedral. There nurses were entirely responsible for all services rendered until 1221, when a medical doctor added his services for "charity and to heal his soul." (7:p. 38).

The history of American hospitals begins with the institution erected by Cortez in the City of Mexico in 1524, which is still in existence and known as the hospital Jesus Nazarene.

Many writers believe that hospitals owe their origin to three different influences: religion, war, and science. The mingling of these causes is indicated by the statement "that in the social rebellion produced among the nations of Europe by the introduction of Christianity, hospitals were the distillate, and war and science the by-products." (9:p. 479).

The best of good will has been concentrated on hospitals from the beginning, but it has taken centuries of ceaseless effort to raise them to a position of safety and desirability. It is easy to imagine some of the serious consequences resulting from the care under one roof of people having various infectious diseases previous to any knowledge of the science of bacteriology.

"In the last half century the spread of hospitals throughout the world received a marvelous impetus. The role of bacteriology, as applied to preventive medicine, surgery and therapeutics is one that must be accorded first place in advancing modern hospital efficiency." (9:p. 490).

B. Development of Hospitals in the United States.

The first hospital in the United States was established in 1663 on Manhattan Island to care for soldiers and negroes of the East India Co. The Charity Hospital, founded in New Orleans in 1720, was the first privately endowed hospital in the United States.

Today almost every American community of any size has a hospital. The census of Hospitals of the American Medical Association for 1933 states that "hospitals are increasing six times as fast as the population." (3:p. 893). The American Hospital Association census figures begin with 1909, but the United States Department of Education in 1872 reported the total hospital capacity to have been around 50,000 beds. The relative increase of hospitals and population is found in the census of the American Medical Association. (3:p. 894).

Table I. Ratio of Hospital Beds to Population in the United States, 1872-1932.

Year	Estimated Number Hospital Beds	Estimated Population	Ratio beds to Population
1872	50,000	40,877,853	1:817
1880	85,000	50,155,783	1:590
1890	150,000	62,947,714	1:419
1900	250,000	75,994,575	1:304
1910	443,348	91,972,266	1:208
1920	669,639	105,710,620	1:158
1930	955,869	122,775,046	1:128
1931	974,115	124,481,488	1:128
1932	1,014,354	126,187,930	1:124

Should the present rate of increase in hospitals continue to outstrip the rate of increase in population, overhospitalization is inevitable unless their fields of service are greatly increased. "On the whole, the country is without doubt already overhospitalized, although this may not apply to every community and certainly does not apply equally to all communities." (3:p. 894). This fact bears a close relationship to present hospital costs and to the type of service which the institutions can supply.

There was a time when hospitals were regarded with dread because they were used only for critical cases and so considered merely as places where people went to die rather than to get well. In some cases hospitals themselves contributed to their own unpopularity by their severe and unvarying rules and regulations. Modern hospitals however have rather generally adopted the service point of view, recognizing the close association of mental and physical health and do all in their power to increase the peace ofmind of their patients, yet maintaining the essential standards of care. This change in attitude of hospital administrators has accounted in a large

measure for the increased use of dietitians, since food attractively prepared and served constitutes a large element in the hospital life of the patients.

The public is coming to realize the fact that in general, hospital care provides for a shorter period of illness than home treatment and for this reason is a good economic as well as human investment. From the census of the American Medical Association we learn that the average length of hospitalization for 1933 was 14 days.

"The 4,305 general hospitals in the United States, on the average, were 63.3% filled. The 3,529 non-government general hospitals were 55.9% filled." (3:p. 887).

Table II. Percentage of Hospital Occupancy in the United States According to Ownership or Control

	1929	1930	1931	1932
Federal	76.8%	79.2%	76.5%	78.2%
State	94.6%	93.8%	94.2%	94.2%
County	80.7%	82.2%	81.2%	84.1%
City	74.3%	75.9%	76.3%	82.8%
City-County	80.2%	81.6%	82.0%	72.4%
Governmental	88.9%	88.8%	88.7%	89.8%
Church	66.7%	64.2%	63.2%	59.6%
Fraternal	58.7%	67.4%	69.0%	66.8%
Industrial	54.4%	53.1%	48.2%	47.7%
Individual or partner	54.2%	51.7%	48.7%	45.6%
Independent	65.9%	65.4%	64.3%	61.3%
All hospitals	80.1%	79.8%	79.6%	79.9%

C. Development of Hospitals in Montana.

From unpublished materials found in the Montana Historical Library it appears that Father Ravalli, a Doctor from Rome, came to Hell Gate, near Helena in 1862 and aided the sick as well as carrying on his missionary

work. The gold rush started in the State in 1862, and on December 31, 1864 the City Council of Virginia City was given authority to establish a hospital. In January 29, 1866 a Miner's Hospital was organized in Helena with T. E. Tuth as president. Sister Julia, of the Sisters of Charity from Leavenworth, Kansas, opened the St. Johns' Hospital in Helena in 1870. The next hospital in Montana was the St. James, opened in Butte by Sister Irene in 1876. The first Deaconess Hospital in Montana was the Montana Deaconess at Great Falls opened in 1902 by Miss E. Augusta Ariss.

The 1933 hospital census report of the American Medical Association states that there are 46 hospitals and sanatoriums and 17 related institutions in Montana. The "related" institutions include the School for Feeble-minded, Boulder; Silver Bow County (contagious) Hospital, Butte; Montana State Penitentiary Hospital, Deer Lodge; Florence Crittenton Home, Helena; State Orphan's Home, Twin Bridges. The forty-six Montana hospitals are listed below (3;p. 940-1), and those maintaining nurses training schools are starred.

MONTANA HOSPITALS AND SANATORIUMS

		Capacity
1. *St. Ann's Hospital	Anaconda	65
2. *Billing's Deaconess	Billings	51
3. *St. Vincent's Hospital	Billings	120
4. *Bozeman Deaconess	Bozeman	45
5. Blackfeet Hospital	Browning	30
6. Murray Hospital	Butte	120
7. *St. James Hospital	Butte	152
8. Choteau Hospital	Choteau	15
9. St. Mary's Hospital	Conrad	34
10. Crow Indian Hospital	Crow Agency	24
11. Montana State Tuberculosis Sanitarium	Deer Lodge	150
12. St. Joseph's Hospital	Deer Lodge	35

MONTANA HOSPITALS AND SANATORIUMS
(Continued)

		Capacity
13.	Barrett Hospital	Dillon----------22
14.	Rosebud Memorial	Forsyth----------25
15.	St. Clare Hospital	Fort Benton--------40
16.	Veteran's Admin. Hospital	Fort Harrison------306
17.	Station Hospital	Fort Missoula------36
18.	Frances Mahon	Glasgow----------25
19.	Glendive General Hospital	Glendive----------25
20.	Northern Pacific Hospital	Glendive----------60
21.	*Columbus Hospital	Great Falls--------290
22.	*Deaconess Hospital	Great Falls--------155
23.	Marcus Daly Memorial Hospital	Hamilton----------30
24.	Lucy Winn Hospital	Hardin----------12
25.	Ft. Belknap Indian Hospital	Harlem----------50
26.	*Kennedy Deaconess Hospital	Havre----------41
27.	*Sacred Heart Hospital	Havre----------75
28.	*St. John's	Helena----------65
29.	St. Peter's Hospital	Helena----------58
30.	Kalispell General Hospital	Kalispell----------54
31.	Tongue River Agency Hospital	Lame Deer----------50
32.	Attix Clinic Hospital	Lewistown----------16
33.	*St. Joseph's	Lewistown----------75
34.	Libby General	Libby----------16
35.	Park Hospital	Livingston---------25
36.	*Miles City Hospital	Miles City---------85
37.	Northern Pacific Hospital	Missoula----------75
38.	*St. Patrick's Hospital	Missoula----------108
39.	Thornton Hospital	Missoula----------37
40.	Sheridan Memorial	Plentywood---------25
41.	Ft. Peck Indian School Hospital	Popular----------30
42.	Mt. Maurice Hospital and Sanitarium	Red Lodge----------26
43.	Musselshell Valley Hospital	Roundup----------25
44.	Holy Family Hospital	St. Ignatius-------42
45.	Sidney Deaconess Hospital	Sidney----------24
46.	Montana State Hospital	Warm Springs-------1,350

Montana probably has more hospitals than are necessary for her population were it not for her great distances. The 46 general hospitals have a 2,270 bed capacity exclusive of those operated by the Federal and State government within the State. The proportion of population in Montana to bed capacity is 1 : 237 persons. This ratio of hospital beds to people is

about half that for the country as a whole which according to table I is 1:124. This smaller bed capacity to population in this State is not a current problem since the percentage use for 1933 averaged only 58.1%. The percentage occupancy in the United States for all hospitals is 79.9%. In the past few years the figures indicate the total average percentage of beds occupied has not varied greatly from year to year.

At the present time the largest hospital in the State excluding the State or Federal hospitals is the Columbus in Great Falls (290 beds), the smallest is the Lucy Winn Hospital at Hardin (12 beds), and the average is 58.8 beds. Including the State and Federal hospitals the average is 96.2 beds.

Of the 46 hospitals in Montana the distribution as to ownership is as follows:

Ownership	Number of Hospitals	Number of Beds
Church	22	1,649
Industrial	3	161
Individual or partnership	15	255
Independent	5	205
Federal Government	1	306

Communities are indebted to religious groups for the development of hospital facilities especially when it is remembered that the services of their representatives are rendered with little or no financial compensation. However, church management has certain disadvantages as any denomination constitutes only one particular group. This often causes those of other faiths or interests to start competitive hospitals in communities that could be better served by one strong, well-patronized institution.

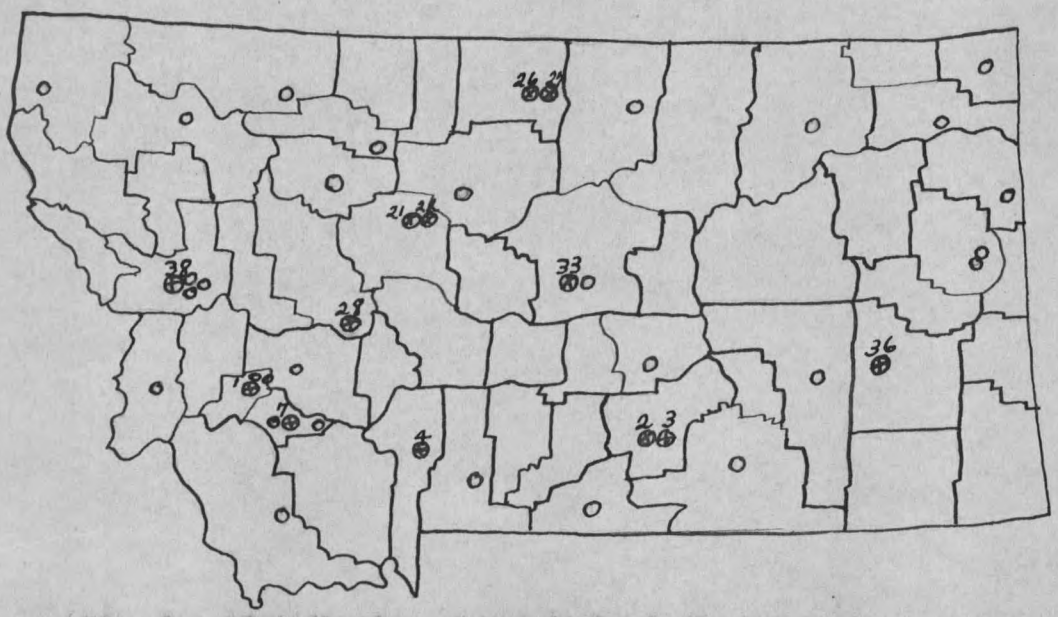


Fig. 1. Distribution of Hospitals in Montana.
Note:-Those marked ⊕ maintain a training school for nurses.

Figure 1, showing the location of hospitals in Montana, indicates that these institutions are fairly well distributed over the state and that their locations follow closely that of the population. Of the 56 counties in Montana 21 or 37.5% are without hospitals, but most of these are comparatively near to such institutions in adjoining counties. Those living in some of the central and eastern counties have greater distances to travel for hospital service. However, modern modes of transportation and recent extensive road improvements have considerably reduced this handicap.

D. Status of Nursing in the United States.

The Fifteenth Census (1930) of the United States (20:p. 18) reports 288,737 trained nurses and 139,576 untrained nurses in this country. At that time the census indicated that 12,389 trained nurses or 4.3% were unemployed. The 1933 Census of the American Medical Association reports that

there are 48,567 graduate nurses employed on a full time basis for nursing and 8,029 graduate nurses are employed for other types of work. Using the 1930 total number as a basis the 1933 percentage of unemployed trained nurses was 80%. This apparent oversupply of trained nurses furnishes an excellent opportunity for the further raising of standards for entrence and training for their profession.

The value of nursing education, of course, cannot be measured by the numbers actively engaged in this field of service. In common with most fields of work extensively occupied by women there is a large turnover in personnel. This type of education has a very definite application in homemaking, which field many nurses enter. Taking these facts into consideration nursing education really deserves some public financial support.

The total number of hospitals in the United States in 1933 was 6,562; 1,934 of which maintained nurses training schools, 1,656 were accredited by the state boards of nurse's examiners, leaving 278 without such recognition. At the same time there were 86,649 student nurses enrolled or an average of 50 for each training school.

Hospitals operating training schools should maintain facilities that will insure a broad educational experience for its students. Dietetics service is considered desirable in any modern hospital and should be required of all those with a training school. Miss Janet M. Geister (10:p.320) has stated that 64% of all nursing is done by student nurses and only 18% by graduates. The service rendered by student nurses has constituted one of the major reasons for many hospitals maintaining training schools but with the higher educational standards now common, many small hospitals are

finding that their training schools are financial liabilities rather than assets.

E. Status of Nursing in Montana.

The Fifteenth Census (1930) of the United States reports that Montana has 1,362 trained nurses and the 1933 Census of the American Medical Association states that in Montana 264 graduate nurses are employed for nursing and 50 are doing other types of work. (20;p. 96). The proportion of trained nurses to population in Montana is 1:304, while that for the country as a whole is 1:425. Montana has .09% of the hospitals of the country as a whole while only .07% of the nurses training schools, so its numbers of training schools are not large in proportion to the total number of hospitals. The average number of student nurses in each of the accredited training schools of the country is 50, while in Montana the average is 30.4. Montana has a lower percentage of training schools in proportion to the total number of hospitals, as well as a lower average number of student nurses when compared with the United States.

In Table III the total number of hospitals with training schools in the United States, Montana and Washington are listed as given by the American Medical Association for 1933.

Table III. Schools of Nursing.

	Total Hospitals	Nurses training school		Percentage of hospitals with Acc. train. sch.	Number Student Nurses
		Accredited	Unaccredited		
United States	6,562	1,656	278	25.5	86,649
Montana	63	13	3	20.6	487
Washington	121	28	1	23.1	1,280

The only available information indicates that the first training school for nurses was sponsored by the Murray hospital in 1900. In Figure I, page 15, the thirteen Montana hospitals which maintained training schools for nurses in 1933 were designated by a circle around the mark x. For Montana the responsibility for supervision and improving the standards for nurses education rests with the secretary of the State Nurses Association and her work is supported by membership fees.

F. Development and Present Status of Dietitian Service in Hospitals.

The prescribing of special foods for the sick has been an important factor in the practice of medicine for many years. However, little scientific study was focused upon this aspect of the treatment of disease until recently. At first the trained staff of hospitals was composed exclusively of doctors and nurses. However, when the feeding of the sick was placed on a more scientific basis, another group of trained workers, called dietitians, was gradually added to the technical staff of many hospitals.

According to available references the first dietitian was attached to the administrative staff of the Presbyterian Hospital of Philadelphia in 1893. Her name was Martha G. Byerly, a graduate of Mrs. Rorer's Normal School. "Miss Byerly's function was to instruct and supervise the nurses in the preparation of food for private room patients." (19:p. 88). Her training consisted in excellent methods of cooking and a few lectures on chemistry, physiology and hygiene. Mrs. Rorer taught her students that diabetics should not have sugars and that nephritics should avoid an excess of protein.

With this beginning the science of dietetics has developed rapidly, thanks to the contributions of research workers in related fields including chemistry, physiology and animal nutrition, as well as to special studies in human nutrition. At the present time there is extensive literature in the field and rather general agreement on the principles of dietary treatment of a wide range of diseases.

As dietotheraphy developed there was an increase in the demands on the time of the dietitian for consultation with the physicians, preparing special weighed diets, instruction of patients, teaching of nurses in addition to the regular management duties, so that more help was required in many dietary departments. This probably constituted one of the reasons for the addition of student dietitians.

In order to standardize the work of dietitians and to improve their professional status the American Dietetic Association was organized in 1917 by forty-two charter members. One of the early (1918) tasks undertaken by this organization was the improvement of the training of student dietitians by a system of accrediting hospitals meeting its standards.

The first courses were from three to six months in length. College graduates with a major in home economics were not qualified to immediately accept managerial positions and the development of an interneship in hospitals provided a means for them to study and to get first hand experience in the management of a dietary department before assuming full responsibility. By this interneship for dietitians the colleges were able to place their graduates and many hospitals were benefitted by having a supply of experienced dietitians trained in a few of the best organized hospitals.

In the beginning the students were little more than apprentices and in many instances their services were exploited as they were kept too long on certain duties which they had soon mastered.

Deans of home economics departments "in the past have discouraged capable students from hospital training in dietetics for the following reasons": (13:p.101).

1. "Student dietitians were sometimes used for cheap help in the kitchens of the hospitals.
2. Some hospitals neglected their educational obligations to the student.
3. Chief dietitian not sufficiently interested in student's development.
4. Low professional rating of the dietitian in many hospitals, often due to the low professional calibre of former dietitians."

A hospital must have the following standards and requirements if it cares to offer courses for dietitian internes and be approved by the American Dietetic Association.

1. Must be approved by the American College of Surgeons with an accredited training school for nurses.
2. Employ two trained dietitians.
3. Have minimum capacity of 100 beds.

"The general organization of the training course for dietitians includes provision for: A. the enrollment of at least two internes in each class; B. a minimum of eight months of training to be divided approximately as follows:

1. One third in general administrative duties connected with the food service for wards and private patients, staff and employees.

2. One third in diet therapy in kitchen, serving pantries and wards. This should include some experience in clinical laboratories and in the metabolism units.

3. One third in infant and child feeding, in teaching hospital patients, nurses, and out-patients, and in pre-natal and well baby clinics." Am. Dietetic Assoc. course. (1:p. 1).

The American Dietetic Association has also suggested that small hospitals interested in training dietitians affiliate with other suitable institutions in order to meet the requirements and to provide the dietitian internes with a broad experienced background. No fixed procedure is outlined for dietary departments by the organization as the set up of institutions vary so greatly.

In order to qualify for an interneship in a hospital approved by the American Dietetic Association at present the applicant must have the required distribution of semester hours in the following courses from recognized colleges offering a four year curriculum in home economics. (1:p. 2)

The minimum essentials are:	Semester hours.
General Chemistry	6
Organic Chemistry	4-6
Physiological Chemistry	3-5
Human Physiology	4-8
Bacteriology	3-5
Psychology	3-6
Sociology and Economics	6
Food Preparation, meal planning, experimental cookery	6-8
Institution food preparation Institution management Institution buying Institution accounting	6-9
Nutrition	6-8

Desirable additions are:

Physics	Analytical Chemistry	Statistics
Zoology or Biology	Principles and Theory or Philosophy	Equipment

At the present time there are 11 hospitals in Montana that employ dietitians and two of them have two dietitians each on their staffs. Two of the 11 hospitals have self-trained dietitians who are therefore not eligible for membership to the American Dietetic Association. The dietitians in the following hospitals in Montana are members of the American Dietetic Association.

Murray Hospital, Butte.
U.S. Veteran's Hospital, Fort Harrison.
Columbus Hospital, Great Falls.
Deaconess Hospital, Great Falls.
Sacred Heart Hospital, Havre.

Since the fall of 1933 the Havre Deaconess Hospital has employed a full time dietitian and the Deaconess Hospital in Great Falls has added an assistant dietitian to its staff. The Murray Hospital in Butte has changed dietitians, the two Billings hospitals are cooperating in order that one full time dietitian may be in charge of the two dietary departments, and one of the related institutions, the Children's Home in Helena, has a full time dietitian.

HOSPITAL DIETARY STUDY

A. Methods of Study.

As stated in the introduction the major work of this study is divided into three parts: first, a questionnaire study of the dietary procedure in a large group of hospitals; second, a first hand investigation of the dietary situation in eight Montana hospitals and third, the organization and testing of a dietary system in a small hospital over a two year period.

Data obtained in the first two parts of the investigation were tabulated and analyzed for the purpose of showing the trends in the dietary situation.

Suggestions obtained in the study that were applicable were incorporated in the dietary system of the Bozeman Deaconess Hospital. The organization of the dietary department of the Bozeman Deaconess Hospital is submitted with the thought that it might be suggestive for other small hospitals.

B. Survey of 51 Hospitals.

In order to obtain some definite information regarding the dietary procedure of hospitals in general, a questionnaire was sent to all the hospitals in Montana, (46), and in the State of Washington, (49); and to the hospitals approved by the American Dietetic Association, (50). The last group was considered to be representative of the country as a whole. The blanks were sent in February, 1933, and over a 50% return was obtained, including 28 replies which did not give sufficient information to be

used in tabulations. The returned questionnaires were distributed as follows: 21 from Montana, 5 from Washington, and 25 from the American Dietetic Association list. A copy of the questionnaire is in the Appendix, page 96. The requested information included the following major divisions:

1. Size of hospital organization including the patients, staff, nurses and employees.
2. Selection, preparation and distribution of food to staff, employees and routine patients.
3. Food cost control system used by the dietary department.
4. The frequency and management of special dietary procedure.

1. Size of Reporting Hospitals.

The size of hospitals has an important bearing on all of their problems including dietary ones as it greatly influences income and expenditures and in table IV the numbers compiled are all the figures supplied by the reporting hospitals relative to the number of patients, staff members and employees in the respective institutions. In several instances all the information requested was not given and such omissions are indicated by blank spaces.

It will be recalled that the institutions fall into three groups--two geographic, including the states of Washington and Montana and the third a widely distributed group of hospitals approved by the American Dietetic Association as meeting satisfactorily its standards for the training of student dietitians.

The hospitals were arranged in three groups in decreasing order of size and were designated by assigned number rather than names. It will be

observed that a wide variation in bed capacity exists, ranging from 16 to 3300. Only two hospitals, numbers 6 and 9, averaged a capacity patient enrollment. Both were university hospitals. Many of the replies stated that their hospitals were not operating normally due to the acute financial conditions of the period. It is to be expected that most of these hospitals averaged a larger patronage in normal times. To show the comparative percentage use of the hospitals for the period studied, the column headed "Percentage of Occupancy" was computed. The number of patients in proportion to bed capacity ranged from 29.4% to 100%, with the average 76.7%.

The administrative staff in the hospital consists of a superintendent, resident doctors, supervisors of departmental work, and members of the training school staff. Spaces marked with zero in the Student Nurse's Column showed that graduate nurses were used in those institutions as not all hospitals maintain training schools.

As shown by table IV the number of regular dietitians vary from 0 to 15 in the institutions reporting. Out of the 51 reporting, 74.5% have the services of dietitians and 61% of the 51 maintain training schools. The number of patients that one dietitian was responsible for varies from 10 to 300. The average number of patients per dietitian was 87.3.

This survey shows that 11 of the 21 Montana hospitals studied had dietitians that were responsible for food service to patients. Out of this total 2 of the "dietitians" within the State were self-trained and through acquired experience were able to serve their institution through good management of the food selection, preparation and service. (One of

the above dietitians was a graduate nurse.)

Since the hospitals surveyed include 25 accredited for the training of dietitians the number of student dietitians was relatively large, but these were not included in the figures given above. The range in number of student dietitians in the hospitals approved by the American Dietetics Association was 1 to 20 with the average being 6.3 in the 25 reporting hospitals.

No figures were available for comparison of the total number of employees in the dietary department. The type of service, efficiency of work rooms, and number of patients determine the number of employees that are necessary for food service. The table shows a range of from 3 to 1100 total employees corresponding to a range in patient bed capacity of from 16 to 1710.

Perhaps one of the most outstanding comparisons was the ratio of patients to total personnel. The range for hospitals which belong to the American Dietetic Association was from .48 to 3.12 employee to one patient with an average of 1.29 employees for each patient. The hospital having the highest number of employees in proportion to the number of patients was a city hospital which has a large number of internes and attending men. A distinct section of this hospital caters to wealthy patrons and it offers deluxe service.

In the hospitals of Montana the ratio of patients to employees varies from 1:.68 to 1:1.77, with an average of 1:1.19. The lowest ratio exists in a hospital managed by a religious order which does not maintain a nurses training school.

TABLE IV. STATISTICAL DATA OF STAFF, PATIENTS, AND EMPLOYEES OF REPORTING HOSPITALS.

Classification of Hospitals.	Number Assigned to Hospitals.	Maximum Bed Capacity.	Average No. of Patients	Percentage of Occupancy.	Administrative Staff.	Student Nurses	Number of Employees						Ratio of Patients to total Personnel
							Dietitians	No. of Patients to one Dietitian	Student Dietitians.	Cooks	Total No. of Employees.	Total Hospital Personnel	
Hospitals Accredited by American Dietetic Association.	1	3300			1000		12	83	8				
	2	1710	1131	66	275	177	15	75.4	15	8	1100	1582	1:1.24
	3	1100	1000	91	247		14	71.4	19	26	172		
	4	1051				250	5	146	6	8		269	
	5	944	600	65	120	213	8	75	15	5	1050	1411	1:2.35
	6	750	750	100	200	200	9	83.3	8	7	200	624	1:0.83
	7	659				0	3		7	7			
	8	654	410	63	180	272	8	51	20		800	1280	1:3.12
	9	500	500	100	100	250	6	83.3	9		129	494	1:0.98
	10	500	375	75	250	80	5	75	4	6	200	545	1:1.45
	11	450	426	94.7	220	165	5	85.2	8	5	210	613	1:1.43
	12	400	185	47	52	92	3	61.6	4	2	132	285	1:1.54
	13	400	200	50	50	225	3	66.6	4	4	33	315	1:1.57
	14									3			
	15	375	267	71		198	4	66.7	4	5	50		
	16	365	255	67	102	91	3	85	6	3	76	281	1:1.1
	17	325	300	93	40	75	1	300	1	2	27	146	1: .4
	18	310	280	90.4	100	140	3	93.3	6	3	165	417	1:1.49
	19	280	220	79		175	5	44	6	8	140		
	20	250	175	70		125	3	58.3	4				
	21	234	168	73	80	77	3	56	3	3	88	254	1:1.81
	22	200	140	70			5	28	6	2	150		
	23	100	65	65	78	43	2	37.5		2	24	149	1:2.29
	24	75	50	67	16	20	1	50	1	2	21	61	1:1.2
	25	40	20	50	4	1	2	10	4	1	3	15	1:1.33
Hospitals in the State of Washington	26	175	95	54	20	91	1	95	0	4		116	1:1.81
	27	80			5	24	1	80		1	5	36	
	28	20	7	35	3					1	7	11	1:1.5
	29	16											
	30	17	5	29.4	4	0	1			1	4	10	1:3

TABLE IV. STATISTICAL DATA OF STAFF, PATIENTS, AND EMPLOYEES OF REPORTING HOSPITALS.
(Continued.)

