A COMPARATIVE STUDY OF CENTRAL SUPPLY SERVICES ADMINISTERED UNDER NURSING AND NON-NURSING MANAGEMENT

by

Greta I. Fraser

Diploma, Dunedin Hospital School of Nursing,

Dunedin, New Zealand, 1949

B.S.N., University of Western Ontario, Canada, 1960

A Thesis submitted to the Faculty of the Graduate School of the University of Colorado in partial fulfillment of the requirements for the Degree

Master of Science

School of Nursing

1960

This Thesis for the M.S. degree by

Greta I. Fraser

has been approved for the

School of Nursing

by

Irene Murchison

Margaret E. Hibbard

Date July 29, 1960

Fraser, Greta Isabel (M. S., Nursing)

A Comparative Study of Central Supply Services Administered Under Nursing and Non-nursing Management

Thesis directed by Professor Irene Murchison

The purpose of this study was to determine, on the basis of opinions of head nurses, directors of nursing service and hospital administrators, whether a central supply service could be operated as efficiently under non-nursing administrative control as it could be under the control of the nursing department.

The normative-survey method of research was used for the investigation of the problem and the tool utilized for gathering the data was the questionnaire.

Two questionnaires were constructed. One, which requested background information as well as opinions, was submitted to directors of nursing service in twenty-five hospitals in which the central supply service functioned under the nursing department and to hospital administrators in twenty-five hospitals in which the central supply service functioned under a non-nursing department. The second questionnaire, which elicited opinions was sent to four head nurses in each one of the fifty hospitals.

The opinions of the head nurses indicated that those who worked with the central supply functioning under a non-nursing department were just as satisfied with the services they received as those who worked with it under the nursing department.

The study showed that directors of nursing service tend to regard the management of the central supply as a vital nursing function. Hospital administrators tend to regard the management of the central supply as a complex, specialized operation and to believe that the graduate nurse should devote her knowledge and skill to more direct nursing care activities.

The overall results of this study indicate that central supply departments administered under non-nursing management render as efficient service as do central supply departments administered by the nursing service.

This abstract of about 250 words is approved as to form and content. I recommend its publication.

Signed Irene Murchison
Instructor in charge of dissertation

ACKNOWLEDGMENT

The writer wishes to acknowledge the direction and assistance of Miss Irene Murchison, Professor of Nursing, the University of Colorado.

TABLE OF CONTENTS

CHAPTER		PAGE
I.	THE PRESENTATION OF THE PROBLEM	1
	The Problem	2
	Statement of the problem	2
	Importance of the study	3
	Scope and limitations of the study....	4
	Organization of the Remainder of the Study	5
II.	REVIEW OF THE LITERATURE	6
III.	METHODOLOGY OF THE STUDY.....	15
	Method of Study	15
	The Construction of the Questionnaires	17
	The Pilot Study	18
	Collection of Data	20
	Selection of the population	20
	Mailing the questionnaires	21
	The cover letter.....	21
IV.	ANALYSIS OF THE DATA	23
	Presentation of the Data	25
V.	SUMMARY, CONCLUSIONS AND RECOMMENDATIONS	60
	Summary	60

CHAPTER PAGE

Conclusions 62

Recommendations 65

BIBLIOGRAPHY 67

APPENDIX 71

LIST OF TABLES

TABLE		PAGE
I.	Numbers and Percentages of Questionnaires Returned, Eliminated and Utilized According to Groups I and II	26
II.	Numbers and Percentages of Head Nurse Respondents Classified According to Clinical Services	27
III.	Numbers and Percentages of Graduate and Non-graduate Nurse Supervisors in Groups I and II	29
IV.	Systems of Administrative Control and Supervision in Groups I and II	31
V.	Percentages of Responses of Head Nurses when Rating the Services Offered by the Central Supply	34
VI.	Numbers of Responses of Head Nurses, Classified According to Clinical Services, Regarding Whether or Not the Organization of the Central Supply Service Could be Improved	36
VII.	Numbers and Percentages of Responses of Head Nurses According to How Well the Central Supply Service Could be Managed by Another Department	40

PAGE

VIII. Numbers and Percentages of Head Nurses According to Prior Experience with a Central Supply Service Functioning under a Different Method of Administrative Control 42

IX. Numbers and Percentages of Responses of Nursing Directors in Group I and Hospital Administrators in Group II According to How Well the Central Supply Service Could be Managed by Another Department 44

X. Numbers and Percentages of Responses According to the Units Served by the Central Supply Service in Groups I and II 45

XI. Percentages of Responses According to the System Used for the Delivery and Collection of Supplies in Groups I and II 46

LIST OF OPINIONS

LIST PAGE

I. Problems Encountered by the Head Nurses in Groups I and II who Expressed the Need for Improved Central Supply Reorganization. 38

II. Advantages Stated by Nursing Directors Regarding Nursing Management of the Central Supply Service and by Hospital Administrators Regarding Non-nursing Management 48

III. Disadvantages Stated by Nursing Directors Regarding Nursing Management of the Central Supply Service and by Hospital Administrators Regarding Non-nursing Management 52

IV. Opinions of Head Nurses in Group I Stating Reasons for the Nursing Management and in Group II for the Non-nursing Management of the Central Supply Service 55

CHAPTER I

THE PRESENTATION OF THE PROBLEM

The past twenty years have brought revolutionary changes to hospital organization due in part to the scientific advances in medicine and the increasingly complex nature of the services offered to the patients. One of the important changes has occurred in regard to the management of the sterile and non-sterile supplies used in patient care by personnel in many and various hospital departments. The ubiquitous water sterilizers used for boiling instruments and trays in the utility rooms of nursing units have given way, in many hospitals, to production-line automatic equipment housed in a central area from which all of the appropriate hospital units are served. Oxygen tents, suction apparatus, hot water bottles, thermometers, and a myriad of other articles have been collected from hidden corners ranging from the basement to the attic and assembled in this one central location. Organized systems for the collection and delivery of supplies are common practice.

Until recent times caring for the equipment and supplies used in patient care was universally accepted as the prerogative of the nurse. Only nursing personnel were thought to possess the

knowledge and understanding necessary for the efficient operation of the service. Today this function of nursing is challenged. Questions such as the following are being posed. Is the nurse really the best person for the job? Has she the thorough knowledge necessary for the most effective management of the modern central supply unit? Does her preparation include not only the functions of supervision but also those of purchasing and inventory control? Can the nurse be better utilized in direct patient care? Basic to all of these is one fundamental underlying question. Can the central supply service be run equally as well, or better, by any department other than nursing? It was the purpose of this study to attempt to answer the latter question based on the opinions of head nurses, directors of nursing service, and hospital administrators.

I. THE PROBLEM

Statement of the problem. It was the purpose of this study (1) to determine the satisfaction expressed with central supply services which were administered by the nursing department as compared with those which were administered by a non-nursing department; (2) to identify the stated advantages and disadvantages of the two different methods of control; (3) to determine the hospital units served by the central supply services; and (4) to identify problems which may be specifically related to the nature

of the administrative control.

Importance of the study. The management of the supplies and equipment used in patient care is undergoing continual change. The developing pattern can be seen by reviewing recent hospital and pharmaceutical periodicals. The claim is being made that today's central supply should not "belong" to nursing service. Although such a trend would appear to be significant to nursing there is a notable absence of comment in the nursing literature regarding this development. It is, however, a topic of informal conversation among nurses in administrative positions. At this time there is concern in nursing circles regarding what professional nursing really is and where its boundaries lie. If the central supply service is a technical operation which can be handled and adequately supervised by non-nursing personnel to the satisfaction of the professional nursing staff and with no sacrifice to the quality of patient care, perhaps it should be removed from nursing service management and placed under the control of another appropriate department.

Nurses must look at the problem from an objective rather than an emotional point of view and examine the implications. Is the quality of service rendered by the central supply satisfactory when the reins of management are not held by professional nursing personnel? One way to find out is to compare both methods

in terms of the satisfaction expressed by personnel receiving the services and working in situations utilizing different systems of administrative control.

Scope and limitations of the study. Satisfaction with the services rendered by central supply services in fifty selected hospitals was studied. In twenty-five hospitals the central supply service was controlled by the nursing department and in the other twenty-five hospitals it was controlled by a non-nursing department.

The study was limited by the fact that satisfaction with the service was related only to the nature of the administrative control. Despite the nature of administrative control, details of organization vary from one hospital to another. The details may influence the efficiency of service and therefore the satisfaction expressed in relation to it. Some of these factors are acknowledged below but they were not specifically considered in the study: adequate or insufficient personnel at the level of operation; the preparation of the supervisor, whether a graduate nurse or non-nurse; the type of purchase and supply procedures, and the equipment available for carrying out the operations. All of these aspects and many others will affect the efficiency of the service and they may or may not be due to the nature of administrative control.

On the other hand, the actual utilization of a central area where supplies and equipment are handled assumes that some

general organizational principles can be applied in any unit with modification of specific procedures to suit the particular situation. It was felt that a study of fifty selected central supply services could provide valuable data for comparing the satisfaction expressed in relation to the type of administrative control.

