

The Relationship Between Control of the Nursing Personnel  
Budget and Control of Staffing Elements

by

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## CHAPTER I

### Introduction, Review of Literature, Research Questions, Theoretical Framework and Hypotheses

#### Introduction

On October 1, 1983, a new system of reimbursement to acute care facilities for Medicare patients was instituted. It is reported that this change will have the most drastic and far-reaching effect upon the health care system in the United States since the inception of the Medicare Program in 1965 (Health Care Financial Management, August, 1983).

The new Medicare system of reimbursement calls for a fixed prospective rate per admission based on the diagnostic grouping wherein the patient is categorized. This new system has been named Diagnostic Related Categories (DRG's). The past system of reimbursement was based on the cost of supplying care for that particular patient.

The total effects of this change are unknown, but studies (Dowling, 1974) indicate that reimbursement by diagnostic category will be most likely to affect changes of increased number of cases treated, decreased length of stay, decreased complexity of case mix, decreased intensity of service, decreased scope of service, decreased level of amenities, decreased quality level, decreased input prices,

decreased investment in resources, decreased teaching programs, and increased efficiency.

Why is this important to nursing in general and nursing administration in particular? The influence of "decreased intensity of service," and "decrease in quality of patient care" due to the reduction of available funds will influence nursing directly. The Nursing Division often constitutes from 50-60% of the total acute care hospital budget (Stevens, B. 1980) and the major part of the nursing budget is salaries. The Nursing Personnel Budget will be a natural target for financial cuts. The amount of nursing care available per patient figured in either nurse/patient ratio or nursing hours per patient day will more than likely be reduced, lowering the "intensity of care" and the "quality of care."

Will nursing have a say in what services are cut? Will nursing have a say in the amount of nursing care that will be cut? Will nursing be the passive recipient of cuts without being able to identify and voice the consequences? Will Nursing Directors be able to identify the levels of care that can be given for given resources in order to relate quality logically to cost? Will nursing attempt to do the impossible by providing the same level or quality of care with a reduction in the number of nurses, resulting in "burn-out" of staff, lowered morale, or loss of professional goals?

The key to these issues is thought to be the Director of Nursing Services (DNS) and the control of the Nursing Personnel Budget. A Director of Nurses with expertise in

financial management and budgeting combined with his/her unique knowledge and experience of the practice of nursing is thought to be able to make optimal decisions which will balance efficiency and quality in patient care delivery in the "cut-back" climate of the diagnosis related group (DRG) reimbursement mechanism.

This study will address the research questions:

1. How much are nursing education, financial education, and nursing management experience of the Director of Nursing Services related to the control of the Nursing Personnel Budget?
2. How does the size of the acute care institution relate to the Director of Nursing's control of the Nursing Personnel Budget?
3. How much is the Director of Nursing's control of the Nursing Personnel Budget associated with his/her control of staff/patient ratios, staff mix, and the hiring, firing, and promotions of staff?

Another purpose of this study is to provide a profile of Directors of Nursing in acute care hospitals in Oregon and the levels of control of Nursing Personnel Budgets immediately prior to the influence of the DRG payment mechanism to provide a data base for future comparison.

#### Review of the Literature

In today's economy of financial constraint and attempts to control the high costs of health care such as the diagnosis-related group (DRG) reimbursement scheme, the control of

the amount of nursing care that will be available to patients assumes a greater importance. Nursing leaders need to have at their disposal the financial resources to insure an adequate number of qualified nurses on the premises and at the patient's bedside 7 days a week, 24 hours a day, to respond without delay to patients' needs (Rotkovitch, 1981).

Control of staff/patient ratio. Nurse staffing has long been of major interest to the profession of nursing. In a published comprehensive literature review on nurse staffing in 1973, over 1,026 articles were discovered. Of the 182 staffing studies that were reviewed and analyzed, only 2 attempted to look at the impact of nursing administrative leadership upon the amount of staff required to deliver nursing care. Due to a lack of specific studies, the authors could only report that administrative variables "probably" have an effect on utilization and amount of staff required.

Levine, Siegel, and De La Puente (1961) conducted a study of actual ratios of nurses to patients in short term general hospitals and allied special hospitals across the United States. The survey included 5,399 hospitals. The average ratio was found to be 89 bedside nurses per 100 patients. Much diversity between the reported average and the actual ratios of individual hospitals was reported. As the size of the hospital increased, the staffing ratios decreased (less staff per patient). The bedside nursing ratio was found to be highest in the West (more staff per patient) and lowest (less staff per patient) in the Northwest.

In a study in 1960, Safford and Schlotfeldt reported a correlation between nursing workload and quality of care measurements.

Nurse staffing is often expressed in "nursing hours per patient day." It is a figure which is easily calculated and which allows for comparisons among institutions. Total nursing personnel over three shifts are multiplied by eight hours (duty shift) and this figure is then divided by the number of patients cared for. The resulting figure is the nursing hours per patient day. Barbara Stevens (1980) cautions against use of the nursing hours per patient day as a universal norm by hospital administrators to measure the achievement of the nurse executive.

A major study of staffing by the Illinois Study Commission on Nursing (1966-1970) used nursing hours per patient day as a dependent variable to test multiple independent variables affecting staffing. Eighteen hospitals were studied. A strong positive relationship between sophistication of the Nursing Service Administration as measured by 35 items and nursing hours per patient day was reported. The higher the sophistication of nursing leadership, the greater the numbers of nursing hours per patient day. The 35 items used in the study were thought to contribute to "good nursing management."

Parrish and Cleland (1981) surveyed 71 Directors of Nursing utilizing a Likert-type questionnaire. One of the findings reported was the 14.1% of the Directors indicated

that they did not have the authority to modify the number of nursing positions in their departments.

In a survey of Nursing Directors in Oregon conducted by the Willamette Council of Hospital Nursing Administrators in 1977, prior approval of a superior was required to develop staffing patterns (numbers of nurses) by;

33% of Directors (hospitals 51-100 beds)

10% of Directors (hospitals 101-250 beds)

45% of Directors (hospitals over 250 beds).

Director of Nursing Service (DNS) control of staff/patient ratio was selected as a dependent variable for this study. It will be defined as "the authority and/or ability to change the nurse/patient ratio (number of staff nurses per patient) up or down as needed."

Control of staff mix. There are many articles in the literature concerning newer modalities of nursing care delivery which call for either an all Registered Nurse staff or all licensed staff. There is controversy about the economy or lack of economy of the "all professional nursing staff." It is thought that the mode of care is not as important as the Director of Nursing's authority and/or ability to change the mix of Registered Nurses, Licensed Practical Nurses, and Nursing Assistants. Under the influence of the "cut-back" economy and DRG reimbursement mechanism for Medicare patients, there could well be a shift from more professional nursing to less professional nursing personnel in the acute care hospital. Again, it is thought to be important

that the Director of Nursing have the control of the decisions about staff mix, whether he/she should decide to increase or decrease the percentage of Registered Nurses to Practical Nurses or licensed to unlicensed personnel.

Abdellah and Levine (1958) studied the effect of nursing staff mix on satisfactions with nursing care. They studied 57 large general hospitals and questioned 8,660 patients and 9,480 nurses. They reported that in hospitals with higher professional nursing hours, non-obstetrical patients reported fewer unfulfilled needs. They found no relationship between total nursing hours and the numbers of unfulfilled patient needs. There was a strong relationship between professional nursing hours available and patients' feelings of the adequacy of care. Staff nurses' feelings of adequacy, however, were related more to the total nursing hours available. Ideal staffing was reported to be 4.7 hours per patient day of which 2.5 would be provided by professional nurses and 2.2 by other nursing personnel.

In the 1961 study by Levine, Stanley, and De La Puente, the average staff mix across the United States was reported as professional nurse 27.9; practical nurse 24.6; nurse aide and orderly 47.5 (total of 89 RNs, LPNs, aides per 100 patients). It was also reported that as the ratio of professional nurses increase, the number of administrative and supervisory nurses decreased.

In Kaeser's study of 98 extended care facilities in Oregon (1980), a correlation was found between inadequacy of

care indicators and number of practical nursing care hours as opposed to Registered Nurse hours of care.

In Parrish and Cleland's study in 1981, 14.1% of the Directors studied did not have the authority to change the professional to non-professional mix of their nursing staffs.

Director of Nursing Service (DNS) control of staff mix was selected as a second dependent variable for this study. It will be defined as "the authority and/or ability to change the ratio of Registered Nurses, Licensed Practical Nurses, and Nursing Assistants on the nursing staff."

Control of staff promotions and control of hiring and firing. Control by the Director of Nursing of staff promotions, hiring, and firing was not specifically addressed in the literature except in administrative texts.

The study of Nursing Directors in Oregon by the Willamette Council of Hospital Nursing Service Directors in 1977 did report the following percentages of Directors needing prior approval of a superior before being able to terminate an unsatisfactory employee;

- 20% Directors (hospitals 0-50 beds)
- 10% Directors (hospitals 51-100 beds)
- 20% Directors (hospitals 101-250 beds)
- 50% Directors (hospitals over 250 beds).

From the same study came the following percentages of Directors needing prior approval of a superior before hiring a new employee;



- 27% of Directors (hospitals 0-50 beds)
- 10% of Directors (hospitals 51-100 beds)
- 10% of Directors (hospitals 101-250 beds)
- 50% of Directors (hospitals over 250 beds).

Since the Directors' authority to carry out all of the nursing staff modifications is thought to be important, Director of Nursing (DNS) control of staff promotions was selected as the third dependent variable for this study. It will be defined as "the authority and/or ability to promote staff members."

Director of Nursing (DNS) control of hiring and firing was selected as the fourth dependent variable for this study. It will be defined as "the authority and/or ability to select applicants for nursing positions or to fire an unsatisfactory employee after following due process."

Control of the nursing personnel budget. Control of the Nursing Personnel Budget is thought to be the major factor that leads to control of nurse staffing. During formulation and approval phases of the budgetary process, major decisions are made regarding the amount of financial resources available for personnel, the nurse/patient ratio, and the professional staff mix. According to Peter Drucker (1970), the personnel budget is really "people" and what we are allocating the energy and efforts of people for. He sees the budgetary process as the decision point for the determination of objectives.

This is where the Nursing Director can make his/her

greatest influence on "quality of care," and "intensity of service" that will be available for patients. Since these are the areas thought to be affected by the DRG reimbursement mechanism cost-containment changes, the Nursing Personnel Budget assumes an even greater importance (Dowling, 1974).

Identification of nursing revenues which make the Nursing Department a "revenue producing" as well as an "expense producing" department is thought to be a major factor in the Director of Nursing's control of the Nursing Personnel Budget. Nursing is the largest revenue producer in the hospital by more than two times (Herkmer, 1978). The literature on health care financial management is conspicuously silent on this fact. In the American Hospital Association Guide to Budgeting Procedures for Hospitals, nursing revenues are included in "routine services." Nursing Department expenses, however, are definitively classified. This was found to be the case in all other hospital budgeting publications reviewed (Health Care Financial Management, 1974-1983; Planning the Hospital's Financial Operations, 1971; Budgeting: Key to Planning and Control, 1971; Cost Determination Manual for Hospital Inpatient Accounting, 1972; The Financial Management of Hospitals, 2nd Edition, 1974; American Institute of Certified Public Accountants Hospital Audit Guide). In general publications on budgeting, the consensus seems to be that desirable integrated planning takes place when budgeted costs and expenses are directly associated with budgeted revenues.

Nursing literature is deficient on the subject of finances. Few studies are reported. Since 1980 there has been an increase in expository articles dealing with the importance of the identification of nursing revenues and direct billing for nursing services (Aydelotte, 1983; Cleland, 1983; Higginson & Van Slyck, 1982; Rotkovich, 1981; Stevens, 1980; and Walker, 1982).

Batey and Lewis surveyed 12 Directors of Nursing in 1982 by an interview technique. All were from hospitals of under 200 beds. They found that the area of least autonomy by Directors of Nursing was 1) developing and allocating budgets, and 2) commanding the resources that budgets imply.

Kaaser in 1980, conducted an exploratory study of 98 extended care facilities in Oregon. The impact of specific expenditure predictors on inadequacy of patient care were explored. Findings of the study indicate that direct service costs need to be funded separately from room and board costs.

Nursing budgets ranged from \$100,000 to \$31,000,000 in Parrish and Cleland's study (1981). Hegyvary (1983) reports that the Director of Nursing often learns about decisions for the nursing budget or operational decisions that will greatly affect nurses only after the decisions are final.

Director of Nursing Service (DNS) control of the Nursing Personnel Budget was selected as the intervening variable for this study. It will be defined as "the authority and/or ability to formulate, implement, and adjust the Nursing Personnel Budget on both the expense and revenue sides of

the ledger." The Nursing Personnel Budget will be defined as "that portion of the total Nursing Department Budget dealing with positions, wages, salaries, and benefits" (Hospital Financial Management Association, 1972).

Factors which influence the Director of Nursing's control of the Nursing Personnel Budget. The nursing and financial education and experience of the Director of Nursing is thought to affect the degree of control he or she exerts over the Nursing Personnel Budget. These variables can be altered thereby providing the DNS with more control.

DNS nursing education. In this decade, the nursing profession has found itself without sufficiently prepared executive administrators, managers, and leaders in health care settings. According to a National Study of Nursing conducted by the Western Interstate Commission on Higher Education in 1978, only 15% of Directors of Nursing were adequately prepared educationally for their positions. In 1978, 75% of all Directors of Nursing in this country had only diploma nursing preparation.

Nursing education may have been in error when the decision was made in the last decade to decrease the number of Master's programs in Administration. Currently, the focus in Master's education is directed towards preparation of clinical specialists (Chaska, 1982).

In 1963, the report of the Surgeon General's Consultant Group on Nursing made the following recommendations:

<u>position</u>	<u>recommended degree</u>
Nursing Service Directors of large Health Agency Systems	Doctorate
Directors and Assistant Directors of Nursing Service in hospitals, related institutions, and health agencies	Masters

The Illinois Study Commission on Nursing (1966-1970) studied 18 hospitals and found that one Director of Nursing had a Doctorate, six had Masters degrees, and eleven had Baccalaureate degrees.

In the 1977 Willamette Council Nursing Service Administrators study, the following findings were reported:

Table 1  
Education of Directors of Nursing in Oregon in 1977

	<u>number of hospital beds (size)</u>			
	<u>0-50</u>	<u>51-100</u>	<u>101-250</u>	<u>250+</u>
Diploma	86%	64%	59%	30%
Baccalaureate	12%	18%	25%	40%
Masters	<u>2%</u>	<u>18%</u>	<u>16%</u>	<u>30%</u>
	100%	100%	100%	100%

As shown in Table 1, the largest percentage of Directors of Nursing in Oregon in 1977 had a nursing diploma as their highest level of education. Baccalaureate prepared Directors made up the second largest category with Masters prepared Directors shown as the lowest percentage. As of that date, there were no Doctorally prepared Directors of acute care hospitals in Oregon.

Director of Nursing Service (DNS) nursing education was selected as the first independent variable. It will be defined as "the highest academic degree achieved by the Director of Nursing."

DNS financial education. With the advent of Medicare, the complexion of hospitals began changing to business-like organizations. Administrators of hospitals who had been predominantly male physicians or male or female members of religious bodies began to be replaced by men with degrees in Business Administration, Hospital Administration, or Accounting. Directors of Nursing did not seem to keep pace with these changes by acquiring financial skills.

The Willamette Council study (1977) reported the percentage of Directors of Nursing with formal financial education as follows:

- 25% of Directors (hospitals 51-100 beds)
- 44% of Directors (hospitals 101-250 beds)
- 40% of Directors (hospitals over 250 beds).

Budget is invariably one of the nursing administrator's primary responsibilities (Fuller, 1976). Once nursing administrators become more skilled in fiscal management, their soundly based requests for nursing service dollars will be forthcoming more readily (Rotkovitch, 1981).

According to the National Commission on Nursing Survey in 1981, the nursing manager's role was presented in testimony as a complex and demanding role that requires strong

leadership skill, fiscal management, creativity, and an understanding of nursing care and business administration.

Director of Nursing Service (DNS) financial education was selected as the second independent variable for this study. It will be defined as "total financial workshop hours or academic coursework in budgeting and/or financial management completed by the Director of Nursing."

DNS experience. Experience of the Director of Nursing Service is thought to contribute to financial control. Total number of years as an R.N., number of years experience in management and supervision, and especially experience as Director of Nursing Services should add to knowledge and skills in these areas.

A search of the literature proved fruitless. Experience was often included in the demographics of studies, but correlations were not specifically mentioned. A study of Directors of Inservice Education (Cohen, R. F., 1981) did report findings that the educational activities performed in the hospital setting were related to the years of experience of the Director of Inservice.

Director of Nursing Service (DNS) experience was selected as the third independent variable. It will be defined as "number of years as Registered Nursing, in management and supervision, and as Director of Nursing."

Size of institution. A study by Aydelotte (1968) of national hospital Nursing Service Administrators (N=1172) concluded that among problems and issues for study of

particular interest was the relationship of hospital size to organizational aspects and staff characteristics.

A study by Anderson and Warkov (1961) explored the relationships between administrative structure, organizational size, and functional complexity. They reported finding that as the size of the institution increased, the number of administrative personnel decreased proportionally. This would tend to show that there is more delegation in larger hospitals.

Hagen and Wolf (1961) studied behavior associated with nursing leadership in six small and nine large hospitals (N=800). The study showed a relationship between hospital size, urban to rural location, and organizational structure to effective and ineffective leadership.

The hypothesis that the definition of responsibilities between executive and subordinate policymakers will be influenced by the size of the formal organization was supported in the study by R. C. Hanson (1961).

Tosi and Patt (1967) found that the ratio of administrators to total hospital personnel decreases in proportion to the size of the organization.

The effect of hospital size on costs was explored by Carr and Feldstein (1967). They found that the cost per day increased with hospital size, but when additional services provided were controlled for, costs decreased with size to a certain level.