Classification of Hospitals	Number Assigned to Hospitals	Maximum Bed Capacity	Average No. of Patients	Percentage of Occupancy	Administrative Staff	Student Nurses	Number of Employees						Ratio of Patients to total Personnel
							Dietitians	No. of Patients to one Dietitian	Student Dietitians	Cooks	Total No. of Employees	Total Hospital Personnel	
Montana Hospitals	31	438	262	62			2	131		1	118	121	1:102
	32	340	125	37		81	1	125		1	52	136	1:1.08
	33	225	100	45	16	72	1	100	1	2	40	132	1:1.32
	34	125	50	70	10	30	1	50	0	2	20	83	1:1.26
	35	100	65	65	10	42	1	65	1	1	14	69	1:1.06
	36	95	58	58	10	38	1	55	0	5	18	72	1:1.3
	37	75	45	60	4	12	2	45	0	2	24	42	1: .93
	38	75	35	47	35	8	1	35	0	1	18	62	1:1.77
	39	75	40	54	8	16				3	3	30	1: .77
	40	75	45	53	13	32	1	45	0	1	12	59	1:1.31
	41	70	25	40	6	13	0		1	1	17	38	1:1.6
	42	53	25	48	8	20	0		0	1	7	36	1:1.44
	43	50	40	80	8	18	0		0	1	15	42	1:1.05
	44	50	41	82	8	26	0		0	1	7	42	1:1.02
	45	42	25	60	10	19	1	25	0	1	11	42	1:1.68
	46	30	16	54	6	0	0		0	0	5	11	1: .68
	47	22	7	32	4	4	0		0	1	4	13	1:1.71
	48	16	10	63	2	0	0		0	1	5	8	1: .8
	49				15	0	1		0	2	17	35	
	50					0	0		0	1			
	51					0	0		0	3			

The results obtained do not justify conclusions as to the number of employees necessary for various sized institutions, but they are at least suggestive.

2. Methods of Food Distribution

To ascertain the methods for service of food to patients in hospitals the following classification was used in the blanks: (1) central service; (2) diet kitchen and (3) combination. The outstanding features of these systems are:

1. Central service.
   a. All food is prepared and served from the main kitchen.
   b. Patient's trays are distributed at high speed to serving pantries.
   c. Trays are unloaded in serving pantry and immediately taken to patients.

2. Diet kitchen.
   a. Daily requisitions for raw foods are sent to main kitchen and storerooms.
   b. All food is prepared and served from diet kitchens.
   c. Trays may be served either from diet kitchen or by means of heated carts near the patient's room.

3. Combination.
   a. All regular foods are prepared in main kitchen.
   b. Prepared food in bulk is sent from the main kitchen to individual diet kitchens.
   c. Perishable foods are prepared in diet kitchen.
   d. Patient's trays are assembled and served from the diet kitchens.

From the data obtained it was found that 37% of the hospitals reporting used the central service, 7% used the diet kitchen, and 56% used the combination service. The diet kitchen service is necessarily more expensive and is used only in large institutions catering to private patients. Central service can be quite satisfactory in small institutions and also in large ones where adequate facilities are used to care for food in transit and during service. As the figures indicate, more than 50% of the hospitals used the combination service which unites the efficiency of the central kitchen for preparation of basic foods with the opportunity of

catering to individual needs and likes in the diet kitchen.

The time reported as used for the moving and serving of cooked food ranged from 1½ minutes to 1 hour and 15 minutes with an average of 27 minutes. Since the conveyor so greatly influences the condition of food on standing it is unfair to consider time alone as a criteria in determining the efficiency and quality of the food service.

3. Serving Equipment.

Information was sought concerning variations in the quality of china, glassware and silver used for the following groups: Doctors, nurses, employees, ward and private patients. These data were quite incomplete so only the information from American Dietetic Association hospitals was analyzed. Of these, 24% used the same kind of equipment for the entire hospital. The other hospitals tended toward the use of three types, one pattern and quality for doctors and nurses, a second for employees and ward patients, and a third for private patients.

Forty-eight percent of the reporting hospitals used linen napkins for the doctors and private patients; the other used cotton, or paper, while 66% used paper napkins for employees and ward patients.

Twenty-three and four tenths per cent of the institutions spent more for the food for their private patients on routine diets and this of course raised their per capita cost of food. Thirty-eight and three tenths per cent of the institutions made no difference in the food served to ward and private patients while 38.3% ranged from little to slight difference in quality in the food and service. Such differences

are less common in smaller institutions as they are more difficult and costly to administer. The majority of Montana hospitals fall into this class.

4. Cost Control of Foods.

The responsibility for purchasing food for the dietary departments in the 51 reporting hospitals was distributed as follows:

Dietitian	42%
Hospital Superintendent	24%
Business Manager	12%
Purchasing Department	18%
Others	12%
Chef	2%

In 52% of the American Dietetic Association hospitals the dietitian purchased all food while in 48% of these hospitals the dietitian worked with the purchasing agent. The latter group consisted of large city hospitals with well organized general purchasing departments.

The data obtained from the 21 Montana hospitals showed that in 45% of these institutions the superintendents purchased the food. Four of the 13 dietitians in Montana hospitals did not buy the food supplies, however 2 of them were self-trained dietitians whose responsibility consisted largely in supervising the preparation and serving of foods. The other two were in hospitals with central purchasing systems.

5. Per Capita Cost of Raw Food.

Food costs are of vital importance to the administrative dietitian as a comparison of the per capita cost of similar institutions enables her to check the efficiency of her department.

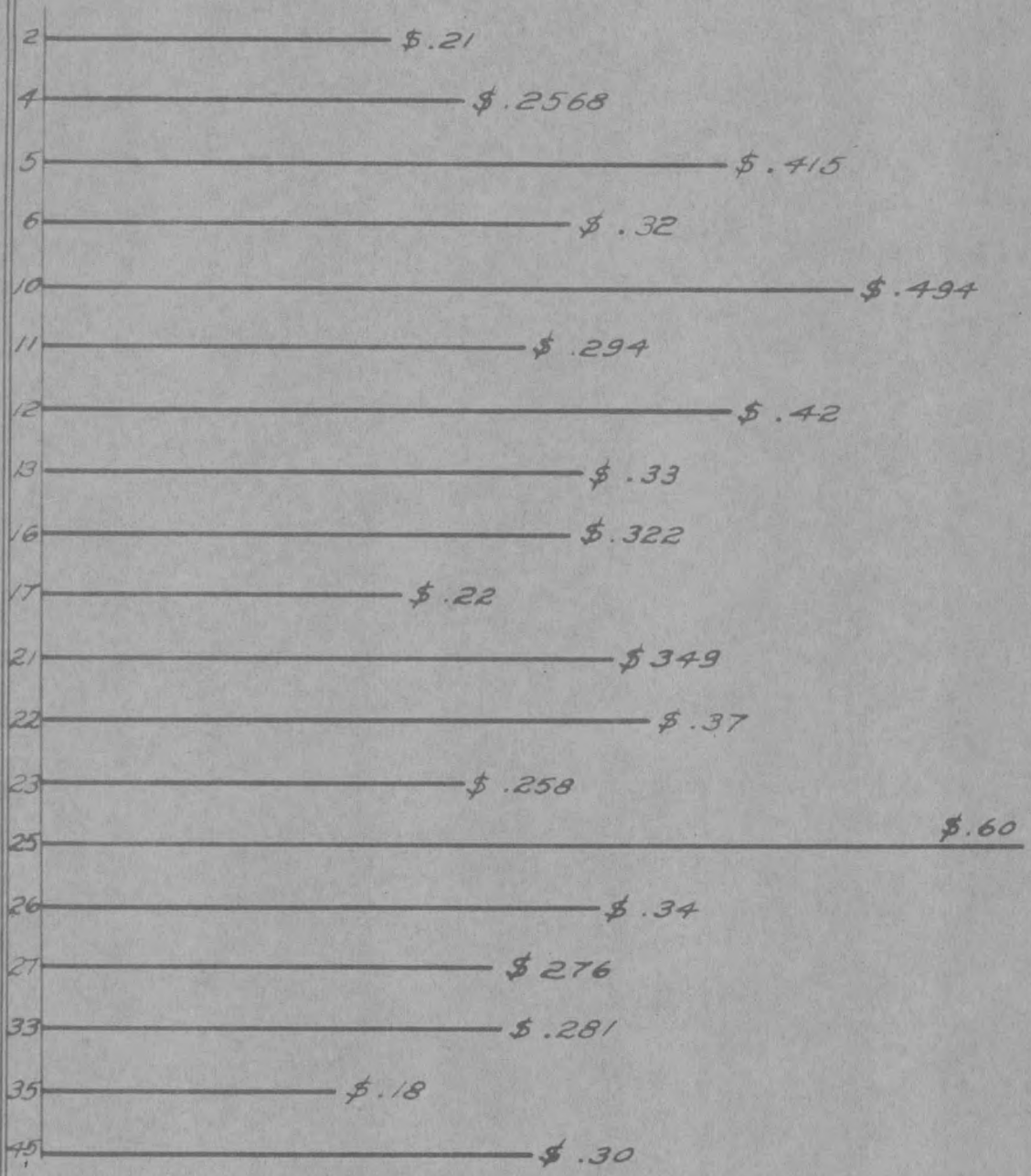


FIG. 2

Per capita cost of raw food per day for reporting hospitals. Note: Numbers on left side are those assigned to the reporting hospitals. (See key)

Raw food makes up practically one half of the total expense of food service, the other 50% consisting of overhead expenses such as rent, light, heat, wages, salaries and replacement. By subdividing this item the percentage cost for the various food groups can be determined and comparison made against standards and seasonal variations. This is an effective aid in cost control work.

The distribution of food expenditures within the dietary departments of the hospitals surveyed was sought, but the results obtained were so incomplete that they did not warrant analysis.

Fig. 2 illustrates the per capita cost of raw food for the 19 institutions reporting this item.

The range for per capita cost of raw food was $0.20 to $0.60 with an average of $0.342 for the 19 hospitals reporting this item. Many reasons may be cited for this wide variation, among which would be included quality of food, use of non-seasonal foods, methods of purchasing and quantity of edible waste. Perhaps it should be noted that the institution with the highest per capita is a private metabolic institution and has an unusual number of special dietary cases. It must also be remembered that at the time the study was made (February, 1933) food costs in general were probably at about their lowest point for a number of years. Figures for February, 1934 for at least one of these institutions has shown an increase.

Ninety-three per cent of the hospitals reporting cost of raw food figured it on a daily basis, while the other 7% figured it by the month. All the Montana hospitals reporting used the daily basis. The dietary departments in 45% of the reporting hospitals are operated on a definite

budget. Seventy-four per cent of them are American Dietetic Association hospitals, 21% Montana, and 4% Washington hospitals.

In the 51 reporting hospitals 96.6% make their own pastries. This includes cakes, pies, cookies and such delicacies. In the larger hospitals pastry cooks are employed whereas in the smaller institutions the first cook is usually responsible for this work.

Many institutions, especially the smaller ones, have found it cheaper to use commercial bread than to employ a baker and provide the necessary space and equipment. However it was found that 25.4% of the hospitals including 10% from Montana did make their own bread.

Forty-one percent of the reporting hospitals made their ice cream. This nutritious food can be used in many special diets as well as being a favorite and adding attractiveness in the regular hospital menus. While the initial cost for a mechanical freezer is relatively high for a small institution it would soon pay for itself.

6. Record Forms Used by Hospitals Surveyed.

In order to find out trends in the use of dietary record forms the hospitals were asked to send samples of the following: dietary sheets used as instruction helps for patients, records for special diets, requisitions blanks, stock cards, record forms for cost control, inventories, records of meals served and application blanks for student dietitians. Eight-six per cent of the reporting institutions sent blanks, 10% came from Montana, 16% Washington and 60% from the hospitals approved by the American Dietetic Association. The percentages of institutions sending samples of their special forms are given below.

17% supplied dietary sheets used as instruction helps in the treatment of disease.
33% supplied forms used in ordering quantitive diets.
27% supplied blanks for calculating quantitive diets.
33% supplied requisitions for staples and equipment.
22% supplied stock cards.
24% supplied inventory sheets.
28% supplied meal records.
17% supplied application blanks for student dietitians.

The dietary instruction sheets which some hospitals gave to special dietary patients on leaving the hospital usually contained a list of foods recommended in the treatment of the disease with suggestive menus and directions for preparing food in definite quantities. These records are kept on file for future reference in case the patient is readmitted to the hospital.

Requisitions, stock cards and inventory sheets were used to control the intake and output in store-rooms and pantries and were so planned that the costs for definite items or periods could be easily computed.

TABLE V. Inventory Methods Used by Reporting Hospitals.

Food Inventory		American Dietetics Association	Montana
Time Unit	Perpetual	17.6%	5.9%
	Weekly	1.9%	
	Monthly	21.5%	15.7%
	Quarterly		1.9%
	Yearly	3.8%	3.8%
Equipment Inventory	Weekly	5.86%	3.9%
	Monthly	27.4%	5.8%
	Quarterly		5.8%
	Yearly	11.6%	11.6%

The data revealed that 96% of the American Dietetics Association hospitals reporting took a periodic inventory of their food supplies. The same percentage was found for the equipment inventories. It may be true that the other 4% do take inventories but neglected to fill in the blanks.

In Montana 79% of the hospitals had food inventories and 73% took inventories of equipment at definite periods. It is hard to understand how a manager of any institution could feel satisfied not to keep a check on the property entrusted to his care.

As may be seen from the above figures for both groups of hospitals the greatest number take inventories of food at monthly intervals. Within recent years perpetual inventories for food have been much more commonly used and as may be observed in table V a large proportion of the American Dietetics Association hospitals favor them. The monthly inventory for equipment is still employed in a large number of hospitals approved by the American Dietetics Association while in the Montana institutions the

yearly inventory is more popular. This is doubtless partly accounted for by the size of the institution.

The writer obtained many ideas from the sample blanks some of which were incorporated into the forms worked out for the local hospital as described on page 70. However, no one set of forms seem to be equally satisfactory for any two hospitals since the main purpose of records is to yield certain specific information for which the people in charge feel a need and will use. Unless considerable office help is available a minimum number of dietary records should be planned otherwise the system will fail. A few well-kept records are an invaluable source of information to check past work and to use as a basis for future planning.

7. Frequency of Special Diet Cases.

Table VI indicates the frequency of certain diseases occurring within the hospitals studied, divided as follows: (1) Montana; (2) Washington, and (3) American Dietetic Association. The diseases were selected as the ones most commonly treated by means of diet. It will be observed that the number in each column does not total 51 as several institutions did not supply all the data requested. The terms common, frequent, infrequent, rare, and none are not exact terms, but it was hoped that through this comparison trends in the frequency of the disease might be obtained.

TABLE VI. FREQUENCY OF SPECIAL DIET CASES IN 51 REPORTING HOSPITALS.

Disease	Montana					Washington					American Dietetic Association				
	Common	Frequent	Infrequent	Rare	None	Common	Frequent	Infrequent	Rare	None	Common	Frequent	Infrequent	Rare	None
Achylia	0	2	3	8	3				2	1	1	1	4	9	6
Arterial hypertension	7	3	5	1	0	1		1		1	6	7	7	2	1
Arthritis	5	7	4	2	0		1	2			4	11	5	4	1
Beriberi			1	1	14					3				9	14
Cancer	2	9	3	2	1		1	3	1		6	9	5	2	1
Diabetes	5	10	3	1	0	3	2				23	1			
Epilepsy		5	5	6	1			1	1		3	8	10	2	2
Fevers: Diphtheria		1	1	6	9							1	5	4	8
Influenza	8	5	4			3					3	8	6	1	2
Malaria			2	4	11		1			2		1		9	9
Pneumonia	7	10	1	1		3			1	2	5	7	6	2	2
Scarlet			2	6	9					2	1	3	1	5	9
Smallpox			1	6	10					2			2	4	13
Typhoid	2	6	5	4	1		1	2			2	5	8	5	2
Typhus			1		15				1	2			3	4	13
Yellow		1			15					3				2	17
Gall bladder	8	8	2	1		2	1				1	13	1		1
Gastritis	6	8	2	1	1	1	1	1			8	9	1	2	2
Gout		4	4	4	5				1	1		1	11	8	3
Jaundice	1	8	5	2	1	1		2		1	3	16	4	2	
Leanness	2	5	3	5	2	1	1	1		1	11	7	3	1	
Migraine		5	4	3	4			1	1		2	3	9	8	2
Nephrosis	1	5	4	5	3		1	1	1		0	9	6	7	2
Nephritis	7	6	6			3	2		1	1	17	6	2		
Neuritis	4	5	7	1	1	1					2	2	6	6	7
Obesity	3	5	7	1	1	1	1			1	12	9	2	1	
Osteomalacia			3	6	7			1	1	1		3	10	7	3
Pellagra			1	4	11					1		1	5	10	7
Pernicious anemia	1	7	5	2	1			3	1		6	9	6	2	1
Simple anemia	3	6	6	4			3				12	7	3		1
Protein sensitization or allergy	1	6	3	6	1	1	1				7	7	8	3	
Eczema		5	4	6	1		1	1	1	1		5	12	4	2
Rickets	1		4	6	5			2	1	1	2	3	10	4	4
Scurvy			1	8	7			1	1	1	2	2	8	5	8
Ulcer	6	7	3	3				2	1	1	17	5	1		1

The occurrence of most of the diseases in the 3 groups of hospitals was approximately the same, however, there were a few exceptions: Epilepsy, jaundice, leanness, nephritis, obesity, and ulcers appear more frequently in the reports of the American Dietetic Association hospitals than they do in either the Washington or Montana reports. Doubtless this was due in part to the larger size of the first group of institutions and to the larger centers in which most of these institutions were located. Also since the question asked referred to special diet treatment rather than occurrence of the disease, it would be normal to expect that the institutions approved by the American Dietetics Association offer more opportunities for this form of treatment.

The data from the 21 Montana hospitals showed the frequent occurrence of 14 diseases including: arthritis, arterial hypertension, diabetes, fevers, gall bladder, jaundice, nephrosis, nephritis, obesity, pernicious and simple anemia, protein sensitization, eczema and ulcer. Less than half of these institutions have the services of trained dietitians and two have "self-trained dietitians" for the planning and supervision of the special dietary work needed by these patients.

The writer has made a careful study of the dietetic treatment recommended by the best authorities for each of the 14 diseases occurring commonly in Montana institutions. (15;p. 58-757). A statement of the dietary principles involved in each, together with suggestive menus, will be found in the appendix, page 160.

Table VII distributes the data concerning dietary diseases for reporting American Dietetics Association hospitals into 4 geographic sections.

TABLE VII. GEOGRAPHIC DISTRIBUTION OF SPECIAL DIET CASES REPORTED BY 25 HOSPITALS.

Disease	United States divided into 4 Geographic Divisions																			
	East (7)					South (1)					Middle West (10)					West (7)				
	C	F	I	R	N	C	F	I	R	N	C	F	I	R	N	C	F	I	R	N
Achlia			1	2	1					1	1	2		5	2		1	1	2	2
Arterial hypertension	1	1	3				1				2	3	4	1		2	3		1	1
Arthritis	1	3	2	1					1		1	4	2	2	1	2	3	1	1	
Beriberi				1	4					1	1			3	6				4	3
Cancer	3	1	1					1			6	3	1				3	2	1	1
Diabetes	6					1					9	1				6	1			
Epilepsy	1		5		1					1	1	4	4			1	3	1	2	
Fevers: Diphtheria	2		1	1	2					1		1	3	1	1			1	2	4
Influenza		3	2							1	1	1	5			2	3	1	1	
Malaria		1		1	3					1				3	4				5	1
Pneumonia	2	3		1						1	1	1	4	1		2	2	2		1
Scarlet	1	1			3					1		2	1	3	1	1			2	4
Smallpox		1			4					1		1	1	2	3			1	1	5
Typhoid		2	2	1					1		2	1	3	2			1	3	1	2
Typhus			1	1	2					1			1	2	5			1	1	5
Yellow				1	3					1				1	6					7
Gall bladder	1	4	1				1				5	3				3	3			
Gastritis	4	2									3	3	1	2	1	1	4		1	1
Gout			4	1					1				4	3	1		1	3	1	2
Jaundice		4	3				1				1	7	2			1	4		2	
Leanness	2	2	1				1				7	2	1			1	2	3	1	
Migraine			3	2	1				1			2	5	2	1	2	1	1	3	
Nephrosis		1	3	3			1					5	2	2			2	1	2	2
Nephritis	6	1					1				6	2	2			6	1			
Neuritis	1			3	1					1		1	3	2	4	1	1	3	1	1
Obesity	3	2	1				1			1	6	3	1			3	3		1	
Osteomalacia			3	1	2				1				4	4	1		3	3	1	
Pellagra			1	2	2			1				1	1	6	2			2	2	3
Pernicious anemia	2	1	3					1			3	4	2	1		1	4		1	1
Simple anemia	4	2	1				1				5	1	2			3	3			1
Protein sensitization or allergy	4		2	1							2	4	2	1			3	3	1	
Eczema		2	3	1	1		1					1	5	2	1		1	5	1	
Rickets	2		2	1	2					1		3	4	1	1		1	4	2	
Scurvy			2	3	1					1		2	2	3	2			1	2	4
Ulcer	6						1				8	2				3	2	1		

Note: C--Common. F--Frequent. I--Infrequent. R--Rare. N--None.
(Figures in section indicates the number of reporting hospitals.)

The total number of hospitals was really too small to indicate trends--this was especially true for the southern section in which only one hospital reported. However, it was interesting to note that the analysis of the data available showed little or no marked differences among the 4 sections of the United States.

8. Student Dietitians.

Of the 51 reporting hospitals, 51% offered a course for training student dietitians. Of this number 49% or 25, were qualified to meet the standards set up by the American Dietetics Association as discussed on page 21.

No hospital in Montana is on the accredited list of the American Dietetics Association and it has been only within recent years that the state of Washington has had an accredited course which was accomplished through a cooperative arrangement of 3 hospitals in the city of Seattle.

C. Survey of Eight Montana Hospitals.

One of the purposes of this study was to make a survey of the dietary situations and problems in certain Montana hospitals with the hope of evolving some plan whereby moderate-sized institutions may command the services of trained dietitians. In order to have first hand information concerning these hospitals it seemed desirable to visit several of them. This plan of visiting was made possible by the superintendents of the eight hospitals granting the writer the privilege of spending a week at each of the following institutions.

Havre Deaconess Hospital----------Havre.
Sacred Heart Hospital----------Havre.
Montana Deaconess Hospital----------Great Falls.
Veteran's Hospital----------Fort Harrison.
Montana State Hospital----------Warm Springs.
Montana State Tuberculosis Sanitarium----------Galen.
Billings Deaconess Hospital----------Billings.
St. Vincent's Hospital----------Billings.

Plate I

MONTANA HOSPITALS VISITED



SACRED HEART HOSPITAL—HAVRE



KENNEDY DEACONESS HOSPITAL—HAVRE



VETERAN'S HOSPITAL—FORT HARRISON



TUBERCULOSIS SANITARIUM—GALEN



BOZEMAN DEACONESS HOSPITAL—BOZEMAN



MONTANA STATE HOSPITAL—WARM SPRINGS



MONTANA DEACONESS HOSPITAL—GREAT FALLS



BILLINGS DEACONESS HOSPITAL—BILLINGS



ST. VINCENT'S HOSPITAL—BILLINGS

During the summer months (June and July) of 1933, four to six days were spent at each of the above named institutions studying the manner in which the hospitals worked out their dietary procedures. An outline, covering the points considered as essential, was made previous to the visits and included:

Organization of personnel.
Organization of dietary department.
    Architectural features.
    Equipment.
    Storage facilities.
    Refrigeration.
Duties of personnel within the dietary department.
Purchasing of food.
Nutrition standards.
Special dietary procedures.
Service of food to patients.
Dietary instruction to student nurses.
Cost control system.

The outstanding facts concerning each hospital may be obtained from the individual reports found in the appendix, p.100, but a summary of the survey follows.

While only 8 hospitals were visited, these institutions possessed 44.5% of the total hospital bed capacity of the State. They were of various types as follows: general, mental and tubercular institutions under Federal, State and Church control. The latter were under Catholic and Methodist direction, however there are other church hospitals in the State. The variation in types surveyed prevented much generalization, but many interesting observations and comparisons were made.

There was considerable difference in the size of hospitals and the range in bed capacity was from 41 (Havre Deaconess Hospital) to 1,350 (Warm Springs). The percentage use of non-government hospitals was low during the period of

the survey and from table IV, page 28, we find the range for all Montana Hospitals was 32% to 70% capacity, with the average 58%. The management of Warm Springs must care for all patients that are sent to them regardless of the overcrowded conditions and its enrollment was 128% of its normal bed capacity. Galen accepts only capacity which is maintained at a practically constant figure. The Federal hospital had reduced its total number of patients over 50% from the regular operating capacity due to the reduction in the Federal appropriations.

The total number of persons fed in the various hospitals ranged from 55 to 1825 at the time the institutions were visited. This number included patients, staff, and employees.

Of the hospitals visited there were 5 that had training schools for student nurses including (1) Billings Deaconess, (2) Havre Deaconess, (3) Great Falls Deaconess, (4) Sacred Heart at Havre and (5) St. Vincent's at Billings. The range of student nurses was from 15 to 72 and the total number for the 5 was 174 student nurses with the average of 34.8.

An outstanding feature of most of the hospitals visited was the relatively large amount of space occupied by the dietary department. Billings Deaconess Hospital constituted the only exception as its main kitchen was small and compact with all space utilized to a good advantage. At Fort Harrison, Great Falls, Galen and Warm Springs the dietary department occupied the first floor, whereas at the other 4 institutions, the dietary quarters are slightly below the first floor.

The equipment in the institutions was of a varied kind, quality and make, and only the larger hospitals had much institutional equipment. In

the case of Warm Springs where the cost of labor was not a factor there was no potato peeler and much waste resulted. Tray equipment for patients was also quite varied in character. The general hospitals apparently realized that attractive tray service was an important feature in pleasing patients and in almost all cases this equipment was of a satisfactory standard. In 3 hospitals better dishes and silver were used for the patients paying higher rates.

The Great Falls Deaconess Hospital had the most satisfactorily arranged storage facilities considering proximity to outside entrance, adequacy of space and convenience to kitchen. At Warm Springs the commissary was across the street from the kitchen. The dietary department at Fort Harrison was in one of the oldest buildings on the grounds and the storage facilities were not adequate for the quantities of staples that had to be ordered by the institution.

Electric refrigeration was used by all institutions but the Havre Deaconess and here a wooden refrigeration was used in the main kitchen, but electrical refrigeration was provided in the diet kitchens.

There was apparently an understanding among the staff and employees in the various dietary departments concerning the division of their duties as employees schedules were available in only one institution.

The greatest number of employees found in any dietary department was 33 at Fort Harrison. At this institution an experienced workman was in charge of each of the various units (storekeeper, butcher, baker, chef and assistants) within the dietary department under the supervision of an administrative dietitian. There was also a therapeutic dietitian who supervised

the meal service for routine and special patients.

At the Montana State Hospital there were 5 full time employees under the supervision of the steward, but they were assisted by 45 patient workers who did the menial labor as is customary in such institutions since a large proportion of the patients are able bodied and are better off when busy.

Trained dietitians were responsible for food service and teaching of dietetics to student nurses and patients at the Great Falls Deaconess, Sacred Heart and Veteran's Administration Hospitals. In the St. Vincent's Hospital, Billings, there was a "self-trained dietitian." The two Billings hospitals and Havre Deaconess had made temporary plans for a trained dietitian to spend six weeks at each to teach foods and dietetics to the student nurses. The 5 institutions visited that did not have dietitians were as follows: Havre Deaconess, Montana State Hospital, Montana State Sanitarium, Billings Deaconess, and St. Vincent's Hospitals. Both the State institutions had stewards. At Warm Springs the steward was supervisor of the entire dietary department, but at Galen the steward acted only in the capacity of storekeeper and the chef managed the dietary department under the general direction of the superintendent.