II. ORGANIZATION OF THE REMAINDER OF THE THESIS

The following chapter, the review of the literature, contains a brief historical summary of the general development of central supply services in this country up to the present-day issue of the most effective kind of administrative organization for this unit. Chapter III, the methodology, describes the procedures and techniques utilized in preparing for the study, collecting the data, and revising the information gathered for analysis. The presentation of the data in Chapter IV consists of tables derived from the questionnaire results, and their interpretations. The final chapter, the summary, conclusions and recommendations presents a brief over-view of the study and the general results obtained as well as conclusions and recommendations. The Bibliography and Appendix conclude the thesis.

CHAPTER II

REVIEW OF THE LITERATURE

Although the utilization of a central supply service is considered a relatively new innovation in hospital practice, such units have existed in some hospitals for a long time. The functions and the scope of activities of these early supply services differed tremendously from some of the broad, modern technological operations found today but, nevertheless, they represent the forerunner of more recent developments.

An early report of 1932 by Sister M. De Paul of Misericordia Hospital, Philadelphia stated that their department was established in 1924.[1] Ida Miller, in 1931, wrote that the St. Joseph's Hospital in Denver began a "supply center" in 1926.[2] The first accounts of a central area for the care and storage of equipment and supplies listed some of the advantages as being better inventory control, availability of equipment, prevention of expensive duplication, breakage control and the removal of the burden of sterilization procedures from the operating room

---

[1] B. S. Burrell, "Pre-packaging--A Central Supply Tool," Hospital Management, 88: 80, August, 1959.

[2] Ibid., p. 80.

personnel.[3] The general absence of any mention in the early literature of the care of needles and syringes, intravenous equipment, oxygen and suction apparatus and other such articles was noteworthy. Today the care of these items is an integral function of the central supply. Indeed, the historical development of this service reflects the revolution in medical and nursing care which has taken place over the past two decades.

By 1944, 35 per cent of hospitals had established central supply services and by 1957 the percentage had risen to 75 per cent.[4] An extensive review of the hospital and nursing literature demonstrated that the role of this department continues to be increasingly recognized and understood and that central services have grown in number as well as in the extent of their activities.

The growth of central supply units proceeded on a trial and error basis as hospitals strove to incorporate the new service into their on-going pattern of operation. Gradually there was a shift from emphasis on the mechanical and economic benefits to be obtained to that of improved service to patients and more efficient use of nursing personnel.[5] Margaret Schafer stated that

---

[3] Ibid., p. 82.

[4] Ibid., p. 80.

[5] H. Rein, "A Central Supply Service," American Journal of Nursing, 47: 541, August, 1947.

better patient care resulted because professional personnel were guaranteed complete supplies and equipment without having to devote time to their preparation.[6]

In 1956 a study was carried out at Teachers College, Columbia University which undertook the definition of criteria in central supply planning.[7] This work has provided one practical guide, the use of which has advanced the end of the systems of trial and error. The journals of nursing and hospital literature also reflected the advancing maturity of central supply concepts. Criteria most frequently mentioned referred to location of the unit within the hospital, staffing patterns, inventory control, purchasing systems and the scope of the central supply activities. After 1957 the bulk of the literature dealt with specific techniques and procedures to improve efficiency and economy, rather than with the advantages, functions, and overall concepts of a central supply service. By this time the department had become accepted as an indispensable and integral hospital service in three-quarters of the hospitals in the United States.

---

[6]Margaret Schafer, "Central Supply-Economy and Efficiency," Hospital Topics, 30: 27, April, 1952.

[7]Mary Johnson, Isobel Reed, Maria Rementeria and Beatrice Stanley, "Consider These Criteria Before Planning a Central Sterilizing Supply Room" (Unpublished study, Teacher's College, Columbia University, New York, 1956)

Until 1951 the exclusive right of the nursing service department to manage the unit appeared to have been unquestioned. The following statement was made by Margaret Schafer "Because most of the materials supplied by the unit are used by or through the nursing department, that group is usually called upon to operate the unit."[8] Since 1951 sporadic articles have appeared in the hospital and pharmacy periodicals which challenge the fact that the central supply logically falls under nursing management.

The most emphatic questioning has come from the pharmacy personnel, based on the assumption that the preparation of the pharmacist fits him better for the efficient management of the central supply. As early as 1946 the departments of pharmacy and central supply were combined under the supervision of the hospital pharmacist at Mercy Hospital, Toledo, Ohio.[9] The value of such a combination, especially in smaller hospitals, was expressed by J. E. Smith in 1951.[10] Figures indicating the

---

[8]Schafer, op. cit., p. 27.

[9]Sister M. John. "The Department of Pharmacy and Central Supply, Mercy Hospital, Toledo, Ohio." The Bulletin of American Society of Hospital Pharmacists, 3: 14, January-February, 1946.

[10]J. E. Smith. "A Pharmacy Service Benefits Smaller Hospitals," The Canadian Hospital 28: 37, 80-108, September, 1951.

frequency of this type of combined service in the smaller hospitals were surprisingly high. Sister M. Theresa, a pharmacist, conducted an across-the-country survey concerning the use of this system and the following percentages are presented in her report: 21 per cent of hospitals of less than fifty beds; 39 per cent of hospitals of 50-99 beds; 79 per cent of hospitals of 100-199 beds utilized this combined system.[11]

The central supply department at the University of California Hospital, Los Angeles was managed by the pharmacist. Heard emphasized that the essential factor in the smooth successful operation of this unit was the central supply committee which included a representative from each section of the nursing service. This committee assured constant coordination and up-to-date discussion of nursing service needs.[12] At the Clinical Center, National Institute of Health, Washington, D. C. the central sterile supply was a division of the pharmacy department.[13]

---

[11]Sister M. Theresa. "Hospital Pharmacy and Central Supply Combination," Hospitals, 11:7, November, 1955.

[12]Jack S. Heard. "Combined Central Supply and Pharmacy Service at the University of California," The Bulletin of American Society of Hospital Pharmacists, 12: 607-611, November-December, 1955.

[13]Milton W. Scolaut, J. A. Scigliano, and J. N. Salvino, "The Central Sterile Supply of a Pharmacy Department," The Bulletin of American Society of Hospital Pharmacists, 11: 114-117, March-April, 1954.

Terrell, a hospital administrator, believed that pharmacists were better adapted to central supply administration than any other group because of the content of their professional curriculum. He described how the combination of pharmacy and central supply functioned at the Shannon West Texas Memorial Hospital, San Angelo.[14]

The results of a study carried out by Frank Oliver Salt were reported by Mary Helen Anderson. On the basis of hospital administrators' opinions, this study demonstrated the inadequacy of the basic preparation of the nurse for some of the functions of central supply management. In his study "The Potential Sources of Competent Central Supply Supervisors," Salt questioned sixty-six hospital administrators and compiled the following data:[15]

Administrators Consider Nursing Training Inadequate for Certain Central Sterile Supply Supervisory Functions

	Functions	Number Marking Inadequate
1.	To organize and supervise personnel	26 out of 66
2.	To set up and manage production-line type work	28 out of 66
3.	To choose and install adequate checks on sterility	13 out of 66

---

[14]Tol Terrell, "Pharmacy and Central Supply," Texas Hospitals, 10:7, November, 1954.

[15]Mary Helen Anderson. "Preparation for Central Service Supervision." Hospital Management, 87: 70-72, April 1959.

Functions (continued)	Number Marking Inadequate
4. To act as liason between purchasing agent and medical staff in establishing standardization controls	28 out of 66
5. To watch, understand and make suggestions for use of sterile supplies in the hospital	14 out of 66
6. To care for safety of personnel in handling of dirty or contaminated supplies	7 out of 66
7. To establish inventories and maintain proper inventory controls	29 out of 66
8. To teach central supply personnel and/or student nurses	9 out of 66
9. To control a pick-up and delivery system	14 out of 66
10. To evaluate, sell and establish new techniques in central service	30 out of 66
11. To direct other services, such as solution rooms, or equipment rooms if you desire them to be under C.S. Control	13 out of 66
12. To organize and operate the department for emergency or disaster conditions	28 out of 66

This investigation is quoted extensively to demonstrate the opinions of a selected number of administrators regarding the adequacy of the nursing supervisor, under the present conditions of her preparation, for the job of management of the central supply service.

Ruth Pendleton, R.N., described a rather unique situation and how it was put into effect at the New England Deaconess

Hospital, Boston. In this hospital the central supply, surgery and the recovery rooms operated as one unit directly responsible to hospital administration rather than to the nursing department.[16]

Only one publication outlining the various methods of central supply management could be found. Mary Helen Anderson discussed current systems of administration including supervision by nursing service, by the operating room, by a department head who was not a nurse such as the pharmacist, and by a person directly responsible to the hospital administrator.[17]

An even more recent development was the concept of the central dispatch system.[18] This represented the growth of the central supply to a separate department which functioned as the complete service center for the entire hospital with the department head or "dispatcher," as he was titled, directly responsible to hospital administration. This unit was the source of all supplies used in the hospital with the exception of food and narcotics. Although this system was not considered in detail in this study, it is mentioned here to indicate the possibility that the potentiality of

---

[16]Ruth Pendleton. "Department Functions Smoothly Under System of Direct Responsibility to Administration." Hospital Topics, 32: 77 -79, September, 1954.