The study of the relationship of control to hospital



size was conducted by Carroll (1969). The structure of 234 teaching hospitals in the United States and Puerto Rico were studied. Findings indicated that all methods of control, whether bureaucratic or nonbureaucratic, were inversely correlated with hospital size.

The size of the acute care hospital may account for variations in the degree of control exerted due to hierarchical structure and span of control.

Size of institution was selected as the fourth independent variable. Categories based upon the range of acute care beds will be taken from the classifications utilized by the Oregon Association of Hospitals.

Other factors influencing control of the Nursing Personnel Budget. There are other variables which are thought to exert an influence upon the Director of Nursing's control of the Nursing Personnel Budget. These variables will be controlled for in this study. The age of the DNS is thought to exert some influence upon the amount of authority or control. DNS age will be the first control variable. The sex of the DNS is thought to exert some influence upon authority. Males will often be accorded more authority due to sex role stereotyping. DNS sex will be the second control variable in this study. The type of hospital and whether it is a non-profit or for-profit hospital is thought to have an effect upon the Director of Nursing's control of the Nursing Personnel Budget. Ownership of institution will be designated as the third control variable. Whether the diagnosis-related

group (DRG) reimbursement mechanism has been implemented at the time of the study is important if one of the purposes of the study is to provide a data base for later comparison after the full effects of the DRG's are realized. Institution of DRG reimbursement will be the fourth control variable for this study.

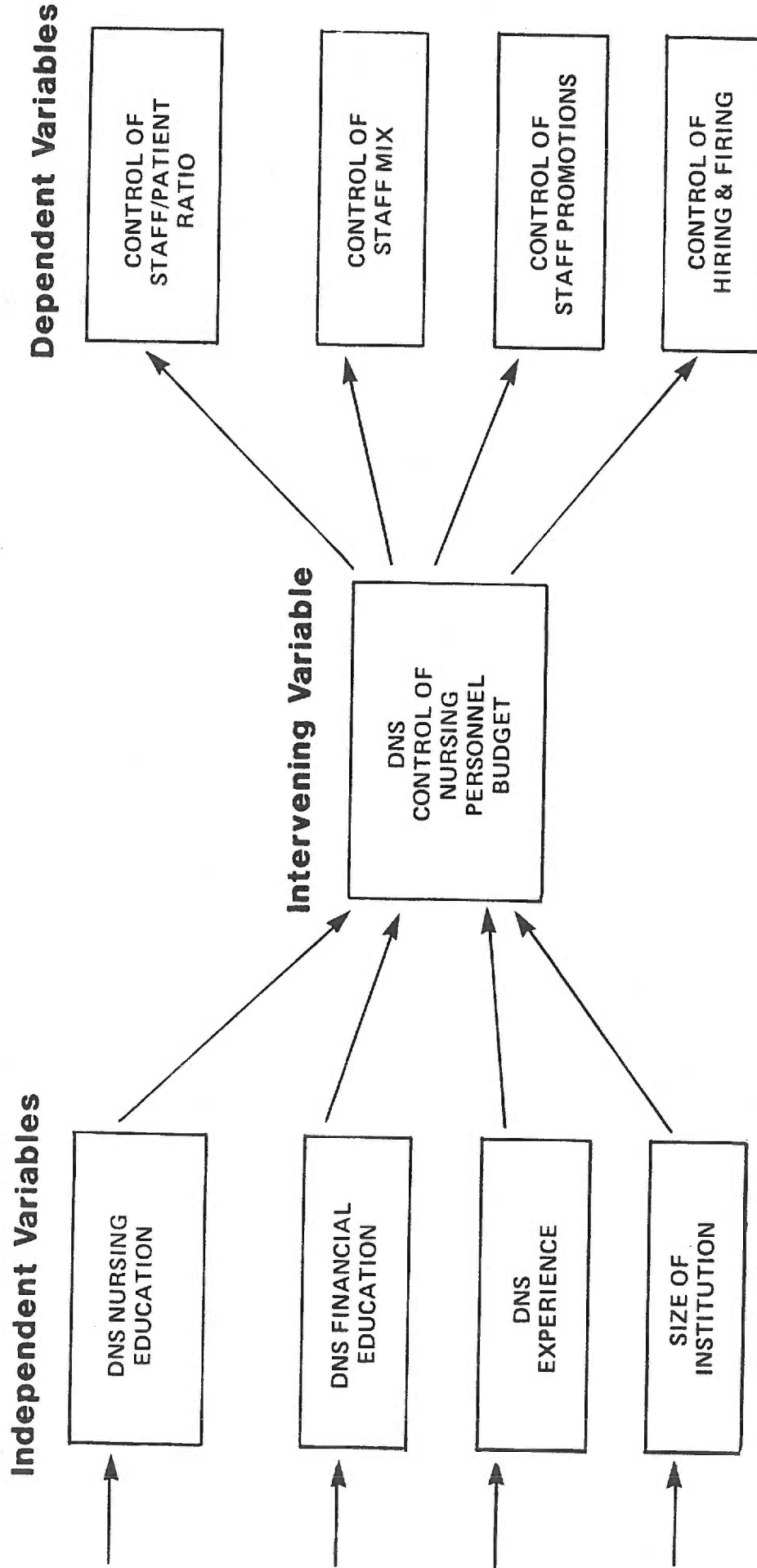
#### Research Questions, Theoretical Framework and Hypothesis

To bring the variables identified through the review of the literature into a logical framework, the following questions will be asked:

- 1) How much do the education and experience of the Director of Nursing relate to control of the Nursing Personnel Budget?
- 2) How much does the size of the acute care institution relate to the Director of Nursing's control of the Nursing Personnel Budget?
- 3) How much does the Director of Nursing's control of the Nursing Personnel Budget relate to the control of nurse staffing elements?
- 4) What is the pre-DRG reimbursement profile of Director of Nursing control of the Nursing Personnel Budget and nurse staffing elements in the State of Oregon?

An original conceptual framework was developed after the review of the literature. The relationships which will be analyzed in this study are presented in the model depicted in Figure 1. There are four independent variables, one

# CONCEPTUAL FRAMEWORK



## CONTROL VARIABLES:

- 1) DNS AGE
- 2) DRG REIMBURSEMENT
- 2) DNS SEX
- 3) OWNERSHIP OF INSTITUTION

Figure 1. Conceptual framework for the study.

intervening variable, four dependent variables, and four control variables.

#### Hypotheses

- 1) The higher the educational level of the DNS, the greater is the DNS control of the Nursing Personnel Budget.
- 2) The greater the amount of financial education of the DNS, the greater is the DNS control of the Nursing Personnel Budget.
- 3) The greater the amount of experience of the DNS, the greater is the DNS control of the Nursing Personnel Budget.
- 4) The size of the acute care institution will be related to the DNS control of the Nursing Personnel Budget.
- 5) DNS control of the Nursing Personnel Budget is positively related to control of staff/patient ratio.
- 6) DNS control of the Nursing Personnel Budget is positively related to control of staff mix.
- 7) DNS control of the Nursing Personnel Budget is positively related to control of staff promotions.
- 8) DNS control of the Nursing Personnel Budget is positively related to control of hiring and firing of staff.

## CHAPTER II

### Methods

#### Study Design

This study was descriptive and correlational in design. The purpose was to explore the relationship between the Director of Nursing's nursing education, financial education, experience, and the Director of Nursing's control of the Nursing Personnel Budget. The relationship between control of the Nursing Personnel Budget and control of nursing staff/patient ratio, nursing staff professional to nonprofessional mix, staff promotions, and hiring and firing were also explored.

The rationale for the study is the concern that the introduction of a new reimbursement mechanism for hospitalized Medicare patients (diagnosis related grouping reimbursement) may cause changes in budgetary control and nurse staffing. This study provides baseline data about Directors of Nursing of acute care hospitals in the State of Oregon. The budgetary and staffing control patterns in existence immediately prior to the implementation of the DRG reimbursement will be explored and recorded for comparison by future studies.

Utilizing a long-term perspective, this study will correspond to the pre-test collection of data. The introduction

of the DRG (diagnosis related grouping) reimbursement (October 1983 to July 1984) is the intervention of interest. A repetition of this study in four to five years will serve as a posttest.

$O_1$                       X                       $O_2$

The sample is the total population of Directors of Nursing of acute care hospitals in the State of Oregon. Results obtained are applicable only to this state.

#### Subjects and Setting

Listing of all the Directors of Nursing currently practicing in acute care facilities in the State of Oregon was obtained from the Oregon Association of Hospitals. Hospitals with a combination of acute care and long-term care beds were included in the study only if the total number of acute care beds exceeded the number of long-term care beds. Children's hospitals were included in this study but psychiatric hospitals were not. Utilizing these criteria, 5 of the 81 hospitals listed by the Oregon Association of Hospitals were eliminated. For this study the total number of Directors of Nursing of acute care hospitals in 1983 was 76 (see Appendix F for listing of hospitals).

These 76 Directors of Nursing administer the Nursing Departments in a variety of hospital settings; community, Veterans, University, religious, city, county, state, and proprietary. The sizes of hospitals in Oregon vary from 20 beds to 780 beds with the majority being under 100 beds. In this study setting there were 29 hospitals with under 51

beds; 16 hospitals with 51-100 beds; 20 hospitals with 101-250 beds; and 11 hospitals with over 250 beds (Oregon Association of Hospitals data, 1983). See Appendix G for maps of the geographical location of the hospitals.

Subjects of the study were informed of the purposes of the study. Signatures on informed consents were obtained for use in follow-up procedures. All information was treated as confidential with code numbers being assigned to the questionnaires. The study qualified for exemption from Full Human Research Committee review under exemption 45 CFR 46.101 (b) #3 "research involving survey or interview procedure." Materials were submitted for review by the Chairman of that Committee. The study was approved verbally on November 3, 1983, and by formal letter on November 18, 1983 (letter in Appendix B).

#### Data Collecting Procedure

Data were gathered by means of a questionnaire taken from the literature and adapted for application to nursing management. The questionnaire was pretested for clarity by a panel of experts including two nursing administrators, one research specialist, and an expert in health care finance.

Questionnaires were distributed to Directors of Nursing at the Fall meeting of the Oregon Society of Nursing Administrators at Salishan on November 7, 1983. A short presentation of the study and instructions for completing the questionnaire were given.

Envelopes with consent forms attached were included

with the questionnaire. Completed questionnaires were inserted into the envelope and the informed consent was signed. The name on the consent form was matched to the appropriate hospital. The hospital was then checked off the list for purposes of determining which hospitals were not represented at the meeting. A code number was written on the questionnaire, and it was separated from the signed consent to allow for confidentiality.

Questionnaires were mailed on November 18, 1983, to all Directors of Nursing in the sample who were not present at the OSNA meeting. A letter of introduction which included an explanation of the study, and mention of confidentiality (see Appendix A) was included with the questionnaire and the informed consent form (see Appendix B). A self-addressed, stamped envelope was also included.

A second mailing was conducted on November 28 to those Directors of Nursing who had been present at the OSNA meeting but had not returned a questionnaire.

Postcards were mailed on January 18, 1984, as a final follow-up to the 19 Directors of Nursing who had not yet responded. Response rate was then 75% or N=57 of a possible 76. Two additional completed questionnaires were received after the statistical analyses had been completed. These were included in the descriptive statistics. The final response rate was N=59 or 78%.

The following techniques were employed to increase the percentage of returns; 1) utilizing follow-up mailings,



2) sending another copy of questionnaire and asking if another copy was needed on postcard (Sewell & Shaw, 1968), 3) ensuring that researcher was known by the population by personal appearance at meeting (Norton, J. R.), 4) altruistic appeal in introductory letter, 5) inducement by promise of report of findings (Shuttleworth), 6) use of regular preaddressed stamped envelope for returns, 7) attempt to produce an esthetically pleasing questionnaire, and 8) selection of a population which was comprised of well-educated professionals with an interest in the topic under study (Likert, R.). These techniques were thought to be important since the population of Directors of Nursing was known to be extremely busy with little time to devote to the completion of a questionnaire.

#### Measurement

From the literature, four independent variables, one intervening variable, four dependent variables, and four control variables were identified as being relevant to this study. See Table 2 on the following page.

#### Measurement of independent variables.

Independent variable #1: DNS nursing education is defined as the highest academic degree achieved by the Director of Nursing. It was measured by choice of eight graduated categories from diploma program to doctorate degree.

Independent variable #2: DNS financial education is defined as total financial workshop hours and academic coursework in budgeting and/or financial management completed by the

Table 2

Variables Used in Studying the Relationship Between Control  
of the Nursing Personnel Budget and Control of the  
Staffing Elements

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## INDEPENDENT

DNS nursing education  
DNS financial education  
DNS experience  
size of institution

## INTERVENING

DNS control of Nursing Personnel Budget

## DEPENDENT

control of staff/patient ratio  
control of staff mix  
control of staff promotions  
control of hiring and firing

## CONTROL

DNS age  
DNS sex  
ownership of institution  
DRG reimbursement

---

Director of Nursing. It was measured by choice of 23 graduated categories distributed among 6 different educational levels from "inservice or workshops" to inclusion in Doctorate program. See Appendix D for scoring.

Independent variable #3: DNS experience is defined as the number of years experience in nursing as a Registered Nurse, in management and supervision, and as Director of Nursing. This variable was measured by number of years under each level of experience. Years worked as an RN will include times as DNS and in management and supervision. Years in management and supervision will include years as DNS. See Appendix D for scoring.

Independent variable #4: size of institution is defined as the number of licensed acute care beds available in the hospital. This variable was measured by a choice of four graduated categories taken from the Oregon Association of Hospitals classification system.

Measurement of intervening variable. Intervening variable: DNS control of the Nursing Personnel Budget is defined as the authority and/or ability to formulate, implement, and adjust the Nursing Personnel Budget on both the expense and revenue sides of the ledger. The Nursing Personnel Budget is defined as that portion of the total Nursing Department Budget dealing with positions, wages, salaries, and benefits (Hospital Financial Management Association, 1972). This variable was measured by a total score obtained from 42 questions dealing with the Nursing Personnel Budget. A matrix of 6 "control" questions ask on a 5-point Likert scale how frequently;

- 1) "Do you initiate action on such a decision?"
- 2) "Do superiors initiate action on such a decision?"

- 3) "Are you required to consult superior before taking further action?"
- 4) "You would make the final decision?"
- 5) "Subordinates would make the final decision?"
- 6) "Superior would make the final decision?"

These questions follow each of seven decision situations dealing with the budget. Three decision situations deal with the expenditure part of the budget. They are 1) Decisions about actual expenditures for nursing service personnel, 2) Decisions about development of annual budget for nursing service personnel expenditures, and 3) Decisions about development of mid-range (2-5 years) plan for nursing service personnel expenditures.

Three decision situations deal with the revenue part of the budget. They are 1) Decisions about development of annual budget for nursing service personnel revenues, 2) Decisions about development of mid-range (2-5 years) plan for needed nursing service personnel revenues, and 3) Decisions about the relationship between patient classification (i.e., acuity) and nursing personnel revenues (i.e., variable billing).

One decision situation deals with budget adjustments for DRG (diagnosis related group) reimbursements for Medicare patients. The situation is decisions about how nursing service personnel budget for expenditures will be adjusted to respond to DRG requirements (new Medicare reimbursement). See Appendix D for scoring.

Measurement of dependent variables.

Dependent variable #1: Control of staff/patient ratio is defined as the authority and/or ability to change the number of nurses available to give patient care, up or down as deemed necessary. This variable was measured by 12 questions referring to two staffing decision situations; 1) Decision to increase the number of permanent positions within your department, and 2) Decision to increase the nurse/patient ratio when patient acuity is increased. Each decision situation is followed by six 5-point Likert scale control questions.

Dependent variable #2: Control of staff mix is defined as the authority and/or ability to change the ratio of Registered Nurses, Licensed Practical Nurses, and Nursing Assistants on the nursing staff. This variable was measured by 12 questions referring to staffing mix decision situations; 1) Decision to adjust the percentage of Registered Nurses in permanent positions, and 2) Decision to decrease the percentage of licensed to unlicensed personnel of your staff. Each decision situation is followed by six 5-point Likert scale control questions.

Dependent variable #3: Control of staff promotions is defined as the authority and/or ability to promote or demote staff members. This variable was measured by 12 questions referring to two decision situations; 1) Decision to promote someone in your department to a higher position, and 2) Decision to remove someone in your department from a

supervisory position due to inadequate job performance. Each decision situation is followed by six 5-point Likert scale control questions.

Dependent variable #4: Control of hiring and firing is defined as the authority and/or ability to select applicants for nursing positions or to fire an unsatisfactory employee after following due process. This variable was measured by 12 questions referring to two decision situations; 1) Decision to choose from several applicants for a position in your department, and 2) Decision to terminate employment of a staff member after institutional procedure has been followed. Each decision situation is followed by six 5-point Likert scale control questions.

Measurement of control variables.

Control variable #1: DNS age was measured by chronological age in years.

Control variable #2: DNS sex was measured by indication of whether one is male or female.

Control variable #3: Ownership of institution was defined as the type of hospital as determined by the body which owns or governs the acute care institution. Measurement was by choice of eight categories as identified by the American Institute of Certified Public Accountants (1972).

Control variable #4: DRG reimbursement was defined as whether the diagnosis related grouping reimbursement mechanism of Medicare had been implemented in the hospital at the time of the study. Measurement was the number of days from the

institution of the mechanism (October 1, 1983) until the system is implemented in the hospital. The actual date of implementation was asked, the fiscal year, and whether patient classification systems were a part of the permanent record.

Instruments. The data for this study were obtained by a questionnaire, a copy of which can be found in Appendix C. Part I of the questionnaire is composed of 48 questions dealing with control of staffing elements. The basic format of the instrument was taken from an instrument developed by Blankenship and Miles (1968). The original instrument was used to measure managerial decision behavior in light industry. The concepts of "personal initiative," "autonomy from superior," and "final choice" came the closest to the concept of "control" utilized in this study. No instrument was found in the nursing literature which measured this concept.