The responsibility for food purchase was assigned to different people at almost every institution. At Great Falls the dietitian was responsible for all food purchases, at Fort Harrison the administrative dietitian cooperated with the purchasing agent. The State Purchasing Agent purchased staples for the two State institutions and the stewards ordered the perishables. The superintendents of 3 general hospitals purchased all food and at the St. Vincent's in Billings the kitchen supervisor bought all food.

The nutritional standards of the house-diets in the institutions visited were graded according to a dietary score card adopted by Montana State College. The scores recorded in the individual reports (p. 100) were for one weeks menus covering the time of personal visits. The score card used was as follows:

Perfect Score	Credits		(Columns for estimate of daily check.)
20	MILK $\frac{1}{2}$ pint 10, 3/4 pint 15, 1 pint	20	
40	VEGETABLES 1 serving 5, 2 servings 10, 3 servings	15	
	Potatoes may be included as one of the above servings.		
	If leafy vegetable is included, extra credit	5	
	FRUITS 1 serving 10, 2 servings	15	
	If raw fruit or vegetable or canned tomato is included, extra credit	5	
15	WHOLE-GRAIN PRODUCTS 1 serving 10, 2 servings	15	
15	CHEESE, EGGS, MEAT, DRIED BEANS OR PEAS 1 serving of any one of the above	10	
	1 serving of any two of the above	15	
10	WATER $1\frac{1}{2}$ quarts 5, 2 quarts	10	
100	TOTAL CREDITS		
	DEDUCTIONS Use of over two cups of tea or coffee or both for adults	10	
	Eating sweets between meals	10	
	TOTAL DEDUCTIONS		
	TOTAL SCORE		
	WEEKLY AVERAGE		

Using this grading system, a dietary score of 85% is considered good and a range from 70 to 80, fair. The range in dietary scores of these 8 hospitals was from 57 to 77. Most of these institutions found it difficult to meet their total operating costs under the existing economic conditions and had reduced food expenditures as much as possible. In most of the house dietaries, the chief reason for the low score was the small amount of milk and fresh fruits allowed. Patients were given a much wider range of fruits and vegetables plus a sufficient amount of milk. The State institutions had their own dairies and were able to allow a sufficient quantity of milk but there was a lack of fresh fruits. All hospitals except the Federal institutions had gardens to supplement the diets during the summer months.

The Deaconess Hospital in Great Falls had a very efficiently operated dietary department and it was evident that a trained person was responsible for the organization and management of its food service. The doctors were interested in cooperating with the dietary department in planning therapeutic diets, and approximately 35% of all patients were treated with the aid of special diets.

Central food service was used only at the Sacred Heart Hospital in Havre and the St. Vincent's Hospital in Billings. At the other 6 institutions a combination service (central and diet kitchen, see page 30) was used. The food was prepared in the main kitchen and sent to diet kitchens on carts or dumb waiters. At Warm Springs the food was sent by carts from the main kitchen to diet kitchens through tunnels that connected the various buildings.

The teaching of foods and dietetics to student nurses is one of the important functions of a dietitian. Five of the 8 institutions visited main-

tained training schools. The Sacred Heart at Havre and the Great Falls Deaconess had trained dietitians that carried the responsibility of teaching dietetics to the student nurses. At the other 3 institutions a cooperative plan was arranged for one dietitian to teach the required 60 hours of foods, nutrition and dietetics to student nurses in a period of 6 weeks.

There was a wide range in food costs and the Federal Hospital was allowed a liberal diet and was privileged to spend up to $0.50 per capita per day for raw food. At Warm Springs the price per capita was $0.113 per day. Warm Springs had a farm of 1300 acres and they had sufficient equipment and labor to raise all potatoes and root vegetables needed for the entire year which greatly reduced the price per capita of raw food. The farm also produced the milk supply which appeared adequate. However, a regular price was allowed for all produce raised on the farm. Expenditures were determined by legislative appropriations and with the amount allowed it was impossible to give more than a subsistence diet. It is generally conceded that there is a close relationship between physical and mental health and it would therefore be desirable for this institution to have a larger appropriation for food which would allow them to work for an optimum physical status for patients. The range per capita per day for raw food at the other 6 institutions was $0.143 to $0.41. At the institution having the $0.143 per capita cash allowance eggs, milk, cream, some meat and vegetables were taken in payment of bills, but were not charged to raw food expense. All the non-government hospitals visited found it necessary to accept varying amounts of raw food and services in payment of bills which somewhat complicates purchasing and accounts.

In the dietary departments of all hospitals visited, there was a scarcity of records and files for the accumulation of information that would be of benefit to these departments and the institution as a whole. However, those that had trained supervision were more progressive in this respect and each had its own system of records.

As a whole the physical plants of all hospitals were satisfactory and very well cared for and there was evidence that the managers realized the importance of general upkeep, repair and replacement. (See Plate I p. 44). Of the 8 hospitals visited, Warm Springs was the oldest, having been privately established in 1877. All but one of the original buildings have been replaced from time to time and at the present most of them are of brick and modernly equipped. There are several frame buildings at the two State institutions visited, but the management hopes to replace them as soon as appropriations are made available. The other 6 hospitals were built later and all are of brick.

The most recently constructed hospital was the new Sacred Heart in Havre, built in 1931 to replace the original building constructed in 1911. The old building is now used as a residence hall for undergraduate nurses and supervisors.

D. Organization of the Dietary Department in Bozeman Deaconess Hospital.

1. History.

The first hospital in Bozeman was owned and operated by Dr. Henry W. Foster in 1899, who sold it to Dr. J. F. Blair in 1903. In 1911 the Deaconess Sisterhood took over this hospital which then consisted of a three story brick building. Miss E. Augusta Arriss was superintendent from 1911 to 1913, Miss Elizabeth Bjorklund in 1913 to 1914, Miss Edith R. Ackerman from 1914 to 1930, Miss Edna Eberl 1930 to 1932, and Miss Monta Bane 1932.

A new building was started in the spring of 1918, but it was not completed until August 4, 1920. The former hospital building is now used as a residence home for the nurses, with one wing serving as a detention ward. The hospital was built at the peak of prices and after 14 years the remaining indebtedness results in an annual interest of $2000. However, since 1930 the institution has been self supporting and has not appealed to the public for contributions.

The capacity of the hospital is 45 beds and 12 basinetts. The Bozeman Deaconess Hospital has modern facilities for the care of medical and surgical cases. At the present time the people in charge of administration, surgery, X-ray and laboratory, obstretics, medicine and dietetics possess special qualifications in training and experience. The medical staff of 11 doctors is adequate for caring for the medical and surgical needs of this community.

The local institution serves rather a large territory as no other hospital facilities are found within quite a wide radius. The Helena hospitals are at a distance of 100 miles to the northwest, while the

Butte institutions are 100 miles west, Livingston 26 miles east has but one hospital and there are none within the State south of Bozeman.

A nurses training school has been maintained by the Bozeman Deaconess Hospital since 1911 and in the fall of 1933, 22 students were registered as follows: 8 juniors, 8 intermediates and 6 seniors. The average total number of patients, hospital staff, student nurses and employees is 65.

Miss Zada Holden was the first dietitian to the local hospital. After her term of service from 1922 to 1924, others have worked only a few weeks or months at a time, until the writer was employed in the fall of 1932.

2. Place of Dietary Department in Hospital Organizations.

Principles governing the organization of hospitals whether large or small are similar. A board of trustees is necessary for all hospitals regardless of the type of institution, for it has two main functions: first, of ownership, and second, of policy formation. The board of trustees forms a link between the activities of the hospital and the community. It should include representation from legal, financial, educational, social, and commercial fields so that it may have a suitable background for the forming of wise policies for the institution. The board is responsible for the personnel of the medical staff and for the election of a capable superintendent who is in reality its executive officer. This administrator should be given responsibility for the appointment of all other personnel within the institution, subject to confirmation by the board. She will in turn work out the aims and policies with the various department heads and delegate to them the responsibilities of execution.

Organization charts aid in the clear understanding of any institution as ultimate authority and relationships of the various departments and personnel are pictured. The writer was interested in a more complete understanding of hospital organization with special reference to the place of the dietary department. The making of such a chart is valuable as it often reveals hazy and varying ideas which are frequent causes of misunderstandings and friction with consequent loss of efficiency.

An outline of the organization of a "prize" small hospital (25-50 beds) was found in the Modern Hospital and has been reproduced in figure 3. (12:p. 277). As the word "prize" would indicate this is rather an ideal

setup which few small hospitals can completely achieve. In figure 4, the organization of the Bozeman Deaconess Hospital has been pictured using the same general plan found in figure 3.

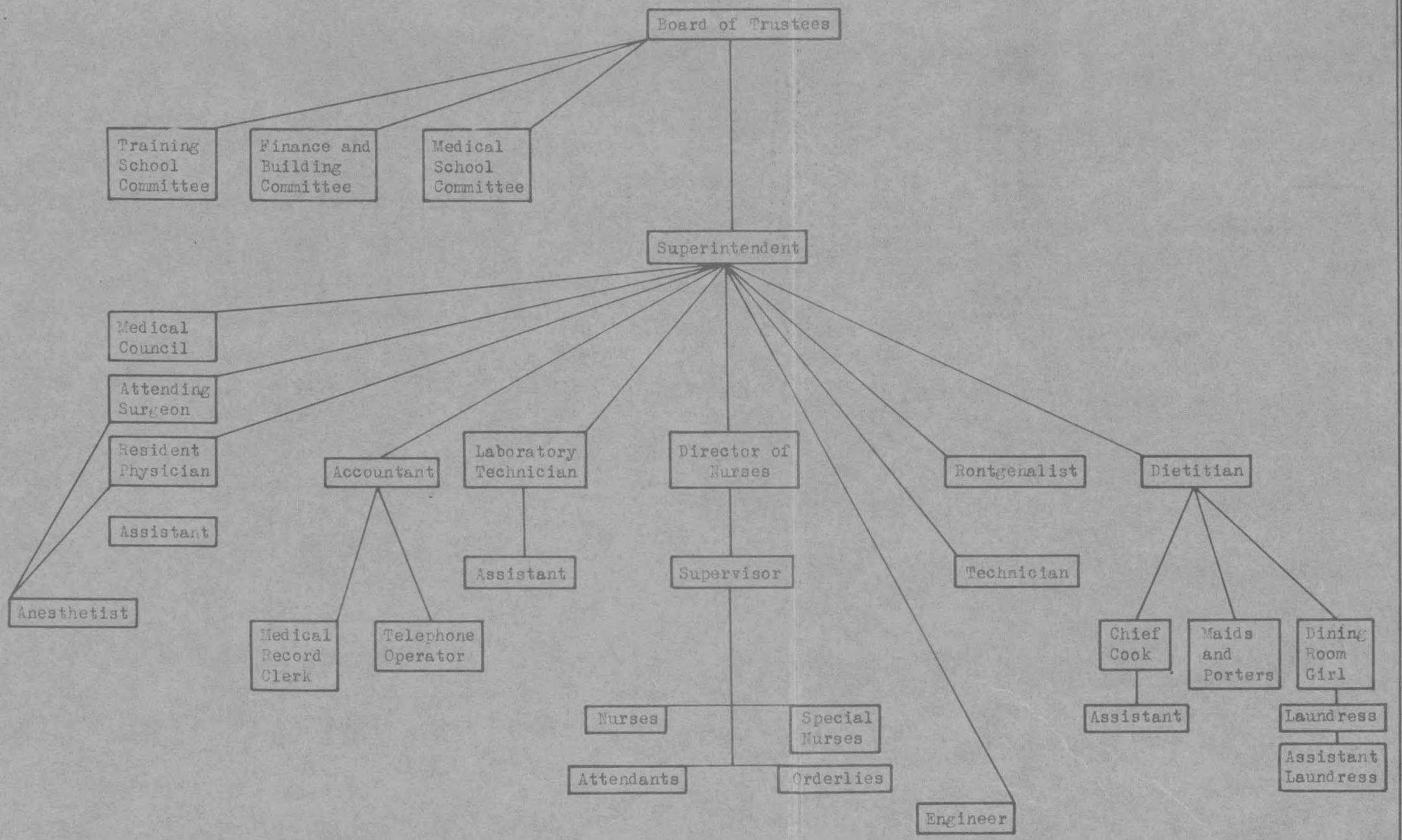


Fig. 3. Organization Chart of Small Hospital.

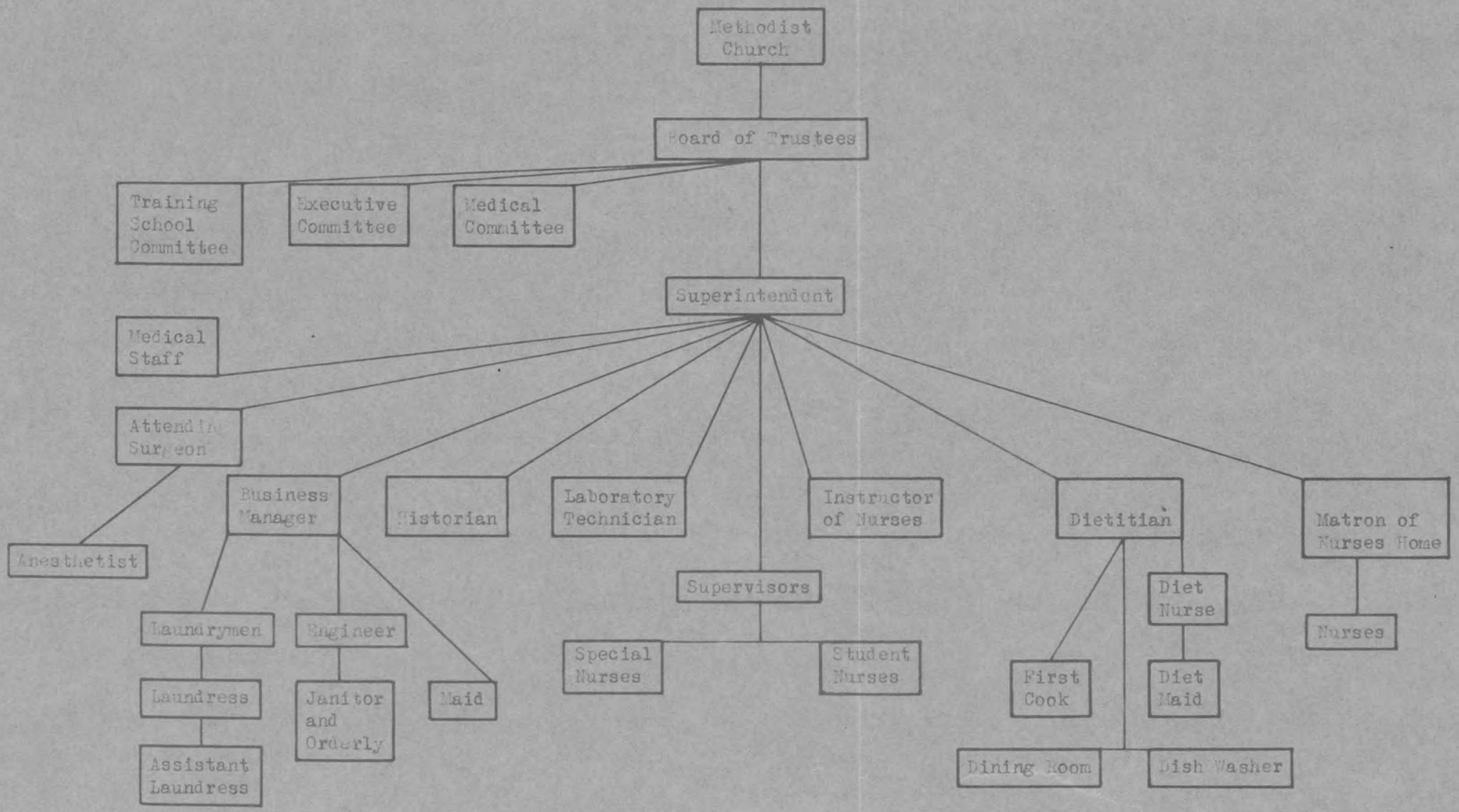


Fig. 4. Organization Chart of Bozeman Deaconess Hospital.

A study of figures 3 and 4 reveals the points of similarity and differences between the "prize" hospital organization and that of the Bozeman Deaconess Hospital. The local hospital has no resident physician, and no special anaesthist as this latter work is done by the hospital superintendent and the laboratory technician. There is no roentgenalist and the laboratory technician does the x-ray work. Supervision of the house-keeping and laundry is carried on by the superintendent and the business manager, who also acts in the place of the superintendent when she is off duty.

3. Responsibilities of Dietitian and Diet Nurse.

One dietitian and one full time diet nurse are responsible for the dietary service of the hospital. The dietitian is a graduate of a recognized college of home economics, and spends part of her time in graduate study.

The dietitian plans all house, routine and special diets, purchases the food supplies, supervises the preparation and serving of food, keeps suitable records and carries on class room and individual dietary instruction with nurses. The dietitian visits the patients and in so far as possible meets their requests for special foods. Special diets are explained and cooperation of the patient is enlisted in the treatment of the case. Bedside instruction is given the patient in food selection; he is informed when changes are made in his diet, and when test meals are being given, and what results may be expected.

The diet nurse has completed her course in foods and dietetics, and spends her time in doing such theoretical and practical work as will be of value to her on the completion of her training school course. The diet nurse keeps a daily record of each special diet, laboratory findings bear-

ing on the case, and makes suggestions for possible changes in the diet that will make the service more acceptable to the patient. This record is used in making her report to the dietitian, and for case study purposes.

4. Dietary Department Regulations.

Ordering of Diets: Each diet for a new patient is to be ordered by the head nurse, use being made of the special form provided, and the order being placed on the spindle in the diet kitchen. On dismissal of the patient an order is to be sent to the dietitian for discontinuing the tray. Each evening the daily menu is posted for the following day. Special nurses may look over the menu, and if a special order is needed for their patients, it should be placed with the dietitian before 9:00 A.M. The dietitian talks over feeding problems with special nurses at frequent intervals.

Changing Orders: Any diet order that is changed after 10:00 A.M. will not receive attention until the evening meal, unless a request is made by the Doctor. Each afternoon diets are written for the following day.

Nourishments: Order blanks are provided on which the head nurses may order nourishments for their patients. General nourishments will not be served unless a special order is given. All nourishments are prepared in the general kitchen by the diet nurse. The afternoon and evening nourishments are served by the floor nurses who are responsible for serving them. Dishes are collected, returned to the serving rooms, washed and replaced on the shelves.

Serving of Nourishments: (1) Cold nourishments, served cold, in glasses, carried on plate, or nourishment tray, and never carried in hand. (2) Hot nourishments are to be served hot. Use nourishment trays with cocoa pot, cup, saucer, spoon, etc. neatly arranged. (3) A nourishment tray should be used in serving sandwiches, custards, jellos, for any extra food.

Charting Diets: Floor nurses should record all routine diets on patient's charts. (1) diet order, (2) food refused, (3) irregularities in serving that migh influence results. Diet nurse should chart all special diets, reporting for the previous day before the doctor makes his rounds in the morning, and using her notebook for reference.

Hours for Meals: (1) Meal service for the nurses' dining room.

1st breakfast	6:30 - 7:00
2nd breakfast	7:00 - 7:30
1st dinner	11:30 - 12:00
2nd dinner	12:00 - 12:30
1st supper	5:30 - 6:00
2nd supper	6:00 - 6:30

(2) Patient's trays

Breakfast	7:00 - 7:30
Dinner	11:15 - 11:30
Supper	5:00 - 5:15

5. Budgets.

Any well managed business or institution operates on a budget plan. For this reason permission was secured to put the dietary department of the

Bozeman Deaconess Hospital on a budget basis and this was done in January, 1934. A budget or an allowance basis offers a real challenge to the management and employees of any department as they have the assurance that savings through thrift will make possible certain improvements for their particular work.

Increased food costs and fluctuation in number of patients are variables that may alter such a budget, however it is felt that before an adequate food cost control system can be maintained the person in charge must have a definite understanding as to the probable income and demands of her department. The dietitian who has the privilege of operating her department on a budget is keenly interested in preventing waste while maintaining satisfactory standards of food service. The income and expenditures for the period from September 1932 to September 1933 was taken as a basis for formulating a budget for the dietary department of the Bozeman Deaconess Hospital. The totals given below are classified according to food firms since more detailed divisions were not kept during the first year.

Table VIII. Distribution of Raw Food Expenditures for Bozeman Deaconess Hospital 1932 to 1933.

Food	Percentage Distribution of Cost
Bread	4.72%
Dairy products:	
Butter, cheese, ice cream, milk, cream.	28.72%
Staples:	
Fresh vegetables, fruits, nuts, sundries.	49.88%
Meat.	16.63%
TOTAL	99.95%

The cost for raw food per capita per day for 1932 and 1933 was $0.30

for a household averaging 65 people at the Bozeman Deaconess Hospital. In figuring the overhead expenses an effort was made to assume for the dietary department a just share of the general expenses including interest, light, water, telephone and heat. An estimate of the area occupied by the dietary department was made and it was found that the dietary department occupies approximately 1/13 of the total space so 1/13 of the annual interest payments and light charges were assumed as a fair proportion. Domestic rates were figured for the telephones and water as the department's share of the bills, and 1/20 of the total coal bill since the kitchen is almost wholly heated and food cooked by coal charged to the dietary department. Actual expenditures were available for pay roll, repair and replacement, coal for range, entertainment, and cleaning supplies. The average daily per capita overhead for 1932-1933 was $0.09, making a total of $0.39 daily per capita expense of the dietary department for an average household of 65 people.

As stated previously the writer was given an opportunity to put the dietary department of the Bozeman Deaconess Hospital on a budget for 1934 with the per capita allowance of $0.40 per day covering the same items included in the previous year.

While a larger margin would have been desirable for price fluctuations and accumulation of needed repairs and additions, the present economic conditions did not seem to warrant the request of any such increase.

6. Meal Planning.

An important function of a hospital dietary department is the planning of meals for patients and personnel. There are several factors in this that must be taken into consideration: adequate, well balanced meals; combinations of food as to taste, color and appeal; variety; market conditions; apportionment of labor; and facilities for preparation and service of meals. The regular daily menus for the hospital personnel and the patients on general diets are checked against the score card found on page 49. The following is a week's menus for the Bozeman Deaconess Hospital chosen at random, the grade for which was 88.

House Menus for June 3 to 9, 1933.

Breakfast	Dinner	Supper
	Sunday	
Rhubarb	Roast pork	Cream of carrot soup
Coffee cake	Mashed potatoes	Assorted sandwiches
Puffed rice or	Gravy	Egg
brownies	Dressing	Meat
Link sausages	Buttered beans	Peanut butter
Coffee--milk	Celery, olives, radishes	Fruit salad
	Black walnut ice cream	Coffee--milk
	Coffee	
	Monday	
Apple sauce	Fricasse of veal	Vegetable soup
Toast	Parsley potatoes	Creamed chipped beef
Ceretana or	Gravy	on toast
shredded wheat	Head lettuce salad	Pickled beets
Scrambled eggs	Thousand island dressing	Peach salad
Coffee--milk	Chocolate cake	Graham crackers
	marshmallow frosting	Tea--milk
	Tuesday	
Stewed prunes	Baked ham loaf	Cream of potato soup
with lemon	Escalloped potatoes	Toasted cheese
Rice krispies or	Candied carrots	sandwiches
cream of wheat	Chow chow	Tomatoes
Toast	Pineapple cream pudding	Fruit cup
Apple butter		Wafers
Coffee--milk		Tea--milk

	Wednesday	
Figs Wheatena or grapenuts French toast Syrup Coffee--milk	Short ribs en casserole Browned potatoes Gravy Diced turnips Apple crisp with whipped cream	Vegetable soup Italian spaghetti Tomato sauce Orange salad Baking powder biscuits Jam Tea--milk
	Thursday	
Canned apricots Toast Link sausage Farina Coffee--milk	Baked veal cutlets Mashed potatoes Buttered carrots & peas Red apples Norwegian prune pudding whipped cream	Creole soup Potato salad with bacon strip Buttered beans Raspberries Wafers Tea--milk
	Friday	
Sliced oranges Toast Wheaco of puffed wheat Coffee--milk	Salmon loaf Tartar sauce Mashed potatoes Spinach salad with egg Cherry pie	Clear soup Baked squash Pineapple cottage cheese salad Apple butter Tea--milk
	Saturday	
Apple sauce Toast Cooked wheat or shredded wheat Coffee--milk	Meat balls Boiled potatoes Gravy Harvard beets Celery and pickles Crumb pudding Carmel sauce	Vegetable soup Cheese fondue Pear salad Gingerbread with whipped cream Tea--milk

As an additional check on the adequacy of the dietary practices it was decided to classify food expenditures and check against certain established standards. Dr. H. S. Sherman in the fourth edition of his book, "Food Products" has recommended that the money distribution for an adequate medium cost diet would be as follows: (18:p. 558).

Table IX. Distribution of Raw Food Expenditures.

FOOD	Percentage Cost of Food	
	Sherman's Recommendations	Bozeman Deaconess Hospital
Meat and fish	32.19	22.04
Eggs	5.47	6.27
Milk, cream and cheese	10.59	20.90
Butter and fats	9.55	6.07
Grain products	18.29	7.85
Sugar and molasses	4.57	2.88
Vegetables	10.55	14.46
Fruits	5.31	17.52
Food adjunts and miscellaneous (nuts.)	3.48	2.01

It will be noted in table IX that the distribution for raw food at the Bozeman Deaconess Hospital did not follow Sherman's percentages in all cases. Dr. Sherman's recommendations are made for average healthy families while the fact that 1/3 of the hospital population are sick, calls for the higher use of eggs, milk, cream, fruits and vegetables.

From the United States Agricultural Yearbook for 1933 it was found that the cost of leafy vegetables, milk, eggs, butter, fruits, bread and meat was slightly higher in Montana than for the average for the country as a whole, while root vegetables and poultry were less. (6:p. 603).

Relative prices of foods vary with times and locations so dietary standards based on costs alone are not as scientifically accurate as those calculated on percentage composition and caloric value of food used.

However, the latter is too time consuming for regular use and the grosser price analyses are valuable in indicating trends.

7. Routine Diets for Patients.

For guidance in planning the routine diets for patients, including clear liquid, full liquid, semi-soft, soft, light and general diets the following list of foods was adopted. (17:p. 38).

Restricted or Clear Liquid.

1. Strained, diluted fruit juices.
2. Clear broths.
3. Cereal water or cracker or toast water.
4. Soups made from vegetable stock and strained.
5. Albuminized drinks.

Full Liquid: Clear liquid plus the following.

1. Milk, buttermilk, cream.
2. Cocoa, eggnogs, malted milk.
3. Strained meat soup.
4. Strained cream soup.
5. Oyster broth.
6. Beef tea and beef juice.
7. Strained gruels.
8. Jello or junket.
9. Plain ice cream, sherbets, or ices.
10. Tomato juice.
11. Sauerkraut juice.

Semi-Soft Diet: Full liquid diet plus the following.

1. Strained oatmeal, farina, rice, crackers.
2. Plain dry toast, zwieback.
3. Soft cooked or coddled eggs.
4. Butter.
5. Plain custards or plain tapioca cream.

Soft Diet: Semi-Soft diet plus the following.

1. Milled cereals.
2. Eggs, any method of preparation except fried or hard cooked.
3. Rice, white bread, toast.
4. Oysters or clams in stews. White fish steamed, baked or creamed.
5. Sweetbreads, creamed. White meat of chicken or turkey, minced or creamed.
6. Pureed vegetables.
7. Potatoes--mashed or baked.
8. Strained cooked fruit or fruit juices. Shredded orange or grapefruit.
9. Cottage cheese.
10. Sponge cake, angel food cake or soft puddings.
11. Souffles.
12. Macaroni, spaghetti, or noodles.