[17]Mary Helen Anderson. "The Administrative Structure of CS," Hospital Management, 81:90, February, 1956.

[18]Jane Barton. "Automat Puts All Supplies in One Place," Modern Hospital, 89: 55-60, September, 1957.

this department to supply even broader services is now being conceptualized and, indeed, practiced.

Developments such as those outlined above demand that professional nurses systematically examine the changes in methods of administration of the central supply service, and look closely at the results of the various systems.

The following chapter describes the procedures used in this study in an attempt to determine the satisfaction expressed with the service offered when the central supply was managed by the nursing service department in comparison with administration by a non-nursing department.

CHAPTER III

METHODOLOGY OF THE STUDY

This chapter deals with the method of approach to the research problem. It explains the type of research method used in conducting the investigation, the specific technique employed for collecting the required information, the construction of the data-gathering tool, the selection of the population to be studied and the pilot study.

I. METHOD OF STUDY

The problem of this investigation was to discover, on the basis of the satisfaction expressed, whether a central supply service could be operated as efficiently under non-nursing management as it could be under the control of the nursing service department.

The normative-survey method of research was selected as being most appropriate for the investigation of this problem. According to Good, Barr and Scates, normative-survey research is directed toward ascertaining the prevailing conditions and seeks to answer the question, "What are the real facts with regard to

the existing conditions?"[18]

Having determined the method of research, the various techniques which could be used for the collection of the data were explored and appraised. These investigational techniques include questionnaire inquiries, interview studies, observational investigations, content analysis of documentary and verbal materials, survey-appraisal procedures and others.[19]

Because the questionnaire is one device for requesting factual information as well as for asking opinions, and because it can be used to gain insight into the attitudes of a group, this was the data-gathering tool chosen for the study.[20] The following advantages listed by Parten concerning the mailed questionnaire were most relevant for this particular investigation: (1) it is possible to cover a wider geographical area than can be accomplished by other techniques; (2) the informant may answer more frankly since anonymity is assured; (3) questions are standardized and (4) the questionnaire can be answered at the convenience of the respondent.[21]

---

[18]Carter V. Good, D. S. Barr and Douglas E. Scates, A Methodology of Educational Research (New York: Appleton-Century-Crofts, 1941), p. 287.

[19]Carter V. Good and Douglas E. Scates, Methods of Research (New York: Appleton-Century-Crofts, 1954), p. 548.

[20]Good, Barr and Scates, op. cit., p. 324.

[21]Mildred B. Parten, Surveys, Polls and Samples (New York: Harper and Brothers, 1950) pp. 94-95.

II. THE CONSTRUCTION OF THE QUESTIONNAIRES

Before beginning the development of the data-gathering instruments, certain principles underlying the communication process were reviewed. These were carefully considered during the construction of the questionnaires. Some of the factors which were taken into account in the development and evaluation of the tools included the need to frankly state the purpose of the study, the clarity and brevity of the questions, the total number of questions, their logical arrangement, and the method by which the data would be analyzed, classified and interpreted.[22] The importance of creating interest on the part of the respondents and, therefore, stimulating their willingness to answer the questionnaires was also taken into account.

Two questionnaires were constructed. One which requested background information and opinions was submitted to the director of nursing service or the hospital administrator, depending upon the nature of the administrative control of the central supply service. The other was directed to four head nurses in each hospital, representing the medical and/or surgical, the obstetric, the pediatric and the operating room units. Copies of these questionnaires are included in the Appendix.

---

[22]Pauline V. Young, Scientific Social Surveys and Research (New York: Prentice-Hall, Inc., 1956) pp. 184-188.

Both of the questionnaires contained items which could be answered by a check mark or a short statement as well as a minimum number of open-end questions for the purpose of obtaining the respondents' opinions. To enable systematic handling of the responses to the open-end questions, categories were established. It was planned to sort the data into the following categories: patient care, organization, techniques, equipment and supplies and qualifications.

In the head nurse questionnaire, a three-point rating scale was utilized to elicit the head nurse's evaluation of the services she received from the central supply department.

The first draft of the questionnaires was submitted to four nurse administrators for critical appraisal and the recommended changes were made before the instruments were pre-tested.

III. THE PILOT STUDY

A vitally important step is that of pre-testing the data-gathering device. The pilot study provides the means for detecting and solving unanticipated problems in the actual administration of the questionnaire and for testing the planned method for analyzing the data. Too, it may indicate the need to include additional questions or delete irrelevant ones.[23]

---

[23]Claire Sellitz, Marie Jahoda, Morton Deutsch and Stuart W. Cook, Research Methods in Social Relations (New York: Henry Holt Company, Inc., 1959), pp. 550-551.

For the purpose of the pilot study two hospitals were selected which reflected as closely as possible the total population to be investigated. Appointments for interviews were set up and the five questionnaires were distributed to each hospital. No verbal explanation of the nature of the study was given at this time because it was desirable that the respondents in the pilot study had no additional information than that which would be received through the mailed questionnaire and the accompanying cover letter. The respondents were asked to mark any questions which were not completely clear and to note their criticisms and suggestions. A second interview was arranged to collect and discuss the completed questionnaires.

In both of the hospitals the five respondents stated that the instructions were clear and the questions readily interpretable and unambiguous. The data obtained from the pilot study was carefully weighed. It was found that the set of questions did, indeed, elicit the information desired for the purposes of the study, and that the data lent itself to tabulation and analysis as planned. No changes were made and the questionnaires used in the final study were identical with those of the pilot study.

IV. COLLECTION OF DATA

In addition to considering the technicalities involved in the construction of the questionnaires, other indispensable factors were taken into account in the collection of the data.

Selection of the population. For the purpose of this study random sampling procedures could not be employed as the total population of hospitals in which the central supply service did not function under the control of nursing service management was not known. The names of twenty-five hospitals operating their central supply under a department other than nursing were, therefore, gathered from various sources. Some names were supplied by professional organizations, others by hospital supply houses and still others were extracted from relevant articles published in pharmaceutical and hospital administration periodicals.

These twenty-five hospitals were then matched as closely as possible with twenty-five hospitals in which the central supply service was administered under the nursing department. The two groups of hospitals were matched on such factors as the size of the hospital, the type of patient services, and the type of control. The Guide Issue of Hospitals published in August, 1959 by the American Hospital Association was utilized to locate the second group of names.

A total of two hundred and fifty questionnaires were sent to the following personnel: twenty-five directors of nursing and one hundred head nurses in hospitals in which the central supply was administered by the nursing department and twenty-five hospital administrators and one hundred head nurses in hospitals in which the central supply service functioned under the control of a non-nursing department.

Mailing the questionnaire. The questionnaires to be submitted to head nurses were included with the one directed to the hospital administrator or the director of nursing service with a request that they be distributed through the appropriate channels of authority. Full instructions for completing the questionnaires were given and anonymity was assured. A stamped, self-addressed envelope for the return of the questionnaires was attached to each of the five forms. The respondents were asked to return the questionnaires within the following three weeks.

The cover letter. A cover letter accompanied the five questionnaires sent to the nurse or hospital administrators. This letter explained the purpose of the study very briefly and attempted to stimulate the receiver to participate in the study. It also repeated the directions stated on the questionnaires. An offer to forward copies of the findings of the study, if this was desired, was also included. In short, the cover letter attempted to explain

what was being done, why it was being done, and for whom it was being done.[24] A copy of the cover letter is included in the Appendix.

The following chapter will present the analysis and interpretation of the data obtained from the returned questionnaires.

---

[24]Carter V. Good, Introduction to Educational Research (New York: Appleton-Century-Crofts, Inc., 1959), pp. 176-178.

CHAPTER IV

ANALYSIS OF THE DATA

For the purpose of gathering adequate information for the study a total of two hundred and fifty questionnaires was mailed. Twenty-five were sent to directors of nursing service employed in hospitals in which the central supply service was operated under the administrative control of the nursing department. Questionnaires were also directed to four head nurses in each of these same hospitals; one in the operating room, one in obstetrics, one in a medical and/or surgical unit and one in pediatrics. For convenience in later descriptive material this group will be known throughout the remainder of the study as Group I. A second group of questionnaires was sent to twenty-five hospitals in which the central supply service was operated under the administrative control of a non-nursing department. One questionnaire, identical to that sent to the directors of nursing service, was submitted to each hospital administrator as well as four to head nurses representing the same clinical services as those in Group I. This latter group will henceforth be designated Group II.

Following close scrutiny of the returned questionnaires, a certain number in each group were not included in the final analysis

of the data because of: (1) incomplete responses which did not lend themselves to tabulation; (2) indefinite responses due to the fact that some central supply services were in the process of reorganization at the time of the study and (3) the fact that some central supply services did not fit into the population description established for this study.