Blankenship and Miles' original tool identified a number of decisions derived from interviews conducted in the companies that were studied. These decisions were reported to be representative of decisions faced by all managers. Three of the decision situations were utilized for the instrument in this study to measure "control of staffing element." They were 1) A decision to increase the number of permanent positions within your department, 2) A decision to choose one of several applicants for a position in your department, and 3) A decision to promote someone in your

department to a higher position. Three additional decision situations dealing with staffing variables were added to increase the number of questions to 12 per variable.

Following each decision situation were the six questions dealing with "control." Each asks on a 5-point Likert scale, how frequently;

- 1) "Do you initiate action on such a decision?"
- 2) "Do superiors initiate action on such a decision?"
- 3) "Are you required to consult superior before taking further action?"
- 4) "You would make the final decision?"
- 5) "Subordinates would make the final decision?"
- 6) "Superior would make the final decision?"

Two additional questions measuring "perceived influence on superior" and "reliance on subordinates" which were present in the original tool were not included because of decreased saliency to this study and to shorten the tool.

Blankenship and Miles' instrument was reportedly tested and revised several times but no test-retest correlations were reported. Provision was made for increased reliability by wording some questions to allow for a reversal of weighting order in the answer.

Part II of the questionnaire was composed of 42 questions to measure control of the Nursing Personnel Budget. The basic format and matrix of "control" questions was used as in the revised Blankenship and Miles instrument utilized to measure the control of staffing elements. Seven original



decision situations dealing with the Nursing Personnel Budget were formulated. These decisions were related to the conceptual framework that control of the budget was based upon control of revenues as well as expenditures. It was thought that control was progressive through "expenditure consultation," "budget for expenditures," "mid-range plan for expenditures," "budget for revenues," "mid-range plan for revenues," "budget adjustments for DRG requirements," and "variable billing for nursing revenues." A decision situation dealing with each of the preceding factors was followed by the matrix of six Likert "control" questions.

Part III of the questionnaire was composed of closed-ended questions to gather data concerning biographical profiles of the Director of Nursing and hospital characteristics.

#### Reliability and Validity of the Instrument

Knowledge of an instrument's reliability is essential for interpretation of research findings. Extensive reliability testing was done on the instrument used for this study since changes had been made to adapt it to nursing management and the unique measurement needs of the study. The instrument was adapted from one developed by L. Vaughn Blankenship and Raymond E. Miles in 1968 for a study of decision-making characteristics of managers in the electronics industry. This instrument came the closest of any in the literature to measuring what was conceptualized as

control of budgetary factors and of control of personnel or staffing elements. Director of Nursing control as conceptualized was equated with "autonomy from superiors," "personal initiative," and "final choice" in decisions concerning the Nursing Personnel Budget and in decisions concerning the staffing elements.

Scoring on questions 2, 3, 5, and 6 was reversed since the questions were reversed to prevent a response set in the answers.

Cronbach's alpha coefficient was utilized for reliability testing. A Pearson's product moment correlation was obtained for each item with every other item. The correlation coefficients were then added and a mean was calculated. This figure was the mean inter-item correlation. The internal consistency coefficient or Cronbach's alpha was then calculated with the following formula (Nunnally, J. 1978): where  $K$  = the number of items in the scale and  $\overline{r_{ij}}$  = the mean inter-item correlation, the Cronbach's alpha is  $\frac{k (\overline{r_{ij}})}{1 + (K-1) (\overline{r_{ij}})}$ . The alpha indicates the extent to which items measure the same construct on a scale of 0 to +1. A higher number reflects a greater degree of internal consistency. The results on the following page were obtained.

A pattern of negatively related items was revealed throughout the various statistical tests. The fifth control question under each decision situation, "subordinates would make the final decision" was apparently measuring something else. Early in the study there had also been some concern

Table 3  
Cronbach's Alpha (Measure of Internal Consistency)  
of Instrument ... First Calculations

	<u>alpha</u>	<u>average inter- item corr.</u>
Control of staff/patient ratio	.67	.142
Control of staff mix	.80	.169
Control of promotions	.80	.242
Control of hiring and firing	.70	.182
Control of nursing personnel budget	.92	.193
DNS experience	.81	.62

over how to score this question. Would reliance on a subordinate for a final decision count for or against the Director of Nursing's control?

The decision was made to remove all of the "subordinate" questions from the measure of control of the Nursing Personnel Budget to form a new variable, "reliance on subordinates for control of the Nursing Personnel Budget." All of the "subordinate" questions were also removed from the measurement of the dependent variables to form a new dependent variable, "reliance on subordinates for control of staffing elements."

The results demonstrated that the coefficient alphas of the revised scales were improved and the new variables displayed good internal consistency.

Polit and Hungler (1983) report that a coefficient alpha of .70 or even .60 is sufficient for group level comparisons.

Nunnally (1978) reports that in early stages of research on predictor tests or hypothesized measures of a construct, instruments with reliabilities of .70 or higher will suffice. Reliabilities much beyond .80 are often wasteful of time and funds to attempt to achieve (Nunnally, 1978). Coefficient alphas of the instrument used for this study after the reclassification of subordinate questions were;

Table 4

Measures of Internal Consistency of Instrument Before and After Reclassification of Subordinate Questions

<u>Variable</u>	<u>Cronbach's alpha</u>	
	<u>before</u>	<u>after</u>
Control of staff/patient ratio	.67	.69
Control of staff mix	.73	.80
Control of promotions	.80	.83
Control of hiring and firing	.70	.75
Reliance on subordinates for staffing	--	.83
Control of Nursing Personnel Budget	.92	.94
Reliance on subordinates for control of Nursing Personnel Budget	--	.89
DNS experience	.81	.81

<u>Variable</u>	<u>average inter-item correlation</u>	
	<u>before</u>	<u>after</u>
Control of staff/patient ratio	.142	.176
Control of staff mix	.169	.286
Control of promotions	.242	.344
Control of hiring and firing	.182	.249
Reliance on subordinates for control of staffing elements	--	.405
Control of Nursing Personnel Budget	.193	.390
Reliance on subordinates for control of Nursing Personnel Budget	--	.521

It appears that the internal consistency reliability of the measures used in this study are of adequate to good levels for research purposes. The items within a scale appear to be measuring the same construct.

Another possible concern exists. To what extent are the relationships between the intervening variable (control of the Nursing Personnel Budget) and the dependent variables influenced artifactually by the underlying matrix of the control questions? Do the responses to the control questions correlate with one another regardless of the content of the items (auto-correlation)? Further testing of discriminant validity and convergent validity may be advisable.

#### Analysis

Descriptive statistics were computed on the population of Directors of Nursing in the State of Oregon. Frequencies, means, and standard deviations were calculated for age, sex, nursing education, financial education, experience as Registered Nurse, experience in management and supervision, and experience as Director of Nursing of the study population. Percentage tables were formulated for comparisons. Frequencies, means, and standard deviations were also calculated for the organizational variables of size, ownership, fiscal years, classification systems, and implementation dates of the DRG reimbursement mechanism. Percentage tables were formulated for comparative purposes. Comparisons were made with the Oregon Society for Nursing Administrators study findings from 1977.

Necessary reversals in scoring were accomplished and individual scores were computed on the dependent variables of control of staff/patient ratio, control of staff mix, control of promotions, and control of hiring and firing. Frequency distributions were determined on the above variables and means and standard deviations were determined.

Individual scores on DNS control of the Nursing Personnel Budget were calculated. (See scoring guide in Appendix D.) Frequency distributions, measures of central tendency, and variations were calculated. Graphic representation was formulated.

Data were manipulated by hand statistics (scatterplots, contingency tables, chi square, ranking of scores) and by computer, utilizing the Statistical Package for the Social Sciences. Pearson's Product Moment Correlations were computed to identify statistically significant relationships and whether the relationship was negative or positive. These correlations were tested between all the variables except DNS sex since there were only two male Directors of Nursing in the population. Results were entered onto the model of the conceptual framework (i.e.,  $r=.45$   $p < .01$ ) showing the strength of the relationship and the probability that the results could have been due to chance alone.

One-way analysis of variance (ANOVA) was calculated to test relationships between size of institution and other variables. This statistic was chosen since there were four distinct size groupings which allowed an analysis of the

variance within each group and between the groups. The resulting statistic was an F ratio which was compared with a table value for statistical significance. Another reason for the choice of the one-way analysis of variance was that a curvilinear relationship would show appropriate significance. The Pearson's Product Moment Correlation would only measure a linear relationship and there was good reason to suspect that the relationship of institutional size was curvilinear, based upon the hand calculated scatterplots done earlier in the data analysis.

The self-classifications of control of the Nursing Personnel Budget were also divided into groups. One-way analysis of variance (ANOVA) was calculated for the relationship between these self-assigned categories and the other variables. Cross-tabulations were also carried out for the self-classifications and the other variables.

Ownership of the institution was analyzed by breakdown tables which gave statistics on each variable by the category of ownership.

Utilizing the findings of the above statistical tests, the research questions were reexamined and the answers attempted to the extent possible. Each hypothesis was evaluated in the light of the statistical findings and determination was made of whether each was supported or not.

## CHAPTER III

### Results

Results of the study are presented in the following format: overview; data related to the independent variables and control variables; data related to the intervening variable; data related to the dependent variables; and hypothesis testing. Anonymity of individual subjects is maintained.

#### Overview

Seventy-six Directors of Nursing of acute care hospitals in the State of Oregon were contacted and asked to participate in the study. Fifty-nine Directors responded with a completed questionnaire (return rate = 78%). Data were collected on independent biographical or institutional variables, control of the Nursing Personnel Budget, and control of nurse staffing elements through the use of an instrument from the literature that was modified for application to nursing management.

The response rate of Directors by hospital size were;

0-50 beds	79%	(29 possible, 23 returned)
51-100 beds	69%	(16 possible, 11 returned)
101-250 beds	85%	(20 possible, 17 returned)
over 250 beds	75%	(11 possible, 8 returned)

#### Independent and Control Variables

From the review of the literature, four independent



variables were selected. Three of the independent variables were biographical characteristics of the Director of Nursing. They were 1) the nursing education of the Director of Nursing, 2) the financial education of the Director of Nursing, and 3) the nursing and management experience of the Director of Nursing. Two other biographical variables were selected as control variables. They were 1) age of the Director of Nursing and 2) sex of the Director of Nursing.

The fourth independent variable selected for this study was an organizational variable of the acute care hospital which provides the work environment of the Director of Nursing. This variable was the size of the institution. Two additional organizational variables were selected as control variables. They were 1) the ownership of the institution, and 2) the implementation of the DRG (diagnosis related grouping) reimbursement mechanism for Medicare patients.

The data related to these variables provided the descriptive component of this study. Comparisons were made with descriptive data from the same population obtained by a study in 1977 by the Oregon Society of Nursing Administrators.

Independent variable #1: DNS nursing education. As shown in Table 6, the predominant category of educational preparation is the Master's degree. These findings can be contrasted with a study of the same population in 1977 in which 60% were diploma prepared.

Table 6

Highest Level of Education Achieved by the Directors  
of Nursing in Oregon, 1984

degree	number	percentage
Associate	5	8%
Diploma	9	15%
Baccalaureate nursing	14	24%
Baccalaureate related field	6	10%
	20	34%
Masters nursing	13	22%
Masters related field	9	15%
	22	37%
Doctorate nursing	1	2%
Doctorate related field	2	3%
	3	5%
	59	100%

Table 7

Comparison of Nursing Education of Directors of Nursing  
In Oregon 1977 to 1984 by Size of Hospital

highest degree	hospital size							
	0-50 beds		51-100 beds		101-250 beds		over 250 beds	
	1977	1984	1977	1984	1977	1984	1977	1984
Associate	0	17%	0	9%	0	0	0	0
Diploma	86%	26%	64%	9%	59%	12%	30%	0
Baccalaureate	12%	35%	18%	46%	25%	29%	40%	25%
Masters	2%	22%	18%	36%	16%	53%	30%	50%
Doctorate	0	0	0	0	0	6%	0	25%
	100%	100%	100%	100%	100%	100%	100%	100%
	N=23		N=11		N=17		N=8	

Independent variable #2: DNS financial education.

Questions on the instrument regarding this variable were

very specific as to the amount of formal instruction in finances and budgeting at each educational level. Findings were as follows:

Table 8

Financial Education of Director of Nursing Population  
in Oregon in 1984

Coursework	number	percent	
<u>Associate level</u>			
(0) no courses	19	83%	mean .26 S.D. .69
(1) included in another course	3	13%	
(2) one course	0	0	
(3) two courses or more	1	4%	
	<u>N=23</u>	<u>100%</u>	
<u>Baccalaureate level</u>			
(0) no courses	24	63%	mean .61 S.D. .92
(1) included in another course	7	19%	
(2) one course	5	13%	
(3) two courses or more	2	5%	
	<u>N=38</u>	<u>100%</u>	
<u>Masters level</u>			
(0) no courses	10	40%	mean 1.76 S.D. 1.74
(1) included in another course	3	12%	
(2) one course	2	8%	
(3) two courses	3	12%	
(4) three courses or more	7	28%	
	<u>N=25</u>	<u>100%</u>	
<u>Doctorate level</u>			
(0) no courses	2	67%	mean 1.33 S.D. 2.31
(1) included in another course	0	0	
(2) one course	0	0	
(3) two courses	0	0	
(4) three or more courses	1	33%	
	<u>N=3</u>	<u>100%</u>	
<u>Related field</u>			
(0) no courses	1	6%	mean 2.88 S.D. 1.36
(1) included in another course	2	12%	
(2) one course	4	23%	
(3) two courses	1	6%	
(4) three or more courses	9	53%	
	<u>N=17</u>	<u>100%</u>	

Financial education was also measured by the number of workshop hours taken in budgeting and finance. See Appendix E for Table 9. For purposes of testing relationships with other variables, data were weighted and scored. See Appendix D for example.

Independent variable #3; DNS experience. Experience of the Director of Nursing was determined at three levels; 1) total years as Registered Nurse, 2) total years in management and supervision, and 3) total years as Director of Nursing. The sum of the three categories was used as the score on experience. The Cronbach alpha for the measure of this variable was .81 and the average inter-item correlation was .62. Appendix E contains Table 10 on experience in management and supervision and experience as R.N..

Table 11  
Years of Experience as Director of Nursing for  
Study Population 1984

years of experience	number	percent
1-5 years	33	60%
6-10 years	12	22%
11-15 years	7	13%
16-20 years	3	5%
20+ years	0	0
no info.	4	--
	<u>N=59</u>	<u>100%</u>

Directors in Position for Five Years and Under

years of experience	number	percent
1 year	11	33%
2 years	5	15%
3 years	7	21%
4 years	3	9%
5 years	7	21%
	<u>N=33</u>	<u>100%</u>

As can be seen in Table 11, 60% of the Directors of Nursing in the study population (N=59 of 76) have been in their positions for five years or less. Eleven Directors have been in their positions for less than one year.

Control variable #1: DNS age. The greatest percentage of Directors of Nursing in Oregon are between the ages of 40 and 49. Only 4 percent of the Directors are under age 30.

Table 12  
Age of Directors of Nursing in the State of Oregon  
in 1984 N=59

age	number	percent	
under 30 years	2	4%	
30-39 years	15	27%	mean 43.4
40-49 years	26	46%	S.D. 7.6
50-59 years	13	23%	
60+ years	0	0	
no information	3	--	
	N=59	100%	

Control variable #2: DNS sex. There were two male Directors of Nursing (3%) and 56 female Directors (97%). One subject did not supply information as to gender.

Independent variable #4: Size of institution. The largest number of Directors of Nursing are from hospitals with

less than 50 beds. This was true of both the total population and the study population. See Table 13 for breakdown by size of institution.

Table 13  
Size of Institutions Represented in the Study

group number	number of beds	number	(number possible)	percent
1	0-50 beds	23	(29)	39%
2	51-100 beds	11	(16)	19%
3	101-250 beds	17	(20)	29%
4	over 250 beds	8	(11)	13%
		—	—	—
		N= 59	(76)	100%

Control variable #3: ownership of institution. The largest percentage of acute care hospitals in Oregon are community hospitals. Sixty-one percent of the hospitals represented by the Directors of Nursing in this study were from community hospitals. Forty-three Directors of Nursing were from voluntary (community, religious affiliation) hospitals. Eight Directors were from Government owned hospitals (federal, county, and city). Eight Directors were from proprietary hospitals.

Table 14  
 Ownership of Hospitals Represented in the Study

ownership	number	percent
<u>Voluntary</u>		
community	36	61%
religious affil.	6	10%
educational affil.	1	2%
	—	—
	N= 43	72%
<u>Government</u>		
Federal	1	2%
State	0	0
County	5	8%
City	2	3%
	—	—
	N= 8	14%
<u>Proprietary</u>		
	N= 8	14%
totals	59	100%

Control variable #4: DRG reimbursement. Utilizing the date given for implementation of DRG reimbursement mechanism, the number of days from the instigation of the law until that date were figured. The majority of hospitals in Oregon reported a July 1, 1984, date for implementation.

Table 15  
Amount of Time from Instigation of Law Until Implementation  
of DRG Mechanism

number of days	date	number	percentage	
0 days	10/1/83	11	22%	
92 days	1/1/84	12	23%	
154 days	4/1/84	5	10%	mean 189
274 days	7/1/84	18	35%	S.D. 208
366 days	10/1/84	2	4%	
123 days	2/84	1	2%	
305 days	8/84	1	2%	
1372 days	7/87	1	2%	
no information	--	8	--	
		N= 59	100%	

Other data obtained pertaining to DRG reimbursement related to whether the patient acuity classification was a part of the permanent patient record. In 11 institutions (19%) the classification was a part of the permanent record. In 48 institutions (81%) the classification was not a part of the permanent record.

Data on the fiscal year of the institutions represented was compared to the date given for DRG implementation. There was correspondence on all but two of the dates given. The Table on Fiscal Years of the Institutions (Table 20) can be found in Appendix E.



The composite average Director of Nursing in Oregon in 1984 would be a female, aged 40 to 49, holding a Masters degree in nursing and having minimal formal education in finances and budgeting. She would have occupied her position as Director of Nursing for less than five years, but would have six to ten years experience in management and supervision. She would have been a Registered Nurse for 11 to 15 years. She would be employed in a community hospital of 50 beds or under.