Light Diet: Soft diet plus the following.

1. Chicken (roast, fricassee, or creamed), scraped beef, lamb chops, fish, steamed or baked.
2. Cheese, creamed or grated.
3. Potatoes prepared in any way.
4. All vegetables, except cabbage, onion, radishes, turnips, sauerkraut, cucumbers, green peppers.
5. Dark bread if preferred.
6. Fruit, fresh or cooked.
7. Simple cakes and desserts.
8. No steamed or hot breads.

General Diet: Light diet plus the following.

1. All meats except large amounts of pork or corned beef.
2. All vegetables except cabbage, radishes, turnips, onions, sauerkraut, cucumbers, green peppers.
3. All desserts except heavy ones.
4. No hot yeast breads.
5. Relishes and pickles.
6. Olives, jellies, or sauces.

8. Special Diets.

Increased knowledge of the importance of diet in the treatment of deficiency diseases and in metabolic disorders has tended to greatly enlarge the special dietary service of most hospitals.

The frequency of special diets in the reporting hospitals was obtained from the questionnaire and diet lists with a sample daily menu were made for the following diseases: ulcer, nephritis, nephrosis, eczema, anemia, obesity, jaundice gall bladder, fevers, gastritis, diabetes, arthritis, epilepsy and protein sensitization. (Appendix, page 160).

During the writers period of service in the Bozeman Deaconess Hospital she had the opportunity to cooperate with the medical staff in preparing special dietaries for all diseases except epilepsy, eczema, and nephrosis have been partly treated by means of the suggestive diets. The most frequent special diets at the Bozeman Deaconess Hospital are diabetes, fevers, gall bladder and ulcer. The number of special diets for the first quarter of the year 1934 has shown a 25% increase over the number in 1933. This is partly accounted for by the increased utilization of the dietary service of the hospital.

The diets are planned with special reference to the patient's needs, metabolic disturbances, likes and dislikes. The diets are prepared by the diet nurse in the main kitchen according to the directions given by the doctor and dietitian.

9. Records Adopted.

When the writer started work at the Bozeman Deaconess Hospital a thorough search revealed that no records were on file within the dietary

department. All accounts were kept in the main office with food records as a subsidiary item. Satisfactory records cannot be expected when the responsibility for the dietary department has to be carried by one who has had no technical training in this field and who has many other duties.

The elimination or reduction of verbal direction and dependence on memory for important facts, are necessary for the efficient organization of a dietary department. This calls for certain record forms. Care must always be exercised to prevent record systems from becoming too cumbersome. Usually the simpler the system the better, as only such information as is needed for daily work and that which can be summarized and analyzed as a basis for future progress is really significant. The system used at the Bozeman Deaconess Hospital utilized the following forms: (1) diet order, (2) quantitive diet orders, (3) nourishment blanks, (4) dietary case studies, (5) patient count, (6) meal census, (7) perpetual inventory, (8) monthly inventory of staples, (9) monthly inventory of equipment, and (10) requisitions. Samples of the blanks may be found in appendix, page 136. A brief explanation of the use of each of these blanks follows.

(1). Diet orders are a time saver for doctors, nurses and dietitians. The blank contains the doctor's dietary orders, diagnosis of disease, and patient's likes and dislikes. This eliminates the possibility of mistakes that often arise from verbal directions.

(2). Quantitive diet orders are used by the dietitian for patients on special diets and as instruction sheets for convalescent patients. Through visits to the patient the dietitian instructs him as to the use, preparation and value of diet in the treatment of his specific disease.

Shortly before leaving the hospital the patient is given a copy of the quantitive diet order to aid him in following his dietary regime at home.

(3). Nourishment blanks show the number of patients on soft and liquid diet that need and receive extra food at 9:00 A.M.; 3:00 P.M. and 8:00 P.M. This information influences market orders of the dietitian and is also placed on the patient's chart to inform the doctor of the extra food given his patients.

(4). A dietary case study is made by each student nurse while in the diet kitchen and aids in her appreciation of the problems involved in variations from normal nutrition in the treatment of special dietary cases.

(5). Patient count is made daily as it shows the number of persons to obtain meals from the dietary department and the number of patients within each division of routine diets.

(6). Meal census is the total number of all persons fed within the institution.

(7). The perpetual inventory for staples is of utmost importance for it shows what supplies are in the storeroom at any time. It aids in purchasing supplies for one can easily ascertain the previous cost of any food and the amounts used for a definite period.

(8). The monthly inventory is a second check on the storeroom stock and reveals any mistakes that might have been made during the month in the perpetual inventory. In figuring total food costs monthly inventories are utilized to determine the amount of the storeroom stock used during the month.

(9). Equipment inventories aid in checking the breakage and loss of

equipment. The inventory blanks call for numbers only and should be supplemented by a card file with information for each type of equipment.

(10). Requisitions are used to order supplies desired from the storeroom by supervisors of the floor and kitchen employees.

10. Food and Dietotheraphy Instruction of Student Nurses.

Until comparatively recent times the family physician carried on a multitude of functions which are now for the most part divided among a number of specialists as doctor, nurse, dietitian, obstetrician, and surgeon. With the multiplication of specialists it is necessary for each to have a working knowledge of the principles of related fields in order to cooperate effectively with the others. Accordingly the well trained doctor and nurse have a general knowledge of dietetic principles. Even though the medical courses are already heavily loaded, several medical schools have added special courses in nutrition for doctors while many others include some instruction in this field in other courses.

The nurse's curriculum is not long enough to provide sufficient scientific background for complete training in normal nutrition and special diets. Therefore it is important that the time available be used to the best possible advantage. While the average nurse has quite a meager background in dietetics it must be remembered that popular faith in her ability often tempts and demands her to overreach her training in this field. The importance of high grade dietetics instruction for nurses furnishes one of the basic reasons for the employment of dietitians in hospitals operating a training school.

Many hospitals recognizing the need for broader and more extensive

nursing education have entered into affiliated relationships with nearby colleges and universities. These combined courses are usually five years in length and lead to both a nurse's certificate and a standard bachelor's degree. Additional courses training for the field of public health nursing are offered at many of these centers.

In 1916 Montana State College introduced a course for graduate nurses. The object of the course was "to attain greater general proficiency for more special lines in their profession." (21:p. 111). However, the demand for nurses was so great at that time that no one enrolled for the work.

In the 1917 Montana State College Catalogue a course was outlined for women who had finished high school and who desired to become nurses. The statement was made that the students who successfully completed the outlined one year course were eligible to complete the training course for nurses in two years rather than the regular three years in hospitals of the State.

The college curriculum included English composition, modern history, general chemistry, invertebrate zoology, and physical education the autumn quarter; general chemistry, human physiology and anatomy, foods, modern history and physical education the winter quarter; and elementary bacteriology, organic chemistry, dietetics, physical education, and modern history in the spring quarter. This course was found in the catalogue until 1920 when it was dropped apparently due to lack of registration.

A third plan for the college training of student nurses was worked by the Montana State College in 1922 at the request of the Bozeman Deaconess Hospital. The plan provided that the first year nurses attend class in the

fall quarter, the second year group in the winter quarter and the third year students in the spring quarter. This arrangement was not ideal, since few special courses could be organized for the nurses and the distribution of year's course in chemistry and English over a three year period was difficult. However, this plan was in operation for 8 years until a change in hospital management brought about its discontinuance in 1930. After that, student nurses received their food and cookery instruction at the college for another two years, while the course in diet and disease was taught by the training school instructor at the Bozeman Deaconess Hospital.

Since 1932 the writer has carried the responsibility of giving the nurses their training in foods and dietetics. The first year the food and dietetic outlines recommended by the American League of Nursing Education were followed. (4:p. 53). The second year the American Dietetics Association outline was used. (2:p. 10). Both the American League of Nursing Education and the American Dietetic Association designated the same amount of time for the teaching of foods and dietetics. The junior or first year nurses are given 45 clock hours of work in food and dietetics following their work in general chemistry, anatomy and physiology. The work is divided into three parts with 15 hours of elementary principles of food selection and preparation together with standards of adequate nutrition; 15 two-hour laboratory periods of food preparation, and 15 hours of nutrition, and dietotheraphy. The two outlines cover essentially the same subject matter, the main difference being in the method of presentation. The outline prepared by the League of Nursing Education is arranged in a logical, systematic order including the study of various foodstuffs while

the American Dietetic Association outline follows a more psychological order of the same subject matter based on meals and including more emphasis on general dietary principles and practices. In the latter the student's thinking is directed along the energy requirements and metabolic functions of individuals.

The emphasis in teaching nutrition and dietotheraphy have changed considerably in the past few years. Formerly most of the time was spent on special diets while the present theory is that a knowledge of normal nutrition is the best basis for the study of any abnormal case. "Two chief factors should govern all dietary regulation: first, the person's nutritive needs, whether in health or disease, and in disease, the nature of the physiological disturbance; second, the combined experience of the past." (15:p. 7). In the past the former has been underestimated, the latter, in most cases has received undue attention. Stress is now placed on the reactions of the average normal body and the best means of maintaining or returning it to a healthy state.

In January, 1933, a foods laboratory was equipped in the nurses' home of the Bozeman Deaconess Hospital which adequately accomodated 8 nurses. Teaching aids have been used to help acquaint the students with principles learned in the classroom. Animal (white rats) experiments were used for the first time during the months of February and March, 1934, to illustrate and make more real a few of the fundamental principles of adequate nutrition and the result of biological methods of study. Texts and reference books in nutrition and dietetics with definite assignments are used to supplement the class work. Two term papers are required from each student;

one embracing normal nutrition and the other diet and disease. Diet kitchen experience is recommended by the American Dietetics Association to supplement, or if necessary substitute for laboratory practice in diet therapy. In the local hospital each student nurse has five weeks' experience in the diet kitchen and in addition receives actual experience in the main kitchen where she has the responsibility for the patient's trays under the direction of the dietitian. One dietary case study is made by each student nurse while in the diet kitchen. The student's instruction in foods and nutrition can be effectively applied and enlarged when she assists in the real feeding problems of the patients.

11. Recommendations for Further Development of Dietary Department in the Bozeman Deaconess Hospital.

If the dietitian's position in the Bozeman Deaconess Hospital could be put on a full time basis, suggestions for contimed development in the service would include the following:

A. Food.

1. Greater variety within the same cost range as more time could be given to this phase of the work.
2. Improvement in the quality of certain food products, such as cakes could be made through experimental work by the dietitian.
3. More extensive cooperation with the doctors on special diet problems.

B. Service.

1. More satisfactory standards of service in the dining-room could be arranged by the addition of an extra employee or by having two of the preliminary or first year students rotate as waitresses one week at a time.
2. Reduce verbal instruction and establish a more standardized procedure through the preparation of a simple manual on table service.
3. Adopt plate service as an economy of food as well as reduction in the time of service.

C. Management.

1. Work out an equipment inventory on cards for filing.

2. Start a ledger for keeping a record of food purchases within the dietary department for convenient use.

3. Allow more time for marketing in person.

4. Experiment with buying contracts as an economy measure.

5. Make arrangements for a revolving fund to permit purchasing in larger quantities.

D. Plant and Equipment.

1. Rearrangement and additions to kitchen facilities.

a. Increase working surfaces and cupboard space near range to reduce steps for employees. This would provide space for most of the materials now in the pantry.

b. Move storeroom into present pantry for greater convenience.

c. Use present storeroom for an out-patient department if desired by the management.

d. Arrange for the resurfacing of the floors in dining-room and kitchen as soon as possible.

2. Equipment additions listed in the order of choice.

a. Kitchen:

Utility cart.

Medium sized dish washing machine.

Potato peeler.

Gas range.

Small electric ice plant.

b. Dining-room.

New curtains.

Small tables to replace large ones.

Wall hangings, tapestry or pictures.

Radio.

c. Office.

Steel cabinet for records.

E. Teaching.

1. Provide an opportunity for seniors to elect a course in nutrition for public health work.

F. Assist with social and recreational activities of the institution.

1. Cooperate in official entertainment by serving dinners for the members of the local board, medical staff and visiting officials of the governing board.
2. Supply information concerning community entertainment.
3. Increase the library facilities of the hospital and stimulate a greater use of the city library.
4. Arrange for talks by outstanding members of the community.
5. Plan hikes and arrange for campfire picnics.

H. Increase service of the dietitian to hospital which would be developed according to the wishes of the management.

1. Plan and develop an out-patient department with the aid of the medical staff by working out special diets for all people desiring such service.
2. Cater to outside professional people who desire and need

special diets for lunch and dinner.

3. Assume additional duties such as housekeeper, recorder and historian, laboratory technician or matron, as needs arise.

E. Suggestions for a Standard Dietary Department in a Small Hospital.

Any standard hospital needs the service of a trained dietitian. The smaller institutions of 30 to 60 beds have been rather backward in adding dietitians to their staff, the chief reason being the cost. The standard adopted by the American Dietetics Association is one full time dietitian to every 100 patients for regular hospitals where the dietitian carries on both administrative and therapeutic work. When the number of patients is considerably below, several alternatives should be considered and the one best suited to the local situation adopted. Plans for dietitian services at reasonable cost which we would suggest for the smaller hospital include:

1. Two or more hospitals share the services of one full time dietitian.
   a. Simultaneous service in same city.
   b. Rotation of periods of service in different localities.
2. Hospital employ a married dietitian on a part time basis.
3. Develop new sources of revenue through additional services of the dietitian.
   a. By an out-patient dietetic clinic.
   b. Conduct a special diet table service for non-resident patients.
   c. Transient service to friends and relatives of the patients.
4. Combinations of work of dietitian with one or more of the following:

a. Housekeeper.

b. Laboratory technician.

c. Recorder and Historian.

d. Matron of Nurse's Home.

The following outline of the regular duties of a dietitian in a small hospital is given as a basis for understanding the standard functions of the dietary department.

I. Duties and responsibilities.
  A. Discuss and plan dietary policies with superintendent.
    1. Study organization of institution as related to work of dietitian.
    2. Submit dietary department budget for approval in order to have a definite understanding concerning the standards to be used.

  B. Patients' diets.
    1. Routine diets.
      a. Attractive food service.
    2. Special diets.
      a. Consult doctors.
    3. Visit patients.
      a. Bedside instruction if needed concerning patient's dietary regime:
        (1). While in the hospital.
        (2). For continuation or home treatment.

  C. House diets.
    1. Plan menus.
      a. To meet adequate food standards.
      b. Attractive food service.

  D. Purchasing.
    1. Foods and supplies.
      a. From reliable and sanitary sources.
      b. Accept satisfactory products on accounts.
    2. Equipment.
      a. Minor replacements.
      b. Major equipment as funds are available.

  E. Records.
    1. Records of purchases.
    2. Requisitions from storerooms.
    3. Inventories of staples and equipment.

4. Meal census.
5. Food costs accounts (monthly summaries.)

F. Management of dietary department.
1. Employ help in dietary department.
a. Check health qualifications.
2. Plan and supervise work of dietary employees.
a. Maintain efficiency and cleanliness in department.
3. Direct work of diet nurse.

G. Entertainment.
1. Institutional and personal.

H. Teaching.
1. Cover requirements in standard outlines.
a. 45 clock hours of foods and nutrition.
b. 15 to 25 clock hours of dietetics.
2. Maintain high standards of teaching methods.
a. Give background appreciation of the importance of dietary treatment of disease.
b. Utilize teaching aids as case studies, animal experiments, and term papers.

The dietary department of an institution is only one unit within the hospital and as in any business the department must maintain policies and practices that coincide with those of the administration.

Efficient organization of employees prevents overlapping and misunderstanding of duties. A graphic representation of the various departments and employees in relation to the management of the institution is probably the most effective means for clear understanding on the part of all concerned.

The dietary department involves a large proportion of the expenditures of an institution and it is therefore necessary to have systematic financial management. This department should be put on a definite budgetary allotment with a clear understanding of the standards to be maintained. In turn the head of the dietary department must work out a careful budget. There are five important fundamentals in the successful planning and executing of a budget.

1. Determine the total expenditures within the department from past records for a definite period.
2. Study carefully the probable and desirable future developments.
3. Underestimate rather than overestimate probable incomes.
4. Adopt methods for periodic checking.
5. Secure cooperation of all parties concerned in the execution of plan. (5:p. 331).

The fundamental objectives of the dietary department is first the selection, preparation and serving of normal diets to patients, and the careful planning of therapeutic diets in close cooperation with the medical staff and clinical laboratory. A high quality of food must be prepared and served to the staff, nurses, and employees in order to help maintain high morale and maximum cooperative results.

The major purchasing problems of food in a hospital are similar to those of other institutions and the dietitian must be scientifically trained to administer the apportionment allowed for raw food. In the moderate sized institutions the dietitian should be assigned the responsibility for purchase of all foods.

The dietitian must establish and maintain a definite system of records which are readily accessable for reference so as to eliminate dependence on memory and the services of one individual.

Personnel management includes employment, training and organizing of employees, safeguarding their health through the control of working conditions.

The dietitian orginally entered the hospital as a teacher of nurses

and this work continues to be one of her important duties. The field of dietetics is developing rapidly and in order to equip the nurses with a broad background it is essential to have a person well trained in the scientific and practical aspects of the work.

With all these important services to be preformed it is hard to understand how any standard hospital can hope to operate successfully without the services of a trained dietitian. The output of home economics graduates from standard colleges is constantly increasing and there are now 65 hospitals approved by the American Dietetics Association for the post graduate training of dietitians so that an ample supply of qualified women is assured. Discrimination in the selection of a dietitian is urged as this profession has suffered in the past by the mistakes of workers poorly equipped with the necessary personal qualifications, training or experience for this highly complicated and exacting service.

SUMMARY

Available records indicate that the first hospital dietitian was employed in 1893, but it is only within the last few years that the position of dietitian has been considered as an essential part of a well organized hospital staff. This study was made with the hope of suggesting some practical means by which more Montana hospitals could command trained dietary service. It consists of three major parts: (1) a survey of a group of hospitals representative of the country as a whole, (2) the securing of data from 8 Montana hospitals through personal visits, and (3) a standardization of the dietary procedure at the Bozeman Deaconess Hospital. In this survey blanks were sent to a total of 145 institutions and the replies were received as follows: 25 from hospitals approved by the American Dietetic Association; 21 from Montana hospitals and 5 from hospitals in the State of Washington. The 8 Montana hospitals visited represented three general types of institutions:-general, mental and tubercular and three types of management:-church, State and Federal. The Bozeman Deaconess Hospital was used as the laboratory for testing and applying various plans.

Some of the results of the questionnaire and personal visits follow. The range in bed capacity for the Montana institutions is 41 to 1,350. The average ratio of patient to total personnel for all institutions studied is 1:1.29 and in Montana the ratio of patient to personnel is 1:1.19.

Very little variation was evident in the occurrence of dietary diseases in the three groups of hospitals. The data from the Montana hospitals showed the frequent occurrence of 14 diseases including: arthritis, arterial hypertension, diabetes, fevers, gall bladder, jaundice, nephrosis,

nephritis, obesity, pernicious and simple anemia, protein sensitization, eczema and ulcer. For each of these diseases a suggestive dietary procedure was outlined.

A lack of dietary records was prevalent in Montana hospitals as might be expected due to the few trained dietitians (in 14% of the hospitals.) Sixty per cent of all forms obtained from the 51 reporting hospitals came from the larger institutions which had definitely organized dietary departments.

Fifty-five per cent of the reporting hospitals used the combination method of food service, and the average time reported for serving of cooked food to patients was 27 minutes for all hospitals. Six of the 8 Montana hospitals visited used the combination method of food service, and the average time was 29 minutes. At the institutions visited the tray equipment in general hospitals was superior in quality and appearance to that in the State and Federal hospitals.

In 52% of the American Dietetic Association hospitals the dietitian purchased the food and in the remaining 48% she cooperated with the purchasing agent. This last group consisted of large institutions with well equipped purchasing departments. In 45% of the 21 Montana hospitals the superintendents purchased the food. Of the 11 Montana hospitals that had dietitians 4 did not have the dietitian purchase the food, however in 2 of these the dietitians were self-trained and in the other 2 institutions central purchasing systems carried on this function.

For the 19 hospitals reporting the range in the per capita cost of raw food for February, 1933, was $0.18 to $0.60 and the average cost was

$0.342. The range in price per capita for the 8 Montana institutions visited was $0.113 to $0.50 and the average was $0.30. The dietary departments in 45% of all the reporting hospitals are operated on a definite budget; 74% of the above number consist of hospitals approved by the American Dietetic Association, 21% Montana hospitals and 4% Washington.

Ninety-six per cent of the American Dietetic Association hospitals took a periodic inventory of their food and equipment supplies. Seventy-nine per cent of the Montana hospitals have food inventories and 73% equipment inventories taken at definite periods. Perpetual inventories are kept by 13% of the American Dietetic Association Hospitals and 6% of the Montana hospitals as a daily check on expenditures and budgetary allowance.

No study was made of the dietary standards of the hospitals except for the 8 which were visited. These were checked by a dietary score and the ratings ranged from 57 to 77 on a scale of 100.

Of the 51 reporting hospitals 51% offered courses for training student dietitians and 97% of these were accredited by the American Dietetic Association. No hospital in Montana is on the accredited list.

There are 13 nurses training schools in Montana or .07% of the total for the country as a whole. The average number of student nurses for the 13 training schools of Montana is 37.4.

In Montana there are 11 dietitians and of this number 2 are "self-trained." At the 8 institutions visited there were dietitians at the Federal and 3 general hospitals, but none at the State hospitals.

Bozeman Deaconess Hospital:

The data obtained from the questionnaires and personal visits aided

in organizing the dietary department of the local hospital.

An outline of the organization of the dietary department with a statement of duties and relationships of the dietitian, diet nurse and employees was made.

Report blanks considered necessary were prepared and utilized at the local hospital including the following: diet orders, quantitive diet orders, nourishment blanks, dietary case studies, patient count, perpetual inventory, monthly inventory of staples and monthly inventory of equipment.

Starting in January, 1934, the dietary department of the Bozeman Deaconess Hospital was placed on a budget and allowed $0.40 per capita per day for raw food, overhead expenses, and wages within the department.

Foods and dietotheraphy instruction for student nurses was given at the local hospital according to standard outlines. A laboratory was equipped and teaching devices utilized which included dietary case studies and animal feeding experiments.

CONCLUSIONS

The dietary department constitutes one of the vital functions of a hospital along with the administrative, medical, educational and personnel phases, and its contribution to the main purpose of the institution, namely restoration of health, should be considered over and above the financial aspects. However, these are not opposing concepts as trained management even in a small hospital can many times improve dietaries and at the same time reduce costs. The services of a general hospital dietitian include the responsibility for:

1. Administration and general management of food service to patients and personnel.
2. Cost accounting within dietary department.
3. Instruction of patients in the principles of general nutrition and special diets.
4. Teaching of student nurses in dietetics and special dietary procedures.

Attractive well balanced meals are of vital importance to patients and in the institutions visited the managers of hospitals, where patronage is more or less voluntary, were especially conscious of the need of trained dietary management. The present oversupply of home economics trained women makes this quite a favorable time for hospitals to secure such services.

The initial cost appears to be the chief objection that superintendents have against trained dietitians. One solution in aiding the small hospital may be the employment of a dietitian capable of assuming other

necessary functions in the institution. Combinations may be with the work of housekeeper, laboratory technician or recorder, historian or matron. Another solution is part time service. Two or more hospitals may cooperate in the employment of one dietitian to divide her time according to a carefully prearranged plan. Still a more progressive arrangement is for the hospital to develop new sources of revenue through additional services of the dietitian: (1) By the establishment of an out patient dietetic clinic, (2) conducting a special diet table service for non-resident patients, and (3) transient service to friends and relatives of patients.

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INFORMATION ON FOOD PROCEDURE OF A SELECTED GROUP OF HOSPITALS.
(Return to Miss Florence Lloyd, Deaconess Hospital, Bozeman, Mont.)

GENERAL ORGANIZATION

I. Size of Hospital.
   a. Name of Hospital_____Location_____
   b. No. of beds_____
   c. Average No. of patients per day_____
   d. Personnel including:
      No. of student nurses training_____
      Hospital staff_____
      Dietitians_____Student Dietitians_____
      Employees_____

II. Special Diets: (Following is a list of diseases or conditions requiring a special diet. Kindly check below their approximate frequency in your hospital.)

Disease	Common	Frequently	Infrequently	Rarely	None
Achylia					
Arterial hypertension					
Arthritis					
Beriberi					
Cancer of the Stomach					
Diabetes Mellitus					
Epilepsy					
Fevers: Diphtheria					
Influenza					
Malaria					
Pneumonia					
Scarlet					
Smallpox					
Typhoid					
Typhus					
Yellow					
Gall Bladder Infection					
Gastritis					
Gout					
Jaundice					
Leanness					
Migraine					
Nephreosis					
Nephritis					
Neuritis					
Obesity					
Osteomalacia					
Pellagra					
Pernicious Anemia					
Simple Anemia					
Protein Sensitization					
Other types of Eczema					
Rickets					
Scurvy					
Ulcer					

III. Printed forms used by Hospital:
(If available, will you kindly send me samples of the following forms.)
1. Dietary sheets and instruction helps for patients.
2. Forms for record of patients on special diet.
3. Requisition blanks for supplies used by department.
4. Stock cards and inventory sheets for food and kitchen equipment.
5. Record forms for cost control of food equipment, etc.
6. Forms for records of meals served.
7. Application blanks for student dietitians.

IV. Food Distribution:
1. a. Does food come from a central food kitchen directly to patients?___
b. Is all food prepared in a central kitchen then sent to diet kitchens to be served from there?_____
c. Does part of food come from central kitchen and some prepared in diet kitchen?_____
2. If food is distributed from a central kitchen in large quantities what means are used to bring the food to various diet kitchens?_____
3. After food leaves the kitchen what is the average time it takes to get all trays to patients?_____
4. Are the trays carried to patients by: Nurses?_____; maids?_____ orderlies?_____
5. Do student nurses receive actual experience in preparation of therapeutic diets?_____If so, for how long?_____Do student nurses assist in the preparation and serving of general or routine trays? _____If so, for how long?_____
6. To insure accuracy of diet and service the trays are checked by: dietitian_____; head nurse_____; student nurse in charge_____; other person_____.
7. The difference made between food served to private patients and those in the wards is: great_____; little_____; slight_____; none____.
8. Indicate in the following table if there is a difference in pattern or quality in china, glassware and silver for the specified groups and tell which groups have the same china, glassware and silver.
Note: (1) If several patterns or qualities are used, for the sake of convenience number them 1, 2, 3, and insert in table which group or groups have the same.
e.g. Doctors and Nurses_____1
Ward patients and employees_____2
Private patients_____3

Group	China	Glassware	Silver
1. Doctors			
2. Nurses			
3. Employees			
4. Private Patients			
5. Ward Patients			

Linen used in Hospital:-(please check)

	Tray Cover or Table Linen				Napkins			
	None	Paper	Cotton	Linen	None	Paper	Cotton	Linen
Doctors								
Nurses								
Employees								
Private Patients								
Ward Patients								

V. Cost control of foods:

1. The purchase of supplies is made by: Dietitian_____; business manager_____; Hospital superintendent____; chef____; others____.
2. Please check in following table the source where most of food is oftained.

Type of food	Wholesale market	Retail Merchant	Producer	Peddler	Packing house Companies	Other Sources
Staples						
Fresh fruit & vegetables						
Meat						

3. Do you make your own pastries?_____; bread?_____; ice cream?_____.
4. How many cooks are employed?_____.
5. Is the per capita cost of food service calculated?_____. If so, what is the average amount spent per capita per unit of time used in your hospital for:

	Daily	Weekly	Monthly
Raw Food			
Salaries charged to food service			
Wages charged to food service			
Overhead expense (rent, heat, light, power)			
Equipment (repair and replacement)			
Reserves for equipment (replacement)			

6. On the basis of how many patients, staff and employees were these figures made?_____
7. Does the dietary department operate on a budget allowed by the hospital administration?_____
8. How often is a food inventory taken: daily?_____; weekly?_____; monthly?_____; quarterly?_____; mid-year?_____; yearly?_____; none?_____.