In Group I, of the twenty-one questionnaires returned by directors of nursing service, one was eliminated and of the seventy-six returned by head nurses, six were eliminated. In Group II, twenty hospital administrators and seventy-two head nurses returned the questionnaires. Of these, three of the former and twelve of the latter were eliminated.

Twenty central supply services were represented in Group I and seventeen central supply services in Group II. The former were in general hospitals in which the total number of beds ranged from ninety-three to one thousand and nineteen. The latter were in general hospitals in which the total number of beds ranged from eighty-five to one thousand five hundred and sixteen.

In general the responses were specific in relation to the questions asked and the answers to the open-end questions were clearly expressed and readily tabulated.

The two groups of questionnaires were kept separate and the data from each were tabulated and analyzed as two distinct

units. In most instances one table was utilized to present both sets of data for the convenience of making comparisons.

Each question was analyzed separately except where duplication of information was discovered. In the questionnaires submitted to the directors of nursing service and the hospital administrators, it was found that questions number three, seven and eleven, and four, six and eleven elicited similar information. When this occurred, and information already given was confirmed, repeated, or re-emphasized in other questions, only one response was tabulated. Question number ten, relative to responsibility for inventory control, was eliminated because the information obtained was not relevant.

I. PRESENTATION OF THE DATA

The numbers and percentages of the total questionnaires returned, eliminated, and analyzed are shown in Table I. Table II presents the numbers and percentages of head nurse responses classified according to the clinical services of medical and/or surgical, obstetrics, pediatrics and operating room.

The data with regard to graduate or non-graduate supervision of the central supply service are found in Table III. Of the twenty central supply services studied in Group I, eighteen or 90 per cent had graduate nurse supervision. Of the seventeen

TABLE I

NUMBERS AND PERCENTAGES OF QUESTIONNAIRES RETURNED, ELIMINATED AND UTILIZED ACCORDING TO GROUPS I AND II

	Group I				Group II			
	Nursing Directors		Head Nurses		Hospital Administrators		Head Nurses	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Returned	21	84.0	76	76.0	20	80.0	72	72.0
Eliminated	1	4.0	6	6.0	3	12.0	12	12.0
Utilized	20	80.0	70	70.0	17	68.0	60	60.0

TABLE II

NUMBERS AND PER CENT OF HEAD NURSE RESPONDENTS CLASSIFIED ACCORDING TO CLINICAL SERVICES

	Group I		Group II	
Clinical Service	Number	Per Cent	Number	Per Cent
Operating Room	18	72	15	60
Obstetrics	19	76	15	60
Medical and/or Surgical	18	72	15	60
Pediatrics	15	60	15	60
Total	70	70	60	60

central supply services in Group II, ten or 59 per cent had non-graduate nurse supervision.

A detailed explanation of the various types of administrative control and supervision found in Group II is presented in Table IV. Of the seven graduate nurse supervisors in Group II, five were directly responsible to hospital administration, one to the department head of Supply Operations, and the other to the pharmicist. Another graduate nurse was an assistant to the Administrative Supervisor of the central supply service. The administrative supervisor was a business administration graduate who assumed all responsibility for the business management of central supply. Inventory control, the messenger system, purchasing, cost control, and personnel management included some of his stated functions. The graduate nurse supervised procedures and techniques used in preparing supplies, trained new employees, coordinated central service activities with the nursing and medical staffs, and visited the nursing units to observe the use of supplies and to ensure the return of instruments and equipment used.

Of the ten non-graduate nurse supervisors in Group II, one was a "dispatcher" who reported to the hospital administrator. One was a Central Supply technician. This person was a licensed practical nurse who was directly responsible to the pharmacist. One pharmacist carried out the supervisory functions and was accountable to hospital administration. An administrative assistant

TABLE III

NUMBERS AND PERCENTAGES OF GRADUATE AND NON-GRADUATE NURSE SUPERVISORS IN GROUPS I AND II

Supervisor	Group I		Group II	
	Number	Per Cent	Number	Per Cent
Graduate Nurse	18	90.0	7	41.0
Non-graduate Nurse	2	10.0	10	59.0
Totals	20	100.0	17	100.0

had direct responsibility for the supervision of the central supply in one hospital. Four central supply services were headed by methods or industrial engineers all of whom reported to the hospital administrator.

The opinions of the head nurses in Groups I and II relative to their satisfaction with the services received are presented in Table V. A three-point rating scale was used to elicit these evaluations, the respondents being asked to check one of the categories "Usually," "Sometimes" or "Never" with reference to each of the statements listed. Some confusion resulted regarding the items referring to the delivery and collection of supplies. In Group II the last item, number eleven, was not checked by 38.3 per cent of the respondents. It is felt that this confusion occurred because 90 per cent had checked that they received satisfactory messenger service and considered the final item inapplicable. In reality, either "Sometimes" or "Never" would have been the appropriate response.

The column headed "Not Appropriate" was added to handle those responses indicating that certain clinical services did not use the facilities of the central supply service at all or used limited services only. In Group I this included six nurses from the operating room and one from obstetrics. In Group II this included one head nurse from the operating room, one from medical-surgical, and one from pediatrics.

TABLE IV

SYSTEMS OF ADMINISTRATIVE CONTROL AND SUPERVISION IN GROUP II

	Method of Supervision and Control	Number of Hospitals
I.	Graduate Nurse Supervisor Responsible to Hospital Administration	4
II.	Graduate Nurse Supervisor in Central Sterile Supply Responsible to Hospital Administration	1
III.	Graduate Nurse Supervisor Responsible to Department Head of Supply Operations	1
IV.	Graduate Nurse Supervisor Responsible to Pharmacist	1
V.	Dispatcher Supervisor of Central Dispatch Center Responsible to Hospital Administration	1
VI.	Industrial or Methods Engineer Supervisor Responsible to Hospital Administration	4
VII.	Central Supply Technician (L.P.N.) Supervisor Responsible to Pharmacist	1
VIII.	Administrative Assistant Supervisor Responsible to Hospital Administration	1
IX.	Administrative Supervisor with Graduate Nurse Assistant Responsible to Hospital Administration	1
X.	Pharmacist Supervisor Responsible to Hospital Administration	2
	TOTAL	17

As can be seen by reviewing Table V the percentage of respondents in Group II checking "Usually" was higher on every item, except number three, than those checking "Usually" in Group I.

Over 10 per cent more respondents in Group II than in Group I were satisfied regarding the following items; supplies are received in the quantity ordered; equipment is clean; equipment is in working order; each package contains the complete supplies needed; emergency orders are handled promptly; deliveries are regular and collections are regular. In Group II, 8.3 per cent more respondents than in Group I were satisfied with the overall efficiency of the services offered by the central supply. In Group I, 2.9 per cent more respondents than in Group II were satisfied with reference to supplies being received on time.

Items nine, ten, and eleven show that fewer central supply services managed by nursing departments than those managed by non-nursing departments have an organized messenger service. In Group I, 25 per cent of the head nurses utilized ward personnel to collect and return supplies. In Group II, 6.7 per cent utilized ward personnel to carry out this function. An average was taken of the percentages checking "Usually" for the first ten items. In Group I, the average was 75.6 per cent while in Group II it was 87.7 per cent. The lowest percentage of respondents checking

"Usually" in both groups was in regard to the promptness with which emergency requests were handled. In Group I 68.6 per cent and in Group II 83.3 per cent checked "Usually" for this item.

Table VI shows the opinions of head nurses in Groups I and II with regard to the need for improvement in the existing organization of the central supply service. The number of "yes" and "no" responses were broken down according to clinical services and the total numbers and percentages were also given. The total percentage of "yes" responses, indicating that improvement was needed, was 9 per cent lower in Group I than in Group II. Twelve of the seventeen nurses in Group I who believed that improvement was necessary were either operating room or obstetric personnel.