#### Intervening Variable

The intervening variable for this study was Director of Nursing control of the Nursing Personnel Budget. Computation yielded a score on control of the Nursing Personnel Budget for each subject. The Cronbach's alpha reliability for this measure was .939. The mean score on the 35 items was 106.24 with a standard deviation of 24.15. The possible scores ranged from 35 to 175. Conversion of the score to a scale of 1 to 5 was done to adjust for missing values and for easier comparison between variables. On the scale of 1 to 5, the group mean was 3.28 with a standard deviation of .53.

Decision situations on the questionnaire dealt with control of both expenses and revenues. The group mean on expenditure control was 3.27. The group mean on revenue control was lower at 2.83. Control of DRG adjustments exhibited a group mean of 2.94.

The new variable created during reliability testing of the instrument was "reliance on subordinates for control of

Table 16  
Control of the Nursing Personnel Budget:  
Ranked Decision Situations

decision situation	mean	standard deviation
MOST CONTROL		
expenditure consultation	x= 3.37	S.D.= 1.08
mid-range plan expenditures	x= 3.33	S.D.= 1.19
expenditure budget	x= 3.12	S.D.= 1.20
variable billing for revenues	x= 3.00	S.D.= 1.74
budget adjustment for DRG's	x= 2.94	S.D.= 1.11
mid-range plan revenues	x= 2.91	S.D.= 1.19
budget for revenues	x= 2.58	S.D.= 1.29
LEAST CONTROL		

the Nursing Personnel Budget. The Cronbach's alpha measure of internal consistency for the instrument measuring this variable was .88. The mean score on the seven items was 11.34 with a standard deviation of 4.98. Possible scores ranged from 7 to 35. The scores were converted to a scale of 1 to 5 to adjust for missing values and to allow for easier comparison between variables. On the scale of 1 to 5, the group mean was 1.62 with a standard deviation of .71.

One additional measurement of control of the Nursing Personnel Budget was a self-categorization of amount of perceived budgetary control. Out of a possible range of 1 to 4, the group mean was 2.5 with a standard deviation of 1.03.

Table 19  
Self-Classification as to Degree of Budgetary Control  
by Directors of Nursing in Oregon

Category of Budgetary control	number	percent
Low budget input	8	14%
Medium-low budget input	21	37%
Medium-high budget input	16	28%
High budget input	12	21%
no information	2	0
	-----	-----
	N=59	100%

#### Dependent Variables

From the review of the literature, four dependent variables were selected. Each variable is related to an element of staffing. The four dependent variables are 1) control of staff/patient ratio, 2) control of professional to non-professional staff mix, 3) control of staff promotions, and 4) control of hiring and firing.

Dependent variable #1: control of staff/patient ratio.  
Ten items with a possible range of scores between 10 and 50 measure this variable. The Cronbach's alpha of internal consistency of the measure is .69. The group mean score was 37.68 with a standard deviation of 6.13. After conversion to a scale of 1 to 5, the group mean was 3.77 with a standard deviation of .55.

Dependent variable #2: control of staff mix. Ten items with a possible range of scores from 10 to 50 measure this variable. Cronbach's coefficient alpha of reliability of the measure was .80. The Directors of Nursing group mean was 36.63 with a standard deviation of 7.45. After conversion to a scale of 1 to 5, the group mean was 3.66 with a standard deviation of .75.

Dependent variable #3: control of staff promotions. Ten items with a possible range of scores from 10 to 50 measure this variable. The reliability of the measure was determined by a Cronbach's coefficient alpha which was .83. The group mean for this variable was 40.79 with a standard deviation of 7.08. After conversion to a scale of 1 to 5 to adjust for missing values and to allow for easier comparison of variables, the group mean was 4.08 with a standard deviation of .61.

Dependent variable #4: control of hiring and firing. Ten items with a possible range of scores from 10 to 50 measure this variable. The reliability of the measure was analyzed with a resulting Cronbach's alpha of .75. The group mean was 40.83 with a standard deviation of 6.26. After conversion to a scale of 1 to 5, the group mean was 4.08 with a standard deviation of .56.

Dependent variable #5: Reliance on subordinates for control of staffing elements. This new variable was formed during reliability testing of the instrument. The internal consistency as determined by a Cronbach's alpha coefficient

was .83. The 8 items which measure this variable have a possible score of 8 to 40 points. The group mean was 15.28 with a standard deviation of 6.01. When the scores were converted to a scale of 1 to 5, the mean was 1.91 with a standard deviation of .75.

#### Hypothesis Testing

Hypothesis #1. The higher the educational level of the Director of Nursing, the greater is the Director of Nursing's control of the Nursing Personnel Budget.

To test the above hypothesis, Pearson's Product Moment Correlations were computed. As shown in Table 17, the correlation ( $r=.22$ ) between educational level and control of the Nursing Personnel Budget was weak and not statistically significant ( $p < .057$ ). A positive relationship between educational level of the Director of Nursing and reliance on subordinates for control of the Nursing Personnel Budget ( $r= .33$ ) was statistically significant ( $p < .05$ ). The hypothesis was not supported.

Hypothesis #2. The greater the amount of financial education of the Director of Nursing Service, the greater is the Director of Nursing's control of the Nursing Personnel Budget.

As shown in Table 17, the Pearson correlations between financial education and control of the Nursing Personnel Budget ( $r=.24$ ) was weak but statistically significant at the .05 level. The hypothesis was supported.

Hypothesis #3. The greater the amount of experience of

the Director of Nursing Services, the greater is the Director of Nursing's control of the Nursing Personnel Budget. As shown in Table 17, the Pearson's  $r$  between experience and control of the Nursing Personnel Budget demonstrated a non-significant negative relationship. ( $r = -.103$   $p < .24$ ). The hypothesis was not supported.

Hypothesis #4. The size of the acute care institution will be related to the Director of Nursing Services control of the Nursing Personnel Budget.

A Pearson's  $r$  of  $.20$   $p < .08$  was not statistically significant. However, a scatter-plot revealed a curvilinear relationship between the two variables. The relationship was tested via a one-way analysis of variance (ANOVA) and the relationship was shown to be statistically significant (F Ratio =  $4.14$   $p < .01$ ). Control of the Nursing Personnel Budget was greatest in the 101-250 bed hospitals and the 51-100 bed hospitals. The least control was shown by the over 250 bed hospitals. See Table 18. The hypothesis was supported.

Hypothesis #5. Director of Nursing control of the Nursing Personnel Budget is positively related to control of the staff/patient ratio.

As shown in Table 17, the Pearson correlation between Control of the Nursing Personnel Budget and control of staff/patient ratio ( $r = .48$ ) was statistically significant at the  $p < .000$  level. The hypothesis was supported.

Hypothesis #6. Director of Nursing Service control of

the Nursing Personnel Budget is positively related to control of staff mix.

The Pearson correlation  $r=.59$  as shown in Table 17, was statistically significant at the  $p < .000$  level. The hypothesis was supported.

Hypothesis #7. Director of Nursing Service control of the Nursing Personnel Budget is positively related to control of staff promotions. As shown in Table 17, the Pearson correlation ( $r=.54$ ) was statistically significant at the  $p < .000$  level. The hypothesis was supported.

Hypothesis #8. Director of Nursing Service control of the Nursing Personnel Budget is positively related to control of the hiring and firing of staff. As shown in Table 17, the Pearson Correlation of  $r=.43$  was statistically significant at the  $p < .001$  level. The hypothesis was supported.

#### Other Findings

Control variables. No significant relationships were demonstrated between the control variables of Director of Nursing's age and sex and the control of the Nursing Personnel Budget.

No significant relationships were demonstrated between ownership of the institution or implementation of the DRG reimbursement system and control of the Nursing Personnel Budget. See Table 19 for findings.

Size of the institution and DNS education. There is a statistically significant relationship between the size of the institution and the level of education of the Director

of Nursing. A one-way analysis of variance (ANOVA) was calculated with a resulting F Ratio of 4.92  $p < .004$ . See Table 18.

Size of the institution and DNS control of the Nursing Personnel Budget. A one-way analysis of variance (ANOVA) was computed to analyze the variances between means of the four size categories and scores on the control of the Nursing Personnel Budget variable. There was a statistically significant difference between the Directors of hospitals 0-50 beds and Directors of 101-250 bed hospitals. The relationship seems to be curvilinear with the Directors of the smallest and the largest hospitals having lower scores than the two middle size categories. The overall F Ratio was significant at a probability of .01. See Table 18.

Size of the institution and control of staff/patient ratio. A one-way analysis of variance shows an F Ratio of 4.24 which is significant at the .009 level between size of the institution and the Director of Nursing's control of the staff/patient ratio. There was a statistically significant difference between the Directors of Nursing of 51-100 bed hospitals and Directors of +250 bed hospitals as to control of the staff/patient ratio. See Table 18.

Size of institution and control of staffing mix. Another curvilinear relationship was found between the variables of size and control of staffing mix. Utilizing a one-way analysis of variance (ANOVA) the F Ratio was 4.78 which was statistically significant at the .005 level. There was a statistically significant difference between Directors of



hospitals with 0-50 beds and Directors of hospitals of +250 beds. There was also a statistically significant difference between control of staffing mix by Directors of 51-100 bed hospitals and +250 bed hospitals.

The least control over staffing mix was by Directors of +250 bed hospitals and the most control by Directors of 51-100 bed hospitals. See Table 18.

Size of institution and control of staff promotions. A one-way analysis of variance showed a curvilinear relationship with the greatest control exhibited by the two middle size groups and less by the smallest and largest. The F Ratio was 3.98 which was statistically significant at a  $p < .01$  level.

Size of institution and control of hiring and firing. ANOVA was calculated with the resulting F Ratio at 3.07 being statistically significant at a probability level of  $p < .036$ . See Table 18.

Size of the institution and reliance on subordinates for control of staffing elements. Examination of the means of the four hospital size groupings on the variable "reliance on subordinates for control of staffing elements" shows a possible linear relationship. The lowest scores are exhibited by the Directors of the smallest hospitals. The scores get progressively larger as the size of the hospital increases. A one-way analysis of variance (ANOVA) shows an F Ratio of 2.83 which is statistically significant at the .05 probability level.

Size of institution to age of Director of Nursing. A one-way analysis of variance revealed a statistically non-significant relationship between the age of the Director of Nursing and the size of the hospital (F Ratio .19  $p < .90$ ). However, a Pearson's Correlation showed a relationship  $r = .47$  which was significant at the  $p < .000$  level. See Table 19.

Size of the institution and reliance on subordinates for control of the Nursing Personnel Budget. A statistically significant relationship was found between the size of the institution and the reliance on subordinates for control of the Nursing Personnel Budget. An  $r$  of .32 was significant at the  $p < .01$  level.

DNS education and reliance on subordinates for control of the Nursing Personnel Budget. A statistically significant relationship was demonstrated between the educational level of the Director of Nursing and the reliance on subordinates for control of the Nursing Personnel Budget. A Pearson's  $r$  of .33 was statistically significant at the  $p < .009$  level.

DNS experience and control of staff promotions. A negative relationship was demonstrated between the experience of the Director of Nursing and control of staff promotions ( $r = -.23$ ,  $p < .05$ ).

DNS education and DNS financial education. A statistically significant relationship was found between the two types of education of the Director of Nursing ( $r = .32$ ,  $p < .01$ ).

Self-classification of budgetary control. One-way analysis of variances (ANOVA) were calculated between the four categories of budgetary control as self-selected by the Director of Nursing and the following variables; DNS education, DNS financial education, DNS experience, control of the Nursing Personnel Budget, DNS age, DRG days, control of the staff/patient ratio, control of staff mix, control of promotions, and control of hiring and firing. No statistically significant relationships were demonstrated between the self-classified categories and the other variables. See Table 19.

A Pearson's Product Moment Correlation between self-classification as to degree of budgetary control and score on the instrument measuring control of the Nursing Personnel Budget was not statistically significant ( $r=.21$ ,  $p < .07$ ).

Ownership of the institution. Directors of Nursing were grouped according to type of hospital they represented. Mean scores were figured for each variable and the means were ranked. Uneven numbers of Directors in each group skewed the results, but general information can be inferred. See Table 22 in Appendix E.

### Summary

Descriptive data were obtained on the Director of Nursing population in Oregon for 1984.

Relationships were analyzed between the independent variables and the intervening variable; the intervening

variable and the dependent variables; the control variables and the intervening variable; and other combinations.

Six of the eight hypotheses were supported. Two were not supported.

## CHAPTER IV

### Discussion, Recommendations, and Summary

When one looks at the typical budget system of most health care institutions, nursing appears on only one side of the ledger--the side marked "expenses." On the other side marked "revenues," nursing does not appear. Those who are perceived as "pulling their own weight" are respected and rewarded. Such rewards come in the form of added resources and, in nursing, added resources mean more or better patient care (Stevens, B. 1980).

This study has focused upon the Nursing Personnel Budget and staffing elements in the acute care hospital. It is thought that decision-making control over the budget will be enhanced by identification, quantification, and control of nursing service revenues. The relationship between control of the Nursing Personnel Budget and control of the number of bedside nurses available and the mix of R.N.s, L.P.N.s, and aides was studied. The Director of Nursing is thought to be in the key position to exert the decision-making control in ways that will be most beneficial to patients and to the nursing staff.

### Conceptual Framework

While in the past, several studies have examined one or more of the variables which have been identified for this

study, none have attempted to relate them into a cohesive whole. A conceptual framework was developed from experience and from a review of the literature. The model of that first conceptual framework can be found in Figure 1.

That conceptual framework provided the organization of the instrument, the design of the study, the choice of a study population, the methods of data analysis, and of the interpretation of the results of the study.

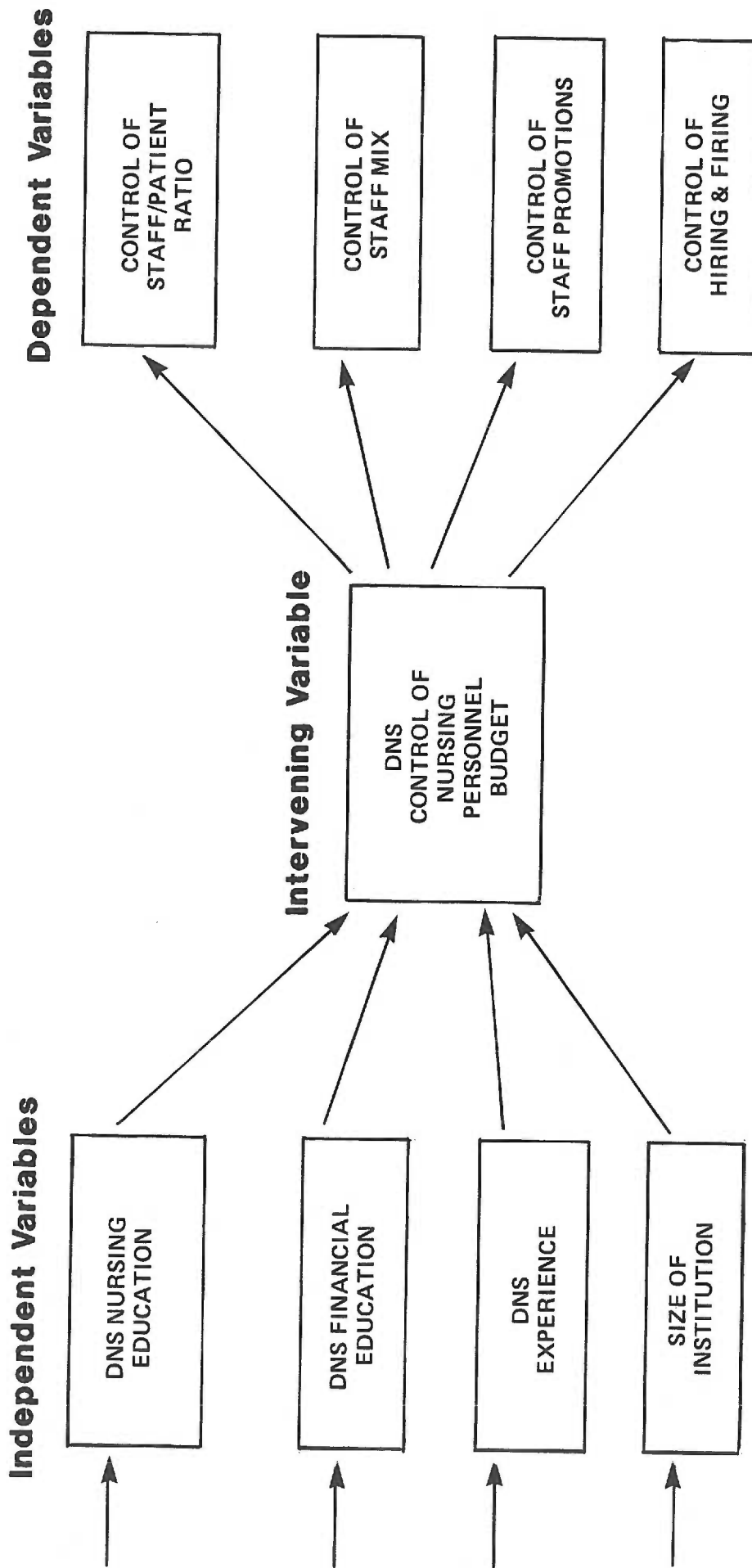
The instrument was based upon one developed by Blankenship and Miles (1968). It was adapted to the unique measurement requirements of this study. Extensive reliability testing was done. The average Cronbach's alpha of internal consistency was .82. Nunnally (1978) reports that in early stage of research on predictor tests or hypothesized measures of a construct, instruments with alpha's of .70 will suffice.

The broad design of the study is longitudinal with a one group pretest-posttest format. This study corresponded to the pretest collection of data. The introduction of the DRG (diagnosis related grouping) reimbursement mechanism of Medicare (10/83 to 7/84) is the intervention of interest. A repetition of the study in four to five years will serve as the posttest.