9. How often is an equipment inventory taken: weekly?_____; monthly?_____; quarterly?_____; mid-year?_____; yearly?_____; none?_____.

VI. Student Dietitian.

1. What are the qualifications required for admittance to training as a student dietitian?

2. Term of service for student dietitian is_____months.

3. Do you have a definitely outlined course of training?_____. If so, and if outlines are available, will you kindly send one?___.

4. Is opportunity provided for student dietitian to assume managerial responsibilities in: marketing?_____; management of personnel?_____; food costs and records?_____.

5. Are they granted a certificate or diploma upon completion of course?_____.

6. Do you have an organized plan for assisting in the placement of graduates on completion of their course?_____.

DESCRIPTIVE REPORTS OF EIGHT MONTANA HOSPITALS VISITED.

Kennedy Deaconess Hospital
Havre, Montana
Data as of June 12-17, 1933

I. Type.
- A. General hospital.
- B. Deaconess institution.

II. Physical plant.
- A. Built in September 15, 1926.
- B. Cost of construction was $135,000.
  - 1. Brick building.
  - 2. Three stories.
  - 3. Good condition.
- C. Maximum bed capacity is 53.

III. General organization.
- A. Average total of persons fed is 55.
- B. There are five full-time employees for the dietary department.
  - 1. Two cooks on equal basis.
- C. A trained dietitian is employed for six weeks to teach student nurses.

IV. Management of the dietary department.
- A. The hospital superintendent plans the menus.
- B. Two cooks have charge of the meal preparation, and service of food and are directly responsible to the superintendent.
- C. Buying.
  - 1. Cooks send daily supply sheet to superintendent to order.
  - 2. Superintendent orders all staples on a two-weeks basis.
  - 3. Patronizes city wholesalers and retailers.
  - 4. Cream, milk, eggs and meats are obtained from farmers on bills.
- D. Records.
  - 1. Food costs managed in the main office as a subsidiary item.
  - 2. No other records for the dietary department are kept.
  - 3. Only family-sized recipes available.

V. Equipment.
- A. Main kitchen.
  - 1. The refrigerator was in the main kitchen and is cooled by means of ice.
  - 2. Storage space was not convenieht to the outside entrance or adequate.
  - 3. Institutional equipment.
    - a. Potato peeler.
    - b. Large gas range.
    - c. Table on rollers.

d. Can opener.
e. Utensil rack.
4. Hand-operated dumb waiter.

B. Diet kitchens (2).
1. Adequately equipped with gas stove, electric refrigeration and cupboard space.
2. Good quality china and glass sherbets were used.
3. Nickel-plated service used on trays for private-room patients.

C. Dining rooms.
1. Staff and nurses.
a. Attractively furnished and arranged.
1. Radio and piano in the dining room.
b. Small tables of four.
c. Cotton tablecloths and napkins.
d. China of a heavy ware.
e. Nickel-plated silver.
2. Employees.
a. Very plain.
b. Common table for men and women.

VI. Service of food.
A. Patients.
1. All food was prepared in main kitchen and sent by the dumb waiter to the two diet kitchens.
2. A nurse from the floor was sent to the diet kitchen to set up trays.
3. Floor supervisors serve the food and were responsible for the patients' tray service.

B. Appearance of trays.
1. Attractive with good quality dishes, glassware and silver.
2. Each tray was marked with name on napkin holder.

VII. Outstanding features.
A. Attractive dining room.
B. Cleanliness of kitchen.
C. A trained dietitian was added to the staff August 1, 1933.

VIII. Recommendations.
A. Dietary.
1. More help was used than needed due to overlapping of duties and low efficiency which was partly accounted for by the fact that over half of the employees were working out bills.
2. Improvement in diet since the dietary score was 57.5.
a. More fresh fruits and vegetables.
b. More milk.
c. More whole grain cereals.
3. Greater variation in daily menus and methods of preparation.
4. Avoid frequent serving of foods not liked by the group.

A Week's Menu Served at the Kennedy Deaconess Hospital
Havre, Montana.

Breakfast:	Dinner:	Supper:
	Monday	
Prunes	Roast Beef	Beef Broth
Toast	M. Potatoes	Macaroni and Tomatoes
Oatmeal	Gravy	Cake
Coffee	M. Carrots	Tea
	Bread Pudding	
	Tuesday	
Apricots	Beef Steak	Vegetable Soup
Hot Cakes	M. Potatoes	Hash
Syrup	String Beans	Cookies
Cream of the West	Chocolate Pie	Lemonade
	Wednesday	
Figs	Meat Pie	Cream Soup
Toast	M. Potatoes	Potato Balls
Oatmeal	Diced Turnips	Carrots, beans or turnips
Coffee	Jello with whipped cream	Cup cakes--tea
	Thursday	
Prunes	Pork Chops	Beef Broth
Toast	Fried Potatoes	Hash
Cream of Wheat	Rutabagas	Sliced Peaches
Coffee	Rice Pudding	Tea
	Friday	
Oranges	Fresh Salmon	Escalloped Corn
Hot Cakes	Stewed Tomatoes	Buttered Rice
Jelly	M. Potatoes	Bread and Jelly
Farina	Cottage Pudding with Lemon Sauce	Tea
Coffee		
	Saturday	
Apricots	Steak	Broth
Toast	M. Potatoes	Baked beans
Farina	Cr. Cabbage	Brown Bread
Coffee	Chocolate Pudding	Tea
	Sunday	
Raspberries	Ham	Cream Soup
Toast	Lima Beans	Potato Balls
Cream of Wheat	M. Potatoes	Ice Cream
Coffee	Vegetable Salad	
	Ice Cream	

Sacred Heart Hospital
Havre, Montana
Data as of June 19-24, 1933.

I. Type.
- A. General hospital.
- B. Catholic institution.
- C. Managed by Sisters of St. Joseph.
  - 1. Order founded in Italy.
  - 2. American headquarters in Albany, New York.

II. Physical plant.
- A. Founded in 1911.
  - 1. Outgrew the former building and in March, 1931, a new hospital was constructed.
  - 2. The old building now used for the nurses' home.
- B. Cost of construction for the new building was $250,000.
  - 1. Red brick building.
  - 2. Three stories.
  - 3. Well cared for.
- C. Maximum bed capacity is 75.

III. General Organization.
- A. Average total of persons fed is 106.
- B. One trained dietitian.
- C. One supervisor of main kitchen.
- D. Five full-time employees in dietary department.
- E. Two college students work part time for nine months.

IV. Management of the dietary department.
- A. The meals for personnel and routine patients are planned by the kitchen supervisor.
- B. Kitchen supervisor aids the cook in the preparation of food and has one cook.
- C. The dietitian plans menus for patients on special diets.
  - 1. As much food as possible is taken from the house menu and the diet nurse prepares all other foods.
  - 2. Dietitian teaches foods and dietetics to student nurses.
- D. Buying.
  - 1. The kitchen supervisor sends a requisition to the superintendent for the quantity of food needed for a period of six months.
  - 2. Daily orders of fresh fruits and vegetables were ordered by the kitchen supervisor.
  - 3. Milk and meat were obtained from farmers in payment of bills.
  - 4. The institution raises its own chickens and most of its vegetables.
  - 5. Only Catholic firms were patronized.

E. Records.
1. Food costs were managed in the main office.
2. The dietitian assumes the responsibility for the following records.
a. Institutional recipes.
b. Daily menus given patients.
c. Suggestive outlines for quantitative and qualitative diets.
3. No records for requisitions, daily or monthly food inventories, equipment inventories, diet orders, quantitative diet orders, meal census, or dietary case studies.

V. Equipment.
A. Main kitchen.
1. Very fine system of refrigeration.
2. Adequate cupboard space.
3. Storage space convenient for deliveries.
4. Institutional pieces of equipment.
a. Small food mixer.
b. Electric lift.
c. Three sinks.
d. Ice cream cave.
B. Diet kitchen.
1. Adequate cupboard space.
2. Electric refrigerator and gas stove.
3. Tray equipment and service is managed in the main kitchen.

C. Dining rooms.
1. There were seven dining rooms.
a. Priests.
b. Sisters.
c. Doctors.
d. Nurses.
e. Graduate nurses.
f. Men employees.
g. Women employees.
2. Priests' and Sisters' dining rooms were not opened for observation.
3. Doctors.
a. Used for dinners at monthly staff meetings.
b. Attractively arranged with period furniture.
c. Haviland china and fine glassware.
d. Good quality linen.
4. Nurses.
a. Small tables for four with composition tops.
b. Paper napkins.
c. Dishes were of medium quality and of an interesting pattern.
d. Attractive color scheme carried out in yellow, brown, orange and green.

VI. Service of food.
A. Patients.

1. All food was prepared and served in the main kitchen.
2. Trays were set up by maids.
3. The supervisor in charge of the kitchen checks the routine trays.
4. Food for patients on special diets was served by diet nurse under the supervision of the dietitian.
5. An electrically operated lift was used to send trays to diet kitchens.
6. Floor nurses serve the trays promptly on arrival in diet kitchens.

B. Appearance of trays.
1. Attractive.
2. Colored tray cloths are used.
3. All trays were marked with patient's name.

C. Sisters.
1. Family style of service.
2. Dishes were washed and put back on tables.

D. Nurses.
1. Plate service.
2. Each nurse washed her own dishes and put them away in cupboards in a serving pantry off dining room. (This work done by student help for nine months of college year.)

VII. Outstanding features.
A. Well planned kitchen as to:
1. Cupboard space.
2. Sink.
3. Refrigeration.
4. Ventilation.

B. Equipment was well cared for.

VIII. Recommendations.
A. Allow dietitian to plan menus for the entire house.
B. Dietitian should call on patients rather than obtaining their desires from the head nurse.
C. Improve house diet since present dietary score was 66.8.
1. More milk.
2. Leafy vegetables and raw fruit should be included.

D. Food cost control should be installed in the dietary department.
E. Employees with experience would reduce total number in the dietary department and increase the efficiency.

Menus for Sacred Heart.
First two weeks in June.

Breakfast:	Dinner:	Supper:
	Monday	
Fruit	Soup-crackers	Soup-crackers
Cereal	Roast Veal	Baked potatoes
Toast	Potatoes-gravy	Stewed tomatoes
Coffee--cocoa	Bread and butter	Bread and butter
	Fruit Jello	Pears
	Tea--milk	Tea--milk
	Tuesday	
Fruit	Soup-crackers	Soup-crackers
Cereal	R. Beef	B. potatoes
Toast	M. potatoes	Poached eggs
Eggs	Creamed celery	Bread and butter
Coffee--cocoa	Bread and butter	Fruit sauce
	Baked custard	Tea--milk
	Tea--milk	
	Wednesday	
Stewed peaches	Soup-crackers	Soup-crackers
Cornmeal	Roast Veal	Baked potatoes
Toast	Potatoes-gravy	Cottage cheese
Bismarks	Fresh spinach	Fruit
Coffee--cocoa	Baked custard	Bread and butter
		Tea--milk
	Thursday	
Stewed Apricots	Soup-crackers	Soup-crackers
Oatmeal	R. Veal	Cr. potatoes
Toast	M. potatoes-gravy	Bread and butter
Coffee	Cr. Asparagus	Cherries or
	Bread and butter	Rhubarb
	Rice pudding	Tea--milk
	Tea--milk	
	Friday	
Stewed Prunes	Vegetable soup	Soup-crackers
Cr. of wheat	Halibut steak	B. potatoes
Toast	M. Potatoes	Lettuce--
Doughnuts	Buttered peas	dressing
Coffee--cocoa	Bread and butter	Bread and butter
	Jello	Fruit sauce
	Tea	Tea--milk

	Saturday	
Rhubarb	Soup-crackers	Soup-crackers
Cereal	Steak	Creamed eggs
Toast	M. potatoes-gravy	Esc. potatoes
Bacon	Fresh spinach	Bread and butter
Coffee--cocoa	Bread and butter	Apricot sauce
	Banana Whip	Tea

Montana Deaconess Hospital.
Great Falls, Montana.
Data as of June 26 to July 1, 1933.

I. Type.
  A. General hospital.
  B. Deaconess institution.

II. Physical Plant.
  A. Built in 1902.
    1. Three wings have been added; the first in 1908, the second in 1917, and the third, the Spencer Memorial, in 1930.
    2. Red brick.
    3. Four stories.
    4. At present covers two blocks.
  B. Maximum bed capacity is 438.
  C. Cost of construction was $1,000,000.

III. General Organization.
  A. Average number of persons fed was 238.
  B. One trained dietitian.
    1. One student dietitian.
  C. Twelve full-time employees in the dietary department.
    1. One chef.
    2. One assistant chef.

IV. Management of the dietary department.
  A. The dietitian supervises the entire dietary department.
    1. Teaches foods and dietetics to student nurses.
    2. Responsible only to the superintendent.
  B. An assistant dietitian helps in the planning and preparation of the special diets and has the aid of two diet nurses.
  C. The chef and his assistant prepare all food except bread and ice cream and are responsible to the dietitian.
  D. Buying.
    1. Staples are purchased on a monthly basis by the dietitian.
    2. Fresh fruits and vegetables are ordered weekly.
    3. Local firms are patronized.
    4. Food was taken in on bills.
  E. Records.
    1. Monthly inventories of supplies.
    2. Price per capita was calculated monthly and sent to main office.
    3. Institutional recipes were available.
    4. Outlines of quantitive and qualitive diets were available for distribution to patients.
    5. Requisitions, perpetual inventory, monthly inventory of equipment, meal census and case studies were not on file.

V. Equipment.
A. Main kitchen.
1. Good quality institution equipment.
a. Potato peeler.
b. Food mixer.
c. Bread cutter.
d. Steam kettle.
e. Steam tables.
f. Electric carts.
g. Ice cream cave.
h. Salad table.
i. Electric orange reamer.
2. All surfaces are of monel metal.
3. Adequate refrigeration with ammonia process of cooling.
a. Four storage refrigerators with extra ones for chef and special diet kitchen.
B. Diet kitchens. (5)
1. Each kitchen has the same equipment.
a. Mechanical refrigeration.
b. Electric toasters.
c. Electric coffee urns.
d. Monel metal surfaces.
e. Adequate cupboard space.
f. Mayer china.
g. Silver, service for private patients consisting of soup bowl, sugar bowl, creamer, butter patty and dessert dish.
C. Dining room.
1. Staff, nurses, and clerical employees eat in the same dining room.
a. Pleasantly arranged room.
b. Tables seat 8 to 10.
c. Cotton for all table linen.
d. Dishes of heavy white china with two green lines.
2. Employees.
a. All employees eat in one dining room.
b. Separate tables for men and women.

VI. Service of Food.
A. Patients on routine diets.
1. All food was prepared in the main kitchen.
2. Food for routine patients was placed in electric carts and taken to the diet kitchen by elevators.
3. Daily menus were posted in each diet kitchen and maids set up the routine trays.
4. Trays were carried to patients by floor nurses.
B. Therapeutic diets.
1. Meals were planned from the house menus.
2. Substitutions were prepared by diet nurses under the supervision of the student dietitian.
3. Quantitive diets were weighed by one diet nurse.
4. Trays were sent to floors by an electric lift, buzzers were used to notify floor nurses the special trays were ready.

C. Appearance of trays.
   1. Good quality china used for all patient's trays.
   2. Each tray was marked with patient's name and diet.
   3. Food was served in an attractive manner with adequate portions.
   4. Flowers on all trays for the three meals a day during summer.

D. Nurses.
   1. Food was taken from the main kitchen to the serving room in an electric cart.
   2. Plate service--second portions available.
   3. Three waitresses serve tables.

VII. Outstanding features.

A. Evidence of trained dietary department.
   1. Special diets have an important place.
   2. Fairly well balanced menus.
   3. Organization effective.

VIII. Recommendations.

A. More fresh fruits and whole grain cereals needed for the hospital personnel.
   1. Higher nutritional standards as the dietary score was 73.5.

B. More efficient organization needed for attractive service in the dining room.

C. Patients need not know the daily menu.

D. Dietitian or assistants should contact patients more frequently.

Montana Deaconess Hospital
June 25--July 1, 1933.

Breakfast	Dinner	Supper
	Sunday	
Prunes	Roast pork	Plate:
Cracked wheat	Br. potato	Salmon salad
Toast	Peas	Potato chips
Scrambled eggs	Sweet relish	Sliced tomato
	Grapenut ice cream	Strawberry shortcake
	Monday	
Stewed raisins	Pot roast of beef	Creamed dried beef on toast
Toast	Mashed potato	Apple and celery salad
Shredded wheat	String beans	Jelly roll
Jam	Tapioca cream	
	Tuesday	
Rhubarb	Pork steak	Plate:
Pettijohn	Steamed potatoes	Potato salad
Toast	Boiled cabbage with bacon	Cold meat
Bacon	Fruit jello with whipped cream	2 olives
		Graham crax-apricot
	Wednesday	
Dried apricots	Braised beef	Plate:
Oatmeal	Noodles	Cheese sandwich
Toast	Buttered carrots with parsley	Hard boiled egg
Jam	Cherry pie	Slice tomato on lettuce
		Pear
	Thursday	
Prunes	Swiss steak	Vegetable soup with crax
Cornflakes	Mashed potato	Peanut butter
Toast	Wilted lettuce	Pineapple and cottage cheese salad
Bacon	Spice cake with icing	Cookies
	Friday	
Baked apple sauce	Sausage	Scrambled eggs
Farina	Br. potato	Creamed potatoes
Toast	Fr. buttered beets	Radishes and onion
Jam	Sherbet	Strawberries

Fresh fruit
Toast
Grapenuts
Jam

Saturday

Pork and kraut
Scalloped potato
Pear salad
Plain cornstarch pudding
with chocolate sauce
and nuts

Italian spaghetti
with meat
Lettuce salad
with 1000 island
dressing
Plum
Cooky

Veteran's Administrative Hospital
Fort Harrison, Montana.
Data as of July 5 to 10, 1933.

I. Type.
  A. Federal hospital for war veterans.
  B. Maintained by the government.

II. Physical plant.
  A. Established in 1921.
    1. New buildings have been added at various times and the cost of the entire hospital is $1,500,000.
    2. Buildings are of red brick.
    3. Well cared for.
    4. Most of the buildings were two stories high.
    5. Passages connect one building with the other.
  B. The administrative staff for the hospital live in nearby apartments.
  C. Maximum bed capacity is 438.

III. General organization.
  A. Average number of persons fed was 303.
  B. There were two dietitians.
    1. Administrative dietitian.
    2. Therapeutic dietitian.
  C. There were 33 employees in the dietary department.
  D. Department was divided into units (butcher shop, bakery, storeroom, vegetable preparation, desserts, meats, etc.)
    1. A trained person for each unit.

IV. Management of the dietary department.
  A. Administrative dietitian.
    1. Has charge of the dietary department.
    2. Manages the help.
    3. Plans meals for personnel.
    4. Has charge of dietary records.
    5. Directly responsible to superintendent.
  B. Therapeutic dietitian.
    1. Supervises the serving of food to routine and special patients.
    2. Plans special diets.
  C. Buying.
    1. Dietitian makes lists of staples needed.
    2. Storekeeper requisitions staples from Washington, D.C. for a period of three months.
    3. Fresh fruits, vegetables, dairy products, bread and meat were purchased by contracts through city firms.
    4. Good quality of staples were used.
  D. Records.
    1. Administrative dietitian.
      a. Figures price per capita from the total requisitions ob-

tained daily from the storekeeper.
b. Records total number of meals served daily.
c. Files daily menus.
d. Checks food requisitions.
e. Records daily efficiency of employees.
2. Storekeeper.
a. Manages food cost control.
b. Keeps a perpetual inventory of staples.
c. Records daily requisitions.
d. Expenditure vouchers of total food costs are sent to main office.
3. Neither quantitative diet orders, quantity reipes or case studies were on file.

V. Equipment.
A. Main kitchen.
1. Mechanical refrigeration with central units in the basement.
a. Small storage refrigerator in kitchen.
2. Working units were spread over a large territory and very little unity in the arrangement.
3. Institutional equipment.
a. Large electric range.
b. Power mixer.
c. Steamers.
d. Steam table.
e. Electric food carts.
f. Heavy aluminum utensils.
g. Mechanical dishwasher.
B. Diet kitchen.
1. Modern equipment with monel coverings in two diet kitchens and have:
a. Crescent dishwasher.
b. Fifteen-gallon coffee urn.
c. Electric stove.
d. Steam tables for heating dishes.
e. Electric refrigerator.
f. Heavy dishes stamped with government seal.
g. White wooden trays.
C. Dining rooms.
1. There are four dining rooms.
a. Administrative staff and graduate nurses.
1. Tables for four.
2. Attractive.
3. Mercerized linen.
4. China stamped with official seal.
b. Patients.
1. Eight to ten seated at one table.
2. Individual tables are arranged for patients on special diets.
3. Cotton tablecloths and paper napkins.
4. Dishes are of heavy white china.
c. Isolated dining room.
1. Tables of eight.
2. Same quality of linen and china as the above patients use.

d. Help's dining room.
    1. Tables for men and women.
    2. Plainly furnished.
    3. Heavy white china.
    4. Oil cloth for table coverings.

VI. Service of food.
A. Patients.
    1. All food was prepared in main kitchen.
    2. Food was taken in electrically-heated carts to diet kitchen.
    3. Menus were posted before each meal in the diet kitchen and maids follow the outline for the various diets.
    4. Trays were sent only to patients that cannot get out of bed.
    5. Small dining rooms off the diet kitchen for convalescent patients.
B. Appearance of trays.
    1. Unattractive.
    2. Heavy dishes.
    3. No tray cloths.
    4. Wooden trays painted white.
    5. Lack appeal.
C. Patients that were able to be up.
    1. A dining room was located off of the main kitchen.
    2. Tables were arranged for those on special diets.
    3. Family food service.
D. Staff and nurses.
    1. Plate service.
    2. Certain range in food selection for each meal.
    3. Two waitresses were in charge of the dining room.

VII. Outstanding features.
A. Evidence of trained staff of dietary department as to:
    1. Organization of work for employees.
    2. Excellent system of requisitioning supplies.
    3. Good dining room service for staff and nurses.

VIII. Recommendations.
A. Include more whole grain cereals, milk, and leafy vegetables as the dietary score was 77.
B. Patient's likes and dislikes should be considered.
C. Closer supervision in food service would eliminate waste in the patient's dining room.
D. Rearrangement of the kitchen is necessary to make it more compact and would eliminate retracing of steps.
E. Dietitian should be able to check food costs rather than the storekeeper.

Menus for Veterans' Administration.
July 5--10, 1933.

Breakfast	Dinner	Supper
	Wednesday	
Egg Plume	Cream Tomato soup	Spaghetti, tomatoes
Wheatena	Baked salmon--lemon	and cheese
Medium eggs.	Mashed potatoes	Lima beans
Toast	Stewed corn	Tunafish salad
Coffee, cocoa, milk	Bread and butter	Bread and butter
	Butterscotch pie	Cinnamon rolls
	with meringue	Pineapple
	Coffee, tea, milk	Coffee, tea, milk
	Thursday	
Canned grapefruit	Potato soup	Cold meats
Cream of wheat	Pot Roast Beef--gravy	Escalloped potatoes
Bacon	Buttered potatoes	Mashed rutabagas
Toast	Spinach	Bread and butter
Coffee, Tea, milk	Bread and butter	Italian prunes
	Cocoanut cream pudding	Coffee, tea, milk
	Coffee, tea, milk	
	Friday	
Orange halves	Vermicelli soup	Southern hash
Oatmeal	Baked ham	Baked potatoes
Scrambled eggs	Mashed potatoes	Simple salad
Toast	Stewed tomatoes	Bread and butter
Coffee, tea, milk	Ripe and green olives	Blackberries
	Graham Parker House	Coffee, tea, milk
	rolls,-butter	
	Pineapple sundae	
	Coffee, tea, milk	
	Saturday	
Stewed prunes	Okra soup	Hamburger
Cream of wheat	Roast beef--gravy	Buttered potatoes
Bacon	Browned potatoes	Asparagus-pimento
Toast	Buttered beets	salad
Coffee, tea, milk	Bread and butter	Bread and butter
	Rice and raisin	Apricots
	pudding	Coffee, tea, milk
	Coffee, tea, milk	

	Sunday	
Stewed apples	Vegetable soup	Pork chops--
Oatmeal	Roast veal--gravy	country gravy
Hot cakes--syrup	Mashed potatoes	Hash brown potatoes
Coffee, cocoa, milk	Peas in cream	Escalloped tomatoes
	Bread and butter	Bread and butter
	Fruit Jello with whip cream	Pears
	Coffee, tea, milk	Coffee, milk, tea
	Monday	
Loganberries	Navy bean soup	Meat pie with
Roman meal	Roast lamb--gravy	vegetables
Fried eggs	Paprika potatoes	Mashed potatoes
Toast	Carrots	Lettuce with French
Coffee, tea, milk	Preserves	dressing
	Bread and butter	Bread and butter
	Brown Betty--hard sauce	Pineapple
	Coffee, tea, milk	Coffee, tea, milk
	Tuesday	
Grapes	Barley soup	Frankfurters
Cornmeal	Roast pork-gravy	Creamed potatoes
Bacon	Whipped potatoes	Sauerkraut
Coffee, cocoa, milk	Succotash	Bread and butter
Toast	Apple butter	Peach-date-nut
	Bread and butter	salad
	Caramel custard	Coffee, tea, milk
	Coffee, tea, milk	

Montana State Hospital
Warm Springs, Montana.
Data as of July 10-17, 1933.

I. Type.
  A. Mental sanitorium.
  B. State institution supported by taxation.

II. Physical plant.
  A. Built in 1877.
  B. Valuation of physical plant for 1932 was $1,608,954.54.
  C. The buildings were constructed of various materials.
    1. The oldest buildings were of wooden structure.
    2. Brick was used for the newer buildings.
  D. The institution's capacity was approximately 1500.
  E. Attractive grounds plotted with lawns, trees, and flowers.

III. General organization.
  A. Average number of persons fed was 1825.
  B. Steward controls the management of the dietary department.
  C. There were five full time employees in the dietary department including one chef.
    1. Forty-five patient employees.

IV. Management in the dietary department.
  A. The steward has charge of all dietary employees and patients working in the department.
  B. Meals were planned by the steward for the patients on a 21 day basis.
  C. Meals for the attendants, nurses, and patient employees were planned by the chef in the main kitchen.
  D. Prepared food from the main kitchen was sent to the doctor's cottage where professional and clerical employees eat.
    1. Menus vary from employees' as more fresh fruits, vegetables and salads were included in the dietary.
  E. Buying.
    1. All staples were ordered through the state purchasing agent by the steward twice a year.
    2. Weekly supplies of fresh vegetables and fruits were ordered from the wholesalers in Anaconda and Butte.
    3. All meat, eggs, milk and poultry were raised on the institution farms.
  F. Records.
    1. The institution was operated on a budget.
    2. Perpetual inventory of staples was maintained.
    3. The total cost of food used was sent to the accountant the last day of each month.
    4. Monthly reports of balance was sent to the steward.

5. Price per capita was figured for maintenance on a monthly basis.
6. Past menus for patients were on file.
7. Institutional recipes were not available.
8. No monthly inventories of equipment, diet orders, quantitative diet orders, case studies, meal census, or institutional recipes are on file.