The main problems encountered by those nurses who considered that improvements in the organization of the central supply service were necessary are listed on page 38. Mentioned most frequently by both groups were difficulties in obtaining emergency requests promptly and the consequent waste of time by the ward personnel in travelling to and from the central supply. Another common problem for both groups concerned receiving trays with either wrong or incomplete supplies. Where no messenger service existed this lack was often expressed as a problem because nursing personnel needed for patient care had to spend precious

TABLE V

PERCENTAGES OF RESPONSES OF HEAD NURSES WHEN RATING THE SERVICES OFFERED BY CENTRAL SUPPLY

Items Rated	Group I					Group II				
	Usually	Some-times	Never	N.A.*	Total	Usually	Some-times	Never	N.A.*	Total
1. The service offered by the central supply is efficient	80.0	10.0	0	10.0	100	88.3	10.0	0	1.7	100
2. Supplies are received in the quantity ordered	70.0	20.0	0	10.0	100	85.0	13.3	0	1.7	100
3. Supplies are received on time	82.9	7.1	0	10.0	100	80.0	18.3	0	1.7	100
4. Equipment is clean	84.3	5.7	0	10.0	100	95.0	3.3	0	1.7	100
5. Equipment is in working order	80.0	10.0	0	10.0	100	91.7	6.7	0	1.7	100
6. Packages are clearly marked	85.7	4.3	0	10.0	100	86.7	8.3	0	5.0	100
7. Each package contains the complete supplies needed	75.7	14.3	0	10.0	100	86.7	8.3	0	5.0	100
8. Emergency orders are handled promptly	68.6	20.0	1.4	10.0	100	83.3	15.0	0	1.7	100
9. Deliveries are regular	64.3	8.6	1.4	25.7	100	90.0	5.0	0	5.0	100

TABLE V (continued)

PERCENTAGES OF RESPONSES OF HEAD NURSES WHEN RATING THE SERVICES OFFERED BY CENTRAL SUPPLY

Items Rated	Group I					Group II				
	Usually	Some-times	Never	N.A.*	Total	Usually	Some-times	Never	N.A.*	Total
10. Collections are regular	64.3	8.6	1.4	25.7	100	90.0	3.3	1.7	5.0	100
11. Your personnel collect and return supplies	24.3	55.7	10.0	10.0	100	6.7	20.0	30.0	5.0	61.7**

* N.A. refers to "Not Appropriate." This category was added for the purpose of including units which did not use the Central Supply Service facilities or used limited services only.

** 38.3 percent did not respond.

TABLE VI

NUMBERS OF RESPONSES OF HEAD NURSES, CLASSIFIED ACCORDING TO CLINICAL SERVICES, REGARDING WHETHER OR NOT THE ORGANIZATION OF THE CENTRAL SUPPLY SERVICE COULD BE IMPROVED

Clinical Services	Group I			Group II		
	Number of "Yes" Responses	Number of "No" Responses	Not Applicable*	Number of "Yes" Responses	Number of "No" Responses	Not Applicable*
Operating room	5	7	6	5	9	1
Obstetrics	7	11	1	5	10	0
Medical and/or Surgical	2	16	0	5	10	0
Pediatrics	3	12	0	5	10	0
Total number	17	46	7	20	39	1
Total Per Cent	24.3	65.7	10.0	33.3	65.0	1.7

*These units do not use the facilities of the Central Supply Service or use limited services only.

time collecting and returning supplies and equipment. Head nurses in Group I mentioned that equipment received was not always clean. Head nurses in Group II stated that special equipment was sometimes not in perfect working order. Two further problems expressed by Group I were the lack of a standard method of packaging sterile supplies and failure to receive the full quantity of supplies ordered. Two respondents in each group mentioned that the available services should be increased and the scope of the central supply enlarged. Three head nurses in Group II mentioned unspecified "difficulties with personnel" and one respondent in Group I commented on the lack of interdepartmental rapport with the central supply service.

Table VII shows the responses of the head nurses in Groups I and II according to whether the central supply service could be managed equally well, better or less well by some other department. If the respondent checked "better" she was asked to state which department she would recommend and why.

Of the respondents in Group I one nurse or 1.4 per cent answered that it could be managed equally well by some department other than nursing. In Group II, nineteen head nurses or 31.7 per cent felt that central supply service could be run equally well by another department.

Four nurses in Group I were of the opinion that it could be managed better by another department. Of these four, one respondent felt that it should be a direct function of the operating

LIST I

PROBLEMS ENCOUNTERED BY THE HEAD NURSES IN GROUPS I AND II WHO EXPRESSED THE NEED FOR IMPROVED CENTRAL SUPPLY SERVICE ORGANIZATION

Group I	Group II
Lack of an organized messenger system	Problems with delivery when the dumb waiter is occupied
Messenger system too irregular	Personnel must go to the central supply for emergency needs
Ward personnel waste time going to the central supply	Ward personnel waste time going to the central supply
Lack of uniform method of packaging sterile supplies	
Trays are not always complete	Difficulty in obtaining special trays
Equipment is not always clean	Equipment is not always in working order
Emergency requests are not delivered promptly	Personnel are not always available for meeting emergency requests
All the supplies requested are seldom received.	Lack of adequate linen supplies
Lack of qualified attendants in the central supply	Difficulties with personnel
Personnel are not sure what supplies they have	
Poor interdepartmental rapport	
The service is not "central" enough--some sterilization is carried out on the wards	Not "central" enough. Scope limited. Need to increase available services.
Lack of adequate supervision	
Lack of floor space and closet space in the central supply	Poor location of central supply

room, one stated that obstetrics could more efficiently take care of their own supplies and two felt that it should not be controlled by nursing service at all. Of the latter, one suggested the purchasing department as an alternative and the other stated that the central supply service should be an individual department responsible to hospital administration. Both of these respondents expressed the opinion that close coordination with nursing service would be essential for the successful functioning of the central supply service. Six head nurses in Group II felt that the central supply could be better operated by another department and of these six, four specified that nursing service could carry out this function more efficiently. One nurse stated that pharmacy personnel were better prepared and the other favored central stores for the operation of the central supply service. Ninety per cent in Group I were of the opinion that only nursing service could manage the central supply efficiently while in Group II, 58.3 per cent felt that their particular non-nursing department could do this work better than any other.

Table VIII shows the number and per cent of head nurses in both groups who had had previous experience working with a central supply service under some other form of administrative control and those who have always worked with the same system of management. Of the head nurses in Group I, that is, the group working in hospitals where the central supply service was managed

TABLE VII

NUMBERS AND PERCENTAGES OF RESPONSES OF HEAD NURSES ACCORDING TO HOW WELL THE CENTRAL SUPPLY SERVICE COULD BE MANAGED BY ANOTHER DEPARTMENT

	Group I		Group II	
Response Category	Number	Per Cent	Number	Per Cent
Managed equally well by another department	1	1.4	19	31.7
Managed better by another department	4	5.7	6	10.0
Managed less well by another department	63	90.0	35	58.3
No response	2	2.9	0	0
Totals	70	100.0	60	100.0

by nursing, nine or 12.9 per cent had had experience with a different system and 87.1 per cent had always worked with central supply under the nursing department. Comparing Table VII and Table VIII, in Group I, 90 per cent believed that it could be managed best by nursing service and 87.1 per cent had never worked under any other system. In Group II, 56.7 per cent had worked in hospitals where a different kind of management existed and 43.3 per cent stated that they had always functioned in a situation where the central supply service was operated by a non-nursing department.

Table IX shows the opinions of the nursing service directors in Group I and the hospital administrators in Group II regarding whether the central supply could be managed equally well, better or less well by some other department. In Group I, two directors of nursing service checked "better," and both were of the opinion that central supply activities were not a function of nursing service. One suggested that the service should be an individual department directly responsible to hospital administration and the other felt that it should be managed by Purchasing and Supply with consultation from nursing service, pharmacy, and laboratory. Four nursing directors checked that it could be managed equally well by another department but did not specify the department. They were in agreement that this would be possible as long as the supervisor had a thorough knowledge of hospital needs and supplies and if close cooperation with nursing personnel

TABLE VIII

NUMBERS AND PERCENTAGES OF HEAD NURSES ACCORDING TO PRIOR EXPERIENCE WITH A CENTRAL SUPPLY SERVICE FUNCTIONING UNDER A DIFFERENT METHOD OF ADMINISTRATIVE CONTROL

	Group I		Group II	
Experience of Head Nurses	Number	Per Cent	Number	Per Cent
Previous experience with a different method of administrative control	9	12.9	34	56.7
No previous experience with a different method of administrative control	61	87.1	26	43.3
Totals	70	100	60	100

was established. Fourteen directors of nursing felt that nursing service could supply the most efficient administrative management.

In Group II, one hospital administrator checked "better." He felt that the pharmacist had the required basic background including a knowledge of modern technological advances. He preferred management by the pharmacy rather than direct responsibility to hospital administration. Of the five administrators checking "equally well" three stated that it could be managed as efficiently by nursing service. The other two did not specify an alternate method of control. Of those in Group II, 63.7 per cent felt that the particular non-nursing method of control existing in their institution was the most efficient system of administration.

The number of departments and units which utilize the facilities of the central supply service are shown in Table X. It can be seen that there is a tendency for the scope of service, in terms of the different hospital departments served, to be more extensive under the Group II system.

Table XI indicates the systems used for the delivery and collection of supplies as stated by the administrators in Groups I and II. In Group I 25 per cent and in Group II 11.8 per cent of the individual units are responsible for this function. From the data it would appear that more central supply services in Group II provide some kind of organized messenger service.