$O_1$                        $X$                        $O_2$

The more specific design of this study is descriptive and correlational to provide preliminary testing of the hypothesized measures of the conceptual framework.

# CONCEPTUAL FRAMEWORK



## CONTROL VARIABLES:

- 1) DNS AGE
- 2) DRG REIMBURSEMENT
- 2) DNS SEX
- 3) OWNERSHIP OF INSTITUTION

Figure 1. Conceptual framework for the study.

The study population was the total population of Directors of Nursing of acute care hospitals (excluding psychiatric) in the State of Oregon. Hospitals with combined long-term and acute care beds were included only if the number of acute care beds exceeded the long-term beds. The total population of 76 Directors were surveyed via questionnaire. Fifty-nine Directors participated in the study (response rate of 78%).

Data were analyzed descriptively with mean scores, standard deviations, frequencies, percentages, and rankings. Comparisons were made with a study of the same population in 1977 (Willamette Council of Nursing Administrators).

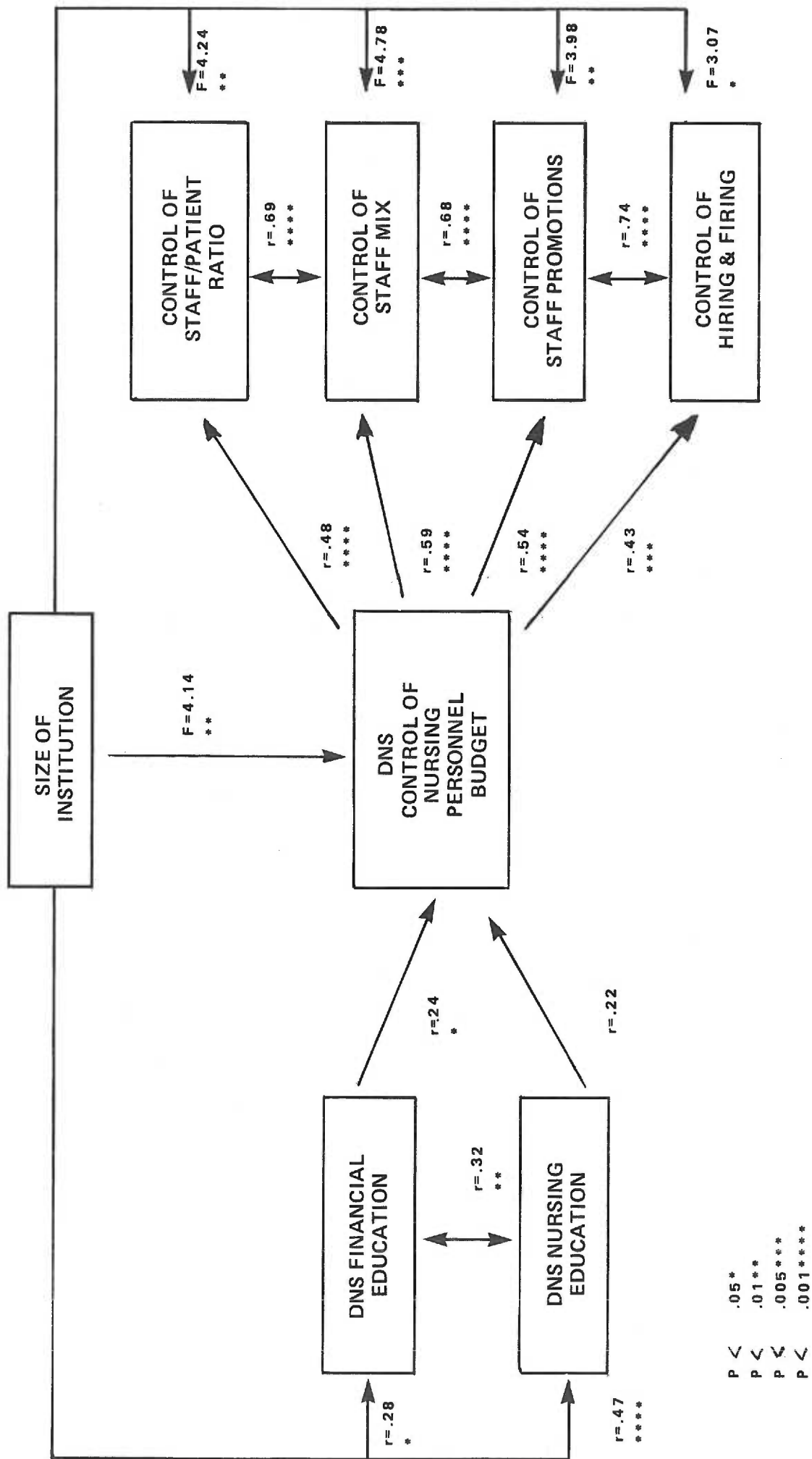
Hypothesized relationships and relationships of control variables were analyzed statistically utilizing Pearson's Product Moment Correlations and one-way ANOVAs.

Six of the eight hypotheses were supported and the effects of the control variables were eliminated. Findings necessitated a revision in the original conceptual framework. Figure 2 gives the model as revised with the relationships identified.

Hypotheses. As can be determined from Figure 2, results of the testing of hypothesized relationships were;

1. The higher the educational level of the DNS, the greater is the DNS control of the Nursing Personnel Budget. This hypothesis was not supported ( $r=.22$   $p < .06$ ).
2. The greater the amount of financial education of the





## REVISED CONCEPTUAL FRAMEWORK

Figure 1. Conceptual framework revised after statistical analysis.

DNS, the greater is the control of the Nursing Personnel Budget. This hypothesis was supported ( $r=.24$   $p < .05$ ).

3. The greater the amount of experience of the DNS, the greater is the DNS control of the Nursing Personnel Budget. This hypothesis was not supported ( $r=-.10$   $p < .24$ ).

4. The size of the acute care institution will be related to the DNS control of the Nursing Personnel Budget. This hypothesis was supported (F Ratio=4.14  $p < .01$ ). The relationship was curvilinear, necessitating testing by ANOVA. Less control was exhibited by Directors of the smallest and the largest hospitals.

5. DNS control of the Nursing Personnel Budget is positively related to control of staff/patient ratio. This hypothesis was supported ( $r=.48$   $p < .000$ ).

6. DNS control of the Nursing Personnel Budget is positively related to control of staff mix. This hypothesis was supported ( $r=.59$   $p < .000$ ).

7. DNS control of the Nursing Personnel Budget is positively related to control of staff promotions. This hypothesis was supported ( $r=.54$   $p < .000$ ).

8. DNS control of the Nursing Personnel Budget is positively related to control of the hiring and firing of staff. This hypothesis was supported ( $r=.43$   $p < .001$ ).

The control variables of age, ownership of the institution, and DRGs (Medicare reimbursement mechanism) were found to have no significant relationship with the intervening variable (control of the Nursing Personnel Budget). The

relationship of the control variable, sex of the DNS, to the control of the Nursing Personnel Budget were not tested due to the small number of male Directors in the study population.

Staffing variables. In a comprehensive review of the nursing literature on nurse staffing (Aydelotte, M., 1973), only two studies attempted to analyze the impact of nursing administrative leadership upon the amount of staff required to deliver patient care. In a study by the Illinois Study Commission on Nursing (1966-1970), one of the findings reported was that as the sophistication of nursing leadership increased, so did the number of nursing hours available for patient care. In 1981, Parrish and Cleland studied 71 Directors of Nursing and found that 14% did not have the authority to modify the number of nursing positions in their departments.

The relationship between the percentage of RNs in a nursing staff to other nursing personnel was reported to have consequences of increased patient satisfaction or increased quality of care (Abdellah & Levine, 1958; Kaeser, 1980).

Control of staff/patient ratio; control of staff mix; control of promotions; and control of the hiring and firing of staff were measured as dependent variables for this study. The study population of Directors of Nursing in the State of Oregon in 1984 scored on the high side of the scale on these variables. The group mean score on control of staff/patient

ratio was 3.77 on a scale of 1-5. The group mean score on control of staff mix was 3.66 (scale of 1-5); on control of promotions was 4.08 (scale of 1-5); and was 4.08 (scale of 1-5) on control of hiring and firing.

It is interesting that staff/patient ratio and staff mix were elements of staffing over which the Directors of Nursing had less control than over the other two staffing variables. There is more money involved with the number and types of nurses employed and less control granted to the nursing administrator.

Nursing Personnel Budget. The nursing literature had been virtually silent on the subjects of finance and budgeting (except for nursing texts) until the past five years. Recently, there has been an increased awareness of the importance of the budget as the tool by which objectives and decisions are made which will influence nurses and patients directly. Articles dealing with the importance of identifying nursing revenues and of quantifying nursing care are becoming more common (Aydelotte, 1983; Higginson & Van Slyck, 1982; Stevens, B., 1980; and Walker, D., 1982). A study by Batey and Lewis found that the area of least autonomy by Directors of Nursing was commanding the resources that budgets imply.

Director of Nursing control of the Nursing Personnel Budget was measured in this study as the intervening variable. The population of Directors of Nursing in Oregon in 1984 scored a mean of 3.28 on a scale of 1-5 on this variable.

More control was exhibited over expenditures (mean of 3.27) than over revenues (mean of 2.83). The decision situations, ranked from most control to least control, were; 1) expenditure consultation, 2) mid-range plan for expenditures, 3) expenditure budget, 4) variable billing for revenues, 5) budget adjustment for DRGs, 6) mid-range plan for revenues, and 7) budget for revenues.

Directors were asked to classify themselves as to category of budgetary input. Statistical testing revealed no significant relationship between the self-selected categories and the level of control of budgetary decisions as measured by 42 Likert-scale questions. This would tend to indicate that perceptions of level of control may be somewhat distorted.

Biographical and institutional variables. According to a National Study of Nursing conducted by the Western Interstate Commission on Higher Education in 1978, 75% of all Directors of Nursing in the United States had only diploma preparation. In Oregon, a study by the Willamette Council of Nursing Service Administrators reported that in 1977, 60% of the Directors of Nursing were diploma prepared, 24% were Baccalaureate prepared, 17% were Masters prepared, and none were Doctorally prepared. Findings of this study indicate a definite trend towards higher levels of education of Directors of Nursing in Oregon in 1984. Fifteen percent were diploma prepared, 34% were Baccalaureate prepared, 37% were Masters prepared, and 5% were Doctorally prepared.

Director of Nursing educational preparation was measured as an independent variable for this study.

With the advent of Medicare, the complexion of hospitals began changing to business-like organizations. Hospital administrators who had been physicians or members of religious bodies began to be replaced by men with degrees in Business, Hospital Administration, or Accounting. The study by the Willamette Council of Nursing Service Administrators in 1977 reported the percentage of Nursing Directors with formal education in finances as;

25% of Directors (hospital 51-100 beds)

44% of Directors (hospitals 101-250 beds)

40% of Directors (hospitals over 250 beds)

Financial education of the Director of Nursing was measured as the second independent variable for the study.

Findings of this study indicate that financial and budgetary curricula are still lacking in many nursing programs which are preparing nursing leaders. At the Masters level, 40% of the 25 Directors receiving that degree had taken no courses in budgeting or finances and only 28% had taken 3 courses or more. At the Doctorate level, 2 of the Directors had not had any coursework and 2 had taken 3 courses or more.

It would seem that some attention should be paid to the Masters and Doctorate programs preparing nursing administrators to ensure adequate preparation in financial management.

The amount of experience of the Director of Nursing was measured as the third independent variable.

Apparently there has been a turnover in the Director of Nursing positions in Oregon during the past five years. Sixty percent of the Directors included in this study had been in their positions five years or less.

This may in part explain the changes in the level of educational preparation since 1977. Evidently, nurses with higher degrees are being hired as positions become vacant.

Two additional biographical variables were selected as control variables. Age of the Director of Nursing and sex of the Director of Nursing. The average age was 43. Only 2 of the 59 Directors included in this study were male. Although male nurses have been becoming more visible in nursing management in Oregon, they have not reached the top position in significant numbers.

One institutional variable was explored as an independent variable for the study. That was size of the institution. A study by Aydelotte (1968) of Nursing Service Administrators nationally (N=1172) concluded that among problems and issues for study of particular interest was the relationship of hospital size to organizational aspects and staff characteristics. The hypothesis that "the definition of responsibilities between executive and subordinate policymakers will be influenced by the size of the formal organization" was supported in the study by Hanson in 1961.

The size of the institution was found to correlate significantly with all of the variables in the revised conceptual framework. A linear relationship was discovered

between the educational level and amount of financial education received by the DNS, and the size of the hospital. This would indicate that Directors with higher levels of education are employed in larger hospitals. In larger hospitals there seems to be more delegation of control over staffing to subordinates ( $r=.37$   $p < .01$ ).

Directors of the larger hospitals scored lower on control of the Nursing Personnel Budget ( $\bar{x}=2.77$ ), as did the Directors of the smaller hospitals ( $\bar{x}=2.80$ ), than the two middle-size hospital categories ( $\bar{x}=3.37, 3.39$ ). In the smaller hospitals the Hospital Administrator may retain control over the budget. In the larger hospitals the results are not as easily explained. Delegation to subordinates which removes direct control would be an easy answer, but in the case of the measurement in this study, "the reliance on subordinates for control" was scored as a separate variable. The score on control of the Nursing Personnel Budget was based on decision-making control as measured by initiation of action, autonomy from superior, and final say. Results may have been influenced by the inclusion into the study population of two Directors who did not hold the top position in the Nursing Department. Speculation arises regarding the power that would be inherent in the control of such a large budget and whether that fact could make a difference in the amount of control allowed the Director of Nursing.

The Directors of the largest hospitals also scored lower on control of the staff/patient ratio than the other



size categories. Levine, Siegel, and De La Puente (1961) found that as the size of the hospital increases, the number of nursing staff to patients decreases. This study did not specifically address the number of nurses available per patient, but if less control over the staff/patient ratio results in less staff, then findings would tend to support those of the above study.

#### Limitations of the Study

Several limitations of this study are apparent. First of all, the construction of the instrument, with identical matrix of control questions, raises questions of possible auto-correlation. If the instrument correlates with itself, the relationships as measured may be inflated and caution in interpretation would be advised. To address this limitation, extensive reliability testing was done on the instrument. The means of each question in the control matrix were computed across variables and compared statistically with the means of the individual variables. Further testing and refinement of the instrument would be advantageous since no tools have been found in the literature to measure control of the budget or control of staffing elements.

The second limitation of the study is that there were some problems with the definition of "Director of Nursing" as a criteria for inclusion in the study population. In several of the larger hospitals in Oregon, the top nursing administrator has another title (i.e., Vice President of Nursing or Associate Hospital Director for Patient Care).

In some settings, there is also a Director of Nurses who reports to the top nursing administrator. In the case of two hospitals represented in the study, the subject was not the top nursing administrator. The decision was made to include these questionnaires since there was no other input from the hospital.

Third, there is a limitation in using a total population of one geographical location such as the State of Oregon. Findings are applicable only to that area. In this case, that was consistent with the purposes of the study.

#### Implications

A clarification seems in order before discussing the implications of the study. Control over the budget can be conceptualized as being directed downward or upward. It is necessary to differentiate between control over subordinates (i.e., use of budget to control nursing personnel efficiency) and control as an advocate for the nursing department (i.e., to obtain resources).

Control over the budget and over staffing elements is conceptualized as advocate control in this study. It is the use of budgeting information in communicating with and influencing the behavior of those outside of the nursing department such as hospital administrators who supply resources necessary to the department's functioning (Covaleski & Dirsmith, 1981).

Three theoretical implications of the study have been identified. First, is the further development and

modification of the conceptual framework by further study, retesting, and the exploration of additional variables. Another method of testing the relationship between nursing education and control of the personnel budget might be advantageous. The relationship was near-significant as measured in this study. Additional independent variables should be identified and tested. Possibilities include 1) decision-making characteristics of the DNS, 2) personality or management style of the hospital administrator, or 3) organizational structure of the hospital. Preliminary testing of a new conceptual framework was accomplished by this study. After further research, it may contribute to the understanding of budgetary control in nursing management.

Secondly, further refinement and testing of the instrument developed by Blankenship and adapted to nursing management for this study, would be advantageous to provide a tool that could be used in other studies. The question of auto-correlation should be explored further, perhaps by manipulation of "dummy variables" which have been shown to have no relationship. New decision-situations could also be developed utilizing the six Likert-type control questions and correlations could be tested for. If the variables measured by the decision-situation were known to be statistically unrelated and yet a correlation were shown, an auto-correlation could be identified and perhaps controlled for.

Thirdly, the expected effects of the DRG (diagnosis-related grouping) reimbursement mechanism will need to be

determined. Hypotheses regarding the anticipated effect upon control of the personnel budget and control of staffing elements will need to be formed prior to the replication of the study in five years (1988-89). Evaluation of extraneous variables which may influence results will need to be done. Based upon the findings of this study, the population of Directors of Nursing may have changed significantly during that period of time. However, the institutions that will be represented by the Directors of Nursing will be the same institutions represented in this study. Significant changes detected after the implementation of DRG's may add to the knowledge of the effects upon the nursing departments of acute care hospitals in Oregon, and of where the control resides over the type and amount of care available to patients.

Three implications of the study for nursing practice have been identified. First, the finding that the Nursing Directors scored lower on the decisions relating to the control of nursing revenues as opposed to nursing expenses has implications for the practice of nursing administrators in Oregon. Since a correlation was found between budgetary control and control of the numbers and types of nurses available to give nursing care, it would seem important to increase that control. If the area of least control concerned revenues, that would seem to be the area needing attention.

If nursing care can be quantified, by use of acuity

classification systems or other methods such as those proposed by Holbrook (1972), Wood (1976), or Poland (1970), and be related directly to the costs (direct and indirect) of providing that care, appropriate nursing revenues can be established. The use of payroll systems that allow for a breakdown of time worked between hospital departments, will allow non-nursing hours to be charged back to the appropriate departments. This is possible only if nursing care can be defined and defended as such. The benefits to nursing administrators and to the hospital stem from the fact that a truer picture of expenses may be obtained.