V. Equipment.
   A. Main kitchen.
      1. Electric range and broiler.
      2. Steam tables.
      3. 50 to 150 gallon steamers.
      4. Hobart mixer.
      5. Electric food chopper.
      6. Hand-run waiters.
      7. Electric refrigeration.
   B. Diet kitchen (one located in hospital building.)
      1. Adequately equipped.
         a. Electric stove.
         b. Electric refrigerator.
         c. Sufficient cupboard space.
         d. Heavy white dishes.
         e. Nickel-plated silver.
         f. Aluminum trays.
   C. Dining rooms.
      1. Patients are divided into sections or classes depending upon their mentality and each class has a dining room.
      2. Hospital dining room.
         a. Men and women were segregated and each have own dining room but the equipment is the same.
         b. Four sit at a table.
         c. Heavy white dishes.
         d. Knife, fork and spoons are used.
         e. Very clean.
      3. Appearance of trays.
         a. Trays were given only to those that cannot get up.
         b. Poorly equipped.
         c. Lack personal appeal.
         d. Same type of food as that given to working patients.
      4. Women's ward.
         a. Long tables with oil cloth coverings.
         b. Benches.
         c. Tin plates and cups.
         d. Spoons.
      5. Men's ward.
         a. Tables seating 6 to 8.
         b. Chairs.
         c. Heavy white dishes.

d. Knife, forks and spoons were used in all departments but one and only spoons were given to this group.

6. Patient employees.
   a. Men and women have separate dining rooms.
   b. Long tables.
   c. Chairs.
   d. Cotton table cloths and paper napkins.
   e. Heavy white dishes.
   f. Nickel-plated silver.
7. Attendants.
   a. Separate dining rooms for men and women.
   b. Eat in the same dining rooms as the patient employees after they have finished.
   c. Same quality of linen and equipment as used for patient employees.
8. Doctor's cottage.
   a. Attractively furnished.
   b. Individual tables for groups of different sizes.
   c. Cotton was used for table cloths and napkins.
   d. Dishes of heavy china with two green bands.
   e. Nickel-plated silver.

VI. Service of food.
   A. Patients.
      1. All food was prepared in the main kitchen by patient employees and sent to 7 buildings by means of an underground tunnel.
      2. Family style of service used in all dining rooms.
      3. Patient employees act as waiters and waitresses.
   B. Employees.
      1. Foods were prepared in the main kitchen by the chef.
      2. Women patients acts as waitresses.
      3. Family style.
      4. Right-hand service.
   C. Doctor's cottage.
      1. Food was prepared by chef and sent to the cottage kitchen.
      2. Additional dishes were prepared by the cottage cook.
      3. Family style of service.

VII. Outstanding features.
   A. Modern dairy.
      1. Patients had sufficient milk.
   B. Well equipped butcher shop.
   C. Cleanliness.

VIII. Recommendations.
   A. Dietary.
      1. Trained dietitian who would have time and ability to raise dietary score which was 56.5 for patients and 70 for employees.
      2. Include more vegetables and less starch.

3. More eggs should be included in diet rather than so much meat.
4. More equal distribution of food between the different classes of patients.
5. More adequate diet for unemployed patients.

B. Management.

1. Closer supervision in main kitchen would eliminate much waste.
2. Rigid rules needed for requisitioning supplies.
3. Higher grade of staples would eliminate a great deal of table waste.
4. Potato peeler would reduce waste.

Menus for Montana State Hospital
July 10-17, 1933

Breakfast	Dinner	Supper
	Monday	
Stewed raisins Cream of wheat Bacon Fried potatoes Wheat cakes Syrup Coffee	Vegetable soup Roast pork Apple sauce Potatoes Spinach Apple pie	Pork chops Gravy Potatoes Creamed peas Biscuits Onions Apricots Cookies
	Tuesday	
Stewed prunes Oatmeal Sausage Toast Fried potatoes	Macaroni soup Roast beef Brown gravy Steamed potatoes Pork and beans Bread and raisin pudding	Club steak Gravy Potatoes Stewed tomatoes Radishes Biscuits Plums Cookies
	Wednesday	
Stewed prunes Cornmeal mush Sausages Fried potatoes Wheat cakes Syrup Coffee	Navy bean soup Spare ribs Lima beans Potatoes Sliced tomatoes Blueberry pie	Pork chops Gravy Potatoes String beans Sliced onions Blackberries Suet cake
	Thursday	
Stewed prunes Oatmeal Toast Fried potatoes Coffee	Tomato rice soup Potatoes Stewed tomatoes Head lettuce French dressing Roast beef Gravy Rice pudding	Lamb chops Potatoes Gravy Peas French twists Green onions Pears Chocolate cake
	Friday	
Stewed pears Cream of wheat Fried ham Fried potatoes Wheat ckaes Syrup Coffee	Clam chowder Roast mutton M. potatoes Gravy Rhubarb pie	Veal steak gravy Potatoes Peas Sliced pineapple Cookies

Stewed raisins
Oatmeal
Bacon
Fried potatoes
Toast
Coffee

Saturday

Rice tomato soup
Roast beef
Gravy
Potatoes
Peas
Bread and raisin pudding

Club steak
Fried potatoes
Green onions
Fruit slices
Pineapple rice

Stewed peaches
Rice krispies
Fried ham and eggs
Toast
Fried potatoes
Coffee

Sunday

Roast pork
Apple sauce
Mashed potatoes
Shrimp salad
Cream corn
Head lettuce
Jello with whipped cream

Cold meats
Potato salad
Green onions
Sliced tomatoes
Sweet bread
Pineapple ice cream
Cookies

Montana State Tuberculosis Sanitarium
Galen, Montana
Data as of July 17-22, 1933

I. Type
- A. Tuberculosis sanitarium
- B. State institution supported by taxation
- C. Cares for men, women, and children

II. Physical plant
- A. Built in 1913
- B. Four large buildings for patients of wooden and brick structure
  - 1. The recent ones are of brick
- C. Cost of construction was $219,848
- D. Maximum bed capacity was 145

III. General organization
- A. One steward
- B. One chef and assistant
- C. There were 12 employees in the dietary department
- D. Total number of people fed per day was 201

IV. Management in the dietary department
- A. Chef was in charge of food preparation and service
  - 1. Plans the menus
  - 2. Supervises the main kitchen
  - 3. Directly responsible to the superintendent
- B. Buying
  - 1. All staples and supplies were ordered through the state purchasing agent
  - 2. The storerooms were managed by a steward
- C. Records
  - 1. Food and supplies were requisitioned
  - 2. Weekly menus were kept
  - 3. Food accounts were figured monthly in the main office
  - 4. The price per capita was figured at the close of the year by the bookkeeper
  - 5. Inventories of the storerooms were taken twice a year before the requisitions were sent to the state purchasing agent
  - 6. Records
    - a. No forms for records; biennially inventories were recorded in ledger with only number listed
    - b. Requisitions were made on blank pieces and were not recorded by the steward
    - c. Patient days were filled in the main office
    - d. A summary sheet of food expenses was made at the end of the year
    - e. No records or files of quantitative diet orders, case studies, diet orders or quantity receipes

V. Equipment
  A. Main kitchen
    1. Institution equipment used for quantity cookery
      a. Institutional gas range
      b. Steamer
      c. Food mixer
      d. Meat grinder
      e. Slicer
      f. Urns
      g. Pot sink
      h. Potato peeler
  B. Diet kitchens (3)
    1. Rinsing machines were constructed so that each dish was thoroughly scalded
    2. Electric refrigeration
    3. Adequate cupboard space
    4. Heavy vitrified china
      a. Mugs used for cups
      b. Sugar dispensers
      c. Icy hot containers used for beverages
    5. Aluminum trays were used for women and white enamel at the men's cottages
    6. Paper tray cloths were used on the aluminum trays but not on the white enamel ones
  C. There are four dining rooms
    1. Patients
      a. Tables seating 8 to 10
      b. Heavy white dishes
      c. Nickel-plated silver
      d. Light and pleasantly arranged
    2. Doctors
      a. Small dining room
      b. Family dining table
      c. Used by only one doctor and his guests
      d. Cotton for all table linen
    3. Nurses
      a. Tables seating 6 to 8
      b. Various patterns of dishes
      c. Cotton for table linen
    4. Employees
      a. Long tables
      b. Separate tables for men and women
      c. Housekeeper acts as hostess in this dining room

VI. Service of food
  A. Patients
    1. All food was prepared in the main kitchen and sent to the diet kitchens by means of hot water carts
    2. Trays were served by maids under the supervision of the person in charge of the building
    3. Patients that live in cottages go the main dining room when they were able to do so, but when resting their trays were served from the main kitchen

B. Appearance of trays
   1. Trays that were taken to the cottages were poorly equipped
      a. Little effort was made to keep food hot
      b. Large servings were given to the men
   2. Trays that were given to the women at the pavillion are more attractive in that they have paper tray cloths, pitchers for cream, and nickel containers for the beverage

C. Doctors, Nurses, Employees
   1. Food was served "family style"
   2. One waitress cares for the doctors and nurses, and one has charge of the dining room for employees

VII. Outstanding features
   A. An efficient method of checking out supplies
   B. An adequate supply of milk given to all patients

VIII. Recommendations
   A. A trained person that can plan well balanced, varied menus for patients well as for personnel should be employed in such an institution; she would help to do the following things:
      1. Eliminate food waste in preparation and from the tables
      2. Give more variety to the daily dietary
      3. Provide a better balanced diet and allow for more
         a. Fruits and vegetables
         b. Whole grain cereals
      4. Raise dietary score for it was 71.4
   B. Electrically heated carts would aid in transporting hot food from one building to the other

Menus for Montana Tuberculosis Sanitarium
July 17-24, 1935

Breakfast	Dinner	Supper
Sunday		
Cantaloupe Rolled oats Bacon and eggs Toast Coffee	Roast veal Dressing Mashed potatoes String beans Sliced tomatoes Ice cream	Pea soup Assored cold meats Bread and butter Dill pickles Strawberry sauce
Monday		
Stewed peaches Rolled oats Hot cakes Syrup Coffee	Vegetable soup Hominy Hot gingerbread Tea	Roast beef Boiled potatoes Stewed tomatoes Cherries
Tuesday		
Stewed figs Cornmeal mush Fried eggs Toast Coffee	Navy bean soup Spinach with hard cooked eggs Rice pudding	Roast pork Gravy Boiled potatoes Cream corn Apple sauce
Wednesday		
Fresh fruit Wheat hearts Bacon and eggs Toast Coffee	Tomato soup Cold meats Potato salad Bread and butter Sago pudding	Corned beef and cabbage Boiled potatoes Hot rolls Apricot whip
Thursday		
Stewed pears Steel cut oats Scrambled eggs Toast Coffee	Split pea soup Buttered rice Cocoanut pudding	Roast mutton Gravy Boiled potatoes Creamed carrots Blackberry pie
Friday		
Stewed apricots Wheat hears Boiled eggs Toast Coffee	Oyster soup Macaroni and tomatoes Cabinet pudding	Boiled salmon Egg sauce Pickled beets Boiled potatoes Fruit salad

Billings Deaconess Hospital
Billings, Montana
Data as of July 24-31, 1933

I. Type
- A. General hospital
- B. Deaconess institution

II. Physical plant
- A. Built in 1927
- B. Cost of construction $350,000
- C. Building was of red brick
  - 1. Engineering plan was in small building back of the hospital and built of the same material
- D. Maximum bed capacity is 50
  - 1. Rooms were small
- E. Undergraduate nurses do not live in the hospital, but have a home one block away
  - 1. Graduate nurses live on the third floor of hospital
- F. Yard was well cared for with lawn, flowers, and trees

III. General organization
- A. A trained dietitian was employed for six weeks to teach student nurses dietetics
- B. Housekeeper supervises the kitchen and storerooms
- C. Five employees in the dietary department
- D. Total average of persons fed is 69

IV. Management of the dietary department
- A. Superintendent of hospital has complete charge of the dietary department
  - 1. Menus were planned by the superintendent and housekeeper
  - 2. Food was requisitioned in the morning through the housekeeper
  - 3. Two cooks have charge of food preparation
- B. Buying
  - 1. Staples were ordered on a monthly basis
  - 2. High quality of food purchased
  - 3. Meat, eggs, cream and milk were taken in on bills
- C. Records
  - 1. Food costs were controlled by the superintendent
  - 2. No requisitions were used
  - 3. A running monthly inventory of staples was made but no blanks are used
  - 4. Weekly inventory of dishes
  - 5. Department was not operated on a budget

V. Equipment
- A. Main kitchen
  - 1. Electric refrigeration

a. Cabinet for freezing ice block
2. Kitchen was small but efficiently planned
3. Institutional equipment includes
   a. Gas range
   b. Griddle
   c. Coffee urn
   d. Small mixer
   e. Potato peeler
   f. Adequate sink space

B. Diet kitchens
   1. Each diet kitchen was equipped with
      a. Electric refrigerator
      b. Gas stove
      c. Hot water steam table
   2. Good quality of porcelain dishes for all trays
   3. Fine linen crash for tray cloths
   4. Napkins of cotton for ward patients and line for private patients
   5. One set of silver service was purchased monthly to replace china

C. Attractively arranged dining room
   1. Small tables for four
   2. Linen crash used for table cloths
   3. China in ivory with floral design
   4. Community plate silver

VI. Service of food
   A. Patients
      1. All food was prepared in main kitchen
      2. Food was sent to diet kitchens by means of a dumb waiter
      3. Trays were set up with cold foods by a maid
      4. Floor supervisors serve the trays with hot food
   B. Appearance of trays
      1. Attractive
      2. Good quality dishes, line, and silver
   C. Staff and nurses
      1. Plate service was used
      2. Right-hand service
      3. Two waitresses are in charge of the service
         a. Responsible to the superintendent
   D. Employees
      1. Family service
      2. Common table for men and women

VII. Outstanding features
   A. An efficient system of requisitioning supplies
   B. Well planned kitchen
   C. Good dining room service

VIII. Recommendations
   A. Budget system would increase the efficiency
   B. More record blanks needed for permanent file
   C. Menus should be planned for a definite period in advance
   D. Improve dietary score now 72.7, need more fresh fruits and whole grain cereals

Menus for Billings Deaconess Hospital
July 24-July 31, 1933

Breakfast	Dinner	Supper
	Monday	
Stewed apricots French coffee cake Cream of wheat Coffee	Boiled beef Cabbage Onions Carrots Boiled potatoes Bread pudding	Potatoes au gratin Kidney bean salad Fresh raspberries
	Tuesday	
Strawberry jam Rolls Fried eggs Corn flakes Coffee	Baked ham Candied sweet potatoes Green beans Cold slaw Ice cream	Sandwiches Mixed fruit salad Cake Ice cream
	Wednesday	
Scrambled eggs with ham All bran Toast Coffee	Spare ribs Mashed potatoes Creamed cabbage Raspberry shortcake	Corn on cob Bean, beet, carrot and cabbage salad Cherries
	Thursday	
Krumbles Scrambled eggs Toast Coffee	Pork chops Gravy Potatoes Wilted lettuce Frozen chocolate pudding	Potato chips Salmon loaf Tomato and cucumber salad Pears
	Friday	
Wheaties Hot cakes Syrup Coffee	Creamed chicken Mashed potatoes Green beans Banana cream pie	Cheese and fish souffle Fruit salad Italian prunes
	Saturday	
Apple sauce Bacon Toast Coffee	Boiled ham Potatoes Carrots Cabbage Apple jack with lemon sauce	Fried potatoes Salmon loaf Cottage cheese salad Watermelon

St. Vincent's Hospital
Billings, Montana
Data as of July 31 to August 4, 1933

I. Type
- A. General hospital
  - 1. Specializes in orthopedic work
- B. Catholic institution
- C. Managed by Sisters of Charity

II. Physical plant
- A. Built in 1927
- B. Cost of construction $350,000
- C. Building was of tan brick
- D. Maximum bed capacity was 95
  - 1. Houses staff and undergraduate nurses
- E. Two reception rooms
  - 1. Attractively furnished
- F. Interesting chapel on first floor of the hospital

III. General organization
- A. Total number of persons fed is 126
- B. Two sisters act as supervisors in the kitchen
  - 1. One manages food preparation and the kitchen
  - 2. The other serves as dietitian (self-trained)
- C. Seven employees in the dietary department
  - 1. One cook
- D. A trained dietitian was employed for 6 weeks to supervise student nurses in dietetics

IV. Management of the kitchen
- A. Kitchen manager
  - 1. Purchases all food
  - 2. Supervises kitchen employees
  - 3. Plans the menus with aid of the cook
  - 4. Helps with food preparation
- B. Dietitian
  - 1. Supervises food service for patients
  - 2. Plans special dietaries
- C. One cook prepared all basic foods
- D. Buying
  - 1. Supplies were ordered on a weekly basis
  - 2. All staples and supplies were ordered from city firms
  - 3. Cream, milk and vegetables were obtained from farmers
  - 4. The storerooms were locked and available only to kitchen manager, dietitian and cook

E. Records
1. Food accouts were kept by the bookkeeper
a. Yearly summaries were made of food costs and patient days
2. Invoices were checked by the kitchen supervisor and sent to superintendent
3. No inventories of staples and equipment
4. None of the following dietary records were available: meal census, quantitative diet orders, diet orders, case studies, or quantity recipes

V. Equipment
A. Main kitchen
1. Modern equipment for quantity cookery
a. Electric coffee urn
b. Food mixer
c. Steamer
d. Steam table
e. Gas range
f. Potato peeler
g. Dish washer
B. Diet kitchens (3)
1. Diet kitchens are used only to deliver trays
C. Dining room (8)
1. Sisters'
a. Very plain
b. Long tables with white covering
c. Benches
d. Heavy white dishes
2. Priests'
a. Attractively furnished
b. Family sized dining table
c. Cotton table coths and napkins
d. Good quality china of a light weight
3. Nurses'
a. Plainly furnished
b. Tables for 8
c. Cotton table coths and napkins
d. Heavy white dishes
4. Graduate nurses'
a. Attractive
An interesting alcove off the dining room for recreational purposes
b. One table that seats 8 to 12
c. Cotton table coths and napkins
d. Same quality dishes as in nurses' dining room
5. Four dining rooms for the help
a. Two dining rooms for kitchen and housekeeping employees--one for men and one for women
b. Two dining rooms for laundry employees--one for men and one for women
c. All dining rooms have the same equipment

1. Oil cloth for table covering
2. Heavy hotel-ware dishes
3. Small rooms

VI. Service of food
- A. Patients
  1. Central service with all food prepared in the main kitchen
  2. The menus were similar to house with the exception of salads being added
  3. Trays were served by two maids and diet nurse
  4. Equipment varies with the rate charged the patient
     - a. Semi-porcelain and silver service for the very best rooms
     - b. Good quality procelain dishes of a different pattern were used for the small private rooms
     - c. Heavy white dishes were used for the ward patients
     - d. Silver was nickel plated
     - e. Napkins were not used
- B. Appearance of trays
  1. Attractive
  2. Appealing
- C. Personnel
  1. The eight dining rooms were served by four waitresses
     - a. Meals were served at two different hours
  2. Family style of service was used in all dining rooms

VII. Outstanding features
- A. Keen interest is taken by those in charge of the department and their efforts can bed noted by:
  1. Cleanliness of department
  2. Well cared equipment
  3. Cooperation among employees

VIII. Recommendations
- A. A food cost control system would increase the efficiency of the department
- B. Reorganization needed within the dietary department with the Assignment of definite duties
- C. Purchase staples in larger quantities
- D. Plan daily menus in advance
- E. Provide more variety in the menus
- F. Improve dietary score as it was 64.2
  1. The following things are needed
     - a. Vegetables and fruits
     - b. Whole grain cereals
     - c. Milk

Menus for St. Vincent's Hospital
July 31 to August 4, 1933

Breakfast	Dinner	Supper
	Monday	
Grapefruit Toast Bacon Cornflakes Coffee	Baked ham Mashed potatoes Gravy Lettuce salad Ice cream	Soup Mixed vegetable salad Cake Coffee
	Tuesday	
Prunes Hot cakes Syrup Oatmeal Toast Coffee	Roast beef Potatoes Gravy Boiled cabbage Lemon pie	Soup Baked potatoes Buttered beets Biscuits Jam Root beer
	Wednesday	
Sliced peaches Toast Cornflakes Bacon Coffee	Side pork Potates Gravy Canned tomatoes Corn on cob Pineapple upside down cake	Steak Fried potatoes String beans Wilted lettuce Watermelon
	Thursday	
Apricots French toast Jelly Cooked cereal Coffee	Roast veal Dressing Potatoes Stewed tomatoes Turnips Jello with whipped cream	Baked beans Wilted lettuce Brown bread Watermelon
	Friday	
Plums Pettijohns Toast Coffee	Fried salmon Boiled potatoes Tartar sauce Gravy Buttered beets Stewed tomatoes Loganberry pie	Baking powder biscuits Cheese Tomato and lettuce salad Cherries

Baked apples
Toast
Bacon
Cream of West
Coffee

Saturday
Baked veal
Boiled potatoes
Gravy
Buttered canned peas
Fresh tomatoes.
Pineapple rice

Cream of celery soup
Rice and tomatoes
Wilted lettuce salad
Canned peaches

Cantoloupe
Toast
Cinnamon rolls
Bacon
Coffee

Sunday
Chicken
Potatoes
Gravy
Buttered peas
Ice cream
Cake

Potato salad
Meat sandwiches
Raspberries
Cookies
Ice tea

SAMPLES OF RECORDS USED BY THE DIETARY DEPARTMENT

OF THE BOZEMAN DEACONESS HOSPITAL

DIETARY DEPARTMENT
DIET ORDER

Date_____

Check for:
New Patient_____
Changed diet_____
Patient left_____
Room_____
Patient's Name_____
Doctor's orders:

Preferences and suggestions:

Signed_____
Head Nurse:
This order should be placed on
spindle in diet kitchen by:
10:00 a.m. for dinner.
3:30 p.m. for supper and breakfast.

Bozeman Deaconess Hospital
Dietary Department

Year _____
Month _____

QUANTITATIVE DIET ORDER

Diet_____ Carbohydrate _____ Glucose value_____

Name_____ Protein _____ Glucose tolerance_____

Room_____ Fat _____ Patient's weight_____

Date_____ Total Calories_____ Insulin Unit_____

FOOD	Wt. in Grams			Total Calories	BREAKFAST	DINNER	SUPPER
	CHO	P	F				
Vegetables 5%							
Vegetables 10%							
Vegetables 15%							
Vegetables 20%							
Fruit 5%							
Fruit 10%							
Fruit 15%							
Muffins							
Butter							
Bacon							
Eggs							
Meat							
Cream, 20%							
Cream, 40%							
Milk							
Mayonnaise (Mineral oil (Other oil							
Cereal (dry)							

NOURISHMENT ORDER

Floor_____
Date_____

9:00 served_____
3:00 served_____
8:00 served_____

Room	Name	A.M.	P.M.	Night	Report	Remarks

Bozeman Deaconess Hospital
Dietary Department

Year _____
Month _____

DIETARY CASE STUDY

Patient _____
Address _____
Date of admission _____
Date of discharge _____
Religion _____
Age _____
Occupation _____

Working Diagnosis _____

Final Diagnosis _____

History of the Case--Social and Dietary Factors Relating to the Condition

Etiology: General and Specific

References consulted:

Sample Day's Dietary for this Patient:

Amount of food	Calories	No. of Grams		
		CHO	F	P
Breakfast				
Dinner				
Supper				

Foods Allowed in Treatment:

Restricted:

Prohibited:

Bozeman Deaconess Hospital
Dietary Department

Year _____
Month _____

DIETARY CASE STUDY

Dietary Prescription	Pathological and Laboratory Findings	Medications Treatment

Progress and Prognosis:

Factors Taught Patient in Regard to Diet and Health Habits:

Information Gained from this Case Study

Name of Student _____

Bozeman Deaconess Hospital
Dietary Department

Year _____
Month _____

RECORD OF PATIENT DAYS

Date	General	Light	Soft	Liquid	Special	Detention	Total Number
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							
13.							
14.							
15.							
16.							
17.							
18.							
19.							
20.							
21.							
22.							
23.							
24.							
25.							
26.							
27.							
28.							
29.							
30.							
31.							
Totals							
Daily Average							

Bozeman Deaconess Hospital
Dietary Department

Year _____
Month _____

MEAL CENSUS

Date	Patients	Detention	Staff	Guests	Undergraduate Nurses	Specials	Employee	Total Number
1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								
13.								
14.								
15.								
16.								
17.								
18.								
19.								
20.								
21.								
22.								
23.								
24.								
25.								
26.								
27								
28.								
29.								
30.								
31.								
Total								
Daily Average								

PERPETUAL INVENTORY FOR SUPPLIES

Bozeman Deaconess Hospital

Item_____ Source_____

Brand_____ Description_____

Size_____

	PURCHASES			STOREROOM ISSUES		INVENTORY		
Date	Amount	Unit Price	Total Price	Amount	Value		Quantity	Value

Bozeman Deaconess Hospital
Dietary Department

Year _____
Month _____

MONTHLY INVENTORY OF SUPPLIES
Summary

1. Beverages	$	
2. Cereals and Cereal Products . . .		
3. Dairy Products		
4. Fats and Oils		
5. Fish, Canned		
6. Flavorings and Extracts		
7. Fruits, Canned		
8. Fruits, Dried		
9. Fruits, Fresh		
10. Jellies and Jams		
11. Vegetables, Canned		
12. Vegetables, Fresh		
13. Vegetables, Dried		
14. Sugars and Sweets		
15. Relishes, Nuts, & Pickles		
16. Spices		
17. Sundries		
Total Food		
Cleaning Supplies		
TOTAL		

Bozeman Deaconess Hospital
Dietary Department

- 2 -

Year _____
Month _____

MONTHLY INVENTORY OF SUPPLIES

ARTICLE	Brand	Size	Amount on Hand	Unit Price	Total Value
BEVERAGES					
Chocolate					$
Cocoa					
Coffee					
Malted milk, plain					
chocolate					
Ovaltine					
Prepared beverage					
Tea, black					
green					
Beverage Total					
CEREALS AND CEREAL PRODUCTS					
Bran					
Branflakes					
Brownies					
Cornflakes					
Cornmeal					
Cornstarch					
Crackers, 1. graham					
2. salad wafers					
Cream of wheat					
Farina					

Bozeman Deaconess Hospital
Dietary Department

Year _____
Month _____

- 3 -

ARTICLE	Brand	Size	Amount on Hand	Unit Price	Total Value
Flour, bread					$
graham					
pastry					
Grapenuts					
Krumbles					
Macaroni					
Noodles					
Post Toasties					
Pettijohns					
Puffed wheat					
Rice					
Rice crispies					
Rolled oats					
Spaghetti					
Tapioca					
Starch					
Wheatco					
Wheatena					
Cereals and Cereal Products Total					
DAIRY PRODUCTS AND EGGS					
Butter					
Cheese					

Bozeman Deaconess Hospital
Dietary Department

Year _____
Month _____

ARTICLE	Brand	Size	Amount on Hand	Unit Price	Total Value
Eggs					$
Dairy Products, Total					
FATS & OILS					
Crisco					
Lard					
Salad Oil					
Fats & Oils, Total					
FISH, CANNED					
Clams					
Lobster					
Salmon					
Sardines					
Shrimp					
Tuna					
Fish, Total					
FLAVORINGS, EXTRACTS					
Lemon					
Mapeliene					
Orange					
Coloring, red					
green					
Vanilla					
Flavorings, Extracts, Total					

Bozeman Deaconess Hospital
Dietary Department

Year _____
Month _____

- 5 -

ARTICLE	Brand	Size	Amount on Hand	Unit Price	Total Value	
FRUITS, CANNED					¢	
Apples						
Apricots						
Blueberries						
Cherries, red						
Royal Anne						
Maraschino						
Figs, Ripe						
Grapefruit						
Grapejuice						
Grapes						
Loganberries						
Peaches, halves						
slices						
Pears						
Pineapple, broken slices						
crushed						

ARTICLE	Brand	Size	Amount on Hand	Unit Price	Total Value
sliced					$
Plums, Green gage					
Italian					
Raspberries					
Strawberries					
Fruit, Canned, Total					

FRUITS, DRIED

Apricots					
Dates					
Figs					
Prunes					
Raisins					
Fruits, Dried, Total					

FRUITS, FRESH

Fruits, Fresh, Total					

Bozeman Deaconess Hospital
Dietary Department

Year _____
Month _____

- 7 -

ARTICLE	Brand	Size	Amount on Hand	Unit Price	Total Value	
JELLIES & JAMS					$	
Apple						
Apricot-pineapple						
Chokecherry						
Crab-apple jelly						
butter						
Grape						
Peach						
Plum						
Raspberry						
Strawberry						
Jellies & Jams, Total						
VEGETABLES, CANNED						
Asparagus tips						
Beans, green						
wax						
Beets						

Bozeman Deaconess Hospital
Dietary Department

Year _____
Month _____

- 8 -

ARTICLE	Brand	Size	Amount on Hand	Unit Price	Total Value
Corn					$
Peas					
Pimentos					
Pumpkin					
Spinach					
Tomatoes, juice					
puree					
soup					
Vegetables, Canned, Total					

SUGARS & SWEETS

Honey						
Karo						
Marshmallows						
Sugar, brown						
granulated						
loaf						
powdered						
Sugars & Sweets, Total						

Bozeman Deaconess Hospital
Dietary Department

Year _____
Month _____

- 9 -

ARTICLE	Brand	Size	Amount on Hand	Unit Price	Total Value
RELISHES & NUTS					
Beets					
Catsup					
Chili sauce					
Crab apple					
Pickles, dill					
gherkins					
home					
Sweet relish					
Tomato					
Peanut butter					
Walnuts					
Cocoanut					
Relishes & Nuts, Total					
SPICES					
Allspice					
Bouillon cubes					
Celery salt					
Cinnamon					
Chili powder					
Cloves, ground					
whole					
Cream of tartar					

Bozeman Deaconess Hospital
Dietary Department

Year _____
Month _____

- 10 -

ARTICLE	Brand	Size	Amount on Hand	Unit Price	Total Value
Curry					$
Ginger					
Mace					
Mustard					
Nutmeg					
Onion salt					
Paprika					
Pepper, black					
Pickle spices					
Sage					
Salt, ice cream					
table					
Spices, Total					

SUNDRIES

Baking powder					
Certo					
Eagle bran					
Gelatine					
Jello					
Junket					
Kitchen bouquet					
Mushrooms					
Soda					
Vinegar					
Sundries, Total					

Bozeman Deaconess Hospital
Dietary Department

Year _____
Month _____

- 11 -

ARTICLE	Brand	Size	Amount on Hand	Unit Price	Total Value	
CLEANING SUPPLIES					$	
Bon Ami						
Brooms						
Chlorinated lime						
Drano						
Dutch cleanser						
Lye						
Oxydol						
Sani-flush						
Sapolio						
Soap						
Wyandotte						
Borax						
Chloride of lime						
Cleaning powder						
Cleaning Supplies, Total						

Bozeman Deaconess Hospital
Dietary Department

EQUIPMENT INVENTORY

Year _____
Month _____
Floor _____
Room _____

Items	Unit Cost Price	Value Jan. 1st	Jan. 31	Feb. 28	Mar. 31	Apr. 30	May 31	June 30	July 31	Aug. 31	Sept. 30	Oct. 31	Nov. 30	Dec. 31	Value December 31
			No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	

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REQUISITION
Storeroom, Food & Cleaning Supplies
Bozeman Deaconess Hospital

Date_____

Department_____

Articles	Amount

Signed_____

SCHEDULES FOR DIETARY DEPARTMENT STAFF AND EMPLOYEES OF THE BOZEMAN DEACONESS HOSPITAL.