TABLE IX

NUMBERS AND PERCENTAGES OF RESPONSES OF NURSING DIRECTORS IN GROUP I AND HOSPITAL ADMINISTRATORS IN GROUP II ACCORDING TO HOW WELL THE CENTRAL SUPPLY SERVICE COULD BE MANAGED BY ANOTHER DEPARTMENT

	Group I		Group II	
Response Category	Number	Per Cent	Number	Per Cent
Managed equally well by another department	4	20.0	5	29.4
Managed better by another department	2	10.0	1	5.9
Managed less well by another department	14	70.0	11	64.7
Totals	20	100.0	17	100

TABLE X

NUMBERS AND PERCENTAGES OF RESPONSES ACCORDING TO THE UNITS SERVED BY THE CENTRAL SUPPLY SERVICE IN GROUPS I AND II

Units or Departments Served	Group I		Group II	
	Number	Per Cent	Number	Per Cent
Nursing units	20	100	17	100.0
Operating room	18	90	16	94.1
Labor and delivery	17	85	16	94.1
O.P.D.	18	90	17	100.1
Laboratory	12	60	9	53.0
Blood bank	16	80	12	70.6
Others				
Radiology	5	25	9	53.0
Emergency	8	40	7	41.1
Pathology	1	5	2	11.8
Nursing education	1	5	1	5.9
Rehabilitation	1	5	1	5.9
Heart station	1	5	0	0
Physicians offices	3	15	1	5.9
Physical medicine	1	5	4	23.5
Research activities	2	10	4	23.5
Cardiac catheterization	0	0	4	23.5
Pulmonary laboratory	0	0	2	11.8
Anaesthesiology	0	0	5	29.4
Administration	0	0	1	5.9
Medical records	0	0	1	5.9
Dietary	0	0	11	11.8
Physical therapy	0	0	3	17.6

TABLE XI

PERCENTAGES OF RESPONSES ACCORDING TO THE SYSTEM USED FOR THE DELIVERY AND COLLECTION OF SUPPLIES IN GROUPS I AND II

System of Delivery and Collection	Group I Per Cent	Group II Per Cent
Central supply service	75.0	88.2
Individual units	25.0	11.8
Totals	100.0	100.0

Lists containing the opinions given in answer to open-end questions are found on pages 48-59. These are classified in accordance with pre-established categories. List II outlines the advantages commonly expressed by directors of nursing services in relation to management of the central supply service by the nursing department and the advantages stated by hospital administrators in relation to management of the central supply service by a non-nursing department. List III outlines the disadvantages expressed by these two groups on the same subject.

List IV contains the opinions of head nurses in Group I regarding reasons why the nursing department should manage the central supply service and of head nurses in Group II regarding reasons why a non-nursing department should carry out this function.

LIST II

ADVANTAGES STATED BY NURSING DIRECTORS REGARDING NURSING MANAGEMENT OF THE CENTRAL SUPPLY SERVICE AND BY HOSPITAL ADMINISTRATORS REGARDING NON-NURSING MANAGEMENT

Nursing Directors	Hospital Administrators
Patient Care	**Patient Care**
The needs, requests, and problems of the nursing units are more readily understood.	Nursing personnel are able to devote their time and skill to patient care activities
Difficulties between the wards and the central supply service are more easily handled.	Professional nursing personnel are able to concentrate on solving nursing problems directly concerned with the bedside care of the patient.
It is easier to make changes for improved service for patient care.	Nursing personnel can be used for nursing functions.
Organization	**Organization**
The central supply service is a vital function of the nursing department.	The central supply service is not a nursing function but requires nursing consultation.
Nursing service is the largest department served and needs to control supply activities.	Eliminates nursing control of a non-nursing activity.

Nursing Directors

Organization (continued)

Nursing has control of instituting new procedures and changes in equipment.

The service is more flexible under nursing service.

Direct communication and close cooperation between the central supply and nursing service are assured.

The central supply service is the hub of the medical and surgical service.

Staffing by nursing service has many advantages.

Nursing personnel are able to carry out research regarding new items.

Hospital Administrators

Organization (continued)

The principle problem is organization to achieve quality and volume.

Organization allows for the broad integration of concepts of materials and management.

Close cooperation between administration and supply functions are assured.

Serves all appropriate hospital departments while under nursing service the tendency is for it to be a servant to nursing.

Personnel remain in the department and are not sent to relieve in nursing units when they are short-handed.

The central supply service is not a sideline of nursing but a complex speciality.

The basic principles of operation of the pharmacy are almost identical.

Reduction of manpower through combination of like activities.

Nursing Directors

Techniques

Nursing personnel have a sound understanding of sterilization techniques.

Close cooperation with committees on standardization and procedures.

Equipment and Supplies

Supplies are used almost exclusively by nursing service and this department should have control of the operations involved.

Nursing personnel are more responsive to supply and equipment needs.

Qualifications

Nursing personnel are best prepared to understand and solve central supply service problems.

Lay personnel are not qualified to understand the responsibilities associated with this department.

Hospital Administrators

Techniques

The pharmacist has a better scientific understanding of the techniques necessary including sterilization.

Allows for better maintenance of standards established jointly with nursing service.

Equipment and Supplies

Consolidation of various hospital supply functions is achieved and production, sterility and economy are coordinated.

With greater use of disposable supplies there is need for evaluation of cost, production, and conservation of supplies.

Qualifications

This is a business operation for which nursing personnel are not prepared.

Nursing personnel are not qualified to understand production methods, cost control, methods analysis and inventory control.

Nursing Directors

Qualifications (continued)

Only nursing personnel are familiar with all the hospital departments served and know the purpose for which the supplies are prepared.

Nursing personnel understand emergency needs and requests.

Nursing personnel understand the requests of the medical staff.

Hospital Administrators

Qualifications (continued)

The skills and knowledge required are not limited to nursing personnel.

The pharmacist has the basic background necessary.

Supply and control problems can be handled more efficiently through hospital administration.

LIST III

DISADVANTAGES STATED BY NURSING DIRECTORS REGARDING NURSING MANAGEMENT OF THE CENTRAL SUPPLY SERVICE AND BY HOSPITAL ADMINISTRATORS REGARDING NON-NURSING MANAGEMENT

Nursing Directors	Hospital Administrators
Patient Care	**Patient Care**
	Nursing personnel understand nursing and medical needs readily.
The time and abilities of a well-qualified nursing supervisor are used in a non-patient area.	
Organization	**Organization**
Adds to the organizational responsibilities of the director of nursing service.	Resistance of nursing personnel to a change from the traditional management by nursing service.
Central supply service problems with purchasing are best handled through hospital administration.	Cooperation is more difficult to establish when the supervisor is not responsible to the department head of the main units servced.
Inventory control is not efficient.	
Poor use of nursing manpower as it is possible for the service to function efficiently under a non-nursing department.	There is no "pool" of personnel available to relieve for unexpected leave, absences due to sickness, etc.
The functions are more peculiar to the pharmacy.	

Nursing Directors	Hospital Administrators
Organization (continued)	Organization (continued)
The nursing supervisor cannot always provide sufficient direction as there are too many other demands on her time.	The pharmacist sometimes has insufficient time for adequate supervision.
Techniques	Techniques
Waste of nurses time when lay personnel can be taught a sound knowledge of sterilization techniques.	
Nursing personnel are sometimes ineffective as they tend to use out-moded, traditional methods.	
Equipment and Supplies	Equipment and Supplies
Nursing personnel are not qualified to direct the maintenance of equipment.	Nursing personnel have the ability to improvise when necessary.
Poor use of nurses' time when a lay person well-versed in hospital supplies can carry out this function.	Nursing personnel feel less responsibility for the care and conservation of supplies and equipment.

Nursing Directors

Qualifications

Nursing personnel do not have some of the special preparation needed to run the central supply service.

Nursing personnel are not familiar with purchasing functions, inventory control or accounting procedures.

Supervision by a professional graduate nurse is not essential.

Hospital Administrators

Qualifications

LIST IV

OPINIONS OF HEAD NURSES IN GROUP I STATING REASONS FOR THE NURSING MANAGEMENT AND IN GROUP II FOR THE NON-NURSING MANAGEMENT OF THE CENTRAL SUPPLY SERVICE

Group I	Group II
Patient Care	**Patient Care**
Nursing personnel have a better understanding of nursing problems and needs.	Nurses are needed for direct patient care.
Nursing personnel are close to the wards and are more aware of the supplies and equipment needed to give good patient care.	Removes responsibility for supplies from nursing personnel who can give their full attention to nursing problems.
Nursing personnel know best how to render a service so closely connected with good nursing care.	A qualified methods engineer is capable of thoroughly understanding nursing needs and problems.
Nursing personnel are able to evaluate current practices in the light of proper patient care.	An effective system of communication achieves coordination through which nursing needs and objectives can be met.
Organization	**Organization**
The central supply service is an integral part of nursing service.	Central supply activities are not nursing functions.
Nursing service is the largest department supplied.	This is a large operation too complex to be managed by nursing service.

Group I	Group II
Organization (continued)	Organization (continued)
The central supply service is more efficiently handled under nursing service.	The central supply service is equally as efficient under a non-nursing department so why use the time of a professional graduate nurse.
Nursing personnel are best able to coordinate and control these activities.	The pharmacist has a better understanding of the philosophy and the functions of the central supply service.
Close coordination and good communications would not be possible if the department were independent.	There is excellent cooperation and a good system of communications.
Nursing personnel know the working conditions in the different nursing units.	Central supply service is an administrative function requiring close liason with purchasing and with nursing.
New ideas are fostered by a creative nurse because of her sound understanding.	As an individual department it functions perfectly to the satisfaction of the nursing personnel.
The scope of service is broader under nursing management.	The scope of the central supply is broader as it serves the entire hospital.
Nursing principles are involved and it is not just a mechanical process.	As an individual department it has one goal, the preparation and care of supplies and equipment.