Integrated planning results when cost and expense levels are directly associated with the revenue budgeted (Jones & Trentin, 1971). A more realistic depiction of what level of nursing care can be provided, for each increment of resources made available to the nursing department, can be developed. This can have positive implications for staff nurses. Clearer expectations of what nursing care is expected and possible for the number or mix of nurses available can, 1) eliminate the confusion and frustration of "attempting the impossible," and 2) stimulate realistic and creative solutions to cutbacks.

The second implication for practice also stems from the study finding that Directors scored lower on control over nursing revenues than over expenses. Control over revenues may give Nursing Directors added credibility and the psychological boost of being advocate of a department which is

"pulling its own weight." Both, should allow the Director of Nursing to utilize the budget as a political advocacy device (Covaleski & Dirsmith, 1981) to obtain needed resources from hospital administration.

Lastly, the findings that Director of Nursing control is less over staff mix and staff/patient ratio may be important in the cutback economy of the 1980's. The important factor is thought to be, not necessarily that there always be more nursing care hours available, but that the decision should remain with the one who has knowledge of nursing and patient needs.

Findings of a correlation of nursing educational preparation and financial education with control of the Nursing Personnel Budget may not imply causation, but more control was exhibited when the educational level was higher. The educational level of Directors of Nursing in Oregon has increased significantly in the past seven years. However, findings also indicate that 40% of the Masters-prepared Directors of Nursing had received no formal education in budgeting and finance.

If nursing is to control all elements of staffing, nursing must also control the Nursing Personnel Budget. In order to control the budget, thought needs to be given to the education of nursing administrators, especially the financial education. Nursing leadership carries the responsibility for nursing advocacy and patient advocacy in the cutback economy environment in health care.

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APPENDIX A

Letter of Introduction

OREGON HEALTH SCIENCES  
UNIVERSITY

November, 16, 1983

Dear \_\_\_\_\_,

I am presently a student in the Master's program in Nursing Management and Administration at the Oregon Health Sciences University. My thesis study concerns control of the nursing personnel budget by the Director of Nursing Services.

The enclosed questionnaire should take between 15 and 20 minutes to complete. Your assistance in supplying this information will be greatly appreciated. I have enclosed a self-addressed, stamped envelope. If at all possible, your return of the questionnaire within one week will significantly facilitate data collection.

I will be sending you a summary of the findings after the data analysis has been completed. The information should be useful in establishing a baseline of budgetary practices in Oregon prior to the establishment of the Medicare DRG reimbursement mechanism.

Again, thank you for your help.

Sincerely,

Esther Halvorson  
School of Nursing, OHSU  
3181 S.W. Sam Jackson Park Rd.  
Portland, Oregon 97201

APPENDIX B  
Informed Consent Form

## THE OREGON HEALTH SCIENCES UNIVERSITY

Informed Consent Form

I, \_\_\_\_\_,  
(first name) (middle name) (last name)

herewith agree to serve as a subject in the investigation named "Study of the Relationship Between Control of the Nursing Personnel Budget and Nurse Staffing Elements", by Esther L. Halvorson, B.S.N., R.N., under the supervision of Linda Kaeser, R.N., PhD.

My role in the study will be filling out and returning a questionnaire. There is no risk for me from this procedure. The information will be kept confidential. My name will not appear on the records and anonymity will be insured by the use of code numbers.

Esther Halvorson has offered to answer any questions that I might have about my participation in this study. I understand I am free to refuse to participate or to withdraw from participation in the study at any time without affecting my relationship with the Oregon Health Sciences University.

I have read the foregoing and agree to participate.

\_\_\_\_\_  
(date)

\_\_\_\_\_  
(subject's signature)



**MEMO** 

Date: November 18, 1983

To: Esther Halvorson, B.S.N.

From: The Committee On Human Research

Subject: A Study of the Relationship Between Director of Nursing Control  
of the Nursing Personnel Budget and Control of Staffing Elements

This confirms receipt of the above entitled project requesting exemption from Institutional Review Board approval based upon category #3.

The project has been reviewed and it has been determined to be exempt under 45 CFR 46.101 (b) #3. Thank you for your cooperation.

*Michael A. Ward, M.D.*

ASSURANCE/CERTIFICATION/DECLARATION

continuation continuation

- ORIGINAL  FOLLOWUP  EXEMPTION  
(previously undesignated)

APPLICATION IDENTIFICATION NO. (if known)

89

**POLICY:** A research activity involving human subjects that is not exempt from HHS regulations may not be funded unless an Institutional Review Board (IRB) has reviewed and approved the activity in accordance with Section 474 of the Public Health Service Act as implemented by Title 45, Part 46 of the Code of Federal Regulations (45 CFR 46—as revised). The applicant institution must submit certification of IRB approval to HHS unless the applicant institution has designated a specific exemption under Section 46.101(b) which applies to the proposed research activity. Institutions with an assurance of compliance on file with HHS which covers the proposed activity should submit certification of IRB review and approval with each application. (In exceptional cases, certification may be accepted up to 60 days after the receipt date for which the application is submitted.) In the case of institutions which do not have an assurance of compliance on file with HHS covering the proposed activity, certification of IRB review and approval must be submitted within 30 days of the receipt of a written request from HHS for certification.

1. TITLE OF APPLICATION OR ACTIVITY **A STUDY OF THE RELATIONSHIP BETWEEN DIRECTOR OF NURSING CONTROL OF THE NURSING PERSONNEL BUDGET AND CONTROL OF STAFFING ELEMENTS**

2. PRINCIPAL INVESTIGATOR, PROGRAM DIRECTOR, OR FELLOW  
**ESTHER LOUISE HALVORSON**

3. FOOD AND DRUG ADMINISTRATION REQUIRED INFORMATION (see reverse side)

4. HHS ASSURANCE STATUS

This institution has an approved assurance of compliance on file with HHS which covers this activity.

Assurance identification number \_\_\_\_\_ IRB identification number \_\_\_\_\_

No assurance of compliance which applies to this activity has been established with HHS, but the applicant institution will provide written assurance of compliance and certification of IRB review and approval in accordance with 45 CFR 46 upon request.

5. CERTIFICATION OF IRB REVIEW OR DECLARATION OF EXEMPTION

This activity has been reviewed and approved by an IRB in accordance with the requirements of 45 CFR 46, including its relevant Subparts. This certification fulfills, when applicable, requirements for certifying FDA status for each investigational new drug or device. (See reverse side of this form.)

\_\_\_\_\_ Date of IRB review and approval. (If approval is pending, write "pending." Followup certification is required.)  
(month/day/year)

- Full Board Review  Expedited Review

This activity contains multiple projects, some of which have not been reviewed. The IRB has granted approval on condition that all projects covered by 45 CFR 46 will be reviewed and approved before they are initiated and that appropriate further certification (Form HHS 596) will be submitted.

Human subjects are involved, but this activity qualifies for exemption under 46.101(b) in accordance with paragraph 3 (insert paragraph number of exemption in 46.101(b), 1 through 5), but the institution did not designate that exemption on the application.

6. Each official signing below certifies that the information provided on this form is correct and that each institution assumes responsibility for assuring required future reviews, approvals, and submissions of certification.

APPLICANT INSTITUTION	COOPERATING INSTITUTION
NAME, ADDRESS, AND TELEPHONE NO.	NAME, ADDRESS, AND TELEPHONE NO.
NAME AND TITLE OF OFFICIAL (print or type)	NAME AND TITLE OF OFFICIAL (print or type)
SIGNATURE OF OFFICIAL LISTED ABOVE (and date)	SIGNATURE OF OFFICIAL LISTED ABOVE (and date)

MAW 11/3/83

APPENDIX C  
Questionnaire Form

OREGON HEALTH SCIENCES  
UNIVERSITY

FINANCIAL CONTROL SURVEY

Thank you for agreeing to participate in this study. A summary of results will be mailed to you at the conclusion of the data analysis.

INSTRUCTIONS:

Part I of the questionnaire will present you with situations requiring a decision which might confront you in your current position as Director of Nursing Services.

You will be asked to rate, on a scale of 1-5, how frequently you perform a certain action relating to that decision.

example:

How frequently do you initiate action on such a decision?.....

never----->always				
1	2	3	4	5
	✓			

- 1= "never"
- 2= "almost never"
- 3= "do as many times as don't"
- 4= "almost always"
- 5= "always"

Part II of the questionnaire asks questions related to your background and to certain characteristics of the hospital in which you are presently employed.

Please place your completed questionnaire in the envelope provided and sign the consent form that is attached. Your name will not appear on the records and anonymity will be insured.

Your speedy response will greatly facilitate the study. If you have any questions, you may contact Esther Halvorson at 224-8161 (Portland) or 930 S.W. Gibbs, #6, Portland, Oregon, 97201.

A.

DECISION TO INCREASE THE NUMBER OF PERMANENT POSITIONS  
WITHIN YOUR DEPARTMENT

never-----→always

HOW FREQUENTLY:

	1	2	3	4	5
1) Do <u>you</u> initiate action on such a decision?_____					
2) Do <u>superiors</u> initiate action on such a decision?					
3) Are you required to consult superior before taking further action?-----					
4) <u>You</u> would make the final decision?_____					
5) <u>Subordinates</u> would make the final decision?_____					
6) <u>Superior</u> would make the final decision?_____					

B.

DECISION TO CHOOSE ONE FROM SEVERAL APPLICANTS FOR A  
POSITION IN YOUR DEPARTMENT

never-----→always

HOW FREQUENTLY:

	1	2	3	4	5
1) Do <u>you</u> initiate action on such a decision?_____					
2) Do <u>superiors</u> initiate action on such a decision?					
3) Are you required to consult superior before taking further action?-----					
4) <u>You</u> would make the final decision?_____					
5) <u>Subordinates</u> would make the final decision?_____					
6) <u>Superior</u> would make the final decision?_____					

C.

DECISION TO PROMOTE SOMEONE IN YOUR DEPARTMENT TO A  
HIGHER POSITION

never-----→always

HOW FREQUENTLY:

	1	2	3	4	5
1) Do <u>you</u> initiate action on such a decision?_____					
2) Do <u>superiors</u> initiate action on such a decision?					
3) Are you required to consult superior before taking further action?-----					
4) <u>You</u> would make the final decision?_____					
5) <u>Subordinates</u> would make the final decision?_____					
6) <u>Superiors</u> would make the final decision?_____					

DECISION TO TERMINATE EMPLOYMENT OF STAFF MEMBER AFTER INSTITUTIONAL PROCEDURE HAS BEEN FOLLOWED

HOW FREQUENTLY:	never-----→always				
	1	2	3	4	5
1) Do <u>you</u> initiate action on such a decision?_____					
2) Do <u>superiors</u> initiate action on such a decision?_____					
3) Are you required to consult superior before taking further action?-----					
4) <u>You</u> would make the final decision?_____					
5) <u>Subordinates</u> would make the final decision?_____					
6) <u>Superior</u> would make the final decision?_____					

DECISION TO ADJUST THE PERCENTAGE OF REGISTERED NURSES IN PERMANENT POSITIONS

HOW FREQUENTLY:	never-----→always				
	1	2	3	4	5
1) Do <u>you</u> initiate action on such a decision?_____					
2) Do <u>superiors</u> initiate action on such a decision?_____					
3) Are you required to consult superior before taking further action?-----					
4) <u>You</u> would make the final decision?_____					
5) <u>Subordinates</u> would make the final decision?_____					
6) <u>Superior</u> would make the final decision?_____					

DECISION TO INCREASE THE NURSE/PATIENT RATIO WHEN PATIENT ACUITY IS INCREASED

HOW FREQUENTLY:	never-----→always				
	1	2	3	4	5
1) Do <u>you</u> initiate action on such a decision?_____					
2) Do <u>superiors</u> initiate action on such a decision?_____					
3) Are you required to consult superior before taking further action?-----					
4) <u>You</u> would make the final decision?_____					
5) <u>Subordinates</u> would make the final decision?_____					
6) <u>Superiors</u> would make the final decision?_____					



G.

DECISION TO DECREASE THE PERCENTAGE OF LICENSED TO UNLICENSED PERSONNEL ON YOUR STAFF

never----->always				
1	2	3	4	5

HOW FREQUENTLY:

- 1) Do you initiate action on such a decision?\_\_\_\_\_
- 2) Do superiors initiate action on such a decision?\_\_\_\_\_
- 3) Are you required to consult superior before taking further action?-----
- 4) You would make the final decision?\_\_\_\_\_
- 5) Subordinates would make the final decision?\_\_\_\_\_
- 6) Superior would make the final decision?\_\_\_\_\_

H.

DECISION TO REMOVE SOMEONE IN YOUR DEPARTMENT FROM A SUPERVISORY POSITION DUE TO INADEQUATE JOB PERFORMANCE

never----->always				
1	2	3	4	5

HOW FREQUENTLY:

- 1) Do you initiate action on such a decision?\_\_\_\_\_
- 2) Do superiors initiate action on such a decision?\_\_\_\_\_
- 3) Are you required to consult superior before taking further action?-----
- 4) You would make the final decision?\_\_\_\_\_
- 5) Subordinates would make the final decision?\_\_\_\_\_
- 6) Superior would make the final decision?\_\_\_\_\_

I.

DECISIONS ABOUT ACTUAL EXPENDITURES FOR NURSING SERVICE PERSONNEL

never----->always				
1	2	3	4	5

HOW FREQUENTLY:

- 1) Do you initiate action on such a decision?\_\_\_\_\_
- 2) Do superiors initiate action on such a decision?\_\_\_\_\_
- 3) Are you required to consult superior before taking further action?-----
- 4) You would make the final decision?\_\_\_\_\_
- 5) Subordinates would make the final decision?\_\_\_\_\_
- 6) Superiors would make the final decision?\_\_\_\_\_





M.

DECISION ABOUT DEVELOPMENT OF MID-RANGE (2-5 YEARS) PLAN FOR NEEDED NURSING SERVICE PERSONNEL REVENUES

HOW FREQUENTLY:

- 1) Do you initiate action on such a decision?\_\_\_\_\_
- 2) Do superiors initiate action on such a decision?\_\_\_\_\_
- 3) Are you required to consult superior before taking further action?-----
- 4) You would make the final decision?\_\_\_\_\_
- 5) Subordinates would make the final decision?\_\_\_\_\_
- 6) Superior would make the final decision?\_\_\_\_\_

never----->always				
1	2	3	4	5

N.

DECISIONS ABOUT HOW NURSING SERVICE PERSONNEL BUDGET FOR EXPENDITURES WILL BE ADJUSTED TO RESPOND TO D.R.G. REQUIREMENTS (NEW MEDICARE REIMBURSEMENT)

HOW FREQUENTLY:

- 1) Do you initiate action on such a decision?\_\_\_\_\_
- 2) Do superiors initiate action on such a decision?\_\_\_\_\_
- 3) Are you required to consult superior before taking further action?-----
- 4) You would make the final decision?\_\_\_\_\_
- 5) Subordinates would make the final decision?\_\_\_\_\_
- 6) Superior would make the final decision?\_\_\_\_\_

never----->always				
1	2	3	4	5

O.

DECISIONS ABOUT THE RELATIONSHIP BETWEEN PATIENT CLASSIFICATION (ie. ACUITY) AND NURSING PERSONNEL REVENUES (ie. VARIABLE BILLING)

HOW FREQUENTLY:

- 1) Do you initiate action on such a decision?\_\_\_\_\_
- 2) Do superiors initiate action on such a decision?\_\_\_\_\_
- 3) Are you required to consult superior before taking further action?-----
- 4) You would make the final decision?\_\_\_\_\_
- 5) Subordinates would make the final decision?\_\_\_\_\_
- 6) Superiors would make the final decision?\_\_\_\_\_

never----->always				
1	2	3	4	5

## FINANCIAL CONTROL SURVEY

## PART II

- 1) Age \_\_\_\_\_
- 2) Sex \_\_\_\_\_
- 3) Educational Background (highest degree achieved):
- \_\_\_\_\_ A.A.  
 \_\_\_\_\_ Diploma program  
 \_\_\_\_\_ B.A. or B.S. in nursing  
 \_\_\_\_\_ B.A. or B.S. in related field  
 \_\_\_\_\_ Masters in nursing  
 \_\_\_\_\_ Masters in related field  
 \_\_\_\_\_ Doctorate in nursing  
 \_\_\_\_\_ Doctorate in related field
- 4) Years of experience (please give number of years for each of the following):
- \_\_\_\_\_ years as Director of Nursing Services in present or any other hospital  
 \_\_\_\_\_ years you have spent in nursing management and/or nursing supervision (including present position)  
 \_\_\_\_\_ years you have worked as a Registered Nurse (including the above categories)
- 5) Approximately how many hours of inservice or workshops on budgeting and/or financial management have you attended?  
 \_\_\_\_\_ number of hours
- 
- 6) How much education have you had in budgeting and/or financial management? (please check category that applies):
- In nursing program at Associate level: (check one)
- \_\_\_\_\_ no courses  
 \_\_\_\_\_ included in another course  
 \_\_\_\_\_ one specific course  
 \_\_\_\_\_ two or more courses  
 \_\_\_\_\_ does not apply (was not a student in such a program)
- In nursing program at Baccalaureate level: (check one)
- \_\_\_\_\_ no courses  
 \_\_\_\_\_ included in another course  
 \_\_\_\_\_ one specific course  
 \_\_\_\_\_ two or more courses  
 \_\_\_\_\_ does not apply (was not a student in such a program)
- In nursing program at Masters level: (check one)
- \_\_\_\_\_ no courses  
 \_\_\_\_\_ included in another course  
 \_\_\_\_\_ one specific course  
 \_\_\_\_\_ two courses  
 \_\_\_\_\_ three or more courses  
 \_\_\_\_\_ does not apply (was not a student in such a program)

In nursing program at Doctorate level: (check one)

- no courses
  - included in another course
  - one specific course
  - two courses
  - three or more courses
  - does not apply (was not a student in such a program)
- In program of related field of study (please identify):

- 
- no courses
  - included in another course
  - one specific course
  - two courses
  - three or more courses
  - does not apply (was not a student in such a program)

---

Characteristics of the hospital setting in which you currently work:

7) Size of hospital:

- 0-50 beds
- 51-100 beds
- 101-250 beds
- over 250 beds

8) Ownership of hospital:

Voluntary

- community
- religious affiliation
- educational institution affiliation

Governmental

- Federal
- State
- County
- City

Proprietary

9) Fiscal year of your hospital:

- July-June
- January-December
- other (please state) \_\_\_\_\_

10) When will your hospital convert to diagnosis related grouping reimbursement (DRG's) ?