Dietitian:

I. Routine Daily Program.

A. On duty at 7:00 A.M.
   1. Check work of employees.
   2. Round of floor serving rooms to check breakfast service.

B. Conference with cook.
   1. Program for the day with special instructions.
   2. Inspect ice boxes.
   3. Supply needed recipes.

C. Place market order.
   1. Staples are purchased on a monthly basis.
   2. Supplementary orders purchased daily.
   3. Check food ordered.

D. Make and fill requisitions from storerooms.

E. Supervise meal service of patients at least once a day.

F. Consult doctors.
   1. Cooperate with special nurses as to needs of their patients.

G. Visit patients three times a week.

H. Plan menus on a weekly basis.

I. Special dietaries are adjusted daily from house menus and to the patient's needs.

J. Daily check of records and dietary accounting.

K. Teach 5 hours of foods, nutrition and dietetics weekly for five months.

Diet Nurse:

6:00 A.M.	Clears and sets dumb waiter for breakfast.
6:15	Arranges trays.
7:00	Serves breakfast.
7:30	Eats breakfast.
8:00	Prepares custards and jellos.
	Prepares lettuce etc., for salads.
	Prepares nourishments.
	Secures nourishment supplies for P.M.
9:00	Serves nourishments and makes rounds of patients.
	Gathers special diet reports.
	Looks over orders.
9:45	Prepares salads.
	Special foods; special desserts, salads, vegetables.
11:20	Serves dinner.
12:00	Off duty.
3:00 P.M.	Looks over orders.
	Prepares special dishes.
	Prepares salads.
5:30	Off duty.

2½ days off a week. Reports to Dietitian:—1. Diet order; 2. Foods refused and reason; 3. Laboratory reports; 4. General condition of patient; 5. Progress recorded.

First Cook:

5:30 A.M.	On duty.
	Prepares cereal, hot dishes and coffee by 6:30.
6:00-6:15	Breakfast.
	Makes toast.
	Serves nurse's breakfast.
	Makes desserts, cake and pastry for house and patients.
	Prepares meat and vegetables.
	Makes quick breads as ordered.
	Lines work up for supper.
12:00	Serves nurses and off duty.
12:10-12:30	Dinner.
4:00-5:30	Prepares supper.
5:30	Serves and off duty.

½ day a week off with every other Sunday.

Second Cook:

6:00 A.M.	Fixes milk, cream, butter, etc.
	Dishes cereal, fruit for tables.
6:30	Serves breakfast to the nurses.
6:45-7:00	Breakfast.
7:00	Serves second breakfast.
	Resets tables and waits on those present.
	Wipes dishes.
	Resets tables and changes linen as needed.
9:00-10:00	Off duty.
10:00	Cleans lettuce, celery; prepares salads; fills cream, milk and water pitchers; assists cook.
11:20	Cut bread and butter for tables.
11:30	Waits tables.
12:00 P.M.	Resets tables for second dinner.
12:10-12:30	Eats dinner; wipes dishes;sets tables.
1:00-4:30	Off duty; prepares salad; cuts bread and butter; fills water, milk and cream pitchers.
5:30	Waits tables and resets for second supper.
6:10-6:30	Supper. Wipes dishes; resets tables.
7:00	Off duty.

½ day a week off with every Second Sunday.

Dishwasher:

7:00 A.M.	On duty. Washes dishes; washes diet nurse's dishes and pans; peels potatoes.
9:10-11:40	Nurse's home.
11:40-12:00	Dinner.

Dishwasher continued:

12:00 P.M.	Washes dishes; answers bells from dining room.
1:00	Off duty.
5:00	Cuts toast bread. Arranges fruit for patients breakfast; clears slide, etc.; puts food away.
5:30-6:00	Washes dishes; answers bells; washes diet nurse's dishes; cares for left-over food; sweeps floor and leaves kitchen in good order.
7:00	Off duty.

½ day a week off.

Diet Kitchen Maid:

7:00 A.M.	On duty. Places food on dumb waiter; serves food following a definite outline; washes tray dishes, trays and tray equipment in the three diet kitchens; cleans sink; does assigned cleaning of kitchens.
11:20	Clears dumb waiter and places food for dinner on same. Serves dinner on first floor.
11:40-12:00	Dinner.
12:00 P.M.	Washes dishes in three diet kitchens. Straightens cupboards. Cleans sink. Sweeps floors.
1:00	Off duty.
5:00	Places food on dumb waiter for patient's supper. Serves food on first floor. Washes tray dishes. Straightens kitchens and leave in good order. Takes soiled linen and dish towels to laundry room.
7:00	Off duty.

½ day off a week.

SUGGESTIVE SPECIAL DIETARY PROCEDURES FOR GENERAL USE.

ARTHRITIS

I. Conditions.
  A. Classification of Arthritis.
    1. Proliferative arthritis.
      a. Types of proliferative arthritis.
        Chronic infectious arthritis.
        Specific arthritis, caused by specific bacterial infection (gonococcal, tuberculous, septic, etc.)
        True arthritis deformans, a chronic progressive polyarthritis of unknown origin.
      b. Characteristics or general symptoms.
        Changes in the synovial membrane.
        Eventual destruction of the cartilaginous tissue.
        Produced pain, swelling and limitation of motion.
        Usually moves from joint to joint.
    2. Degenerative arthritis.
      a. Types of degenerative arthritis.
        Arthritis of the menopause.
        Degenerative monarticular arthritis.
        Senile arthritis.
      b. Characteristics or general symptoms.
        Degeneration of the joint cartilage.
        Hardening of the bone.
        No ankylosis.
        Inflammatory reaction is slight.
        Usually limited to one joint.
        Progress of the disease is slow.
  B. Normal Condition.
    1. The muscles and joints are in a healthy state, able to contract and perform the mechanical efficiency of the body.

II. Etiology.
  A. Infection.
  B. Obesity.
  C. Exposure.

III. Dietary Principles.
  A. Chronic infectious arthritis is usually accompanied by anemia and the infections can be reduced by the careful selection of food with sufficient vitamins and minerals and liberal quantities of good protein.
  B. Rigid restriction of protein, as is sometimes advised, is of no advantage in this disease, nor does any other form of dietary restriction accomplish anything unless it be a low calorie diet of limited carbohydrate content.
  C. Simple, easily digested diet should be given.

IV. Foods to Use.
A. Muscle meats and
1. Liver.
2. Kidney.
3. Chicken.
B. Liberal amounts of fresh fruits and vegetables.
C. One quart of milk a day.
D. One serving of Whole Wheat a day.

V. Suggestive Daily Menus.
Breakfast.
Grapefruit.
Shirred egg with slices of bacon.
Whole wheat muffin and butter.
Coffee.
Cream and sugar.

Dinner.
Roast beef.
Mashed potatoes.
Buttered carrots.
Head lettuce salad.
French dressing.
Bread and butter.
Canned pears.
Glass of milk.

Supper.
Minced liver on toast.
Spinach with hard cooked egg.
Bread or small biscuit.
Fruit cup (orange and grapefruit.)
Milk.

VI. Dietary List of Foods of General Agreement.
A. Meats of all kinds in moderate amounts.
B. Large amounts of the 3 and 5% vegetables.
C. One to two eggs are recommended daily.
D. One quart of milk daily.
E. Sweets are not given except in the form of fruits or very simple puddings such as cornstarch or ice cream.

VII. Dietary List Recommended by a Few.
A. Only poultry, fish, and rabbit given as meat.
B. Rhubarb is not permissible.
C. White bread, spaghetti, tapioca, rice, oatmeal and buckwheat flour are prohibited.
D. All condiments are restricted.
E. No condensed milk could be used.

DIABETES MELLITUS

I. Conditions.

A. A few of the Important Factors.

1. Pancreatic hormone, insulin, which is essential for the oxidation of sugar is lacking or incapable of functioning.
2. Respiratory quotient shows the amount of foods metabolized and their respective amounts.
3. Basal metabolism usually normal in persons with mild and moderately severe cases of diabetes, while in those severe cases accompanied by marked under-nutrition the basal metabolism is subnormal.
4. In figuring carbohydrate metabolism the ultimate amount must be considered.
   a. 58% of the protein metabolized and 10% of the fat yield glucose.
   b. In metabolism this glucose is no different than that taken by mouth.
5. Protein metabolism important for four reasons:
   a. Certain amino-acids of the protein are converted into glucose, giving a 58% yield of the latter.
   b. Other of the amino-acids are converted into fatty acids which increase the danger of ketosis.
   c. Because of its specific dynamic action, protein greatly stimulates metabolism.
   d. Possibly interferes with the mechanism of glucose utilization in other ways and thus lowers the diabetics ability to utilize carbohydrate.
6. The "D:N" ratio gives the quantitative relationship of dextrose to nitrogen in the urine, and therefore the proportion of dextrose excreted to protein destroyed.
7. The "ketogenic-antiketogenic ratio" expresses the amount of fat which can be safely oxidized through the aid of a given amount of glucose.
   a. 1.5 Gm. of fatty acid to 1 Gm. of glucose.
   b. Fat metabolism when disturbed through inadequate oxidation of the fatty acids may cause coma.
8. Rise in blood sugar with the promptness with which it falls to its former level is the best test of the amount of glucose that can be burned.
   a. The glucose tolerance test gives the amount of glucose the patient can burn.

B. Normal Condition.

1. Food is broken into a soluble form in order to circulate in blood stream.
   a. Protein changed to amino acids.
   b. Fatty acids converted to fatty acids and glycerol.
   c. Carbohydrates changed to monosachrides, (glucose, galactose, and fructose.)

2. After the process of absorption, the glucose is the only sugar in the blood.
   a. Glucose is changed to glycogenase in the liver or from glycogenase back to glucose as is needed.
3. From the pancreas the hormone insulin is secreted and has three functions:
   a. Oxidation of glucose.
   b. Synthesis of glycogen.
   c. Synthesis of lactacidogen.

II. Etiology.
   A. Heredity in the form of family and racial predisposition.
   B. The relation of obesity.
   C. Nervous influences.
   D. Infections.
   E. Injury to the pancreas.

III. Dietary Principles.
   A. The diet should be from 10 to 20% below the calculated normal if patient is overweight.
      1. Should prevent overnutrition and marked undernutrition.
      2. Not more than 1 Gm. of protein per kilogram of body weight should be given.
         a. Can be taken in any form, but the ones of high biological value are preferred.
      3. High amounts of carbohydrate can be taken if insulin is given.
         a. Has the greatest amount of appeal.
         b. Should never be taken in concentrated forms, but as 5 and 10% vegetables.
         c. Small amounts of 15% vegetables and fruits can be given.
         d. Substitutes for bread made of washed bran with the addition of "cellu" flour should be given.
      4. Average diabetic diet contains two or three times as much fat as is taken in health.
      5. Food should be simple, easily digestible and never highly seasoned.
      6. Thorough investigation should be made of specially prepared diabetic foods for their carbohydrate and protein content before given to the patient.

IV. Foods to Use.
   A. Dairy products.
      1. 20% cream.
      2. Eggs.
      3. Milk.

B. Meats.
   1. Lean chicken.
   2. Fish.
   3. Bacon.

C. Vegetables and fruits.
   1. 5 and 10% vegetables in abundance.
   2. Smaller amounts of 15 to 20%.
   3. 10% fruits.

D. Mineral oil mayonnaise, clear tea, coffee, and broths have no food value.

V. Suggestive Daily Menus.

Breakfast.
   Small orange.
   Oatmeal.
   Cream.
   Butter.
   Soft cooked egg.
   Beverage.

Dinner.
   Spinach and butter.
   Crisp bacon.
   Buttered asparagus.
   Tomato salad with vinegar.

Supper.
   Shirred egg and one white.
   Crisp bacon.
   Stewed tomatoes.
   Baked egg plant with butter.
   Head lettuce salad with lemon juice.
   Sliced orange.
   Beverage.

VI. Dietary List of Foods of General Agreement.

A. Lean meat.

B. Dairy products.
   1. 20% cream.
   2. Cottage cheese.
   3. Butter.

C. Oatmeal.

D. 5-10% fruits and vegetables.

E. Bread substitutes.

VII. Dietary List Recommended by a Few.
  A. Dry cereal.
    1. Puffed wheat, cornflakes.
  B. No consideration made of the fat on meat.
  C. Small quantities of bread for the day.
    1. One to one and a half slices.

ECZEMA

I. Conditions.
  A. Important Factors.
    1. Usually the manifestation of a hitherto latent dermal susceptibility.
    2. Uric acid found in the blood.
    3. Yellowish discoloration of the skin.
    4. Possibility of disturbance in carbohydrate metabolism.
  B. Normal Condition.
    1. The physico-chemical relationships of the body are in effective harmony and are not abnormally influenced by the diet.

II. Etiology.
  A. Faulty nutrition.
    1. Food deficiency.
    2. Nutritive idiosyncrasies.
  B. Metabolic disorders.
    1. Gout.
    2. Diabetes mellitus.
  C. Alimentary infections and intoxications.
  D. Obesity.

III. Dietary Principles.
  A. Dietary regulation in the treatment of skin diseases may be effective in four ways. (15:p. 765).
    1. "Causative, as in the treatment of the underlying disease."
      a. Notably in the dermatoses of such metabolic disorders as diabetes or gout.
    2. Eliminative, as in the withdrawal of the offending food from the diet in allergic urticaria and in the xanthosis of carotinemia.
    3. Regulatory, as in the effort to influence the chemistry of the skin.
      a. Examples of which are the use of salt-poor diet in certain eczemas and of the Gerson-Hermannsdorfer diet in the treatment of lupus vulgaris.
    4. Supporting, as the improvement of the patient's general nutritive state, through the correction of undernutrition, the reduction of obesity, treatment of pellagra.

IV. Foods to Use.
  A. Wholesome, well balanced diet.
  B. Large quantities of fruits and vegetables.
  C. Sufficient vitamin and mineral content.

V. Suggestive Daily Menus.
  Breakfast.
    Grapefruit.

Poached egg on toast.
Rolled oats.
Cream and sugar.
Glass of milk.

Dinner.
Breaded veal cutlets.
Mashed potatoes.
Gravy.
Buttered asparagus.
Vegetable gelatin salad.
Mayonnaise.
Bread and butter.
Fruit delicious.
Cup of tea with sugar and lemon.

Supper.
Creole soup.
Creamed chicken in patty shells.
Buttered peas.
Head lettuce salad.
French dressing.
Pineapple marlow.
Sponge cake.
Coffee with sugar and cream.

VI. Dietary List of General Agreement.
A. The data are very conflicting and "dietary instruction is based more on tradition rather than reason." (15:p. 764).
1. Salt-poor diet in certain eczemas.
2. Gerson-Hermannsdorfer diet in treatment of lupus vulgaris.
3. Elimination of the offending food.
4. Improvement of general nutritive condition.

VII. Dietary Lists Recommended by a Few.
A. Carbohydrate restriction.
B. "Purin-poor diet."

EPILEPSY

I. Conditions.
  A. Factors of Importance.
    1. "No single specific change, either anatomic or physiologic, has ever been found to be regularly associated with epilepsy." (15:p. 750)
    2. Instability of the nervous system.
    3. State of alkalosis precedes the attack.
    4. Mental and often physical degeneration.
  B. Normal Conditions.
    1. There is a stability of the nervous system, able to withstand any physical or physiochemical relations that may occur within the brain which the person with epileptic seizures lacks.

II. Etiology.
  A. Not definitely known.
  B. Hereditary predisposition plus an exciting cause which may be:
    1. Head injury.
    2. Heat.
    3. Digestive disturbances.
    4. Teething.
    5. Over-exertion.
    6. Fright.

III. Dietary Principles.
  A. Customary to begin treatment with a period of fasting, usually a week, or until the seizures have stopped.
  B. A ketogenic-antiketogenic ratio of 4:1 is usually adequate.
    1. Ketosis should be produced by means of the diet.
    2. It will occur when one eats 5 Gm. of fat to 1 Gm. of carbohydrate.
  C. Protein intake must be sufficient to meet daily nitrogen need.
    1. .75 Gm. per kilogram of body weight for the adult.
    2. 1 to 2 Gm. for the child.
  D. Small amount of carbohydrate.
    1. 10 to 20 grams.
  E. Regularity of meals should be exercised, with the lightest in the evening.
  F. No one type of diet suitable for all epileptic patients, but simple, easily digested, well balanced diet is often prescribed.

IV. Foods to Use.
  A. No bread or other starch foods allowed.
    1. A specially prepared bran wafer without food value forms a good substitute.
  B. 5% vegetables (see p.193).

C. 10% fruits (see p.193).
D. Saccharine used for sweetening.
E. Suggested that a "dose" of some nutritive oil be taken with each meal and will reduce the amount of butter and cream.
   1. Use 40% cream.
   2. Large amounts of butter and fatty meats.
F. Daily "doses" of calcium recommended with extremely high fat ratios.

V. Suggestive Daily Menus. (15:p. 757)

Breakfast.
Orange.
Bacon.
Egg.
Butter.
Bran water.
Cream.
Agar.

Lunch.
Pork chop.
Cauliflower.
Butter.
Pinapple mousse.

Dinner.
Egg.
Cheese.
Lettuce tomato salad.
Mayonnaise.
Cream.
Butter.
Agar.

VI. Dietary List of Foods of General Agreement.
A. Vegetables.
   1. 5% gr ouping.
B. No bread.
C. Olive oil or cod liver oil.
D. Fatty meats.
E. Commercial preparation of gelatin and bread.

VII. Dietary List of Foods Recommended by A Few.
A. Luther and Bartlett-Talbot have calculated a table showing different ratios in which ketosis may be obtained. (15:p. 756).

FEVERS

I. Conditions.
  A. Important factors.
    1. Chemical regulation controls heat production by stimulating or depressing metabolism.
    2. The physical factors which govern heat elimination are:
      a. Radiation and conduction from the skin.
      b. Vaporization from the skin and the lungs.
    3. Disturbance in water balance.
      a. Toxin increases the affinity of the tissues for water.
    4. Fairly uniform increase in metabolism for each degree of temperature.
    5. Protein destruction in fever is always great.
  B. Normal Conditions.
    1. "The oxidation processes of basal metabolism which occur within the cell are said to cause vibratory motions of protoplasmic molecules, the energy of which is converted into heat sufficient in amount to maintain body warmth." (15;p. 37).
    2. Loss of heat occurs by means of:
      a. Conduction and radiation from the skin.
      b. Evaporation of water from the skin and lungs.
      c. Warming of ingested food and inspired air.

II. Etiology.
  A. Infection.

III. Dietary Principles.
  A. An intake of 40 to 50 calories per kilogram should be allowed to meet the patient's caloric requirements.
  B. One to one and a half grams of protein per kilogram should be allowed.
  C. High carbohydrate diet helps to spare the protein loss.
  D. Simple easily digested food should be included in the diet.
  E. Patients should have food every two hours.

IV. Foods to Use.
  A. One and a half quarts of milk with one to two pints of cream.
  B. Three to six eggs a day.
  C. Lactose or milk sugar for sweetening.
  D. Junket, ice cream and other possible variations made of milk and cream.
  E. Gruels.
  F. Orange juice.

V. Suggestive Daily Menus.

Breakfast.

7:00 A.M.	Malted milk.
	Milk toast.
9:00	Farina with cream and sugar.
	Milk and cream.
11:00	Soft cooked egg.
	Toast and butter.
	Tapioca pudding.
	Milk and cream.
1:00 P.M.	Strained oatmeal with butter and cream.
	Orange juice.
3:00	Coddled egg on toast with butter.
	Jelly.
	Milk and cream.
	Junket.
5:00	Milk toast.
	Ice cream.
7:00	Cream of wheat.
	Milk and cream.
9:00	Oatmeal gruel.
	Cream and sugar.
	Milk and cream.

VI. Dietary List of Foods of General Agreement.

A. Milk and cream in abundance.
B. Eggs.
C. Lactose as a reenforcing agent.
D. Orange juice.
E. Malted milk and cocoa as variations for milk.
F. Puree vegetables in cream soups.

VII. There seemed to be no difference between the various hospitals in the diet given for general types of fevers.

GALL BLADDER

I. Conditions.
  A. Important factors.
    1. Inflammation of the bile passages and gall bladder.
    2. Stasis of the bile.
    3. Failure of the liver to perform many of its regulatory functions, thereby causing metabolic disturbances.
    4. Lack of bile in the intestinal tract.
    5. Liver converts protein cleavage products into urea, and controls the utilization of amino acids.
    6. Liver prepares the fats for utilization by the tissues.
    7. The liver produces some substance other than sugar necessary for the correlation of the blood sugar and tissue sugar.
  B. Normal Conditions.
    1. Proper functioning of the liver takes place with the ability to control the utilization of the amino acids.
    2. The secretion of the liver fails to reach the intestine in sufficient quantity but functions so proper utilization of the fat takes place.

II. Etiology.
  A. Obstruction to the portal circulation.
  B. Continued dietary indiscretions.
  C. Infections.
  D. Obesity.

III. Dietary Principles.
  A. The protein intake should be limited for three reasons:
    1. The injured liver may be unable to metabolize protein cleavage products.
    2. Absence of bile from the intestinal tract favors putrefaction.
    3. Regeneration of damaged parenchyma takes place more rapidly with a low-protein intake.
  B. An abundance of carbohydrate is desirable.
  C. Fats are not well used.
  D. Administration of bile salts by mouth aid in the emulsification and absorption of the fat.

IV. Foods to Use.
  A. Strained vegetable and stock soups.
  B. All vegetables should be thoroughly cooked.
    1. Spinach, asparagus, rhubarb, beet greens, celery, cauliflower, squash, beets, artichoke, parsnips, and potato.
  C. Breadstuffs.
    1. White, graham, rye toast.
    2. Crackers.
  D. Dairy products.

1. Cream.
2. Cottage cheese.
3. Egg yolks.
4. Skimmed milk.

E. Simple desserts.
1. Gelatins.
2. Cereal puddings.

V. Suggestive Daily Menus.

Breakfast.

Orange juice.
Cream of wheat.
Skimmed milk and sugar.
Graham toast.
Jelly.
Coffee.

Dinner.

Mashed potatoes.
Buttered asparagus on toast tips.
Raisin toast.
Apricot whip.

Supper.

Egg yolks scrambled with cream.
Toast.
Preserves.
Tomato juice.
Apple tapioca.

VI. Dietary List of Foods of General Agreement.
A. Smooth cereals.
B. Strained vegetables.
C. Simple cereal desserts.
D. Dairy products.
1. Skim milk.
2. Small amount of cream, butter.
3. Egg yolks.
4. Cottage cheese.
E. Stewed fruits without skins.
F. Tender meats added later in the treatment.

VII. Dietary List of Foods Recommended by a Few.
A. Zwieback as an addition to bread stuffs.
B. No butter, cream or mayonnaise.
C. Omit gravies and rich sauces.

GASTRITIS

I. Conditions.
  A. Characteristic features of the disease.
    1. Chronic inflammation of the gastric mucosa.
    2. Lack of appetite.
    3. Nausea.
    4. Sense of pressure and dull epigastric pain after eating.
    5. Eructation of food and the "heart burn."
  B. Normal Condition.
    1. In the process of digestion the chyme becomes thoroughly permeated by the gastric juices, where peristaltic action subjects it to a more active mechanical treatment, accomplishing the chief object of stomach digestion.

II. Etiology.
  A. Toxin of an infectious disease.
  B. Ingested poison, bacterial or mineral.
  C. Faulty dietary habits.
    1. Highly seasoned foods.
    2. Very hot or cold drinks.
    3. Rapid eating with poor mastication.
    4. Overloading the stomach.
    5. Preferences of coarse foods.
    6. Alcohol.

III. Dietary Principles.
  A. Correction of dietary errors.
  B. Thorough mastication of foods.
  C. Food should be simple and never highly seasoned.
  D. Too much food should not be taken at one time.
  E. No coarse particles of foods should be included in the diet.
  F. Large part of the carbohydrate of the diet should be in the form of toast.
  G. Protein of the diet should come largely from milk, eggs, and to a less extent from tender meats.
  H. When gastric acidity is low, diluted hydrochloric acid should be given.