Group I	Group II
Organization (cont.)	Organization (cont.)
	The management is more efficient and economical.
	The collection and delivery system is better organized.
	No ordering of supplies is necessary. There is an efficient system for replacing the basic compliment of carts containing linen, sterile supplies, housekeeping supplies, etc.
Techniques	Techniques
Nursing personnel are more efficient in the preparation of trays and supplies.	Processing and packaging supplies does not require a graduate nurse except for consultation.
Nursing personnel understand the techniques and procedures necessary.	More uniform methods are used.
Nursing personnel are trained in a knowledge of sterilizing techniques and are therefore more efficient.	The techniques required can be learned by any person of average intelligence.
Nursing personnel realize the importance of cleanliness.	The supplies received are always clean, well-wrapped and complete.

Group I	Group II
Supplies and Equipment	**Supplies and Equipment**
Nursing personnel are more responsive to requests for emergency equipment and supplies.	The personnel are always prepared for emergencies and requests are handled promptly.
Nursing personnel realize the importance of having all equipment in working order.	The proper maintenance of equipment is more effective.
The multitude and complexity of supplies and equipment make nursing service management essential.	Supply and equipment functions involve special operations which nurses are not qualified to supervise.
Nursing personnel have better judgment when changes to new products are required.	The pharmacist has a better knowledge and understanding of new products and equipment.
Nursing personnel are experienced in using the equipment and can answer questions about it.	Equipment can be circulated, repaired and replaced more efficiently.
Qualifications	**Qualifications**
Nursing personnel have a better understanding of the supply needs of the entire hospital.	Nurses are qualified for patient care not handling supplies.
Nursing personnel only have the vast knowledge necessary to cope with the problems of the central supply service.	Nursing personnel are not qualified to run this complex operation.

Group I

Qualifications (continued)

Lay personnel cannot acquire the extensive knowledge necessary regarding different trays and equipment.

Nursing personnel are familiar with hospital terminology.

Nursing personnel are the only ones capable of rendering efficient service in this area.

Nursing personnel understand nursing needs better than any other department.

Nursing personnel have the right training and experience.

Nursing personnel are more enthusiastic about their duties.

Group II

Qualifications (continued)

The skills and techniques required are readily learned and utilized by non-nursing personnel.

The skills and knowledge necessary are not restricted to nursing personnel.

The industrial engineer is specifically qualified for this specialized job.

Supervision by a methods engineer provides efficient and smooth service.

Specially trained personnel are needed to render efficient service.

Personnel trained for this job have more pride in work performance.

The pharmacist has the training and knowledge required for the operation of the service.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

I. SUMMARY

The management of the supplies and equipment used in the provision of patient care is undergoing change. The constant technological advances in automatic sterilizing processes and the increasing use of disposable sterile supplies have caused a trend toward the utilization of production-line methods. The question has been raised as to whether the professional nurse is the only person or even the best qualified to supervise the central supply service. Are her specialized skills not needed more for professional nursing care activities?

An attempt was made in this study to determine whether or not central supply services could be operated efficiently when not controlled by the nursing service department. Opinions of directors of nursing service, hospital administrators, and head nurses were elicited for the purpose of determining how satisfactory central supply services controlled by non-nursing administration were in comparison to those managed by nursing service.

The normative-survey method of research was used. It was planned to gather facts and opinions about central supply services in fifty hospitals, twenty-five in which this service was controlled by the nursing department and twenty-five in which it was administered by some other department.

An attempt was made to select hospitals of varying sizes. Both groups of central supply services represented hospitals which were matched on relevant factors such as the size and type of the institution. The population used in the analysis of data represented hospitals which ranged from ninety-three to one thousand and nineteen beds in one group and eighty-five to one thousand five hundred and sixteen beds in the other. Two hundred and fifty questionnaires were sent to the fifty selected hospitals. Twenty-five were submitted to directors of nursing service and one hundred to head nurses in the group of hospitals in which the central supply service functioned under the nursing service. Twenty-five questionnaires were also sent to hospital administrators and one hundred to head nurses in those hospitals in which the central supply service was managed by a non-nursing department. In the final analysis of the data, information concerning twenty central supply services representing the former method of management and seventeen representing the latter method of management was included. Each question was tabulated and

analyzed and the data from the two groups studied were kept separate. In most instances the data derived from each group were presented on one table so that comparisons could be made.

The overall results of the study indicate that central supply departments functioning under non-nursing administrative control render as efficient service as do central supply departments administered by nursing service.

II. CONCLUSIONS

On the basis of one study it is rarely possible to prove or disprove that one method of operation is as good or better than another. Although this study is no exception some significant conclusions can be drawn from the facts and opinions gathered and analyzed.

1. Head nurses working with the central supply managed by a non-nursing department are as satisfied with the services received as are head nurses working with it under nursing service management. Approximately ten per cent more of the former group expressed greater satisfaction.

2. More head nurses in Group II are satisfied with the cleanliness and working condition of the equipment they receive than those in Group I.

3. More head nurses in Group I express dissatisfaction because of an insufficient amount of supplies received.

4. More than half of the head nurses in Group II have had prior experience working with a central supply service under a different system of administrative control. These nurses seem more open to the idea that the service can be operated efficiently by an alternative department.

5. Head nurses who had had experience with only one method of administrative control of the central supply believe this to be the most efficient kind of management.

6. Fewer head nurses in Group I expressed the need for improvement in the organization of the central supply service but more problems were stated by this group.

7. The problem most frequently encountered by both groups of head nurses was the lack of prompt handling of emergency requests.

8. The scope of activities is broader when the central supply service is administered by a non-nursing department.

9. Organized messenger systems are found less frequently in central supply services administered under the department of nursing.

10. Directors of nursing service, with two exceptions, believe that the central supply service can be administered more efficiently by nursing than by any other department.

11. Many directors of nursing believe that the central supply service is a vital function of the nursing department.

12. Many also believe that only nurses can adequately understand the hospital and nursing needs for supplies and equipment particularly in regard to emergency requests.

13. Most hospital administrators believe that the management of central supply is not a nursing function but a specialized operation requiring specialized supervisory personnel.

14. Many hospital administrators believe that modern principles and concepts of a central supply service require a thorough knowledge of purchase and supply functions, production-line supervision, cost-accounting, and methods analysis.

15. Most hospital administrators are satisfied with the administration of the central supply service under their own particular system of non-nursing control.

16. Most hospital administrators believe that graduate nurses are not qualified to supervise present day central supply activities.

17. Most hospital administrators believe that nursing personnel should devote their time to activities directly concerned with nursing care.

18. Some hospital administrators believe that their biggest problem is the resistance of nursing personnel to the change from traditional control of the central supply service by the nursing department to non-nursing control.

19. When the central supply service is operated by a non-nursing department, close cooperation and communication with nursing service through an organized committee system are essential for the smooth, efficient functioning of the service.

20. One-third of the central supply services administered by a department other than nursing utilize graduate nurse supervisors. Whether this is due to expediency, improved efficiency or tradition is not known.

III. RECOMMENDATIONS

1. The management of the central supply service should be considered a specialized operation which functions to render efficient and complete service to all appropriate hospital departments.

2. Personnel should be qualified for the management of the central supply service.

3. Training for central supply management should include a knowledge of purchase and supply functions; techniques of supervision and communications; personnel management; methods analysis; cost control; techniques and principles of sterilization; and hospital and nursing needs in regard to supplies and equipment.

4. An organized system which does not include personnel from the nursing units, should be established for the delivery and collection of supplies.

5. All central supply services which function under the control of non-nursing departments should utilize nursing consultation through the media of a planned committee system.

6. Serious consideration should be given to the organization of central supply services under the management of a non-nursing department of hospital administration.

7. Research studies should be carried out by individual hospitals to determine the most efficient method of administration for the central supply service.

BIBLIOGRAPHY

A. BOOKS

Barrett, Jean. Ward Management and Teaching. New York: Appleton-Century-Crofts, Inc., 1949.

Good, Carter V. Introduction to Educational Research. New York: Appleton-Century-Crofts, Inc., 1959.

Good, Carter V. and Douglas E. Scates. Methods of Research. New York: Appleton-Century-Crofts, 1954.

Good, Carter V., D. S. Barr and Douglas E. Scates. A Methodology of Educational Research. New York: Appleton-Century-Crofts, 1941.

Parten, Mildred B. Surveys, Polls and Samples. New York: Harper and Brothers, 1950.

Sellitz, Claire, Marie Jahoda, Morton Deutsch and Stuart W. Cook. Research Methods in Social Relations. New York: Henry Holt Company, Inc., 1959.