\_\_\_\_\_ month \_\_\_\_\_ day \_\_\_\_\_ year

11) Is documentation of patient classification (ie. acuity level) a part of the permanent patient record in your hospital?

yes  no

## Financial Control Survey Cont'd

Please check the category which most closely applies to your budgetary situation for the 1982-83 budget (past year).

- \_\_\_\_\_ Director of Nursing Services or his/her delegate advises on expenditures for nursing personnel. DNS or his/her delegate responsible for implementation of budget.
- \_\_\_\_\_ Director of Nursing Services or his/her delegate prepares the budget for nursing service expenditures. DNS or his/her delegate responsible for implementation of budget.
- \_\_\_\_\_ Director of Nursing Services or his/her delegate advises on revenues by nursing personnel and prepares budget for nursing personnel expenditures. DNS or his/her delegate responsible for implementation of budget.
- \_\_\_\_\_ Director of Nursing Services or his/her delegate prepares the budget for nursing personnel revenues and expenditures. DNS or his/her delegate responsible for implementation of budget.

Thank you for your time and thoughtful participation in completing this questionnaire.

APPENDIX D

Scoring and Coding

SCORING SCALE  
FINANCIAL EDUCATION  
INSTRUMENT

QUESTION #97	workshop hours	0=0 1-80=1 81-160=2 160+=3	range	0-3
QUESTION #98	AA	0=0 1=1 2=2 3=3	range	0-3
QUESTION #99	BAAC	0=0 1=2 2=3 3=4	range	0=4
QUESTION #100	Masters	0=0 1=3 2=4 3=5 4=6	range	0-6
QUESTION #101	Ph.D.	0=0 1=4 2=5 3=6 4=7	range	0-7
QUESTION #102	Rel. field	0=0 1=3 2=4 3=5 4=6	range	0-6

total range 0-29

## SCORING OF THE QUESTIONNAIRE

Dependent variable #1: Staff/patient ratio

Questions: 1-6, 31-36

Variable name: C1-C6, C31-C36

Range of scores: 5 points per question 10-50

Dependent variable #2: Staff mix

Questions: 25-30, 37-42

Variable name: C25-C30, C37-C42

Range of scores: 5 points per question 10-50

Dependent variable #3: Staff promotions

Questions: 13-18, 43-48

Variable name: C13-C18, C43-C48

Range of scores: 5 points per question 10-50

Dependent variable #4: Hiring and firing of staff

Questions: 7-12, 19-24

Variable name: C7-C12, C19-C24

Range of scores: 5 points per question 10-50

Intervening variable: Control of Nursing Personnel Budget

Questions: 49-90

Variable name: B1-B42

Range of scores: 5 points per question 10-50

Independent variable #1: Nursing education

Question: 93

Variable name: EDNUR

Range of scores: 1-5

## SCORING OF THE QUESTIONNAIRE (Cont'd)

Independent variable #2: Financial education

Questions: 97-102

Variable name: Fin 1-Fin 6

Range of scores: 0-300 unweighted 1-29 weighted

Independent variable #3: Experience

Questions: 94-96

Variable name: EXPDNS, EXPSUP, EXPRN

Range of scores: 0-? combined scores on 3 questions

Independent variable #4: Size of institution

Question: 103

Variable name: Size

Range of scores: 1-4

Control variable #1: Age

Question: 91

Variable name: Age

Range of scores: 20-60

Control variable #2: Sex

Question: 92

Variable name: Sex

Range of scores: 1-2 (information only)

Control variable #3: Ownership of institution

Question: 104

Variable name: Iown

Range of scores: 1-8 (information only)

Control variable #4: DRG reimbursement

Questions: 106, 107

Variable names: DRGM, DRGD, DRGYR, Days

Range of scores: 1-12, 1-31, 83-88, 0-? (days figured from  
10/1/83 until system implemented)



## SCORING OF QUESTIONNAIRE (Cont'd)

Other VariablesFiscal year

Question: 105

Variable name: Fiscal

Range of scores: 1-3 (information only)

Self-classification as to control of budget

Question: 108

Variable name: Class

Range of scores: 1-4

APPENDIX E

Tables

Table 9  
Hours of Workshop Education in Budgeting and Finance  
Directors of Nursing in Oregon, 1984

number of hours	number	percent	mean	standard deviation
0	7	14%		
1-20	15	30%		
21-40	8	16%		
41-60	5	10%		
61-80	4	8%		
81-100	6	12%		
101-200	4	8%		
201-300	1	2%		
over 300	0	0		
no info.	7	0		
	N=57	100%	$\bar{X}=51$	S.D.=58.35

Table 10  
 Years of Experience in Management and Supervision by  
 Director of Nursing Population in Oregon, 1984

years of experience	number	percent
1-5 years	14	26%
6-10 years	21	38%
11-15 years	9	16%
16-20 years	9	16%
20+ years	2	4%
no info.	2	0
$\bar{X}=9.96$ S.D.=6.2	N=57	100%

Years of Experience as RN by Director of Nursing  
 Population in Oregon, 1984

years of experience	number	percent
1-5 years	1	2%
6-10 years	9	16%
11-15 years	15	27%
16-20 years	10	18%
21-25 years	13	23%
26-30 years	6	11%
30+ years	2	3%
no info.	1	0
$\bar{X}=17.86$ S.D.=7.37	N=57	100%

Table 17

Pearson's Correlations

	DNS ed.	fin. ed.	exper.	size	control N.P. budget	subord. control NP budget	staff/patient ratio	staff mix	promotions
DNS education	--	.32*	.16	.47***	.22	.33**	-.20	-.09	-.15
DNS Financial educ.	.32*	--	-.05	.28*	.24*	.08	.06	.04	.01
DNS experience	.16	-.05	--	.13	-.10	.09	-.14	-.19	.23*
size of institution	.47***	.28*	.13	--	.20	.32**	-.18	-.31**	-.04
control Nursing Personnel Budget	.22	.24*	-.10	.20	--	.19	.48***	.59***	.54***
subordinate control of Nursing Personnel Budget	.33**	.08	.09	.32**	.19	--	.06	.04	.01
control staff/patient ratio	-.20	.06	-.15	-.18	.48***	.06	--	.69***	.53
control staff mix	-.09	.04	-.19	-.31**	.59***	.04	.69***	--	.68***
control promotions	-.15	-.01	-.23*	-.04	.54***	.01	.53***	.68***	--

	DNS ed.	Fin. ed.	exper.	size	control N.P. budget	subord. control N.P. budget	staff/patient ratio	staff mix	promotions
control hiring and firing	-.10	.02	-.17	-.15	.43****	.02	.51****	.62****	.74****
subordinate control of staffing	.31*	.03	.11	.37***	.17	.73****	-.09	.06	.09
DNS age	-.08	-.08	.29*	.04	.05	.04	.15	.17	.27*
DRG days	-.22	.11	-.13	-.32**	.06	.09	.20	.15	.22
self-classif. of budget control	.16	-.00	.02	-.02	.21	.20	.04	.07	-.09

\* p < .05  
 \*\* p < .01  
 \*\*\* p < .005  
 \*\*\*\* p < .001

Table 18

One-Way Analysis of Variance Between Size of Institution  
and Other Variables

---

Size to Control of Nursing Personnel Budget

---

ranked means:	most control		
		3.39	group 3 (101-250 beds)
		3.37	group 2 ( 51-100 beds)
F Ratio=4.14**		2.80	group 1 ( 0-50 beds)
	least control	2.77	group 4 (over 250 beds)
r=.20			

---

Size to control of staff-patient ratio

---

ranked means:	most control		
		4.29	group 2 ( 51-100 beds)
		3.78	group 3 (101-250 beds)
F Ratio=4.24***		3.75	group 1 ( 0-50 beds)
	least control	3.26	group 4 (over 250 beds)
r=-.18			

---

Size to control of staff mix

---

ranked means:	most control		
		4.23	group 2 ( 51-100 beds)
		3.74	group 1 ( 0-50 beds)
F Ratio=4.78***		3.57	group 3 (101-250 beds)
	least control	2.91	group 4 (over 250 beds)
r=-.32**			

---

Size to control of staff promotions

---

ranked means:	most control		
		4.58	group 2 ( 51-100 beds)
		4.24	group 3 (101-250 beds)
F Ratio=3.98**		3.92	group 1 ( 0-50 beds)
	least control	3.52	group 4 (over 250 beds)
r=.04			

---

Table 18 (cont'd)  
One-Way Analysis of Variance

---

Size to control of hiring and firing

---

ranked means: most control  
 4.53 group 2 ( 51-100 beds)  
 4.06 group 1 ( 0-50 beds)  
 4.11 group 3 (101-250 beds)  
 F Ratio=3.07\* 3.61 group 4 (over 250 beds)  
 least control  
 r=.15

---

Size to reliance on subordinates for control of staffing elements

---

ranked means: most control  
 2.42 group 4 (over 250 beds)  
 2.12 group 3 (101-250 beds)  
 1.74 group 2 ( 51-100 beds)  
 F Ratio=2.83\* 1.63 group 1 ( 0-50 beds)  
 least control  
 r=.37\*\*\*

---

Size to DNS education

---

ranked means: most control  
 3.86 group 4 (over 250 beds)  
 3.53 group 3 (101-250 beds)  
 3.10 group 2 ( 51-100 beds)  
 F Ratio=4.93\*\*\* 2.61 group 1 ( 0-50 beds)  
 least control  
 r=.47\*\*\*\*

positive linear relationship

---

Size to DNS experience

---

ranked means: most control  
 29 group 4 (over 250 beds)  
 16 group 1 ( 0-50 beds)  
 14 group 2 ( 51-100 beds)  
 F = 1.79 13 group 3 (101-250 beds)  
 least control  
 r = .13

---



Table 20  
Fiscal Years of Acute Care Hospitals in Oregon, 1984

fiscal year	number	percent
July to June	23	40%
January to December	16	28%
October to September	11	19%
April to March	5	9%
September to August	1	2%
December to November	1	2%
	<hr/> 57	<hr/> 100%

Table 21

Measurement of Variable	Number of items	Range of Scores	Mean	S.D.	N	Cronbach's Alpha	Comments
Education of DNS	1	1-5	3.84	1.73	57	--	collapse 3&4 5&6 7&8
Financial Education of DNS	6	0-300 1-29	51.0 5.3	58.4 3.99	50 53	-- --	weighted
Experience RN to DNS	3	3-64	16.5	16	57	.81	combine exp. DNS, Sup, Rn
Size of institution	1	1-4	2.1	1.1	59	--	
Control of Nursing Personnel Budget	35	35-175 1-5	106.2 3.3	24.2 .53	41 51	.94	scale of 1-5
Reliance on subordinates for control of Nursing Personnel Budget	7	7-35 1-5	11.34 1.62	4.98 .71	45 45	.88	scale of 1-5
Control of staff/patient ratio	10	10-50 1-5	37.7 3.8	6.13 .55	54 55	.69	
Control of staff mix	10	10-50 1-5	36.7 3.7	7.45	49	.80	scale of 1-5
Control of staff promotions	10	10-50 1-5	40.8 4.1	7.08 .56	53 55	.83	scale of 1-5
Control of hiring and firing	10	10-50 1-5	40.8 4.1	6.3 .56	53 55	.75	scale of 1-5
Reliance on subordinates for control of staffing elements	8	8-40 1-5	15.28 1.91	6.0 .75	50	.83	

Table 21 (Cont'd)

Measurement of Variable	Number of items	Range of Scores	Mean	S.D.	N	Cronbach's Alpha	Comments
Ownership of institution	1	1-8	--	--	59	--	informational categories
Fiscal year	1	1-3	--	--	59	--	informational categories
Patient Classification	1	1-2	--	--	59	--	informational categories
DNS age	1	29-58	43.4	7.55	54	--	
DNS sex	1	1-2	--	--	58	--	
DRG days	1	0-1372	189	208	49	--	
Self-classification of budgetary control	1	1-4	2.5	1.03	56	--	
TOTAL NUMBER OF ITEMS	108						

Table 22

## Breakdown of Ranked Variables by Ownership of Institution

<u>DNS EDUCATION</u>			
<u>ownership</u>	<u>ranked means</u>	<u>standard deviation</u>	<u>number</u>
Educational affiliation	5.0	.00	1
Federal	4.0	.00	1
Religious affiliation	3.7	.52	6
City	3.5	.71	2
Community	3.1	1.06	33
Proprietary	3.0	.87	9
County	2.4	1.14	5

<u>DNS EXPERIENCE</u>			
<u>ownership</u>	<u>ranked means</u>	<u>standard deviation</u>	<u>number</u>
Educational affiliation	55	.00	1
County	22.3	23.45	5
Community	16.4	15.50	33
Federal	16.3	.00	1
Proprietary	13.8	18.01	9
Religious affiliation	13.4	4.47	6
City	6.8	4.01	2

<u>DNS FINANCIAL EDUCATION</u>			
<u>ownership</u>	<u>ranked means</u>	<u>standard deviation</u>	<u>number</u>
Federal	10.0	.00	1
Religious affiliation	6.8	3.19	6
City	6.0	4.24	2
Community	5.7	4.12	28
Proprietary	3.4	2.76	7
Educational affiliation	3.0	.00	1
County	2.0	1.00	5

<u>CONTROL OF NURSING PERSONNEL BUDGET</u>			
<u>ownership</u>	<u>ranked means</u>	<u>standard deviation</u>	<u>number</u>
City	3.20	.34	2
Community	3.15	.67	29
Religious affiliation	3.01	.46	5
Proprietary	2.94	.84	9
Educational affiliation	2.91	.00	1
County	2.71	.41	5

Table 22 (cont'd)

---

 RELIANCE ON SUBORDINATES FOR CONTROL  
 OF NURSING PERSONNEL BUDGET
 

---

ownership	ranked means	standard deviation	number
Educational affiliation	2.29	.00	1
Religious affiliation	1.83	.45	6
Community	1.68	.76	29
County	1.54	.91	5
Proprietary	1.42	.51	9
City	1.00	.00	2

---

 RELIANCE ON SUBORDINATES FOR CONTROL OF  
 STAFFING ELEMENTS
 

---

ownership	ranked means	standard deviation	number
Educational affiliation	4.00	.00	1
Religious affiliation	2.10	.81	5
Community	2.00	.74	6
County	1.83	.90	5
City	1.56	.27	2
Proprietary	1.48	.32	9
Federal	1.00	.00	1

---

 CONTROL OF STAFF/PATIENT RATIO
 

---

ownership	ranked means	standard deviation	number
Federal	4.50	.00	1
City	4.10	.57	2
County	3.92	.55	5
Community	3.79	.59	31
Proprietary	3.69	.80	9
Religious affiliation	3.60	.52	6
Educational affiliation	3.00	.00	1

---

 CONTROL OF STAFF MIX
 

---

ownership	ranked means	standard deviation	number
City	4.40	.28	2
County	4.10	.51	4
Community	3.67	.74	29
Federal	3.60	.00	1
Proprietary	3.51	.94	9
Religious affiliation	3.33	.80	6
Educational affiliation	3.00	.00	1

---

Table 22 (cont'd)

<u>CONTROL OF PROMOTIONS</u>			
<u>ownership</u>	<u>ranked means</u>	<u>standard deviation</u>	<u>number</u>
Federal	4.80	.00	1
County	4.26	.68	4
City	4.20	.14	2
Community	4.15	.62	31
Religious affiliation	3.93	.89	6
Proprietary	3.82	.91	9
Educational affiliation	2.80	.00	1

<u>CONTROL OF HIRING AND FIRING</u>			
<u>ownership</u>	<u>ranked means</u>	<u>standard deviation</u>	<u>number</u>
Federal	5.0	.00	1
City	4.4	.42	2
Proprietary	4.17	.67	9
County	4.10	.60	5
Community	4.09	.60	31
Religious affiliation	3.88	.59	6
Educational affiliation	2.9	.00	1

<u>NUMBER OF DAYS FROM INSTIGATION OF DRG REIMBURSEMENT MECHANISM UNTIL IMPLEMENTATION BY INSTITUTION</u>			
<u>ownership</u>	<u>ranked means</u>	<u>standard deviation</u>	<u>number</u>
Federal	366	.00	1
City	274	.00	2
County	274	.00	5
Proprietary	191	97	4
Community	177	254	30
Religious affiliation	153	94	6
Educational affiliation	0	0	1

TABLE 5

COMPARISON OF MEANS OF CONTROL QUESTIONS ACROSS THE  
DEPENDENT VARIABLES

	dep. 1		dep. 2		dep. 3		dep. 4		mean of means
question 1	4.35	3.63	4.20	3.78	4.34	4.43	4.11	3.94	4.10
question 2	4.06	4.28	4.00	3.84	4.26	4.15	4.42	4.08	4.14
question 3	2.17	4.20	2.49	3.31	3.19	3.15	4.06	3.36	3.24
question 4	3.63	3.78	3.88	3.92	4.23	4.57	3.89	4.13	4.00
question 5 *	4.70	2.98	4.5	4.32	4.28	4.70	3.84	3.70	4.13
question 6	3.24	4.30	3.37	3.86	4.30	4.17	4.53	4.32	4.01

$\begin{matrix} 3.69 & 3.86 \\ & \swarrow \searrow \\ & 3.77 \end{matrix}$ 
 $\begin{matrix} 3.74 & 3.84 \\ & \swarrow \searrow \\ & 3.79 \end{matrix}$ 
 $\begin{matrix} 4.1 & 4.2 \\ & \swarrow \searrow \\ & 4.15 \end{matrix}$ 
 $\begin{matrix} 4.1 & 3.9 \\ & \swarrow \searrow \\ & 4.0 \end{matrix}$