IV. Foods to Use
  A. Gruels.
  B. Dry toast.
  C. Vegetable purees.
  D. Cooked fruits.
    1. Thoroughly ripened (spotted) bananas.
    2. Fruit juices.
  E. Milk.
  F. Eggs may be taken in any form except fried or raw.
  G. Any kind of meat except pork.
  H. Agar recommended to give bulk to the diet.

V. Suggestive Daily Menus. (15:p.566)

Breakfast.

Orange juice.
Strained oatmeal.
Cream and sugar.
Poached egg on slice of toast.
Glass of milk.

Dinner.

Lamb chop.
Baked potato.
Butter.
Spinach.
Rice custard, whipped cream.
Glass of milk.

Supper.

Soft cooked eggs.
Cream of wheat with butter.
Puree of green peas.
Very ripe baked banana with sugar and lemon juice.
Toast.
Glass of milk.

VI. Dietary List of Foods of General Agreement.

A. Puree of cooked vegetables.
B. Simple puddings and desserts.
C. Milk and eggs.
D. Smooth cooked cereals.

VII. Dietary List of Foods Recommended by a Few.

A. Veal as well as pork should not be given.
B. Crab meat should be avoided.
C. Crackers included in dietary.

JAUNDICE

I. Conditions.
  A. Factors of Importance.
    1. Different pathologic states may exist.
      a. Obstructive inflammation of the bile passages.
      b. Acute gastro-duodenitis.
    2. Blood borne infection.
    3. Fever.
    4. Gastritis often an accompaniment.
    5. Prostration often great.
    6. Yellow pigmentation of the skin, eyes, etc..
    7. Excessive amount of bile pigments in the blood and lymph.
    8. Marked disturbance in fat digestion.
    9. Absorption is more or less impaired because of the lack of bile in the intestinal juice.
    10. Obstruction of the bile ducts which prevents the flow of the secretion into the intestinal tract.
    11. Excessive hymolysis of the blood.
    12. Liver is not able to dispose of the bile pigments.
    13. Severity of the disease depends upon the gastro-intestinal, kidney, and blood conditions.
  B. Normal Condition.
    1. "In the process of digestion the pancreatic juices are aided by bile which plays an important role in the intestine." (15:p. 58).
    2. The utilization of proteins and their cleavage products are controlled by the liver. "The liver produces some substance other than sugar necessary for the correlation of blood sugar and tissue sugar." (15:p. 641).
    3. The solvent action on fatty acids and soap is controlled by the bile.

II. Etiology.
  A. May be a blood borne infection of unknown nature.
  B. Sequel or accompaniment of an acute gastro-duodenitis.

III. Dietary Principles.
  A. Diet should be simple and non-stimulating.
  B. Protein intake should cover only the minimal needs of the patient for:
    1. Injured liver may be unable to properly metabolize protein cleavage products.
    2. Absence of bile from the intestinal tract favors putrefaction.
    3. Regeneration of damaged parenchyma takes place more rapidly with a low protein intake.
  C. Fats should be reduced to a minimum, since they require the presence of bile in the intestinal tract for their digestion and absorption.

D. An abundance of carbohydrate is desirable whenever there is impairment of liver function.
   1. Fruit juices and cooked fruits are permissible later in the disease, but raw fruits and green vegetables should always be avoided.

E. Bile salts should be given because of their powerful cholagogue (emulsifying) action.

IV. Foods to Use.

A. Dairy Products.
   1. Milk.
   2. Eggs after the tenth or twelfth day.

B. Cereals.

C. Simple desserts.

D. Puree of cooked fruits.

E. All highly seasoned fruits should be avoided.

V. Suggestive Daily Menus.

Breakfast.

Hot water with lemon juice.
Oatmeal with cream and sugar.
Milk toast.
Cocoa.

Nourishment.

Glass of milk.

Dinner.

Mashed potatoes.
Toast with little butter.
Spanish cream dessert.
Glass of milk.

Supper.

Cooked rice with milk.
Toasted muffin.
Butter.
Jello with cream.
Glass of milk.

Bedtime.

Glass of milk.

VI. No information obtainable concerning dietary regime.

NEPHRITIS

I. Conditions.
  A. "Classification of Nephritis" (15:p. 504).
    1. Acute nephritis.
    2. Subacute nephritis.
      a. Subacute nephritis with edema.
      b. Hemorrhagic nephritis.
    3. Chronic nephritis.
      a. Chronic nephritis with edema.
      b. Chronic nephritis without edema.
      c. Vascular hepertension progressing into nephritis.
  B. Important factors concerning Nephritis.
    1. Inflammatory destruction of glomeruli.
    2. Hematuria.
    3. Albuminuria.
    4. Hyptertension with nitrogen retention.
    5. Protein destruction.
  C. Normal condition.
    1. Proper functioning of the kidney with the ability to regulate carbohydrate, fat, protein, and their respective end products of metabolism.

II. Etiology.
  A. Tonsillitis.
  B. Scarlet fever.
  C. Bacterial invasion and chemical injury.
    (Only after kidney is injured can diet be a determining factor.)
  D. Irritation from heavy metals.
  E. Overeating.
  G. Heredity.

III. Dietary Principles.
  A. Caloric requirement dependent upon:
    1. Age.
    2. Sex.
    3. Weight.
    4. Occupation.
  B. If blood urea in chronic nephritis is high, the more rigid restriction of protein is advisable; when normal, a more liberal diet is permitted.
  C. To maintain nitrogen balance the food should contain a liberal amount of carbohydrate.
  D. "A diet high in fat will not permit economical utilization of protein." (15:p. 509).
  E. "Salt-poor diet" is recommended by many.
  F. It has been suggested that an acid-forming diet may impair a diseased kidney by rendering its work more difficult.
  G. Restrict total fluids to 1 liter, as the volume of urine increases the allowance of fluid may be increased, but no more than 2 liters a day.

IV. Foods to Use.
- A. Whole milk.
- B. Cooked or stewed fruits.
- C. Vegetables.
- D. Simple cereal puddings.
- E. Unsalted butter.

V. Suggestive Daily Menus.

Breakfast.
- Cantaloupe.
- Farina.
- Skim milk.
- Panned oysters with bacon on toast.
- Coffee.
- Sugar.

Dinner.
- Mock turtle soup.
- Uneeda biscuits.
- Roast chicken.
- Corn.
- Lima beans.
- Vegetable salad with hard cooked egg and mineral oil mayonnaise.
- Snow pudding.
- Whole wheat bread.
- Black coffee.
- Sugar.

Supper.
- Sweetbreads scrambled with egg.
- Butter.
- Baked potato.
- Green peas.
- Lobster salad with mineral oil mayonnaise.
- Whole wheat bread.
- Apple tapioca pudding.
- Tea.
- Sugar.

VI. Dietary List of General Agreement.
- A. Lean and glandular meats.
- B. Skim milk.
- C. Mineral oil mayonnaise.
- D. Whole wheat bread, rice and oatmeal.

VII. Dietary List of Foods Recommended by a Few.
- A. Vinegar or lemon juice used on all vegetable salad and no mayonnaise.
- B. White bread.
- C. Two pats of butter per day.

NEPHROSIS

I. Conditions.
  A. Factors of Importance.
    1. Tubular degeneration predominates.
    2. Edema.
    3. Metabolic disorder which leads, first to albuminuria and oliguria.
    4. Reduction of the blood proteins and increase in globulin.
    5. Thyroid gland bears some relation to this disease.
    6. Increased fat in the blood.
      a. Lipoids.
      b. Cholesterol.
    7. Hematuria is not a characteristic symptom.
  B. Normal Condition.
    1. "The protein of the food reaches the blood in the form of amino acids, and circulating as such, it is taken up by the cells." (15:p. 28).
    2. These acids are "resynthesized to be retained by the cell or they are broken up to furnish energy." (15:p. 28).
    3. The kidney, through its regulatory function controls mineral elements and there is the same concentration of salts and osmotic pressure.

II. Etiology.
  A. Injury to kidney.
  B. Infection.
  C. Intoxication either from a bacterial or chemical agent.
  D. Preceded by vascular injury involving the smaller organ arterioles.
  E. Heredity and inherited constitutional predisposition.

III. Dietary Principles.
  A. Give an abundant diet to make up for the constant loss of protein and iron through the permeable kidney.
  B. Protein and iron given in the form most easily assimilated.
  C. In cases with edema restrict salt.
  D. Fluid restricted to the quantity in the food and enough for patient's comfort.
  E. An abundant supply of vitamin A.

IV. Food to Use.
  A. Meat.
    1. Lean veal or ham.
    2. Oysters.
    3. Sweetbreads and glandular organs.
  B. Vegetables.
    1. Lima beans.
    2. Lentils.
    3. Split peas or green peas.
    4. Mushrooms.

C. Rice and oatmeal.
D. Bananas.
E. Skim milk.
F. Coffee, tea, cocoa.

V. Suggestive Daily Menus:

Breakfast.

Grapefruit.
Whole wheat toast and sweet butter.
Orange marmalade.
Coffee.
Cream and sugar.
Glass of milk.

Dinner.

Baked stuffed tomato with celery and unsalted bacon.
Buttered cauliflower.
Date walnut salad.
Cream dressing.
Whole wheat muffin with butter.
Baked banana with sugar and lemon juice.

Supper.

Scalloped corn.
Squash.
Lettuce and tomato salad with mineral oil mayonnaise dressing or vinegar.
Bran muffin.
Sweet butter.
Tea.
Sugar.
Glass of milk.

VI. Dietary List of Foods of General Agreement.
A. Cereals.
B. Whole milk.
C. Any kind of bread.
D. Unsalted butter.
E. Simple desserts.

VII. Dietary List of Foods Recommended by a Few.
A. O'Hara diet where foods are divided into groups according to their protein content.

Further comment: The diet takes no consideration of quality of protein.
Vitamins and minerals.
Acid-base factor.

OBESITY

I. Conditions.
  A. Classification.
    1. Alimentary obesity.
      a. An accompaniment of the contentment and mental relaxation which comes with middle age.
      b. Lessened activity of the throid or other endocrine organs.
      c. Slowing down of general metabolic activity.
    2. Constitutional obesity.
      a. Burn fat less readily than other people.
      b. Abnormal increase transforming carbohydrate into fat.
      c. Distinct anomaly of energy exchange which results in a tendency toward fat accumulation.
    3. Obesity in various disease conditions.
      a. This group should include the following diseases:
        Adiposis dolorosa.
        Dystrophia.
        Thyroid obesity.
        Obesity of genital origin.
        Obesity of the peneal and suprarenal glands.
        Lipomatosis in which there are abnormal deposits of fat.
  B. Other factors involved.
    1. Handicaps the heart.
    2. "Deposition of fat in the abdominal cavity limits the freedom of movement of the diaphragm." (15:p. 444).
  C. Normal Condition.
    1. Energy need and energy intake are equal.

II. Etiology.
  A. Lack of exercise.
  B. Overeating.
  C. Improper functioning of the internal organs.
  D. Respiratory quotient is low and does not burn fat readily.
  E. Age.

III. Dietary Principles.
  A. Curtail the intake of food.
  B. Increase its utilization.
  C. Avoid the loss of body protein, mineral or vitamin deficiency, distress or great hunger when restricting the intake.
  D. The Caloric intake should be about 20 to 30% below the calculated normal maintenance diet.
  E. Keep nitrogen balance and the appropriate amount is regarded from 1.5 to 1.7 gram of protein per kilogram of calculated ideal body weight.
  F. About 50% of the food should come from carbohydrate.
  G. Fat not a necessary part of the diet for the obese and can be easily eliminated.

IV. Foods to Use.
- A. Citrus and fresh fruits.
  - 1. Stewed without sugar are permitted.
- B. Lean meats.
- C. Vegetables.
  - 1. 5 and 10% groups.
- D. Mineral oil mayonnaise.
- E. Dairy Products.
  - 1. One pint of milk per day.
  - 2. Butter.
  - 3. Cheese.
- F. Clear broths as desired.

V. Suggestive Daily Menus. (15;p. 452).

Breakfast.

Grapefruit.
Scalloped codfish with lemon.
Stewed tomatoes.
Saltine crackers.
Butter.
Coffee.

Dinner.

Roast beef with mushroom sauce.
Small baked potato with butter.
Beet greens.
Sliced cucumbers.
Fruit cup (orange, grapefruit, grapes.)
Glass of buttermilk.

Supper.

Cold roast lamb with mint sauce.
Green peas.
Squash.
Cabbage.
Tomato salad with mineral oil dressing.
Uneeda biscuits.
Cantaloupe.
Glass of skim milk.

VI. Dietary List of Foods of General Agreement.
- A. An abundance of fresh fruit or fruit without sugar.
  - 1. Oranges.
  - 2. Grapefruit.
  - 3. Berries.
- B. Liberal use of vegetables.
  - 1. 5-10% vegetables.
  - 2. Small amounts of the higher percentage vegetables.
- C. Lean meats.

D. One pint of milk and 3 squares of butter per day.
E. Protein in the form of eggs, cheese and meats.

VII. Dietary List of Foods Recommended by a Few.
A. No butter.
B. Skim milk.
C. Saccharine as a substitute for sugar.

PERNICIOUS AND SECONDARY ANEMIA.

I. Conditions.
  A. Important factors.
    1. Secondary anemia.
      a. "Hemorrhage.
      b. Diminished production of blood or impaired delivery of erythrocytes from the hematopaietic tissues into the circulation.
      c. Destruction of blood." (15:p. 712)
      d. Low color index.
      e. Anarexia.
    2. Pernicious anemia.
      a. Not solely a disease of the blood-making organs, but most striking changes are there.
      b. Low Platelet count.
      c. High color index.
      d. Achlorhydria or achylia gastrica is a persistent characteristic.
      e. Sore tongue.
      f. Gastro-intestinal disturbances.
  B. Normal Condition.
    1. Nutritive fluid circulating in the arteries and veins with the formed elements, red and white corpuscles, functioning normally from the necessary materials for blood building.

II. Etiology.
  A. Secondary anemia.
    1. Bleeding, hemorrhoids, orgastric ulcer.
    2. Infection.
    3. Poor dietary habits.
  B. Pernicious anemia.
    1. Deficiency disease.
    2. Gastric disturbance.

III. Dietary Principles.
  A. Iron-containing foods should be given to rebuild the hemoglobin.
  B. Diet rich in good protein and low in fat should be given.
    1. Fat restricted because lipoids are believed to have certain blood-destroying and growth-inhibiting properties.
  C. Carbohydrates added in amounts sufficient to provide the required caloric value.
    Average person should have 2,500 calories distributed as:
      1. Protein, 135 grams.
      2. Carbohydrate, 340 grams.
      3. Fat, 70 grams.

IV. Foods to Use.

A. Meat.

1. Kidney.
2. Liver.
3. Red skeletal muscle meats.
4. Brain.
5. Pancreas.

B. Fruits and particularly:

1. Peaches.
2. Apricots.
3. Plums.
4. Pineapple.
5. Strawberries.
6. Oranges.
7. Grapefruit.

C. Vegetables.

1. Spinach.
2. Beet greens.
3. Asparagus.
4. Cabbage.
5. Tomatoes.

D. Milk in moderate amounts.

V. Suggestive Daily Menus.

Breakfast.

Broiled liver.
Oatmeal.
Milk.
Sugar.
Toast and butter.
Peach.

Dinner.

Beef steak.
String beans.
Baked potato.
Bread.
Pineapple salad.
Rice, raisin, molded dessert.

Supper.

Liver soup.
Lean roast lamb.
Boiled macaroni.
Cabbage salad.
Biscuits (Uneeda) and butter.
Strawberries and milk.
Sugar.

VI. Dietary List of Foods of General Agreement.
- A. Liver or liver extract.
  - 1. Kidney.
  - 2. Giblets.
  - 3. Muscle meats.
- B. Fruits.
  - 1. Apricots.
  - 2. Grapefruit.
  - 3. Raisins.
  - 4. Oranges.
- C. Leafy vegetables.

VII. Dietary List of Foods Recommended by a Few.
- A. That large quantities of milk should be given.
- B. Only whole wheat bread.

PROTEIN SENSITIZATION OR ALLERGY.

I. Conditions.
  A. Important Factors.
    1. Is of transient nature thereby changing its form.
    2. Often find the following complications.
      a. Visual disturbances.
      b. Nervousness.
      c. Abdominal pain.
      d. Gastric and intestinal distress.
      e. Nausea.
      f. Vomiting.
      g. Constipation.
      h. Diarrhea.
      i. Skin irritation.
  B. Normal Condition.
    1. Through the process of digestion, both animal and vegetable proteins are broken down into their constituent parts and are able to circulate without producing an abnormal reaction in the body.

II. Etiology.
  A. Pollen, dust, or animal hair.
  B. Protein in foods.
  C. Certain drugs and vapors.
  D. Ability to become sensitive to proteins can be transmitted by heredity, but the particular systems of the idiosyncrasy need not be the same in both forbears and offspring.

III. Dietary Principles.
  A. Careful regulation of diet of those who have poor dietary habits.
  B. Individual consideration for each patient.
  C. Sensitization tests may be given to determine food giving the trouble.
    1. Avoid those foods that disagree in the diet.
  D. Heaviest meal should be at noon and the light one at supper.
  E. Plenty of water should be included in the menu.
  F. Choose vegetables with a high calcium content if milk and cheese are eliminated from the dietary.

IV. Foods to Use.
  A. "Elimination Diets" prepared by Rowe; (15:p. 498).

	Diet 1	Diet 2	Diet 3	Diet 4	Diet 5
Cereal	Natural rice	Corn	Rice Tapioca	Rice Rye	Milk alone for the test period 2-3 quarts a day
Bread	None	Corn pone	None	Rye, Rice, Rye crisp	
Meat or fish	Lamb	Bacon Chicken	Beef	Cod, halibut and white-fish	
Vegetables	Lettuce Spinach Carrots	Squash Asparagus Peas Arti-chokes	Tomatoes Celery String beans	Lettuce Carrots Peas Beets	
Fruits and Jams and fruit drinks	Lemon Pear Peaches	Pine-apple Apricot Prunes	Grape-fruit Pears Peaches	Pine-apple Apricots Pears	
Miscellan-eous	Sugar Olive oil Salt Olives unst. Maple syrup Gelatin	Sugar Mazola oil Salt	Sugar Wesson oil Salt Gelatin Maple syrup	Sugar Olive oil Salt Olives unst.	

V. Suggestive Daily Menus.

A. Menus are made from the diet lists keeping closely within the stated groups.

B. Process of elimination to reach a diet in the use of which the patient will be free of allergic symptoms, and to carefully add or subtract other foods.

C. "Suspected food allergy should not be ruled out until the several diets have been taken without relief, each for a period of from 5-7 days." (15:p. 498).

ULCER

I. Conditions.
  A. Classification.
    1. There are two types: gastric and duodenal.
      a. Biologically the same.
  B. Important Factors.
    1. The two types are subject to the same corrosive influence of the digestive juices.
    2. Same symptomalology:
      a. Gastric hyperacidity.
      b. Localized interference with the circulation.
      c. True hunger burning, piercing or boring pains coming on after meals.
      d. Occult blood in the feces.
  C. Normal Condition.
    1. "The ease and comfort with which food is disposed depends on the secretory and motor response the food obtains and the subjective sensation which it produces." (15:p. 145).

II. Etiology.
  A. Hereditary.
  B. Occupation.
    1. Stooped position.
  C. Infection.
  D. Local interference with circulation.
  E. Possible role of trauma.
    1. "A combination of vigorous muscular action and poorly masticated food." (15:p. 572).

III. Dietary Principles.
  A. Rest for the stomach.
    1. Both motor and secretory.
  B. Adequate nourishment for the patient.
  C. Individualization is always advisable.
    1. Must meet the needs of the patient.

IV. Foods to Use.
  A. Milk and cream flavored with cocoa or coffee.
  B. Eggs.
    1. Raw.
    2. Boiled.
    3. Poached.
  C. Cooked cereals.
  D. Milk toast.
  E. Mashed potatoes.
  F. Stewed and preserved fruits.
  G. Zwieback or dry toast.
  H. In later weeks of treatment, orange and fruit juices are given.

I. Lastly are the tender meats, pureed vegetables and simpler desserts given.
J. Agar should be given for bulk.

V. Suggestive Daily Menus. (15:p. 580).

First 2 days:

6 tbsp. milk and cream mixture--whole milk, 2 parts,-cream; 1 part, every hour from 7 A.M. to 9 P.M.

Next 5 days:

7:00 A.M.	3 oz. milk and cream mixture.	
8:00	3 oz. " " " "	
9:00	3 oz. " " " "	and 6 tbsp. of strained
10:00	3 oz. " " " "	oatmeal with cream.
11:00	3 oz. " " " "	
12:00	3 oz. " " " "	
1:00 P.M.	3 oz. " " " "	and 1 egg, raw or soft boiled.
2:00	3 oz. " " " "	
3:00	3 oz. " " " "	
4:00	3 oz. " " " "	
5:00	3 oz. " " " "	and 1 egg, raw or soft boiled.
6:00	3 oz. " " " "	
7:00	3 oz. " " " "	
8:00	3 oz. " " " "	
9:00	3 oz. " " " "	

Second Week.

First 3 days:

7:00 A.M.	3 oz. milk and cream mixture.	
8:00	3 oz. " " " "	and 6 T. strained oatmeal with
9:00	3 oz. " " " "	cream.
10:00	3 oz. " " " "	and 1 soft boiled egg.
11:00	3 oz. " " " "	
12:00	3 oz. " " " "	and 1 raw egg.
1:00 P.M.	3 oz. " " " "	
2:00	3 oz. " " " "	and 1 soft boiled egg.
3:00	3 oz. " " " "	
4:00	3 oz. " " " "	and 6 T. thin cream of wheat
5:00	3 oz. " " " "	with cream.
6:00	3 oz. " " " "	and 1 soft boiled egg.
7:00	3 oz. " " " "	
8:00	3 oz. " " " "	and 1 raw egg.

Next 4 days:

Same as above, except that a small slice of toast with butter is added at 11 A.M., and 1, 3 and 5 P.M.

Third Week.

7:00 A.M.	Juice of 1 orange, strained oatmeal with cream, 1 slice toast, 6 oz. milk and cream.
9:00	1 soft boiled egg, 1 slice toast, 1 tsp. preserves, 6 oz. milk and cream.

Third Week (Cont.)

11:00	1 raw egg with 6 oz. milk and cream.
1:00 P.M.	1 spoon mashed potato with butter, 1 slice toast with butter, 6 oz. milk and cream.
3:00	Tapioca pudding with cream, 1 slice toast, 1 soft boiled egg, 6 oz. milk and cream.
5:00	1 egg with milk, prune souffle, 1 slice toast with butter.
7:00	Cream of wheat with butter, apple sauce, 6 oz. milk and cream.
9:00	1 coddled or soft boiled egg, 1 slice toast, 6 oz. milk and cream.
10:00	½ glass orange juice.

Fourth Week:

6:00 A.M.	½ glass orange juice.
7:00	7 oz. milk and cream.
Breakfast	
8:30	Well cooked cereal with sugar and cream. 1 spoon apple sauce. 1 poached egg on toast. Glass milk and cream.
11:00	Glass milk and cream.
12:30 P.M.	Oysters (panned, creamed or raw) or very tender meat or fish. Baked or mashed potato with butter, toast. Tapioca pudding with cream. Glass milk and cream.
3:00	Glass milk and cream.
5:00	Glass milk and cream, toast with butter and preserves.
6:30	Soft boiled egg, cream of wheat with butter. 2 slices toast. Rice pudding with cream (no raisins). Glass milk and cream.
9:00	L glass milk and cream, orange Jello with cream or small, well-baked apple without core or skin.

VI. Dietary List of Foods of General Agreement.
   A. Sippy diet was recommended and many sent identical samples that they had copied.

VII. Dietary List of Foods Recommended by a Few.
   A. Alvarez Smooth Diet list.
   B. Lenhartz Diet list.

Foods Arranged Approximately According to Carbohydrate Content.

Vegetables

5%	10%	15%	20%
Lettuce	String beans	Green peas	Potatoes
Cucumbers	Pumpkin	Artichokes	Shell beans
Spinach	Turnip	Jerusalem	Baked beans
Asparagus	Kohl-Rai	Parsnips	Green corn
Rhubarb	Squash	Lima beans	Boiled rice
Endive	Beets	very young	Boiled
Marrow	Carrots		Macaroni
Sorrel	Onions		
Sauerkraut			
Beet Greens			
Dandelions			
Swiss Chard			
Celery			
Mushrooms			
Tomatoes			
Brussel sprouts			
Water Cress			
Sea Kale			
Okra			
Cauliflower			
Egg plant			
Cabbage			
Radishes			
Leeks			
String beans			
Broccoli			

Fruits

5%	10%	15%	20%
Ripe Olives	Strawberries	Raspberries	Plums
Grapefruit	Lemons	Currants	Bananas
	Cranberries	Apricots	Prunes
	Peaches	Pears	
	Pineapple	Apples	
	Blackberries	Blueberries	
	Oranges	Cherries	

Key to Hospital Numbers.

Assigned Number.	Hospital.	Location.
1	Cook County	Chicago, Illinois
2	University of Michigan	Ann Arbor, Michigan
3	Walter Reed General	Washington, D.C.
4	Vancouver General	Vancouver, B.C.
5	The Johns Hopkins	Baltimore, Maryland
6	University Hospital	Iowa City, Iowa
7	St. Lukes'	Chicago, Illinois
8	Michael Reese	Chicago, Illinois
9	Indiana University	Indianapolis, Indiana
10	Strong Memorial	Rochester, N. Y.
11	University of Minnesota	Minneapolis, Minnesota
12	Dr. Graves Latter Day Saints	Salt Lake City, Utah
13	Miami Valley	Dayton, Ohio
14	Mt. Sinai Hospital	Cleveland, Ohio
15	Methodist Episcopal	Indianapolis, Indiana
16	University of Alberta	Edmonton, Canada
17	Multnomah	Portland, Oregon
18	Children's Hospital	Boston, Mass.
19	Barnes	St. Louis, Mo.
20	Peter Brent Brigham	Boston, Mass.
21	St. John's	Brooklyn, N. Y.
22	Beth Isreal	Boston, Mass.
23	General Hospital of Everett	Everett, Washington
24	Doernbecher Children's	Portland, Oregon
25	Scripp's Metabolic	La Jolla, California
26	St. Lukes	Spokane, Washington
27	Port Angeles	Port Angeles, Wash.
28	Community Hospital	Newport, Washington
29	Monroe General	Monroe, Washington
30	St. Frances	Bellingham, Washington
31	Veterans Administration	Fort Harrison, Mont.
32	Columbus	Great Falls, Montana
33	Deaconess	Great Falls, Montana
34	St. Patrick	Missoula, Montana
35	St. James	Butte, Montana
36	St. Vincent's	Billings, Montana
37	Northern Pacific	Missoula, Montana
38	Murray	Butte, Montana
39	St. Joseph's	Lewistown, Montana
40	Sacred Heart	Havre, Montana
41	St. Peter's	Helena, Montana
42	Kennedy Deaconess	Havre, Montana
43	Saint John	Helena, Montana
44	Billings Deaconess	Billings, Montana
45	Bozeman Deaconess	Bozeman, Montana
46	Sidney Deaconess	Sidney, Montana

Assigned Number.	Hospital.	Location.
47	Barrett	Dillon, Montana
48	Libby General	Libby, Montana
49	Northern Pacific	Glendive, Montana
50	Musselshell Valley Hospital	Roundup, Montana
51	Holy Rosary	Miles City, Montana

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