Walter, Carl W. The Aseptic Treatment of Wounds. New York: The MacMillan Company, 1948.

Young, Pauline V. Scientific Social Surveys and Research. New York: Prentice-Hall, Inc., 1956.

B. PERIODICALS

Anderson, Mary Helen. "Central Service--A Challenge," Nursing Outlook, 3: 655-656, December 1955.

_____ "Central Service Supervision Study," Hospital Management, 87: 79, February, 1959.

Anderson, Mary Helen. "Educational Preparation for Central Service Supervision," Hospital Management, 85: 80-83, May, 1958.

_____ "Establishing a Central Service Department in a Hospital," Hospital Management, 85: 80-84, April, 1958.

_____ "Preparation for Central Supply Supervision," Hospital Management, 87: 70-72, April, 1959.

_____ "Setting Up a Pick-up and Delivery Service," Hospital Management, 79: 49, April, 1955.

_____ "The Administrative Structure of the CS," Hospital Management, 81: 90, February, 1956.

Barton, Jane. "Automat Puts All Supplies in One Place," Modern Hospital, 89: 55-60, September, 1957.

Bindel, Catherine A. "Central Supply is the Root of Good Service," The Modern Hospital, 71: 70-72, December, 1948.

Brackett, Mary. "The Central Service Needs Advice from Other Departments," Hospital Management, 78: 71-72, December, 1954.

Burrell, B. S. "Prepackaging--A Central Service Tool," Hospital Management, 88: 80-81, August, 1959.

Comer, E. Wayne. "Prepackaging," Hospital Topics, 3: 71-72, September, 1953.

Graham, Reuben H. "The Purchasing Agent Can Help Ease the Labor Shortage," Hospitals, 26: 90-92, October, 1952.

Hassan, William E. "Management of the Central Supply," Hospital Topics, 31: 72, May, 1953.

Heard, Jack S. "Combined Central Supply and Pharmacy Service at the University of California," The Bulletin of American Society of Hospital Pharmacists, 12: 607-611, November-December, 1955.

John, Sister M. "The Departments of Pharmacy and Central Supply, Mercy Hospital, Toledo, Ohio," The Bulletin of American Society of Hospital Pharmacists, 3: 14-16, January-February, 1946.

Markus, Frederick E. and Jean Christie. "What is Wrong with Conventional Central Service Planning," Hospital Topics, 33: 87, December, 1955.

McNutt, John. "Streamlining Central Supply," Hospital Management, 78: 66-68, August, 1954.

Pendleton, Ruth. "Department Functions Smoothly Under System of Direct Responsibility to Administration," Hospital Topics, 32: 77-79, September, 1954.

Prickett, Edna A. "Work Simplification in Central Supply Service," Hospital Topics, 31: 75-80, July, 1952.

Rein, H. "A Central Supply Service," The American Journal of Nursing, 47: 540-543, August, 1947.

Roberts, E. "Five Big Features of Central Supply Service," Hospital Management, 76: 64-66, December, 1953.

Schafer, Margaret. "Central Supply-Economy and Efficiency," Hospital Topics, 30: 27-30, April, 1952.

Schafer, Margaret. "Standardization in the Central Supply Department," Hospital Topics, 33: 95, June, 1955.

Skolaut, Milton W., J. A. Scigliano and J. N. Salvino. "The Central Sterile Supply of a Pharmacy Department," The Bulletin of American Society of Hospital Pharmacists, 11: 114-117, March-April, 1954.

Smith, J. E. "A Pharmacy Service Benefits Smaller Hospitals," The Canadian Hospital, 28: 37, 80-108, September, 1951.

Terrel, Tol. "Pharmacy and Central Supply," Texas Hospitals, 10:7, November, 1954.

Theresa, Sister M. "Hospital Pharmacy and Central Supply Combination," Hospitals, 11:7, November, 1955.

Theresa, Sister M. "A Pharmacist Looks at Pharmacy-Central Supply Combination," Hospital Management, 79: 76-77, June, 1955.

Ustas, Matthew J. "Installing a CS Control System," Hospital Topics, 32: 81-84, December, 1954.

UNPUBLISHED MATERIALS

Johnson, Mary, Isobel Reed, Maria Rementeria and Beatrice Stanley. "Consider These Criteria Before Planning a Central Sterile Supply Room." Unpublished study, Teachers College, Columbia University, New York, 1956.

MISCELLANEOUS

Guide Issue of Hospitals, American Hospital Association, August, 1959.

APPENDIX

1077 14th Street
Boulder, Colorado

Dear

The most effective and economical utilization of hospital personnel is a matter of concern to both nursing directors and hospital administrators and calls for the study of methods of management presently used in hospitals. The increasing trend for central supply services to be managed by departments other than nursing service has sparked my interest in investigating this area.

As a graduate student in the nursing service administration program at the University of Colorado, I am carrying out an investigation to study central supply services which function under the control of nursing service and those which are managed by other departments. Your participation in this study would be much appreciated and would be useful for those hospital and nursing service administrators who seek to improve the management of this service.

I would be most grateful if you would fill out the questionnaire which is enclosed and return it in the stamped, addressed envelope by May 23rd.

Because the head nurses are the members of the nursing service personnel who work most directly with the central supply, their opinions are also of great value. I am, therefore, enclosing four other questionnaires with stamped, addressed envelopes. Would you be kind enough to see that these are distributed, as directed on the questionnaires, to one head nurse on each of the following units: Pediatrics, obstetrics, operating room and a medical and/or surgical ward? The directions are included on the questionnaires.

I would be happy to send you a copy of the findings of the study if you so request.

Your cooperation and assistance are sincerely appreciated.

Yours truly,

Greta I. Fraser

CENTRAL SERVICE QUESTIONNAIRE

To: The Director of Nursing Service

Purpose: This questionnaire is for the purpose of identifying the nature of the management of your central supply service and of obtaining your opinion of this type of control. The information is intended to provide background material for a study on the control of this service.

Directions: Please check the appropriate answer in 1, 2, 5 and 8 and fill in answers to the other questions. Please enclose the completed questionnaire in the stamped, addressed envelope provided and return to the sender, G. I. Fraser, 1077 14th Street, Boulder, Colorado, by May 23rd. DO NOT SIGN YOUR NAME.

Position:_____ Date:_____

1. The central supply supervisor is: A graduate nurse_____
   : A non-nurse (title) _____

2. The supervisor is directly responsible to:
   Nursing Service _____
   Hospital Administration_____
   Other (please name)_____

3. Major advantages of this type of control_____

   _____

   _____

4. Major disadvantages, if any: _____

   _____

   _____

CENTRAL SERVICE QUESTIONNAIRE (continued)

5. Do you consider that the central supply could be managed:
   Equally as well ___Better___Less well___by another department?

6. If your answer is in the affirmative, which department and why?

   _____

   _____

7. If your answer is in the negative, why not?_____

   _____

   _____

8. Who is responsible for the deliveries and collections of supplies?

   Central Supply_____
   Individual Units_____
   Other (name) _____

9. Please check the units served by the central supply and add any others that are not mentioned:

   Nursing Units_____

   Operating Room_____

   Labor & Delivery_____

   O. P. D._____

   Laboratory_____

   Blood Bank_____

   Others:_____

CENTRAL SERVICE QUESTIONNAIRE (continued)

10. Who is responsible for inventory control?_____

11. Please add any other comments or opinions that you would like to make:

_____

_____

_____

_____

_____

CENTRAL SERVICE QUESTIONNAIRE

To: The Head Nurse

Purpose: The purpose of this questionnaire is to obtain your opinion of how well the central supply serves you in your hospital. The information is intended to provide background material for a study on the nature of the management of this service.

Directions: The following is a list of statements which apply to the central supply. Please check in the appropriate column on the right the word that you think best fits the statement. Please enclose the completed sheet in the stamped, addressed envelope and return to the sender: G. I. Fraser, 1077 14th Street, Boulder, Colorado, by May 23rd. DO NOT SIGN YOUR NAME. Thank you for your assistance.

	Usually	Sometimes	Never
1. The service rendered by central supply is efficient.			
2. Supplies are received in the quantity ordered.			
3. Supplies are received on time.			
4. Equipment is clean.			
5. Equipment is in working order.			
6. Packages are clearly marked.			
7. Each package contains the complete supplies needed.			
8. Emergency orders are handled promptly.			
9. Deliveries are regular.			
10. Collections are regular.			
11. Your personnel collect and return supplies.			

CENTRAL SERVICE QUESTIONNAIRE (continued)

Please answer the following questions.

Do you think the central supply could be better organized than it is at present? Check one. Yes_____ No _____

If you answered "yes", what are your main problems under the present system?_____

_____

Have you ever worked in a hospital in which the service was under the control of a different department? Check one. Yes____ No _____

Do you think the service could be handled equally as well ____ better _____ less well _____ by another department? Check one.

If you answered the last question in the affirmative, which department would you suggest and why?_____

_____

_____

If you answered in the negative, why do you think that this service can be most efficiently rendered by the nursing service?_____

_____

_____