\*dep. 5

APPENDIX F

List of Hospitals



## RATE OF RETURNS BY SIZE OF INSTITUTION

---

0-50 beds	29 possible 23 returned	79%	-6
51-100 beds	16 possible 11 returned	69%	-5
101-250 beds	20 possible 17 returned	85%	-3
over 250 beds	11 possible 8 returned	73%	-3
total	76 possible 59 returned	78%	-17

---

# OREGON ASSOCIATION OF HOSPITALS

## INSTITUTIONAL MEMBERS

### Albany General Hospital

1046 W. 6th St., Albany 97321  
Ronald L. Purdum, Pres. Ph: 926-2244

### Ashland Community Hospital

P.O. Box 98, Ashland 97520  
Robert H. Strowbridge, Adm. Ph: 482-2441

### Bay Area Hospital

1775 Thompson Rd., Coos Bay 97420  
Jon K. Mitchell, Adm. Ph: 269-8111

### Bess Kaiser Hospital

5055 N. Greeley Ave., Portland 97217  
Roy Howard, Adm. Ph: 285-9321

### ~~Blue Cross of Oregon~~

~~P.O. Box 1271, Portland 97207  
William L. Branson, Pres. Ph: 225-5221~~

### Blue Mountain Hospital

170 Ford Road, John Day 97845  
Donna Krausse, Adm. Ph: 575-1311

### Cedar Hills Hospital

10300 S.W. Eastridge St., Portland 97225  
David Frerker, Adm. Ph: 297-2252

### Central Oregon District Hospital

1253 N. Canal Blvd., Redmond 97756  
Thomas M. Mack, Adm. Ph: 548-8131

### Columbia District Hospital

500 N. Col. River Hwy., St. Helens 97051  
Michael Fraser, Adm. Ph: 397-1188

### Columbia Memorial Hospital

P.O. Box 330, Astoria 97103  
Al Cobbin, Adm. Ph: 325-4321

### Coquille Valley Hospital

940 E. Fifth St., Coquille 97423  
Gale M. Christensen, Adm. Ph: 396-3101

### Cottage Grove Hospital

1340 Birch St., Cottage Grove 97424  
John L. Hoopes, Adm. Ph: 942-3355

### Crater General Hospital

600 So. 2nd St., Central Point 97501  
Gary Guidetti, Exec. Dir. Ph: 664-1205

### Curry General Hospital

220 East 4th St., Gold Beach 97444  
David Lecker, Adm. Ph: 247-6621

### Douglas Community Hospital

738 W. Harvard Blvd., Roseburg 97470  
Gary L. Edwards, Adm. Ph: 673-6641

### Dwyer Memorial Hospital & Medical Center

10150 S.E. 32nd Ave., Milwaukie 97222  
Robert E. Wagner, Adm. Ph: 659-6111

### Eastmoreland General Hospital

2900 S.E. Steele St., Portland 97202  
Joe Boyle Act. Adm. Ph: 234-0411

### Emanuel Hospital

2801 N. Gantenbein Ave., Portland 97227  
Walter L. Behn, Exec. V.P. Ph: 280-4872  
Roger G. Larson, Pres. Ph: 280-4000  
Metropolitan Hospitals, Inc.

### Eugene Hospital and Clinic

1162 Willamette St., Eugene 97401  
Richard Vanberg, Exec. Dir. Ph: 687-6202

### Forest Glen Hospital

P.O. Box 198, Canyonville 97417  
D.L. Daniels, Adm. Ph: 839-4211

### Forest Grove Community Hospital

1809 Maple St., Forest Grove 97116  
Richard Woolslayer, Adm. Ph: 357-2173

### Good Samaritan Hospital

P.O. Box 1068, Corvallis 97330  
James R. Mol, Adm. Ph: 757-5002

### Good Samaritan Hospital & Medical Center

1015 N.W. 22nd Ave., Portland 97210  
Chester L. Stocks, Exec. V.P. Ph: 229-7711

### Grande Ronde Hospital

900 Sunset Drive, La Grande 97850  
E.E. Patterson, Adm. Ph: 963-8421

### Gresham Community Hospital

N.E. 5th & Beech Sts., Gresham 97030  
John Grotting, Adm. Ph: 667-1122

### Harney County Hospital

557 W. Washington St., Burns 97720  
Ronald P. Shoemaker, Exec. Dir. Ph: 573-7281

### Harvey E. Rinehart Memorial Hospital

P.O. Box 16, Wheeler 97147  
Byron Quinton, Adm. Ph: 368-5119

### Holladay Park Hospital

1225 N.E. 2nd Ave., Portland 97232  
Ruth C. Hocks, Adm. Ph: 233-4567

### Holy Rosary Hospital

351 S.W. 9th, Ontario 97914  
M.J. Foerster, Adm. Ph: 889-5331

### Hood River Memorial Hospital

P.O. Box 149, Hood River 97031  
Donald F. Kelter, Adm. Ph: 386-3911

### Josephine Memorial Hospital

715 N.W. Dimmick, Grants Pass 97526  
Hans Wik, Adm. Ph: 476-6831

### Kaiser Sunnyside Medical Center

10180 S.E. Sunnyside Dr., Clackamas 97015  
Barbara J. Robertson, Area Adm. Ph: 653-4411

### Lake District Hospital

700 South "J" St., Lakeview 97630  
James H. Carlson, Adm. Ph: 947-2115

### Lebanon Community Hospital

33181 Santiam Highway, Lebanon 97355  
Gene Kanagy, Adm. Ph: 258-2101

### ~~Lower Umpqua Hospital~~

~~P.O. Box 6, Reedsport 97467  
Richard R. Bell, Adm. Ph: 271-2174~~

### ~~Malheur Memorial Hospital~~

~~1109 Park Ave., Nyssa 97913  
Richard Jones, Adm. Ph: 372-2241~~

### McKenzie-Willamette Memorial Hospital

1460 "G" Street, Springfield 97477  
Terry Pitts, Adm. Ph: 726-4400

### McMinnville Community Hospital

603 S. Baker St., McMinnville 97123  
Gary L. Worrell, Adm. Ph: 472-6131

### Medical Center Hospital

511 S.W. 10th Ave., Portland 97205  
Gary Netzer, Adm. Ph: 226-2977

### ~~Medical-Dental Surgicenter~~

~~829 S.W. 11th Ave., Portland 97205  
Janet M. Holmes, Adm. Ph: 227-1424~~

### Mercy Medical Center, Inc.

2700 Stewart Parkway, Roseburg 97470  
Sr. Jacquetta Taylor, Adm. Ph: 673-0661

### Meridian Park Hospital

19300 S.W. 65th, Tualatin 97062  
Carleton G. Lindgren, Adm. Ph: 638-7654

### Merle West Medical Center

2865 Daggett St., Klamath Falls 97601  
David R. Arnold, Adm. Ph: 883-6151

### ~~Mountain View Hospital~~

~~1270 "A" Street, Madras 97741  
Lawrence L. Anthony, Adm. Ph: 475-3882~~

### New Lincoln Hospital

P.O. Box 490, Toledo 97391  
David Bloomer, Adm. Ph: 336-2237

### Newberg Community Hospital

501 Villa Rd., Newberg 97132  
Donald Elsom, Adm. Ph: 538-3121

# OREGON ASSOCIATION OF HOSPITALS

**North Lincoln Hospital**  
P.O. Box 767, Lincoln City 97367  
James A. Mattes, Adm. Ph: 994-3661

**Pacific Communities Hospital**  
721 S.W. 9th St., Newport 97365  
Jim Watson, Adm. Ph: 265-2244

**Pendleton Community Hospital**  
2001 S.W. Nye Ave., Pendleton 97801  
John E. Rohrer, Adm. Ph: 276-2131

**Physicians & Surgeons Hospital**  
1927 N.W. Lovejoy St., Portland 97209  
Neal T. Milburn, Adm. Ph: 224-6500

~~**Pioneer Memorial Hospital**  
564 E. Pioneer Dr., Heppner 97836  
A.K. Felt, Adm. Ph: 676-9133~~

**Pioneer Memorial Hospital**  
1201 N. Elm St., Prineville 97754  
George Pifer, Adm. Ph: 447-6254

**Polk Community Hospital**  
P.O. Box 378, Dallas 97338  
Michael E. Henroid, Adm. Ph: 623-8301

**Portland Adventist Medical Center**  
10123 S.E. Market, Portland 97216  
Donald Ammon, Pres. Ph: 239-6150

**Providence Hospital**  
1111 Crater Lake Ave., Medford 97501  
B.J. Stormberg, Adm. Ph: 773-6611

**Providence Medical Center**  
N.E. 49th & Glisan, Portland 97213  
John P. Lee, Adm. Ph: 230-6182

**Raleigh Hills, Inc.**  
6050 S.W. Old Scholls Ferry Rd.  
Portland 97223  
Edward C. Stalder, Adm. Ph: 292-6671

**Rogue Valley Memorial Hospital**  
2825 Barnett Rd., Medford 97501  
Lenton R. Merryman, Adm. Ph: 773-6281

**St. Anthony Hospital**  
P.O. Box 16, Pendleton 97801  
Sr. Helen Ann Gaidos, Adm. Ph: 276-5121

**St. Charles Medical Center**  
2500 N.E. Neff Rd., Bend 97701  
Sr. Kathryn Hellmann, CSJ  
Pres. Chief Exec. Officer Ph: 382-4321

**St. Elizabeth Community Hospital**  
3325 Pocahontas Rd., Baker 97814  
William Taylor, Adm. Ph: 523-6461

**St. Vincent Hospital & Medical Center**  
9205 S.W. Barnes Rd., Portland 97225  
Thomas J. Underriner, Adm. Ph: 297-4411

**Sacred Heart General Hospital**  
P.O. Box 10905, Eugene 97440  
Sr. Monica Heeran, Adm. Ph: 686-7300

**Salem Hospital**  
665 Winter St. S.E., Salem 97301  
Evan Lewis, Pres. Ph: 370-5200

**Santiam Memorial Hospital**  
10th & Pine Sts., Stayton 97383  
Peter L. Rochetto, Adm. Ph: 769-2175

**Seaside General Hospital**  
P.O. Box 1028, Seaside 97138  
Randall Draney, Adm. Ph: 738-8403

**Serenity Lane**  
616 E. 16th, Eugene 97401  
Neil McNaughton, Adm. Ph: 687-1110

**Shriners Hospital for Crippled Children**  
8200 N.E. Sandy Blvd., Portland 97220  
Stan Groth, Adm. Ph: 281-1103

**Silverton Hospital**  
342 Fairview St., Silverton 97381  
Jim Edmark, Adm., Ph: 873-6336

**Southern Coos General Hospital**  
640 W. 4th, Bandon 97411  
George A. Barnes, Adm. Ph: 347-2426

**The Dalles General Hospital**  
19th & Nevada Sts., The Dalles 97058  
Gary J. Rood, Adm. Ph: 296-2241

**The Good Shepherd Hospital**  
685 Orchard Ave., Hermiston 97838  
Roy Baker, Adm. Ph: 567-6483

**Tillamook County General Hospital**  
1000 Third St., Tillamook 97141  
Stan B. Berry, Adm. Ph: 842-4444

**Tuality Community Hospital**  
P.O. Box 309, Hillsboro 97123  
William E. Winter, Exec. Dir. Ph: 648-3161

~~**Umatilla Hospital District No. 1**  
Box 549, Umatilla 97882  
Adm. Ph: 922-3201~~

**Umpqua Valley Community Hospital**  
P.O. Box 629, Myrtle Creek 97457  
Daie Hanson, Act. Adm. Ph: 863-5253

**University Hospital**  
Oregon Health Sciences University  
3181 S.W. Sam Jackson Park Rd.  
Portland 97201  
Donald G. Kassebaum, M.D., Vice Pres.  
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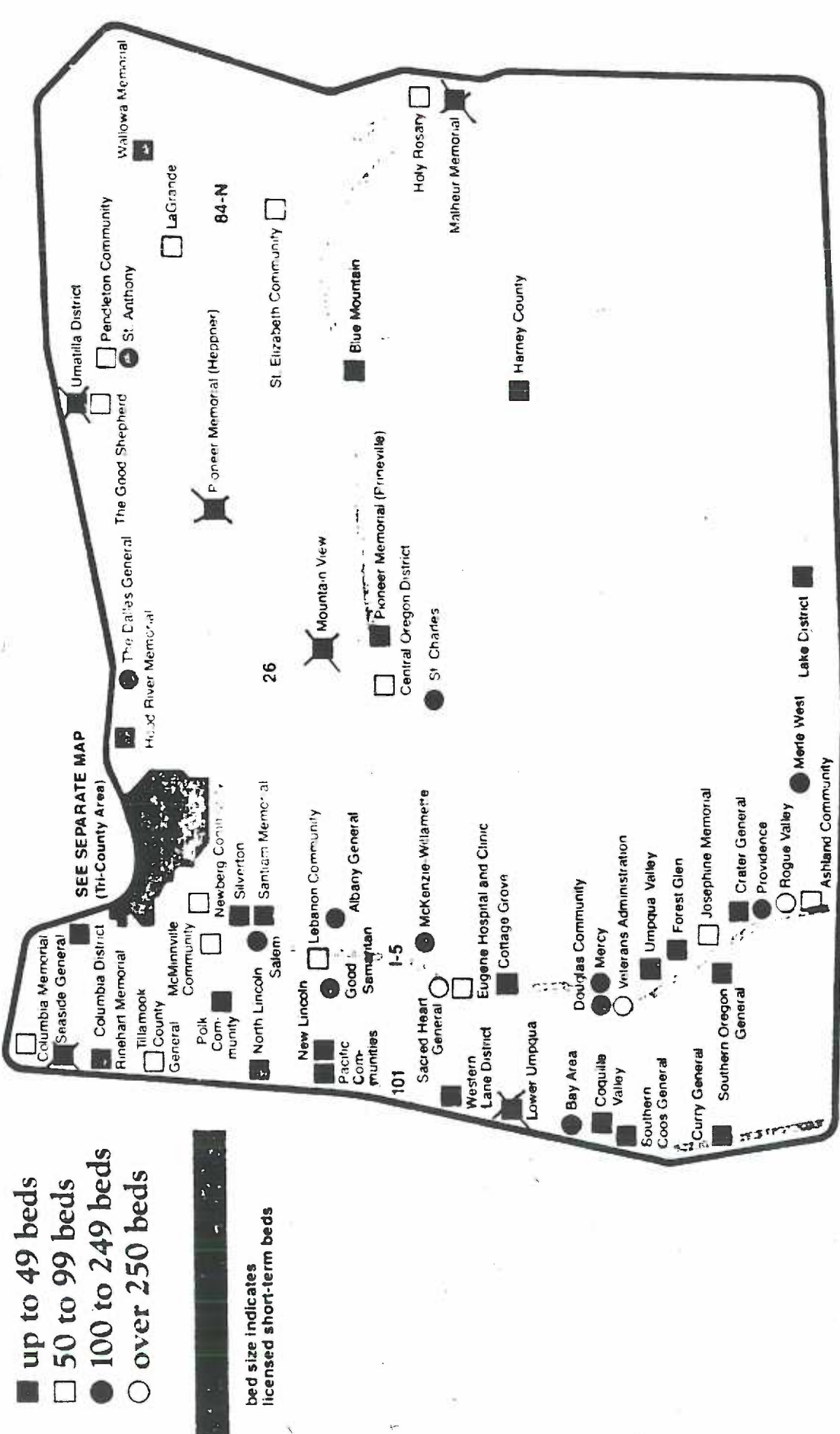
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# Location of Oregon Hospitals

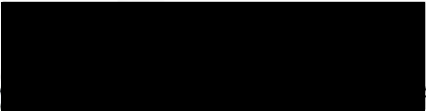


## AN ABSTRACT OF THE THESIS OF

Esther Halvorson

For the MASTER OF NURSING

Date of Receiving this Degree: June 8, 1984

Title: THE RELATIONSHIP BETWEEN CONTROL OF THE NURSING  
PERSONNEL BUDGET AND CONTROL OF STAFFING ELEMENTSApproved: \_\_\_\_\_  
Thesis Advisor

The first purpose of this study was to provide preliminary testing of the hypothesized measures of a new conceptual framework based upon Director of Nursing control of the Nursing Personnel Budget. The second purpose was to provide baseline descriptive data of decision-making control of personnel budgets and staffing elements by Directors of Nursing in the State of Oregon immediately prior to the implementation of the new DRG (diagnosis related grouping) reimbursement mechanism by Medicare. This data will be utilized for future comparative studies.

Four independent variables were identified as 1) DNS (Director of Nursing Service) education, 2) DNS financial education, 3) DNS experience, and 4) size of the institution. The intervening variable for the study was DNS control of the Nursing Personnel Budget. The four dependent variables were 1) control of staff/patient ratio, 2) control of staff mix, 3) control of staff promotions, and 4) control of the hiring and firing of staff.

The study population was the total population of Directors of Nursing of acute care hospitals (excluding psychiatric) in the State of Oregon in 1984. Fifty-nine Directors participated via a questionnaire (response rate of 78%).

The instrument was based upon one developed by Blankenship and Miles (1968). It was adapted to the unique measurement requirements of this study. Reliability testing produced an average Cronbach's alpha of internal consistency of .82.

Pearson's Product Moment correlations and a series of one-way ANOVA were utilized to test the hypothesized relationships. Six of the eight hypotheses were supported. DNS control of the Nursing Personnel Budget was related significantly to all four dependent staffing variables. DNS financial education and size of the institution were related significantly to DNS control of the Nursing Personnel Budget.

Less control was shown over nursing revenues than over nursing expenditures. In acute care hospitals, revenue-producing departments are rewarded with added resources. In nursing added resources mean more or better patient care (Stevens, 1980).

Limitations of the study show possible auto-correlation of the instrument. Further testing is indicated and some caution should be exercised in interpreting the strength of relationships. Also, results should be generalizable only within Oregon since a total population was utilized.