The Effect of Staffing Regulations, Type of Reimbursement and Type of Ownership On Nurse Staffing In Oregon Skilled Nursing Facilities

by

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Kemric Jones, who one day, while laying in bed in a nursing home, said to me, "They certainly seem short staffed around here. Aren't there regulations about the number of nurses that nursing homes must have?" "Yes", I replied, "there are, and as far as I know this nursing home has not gotten into any trouble because its' short staffed." "Well," he grumbled, "then the regulations must be too low."

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CHAPTER I

INTRODUCTION

Prior to the 1930s there were few nursing homes or Long Term Care Facilities (LTCFs) available to care for the aged. Persons over 65 years of age were usually cared for in their advancing years by members of their own families. If they lacked family and were poor, they were cared for by church or fraternal organizations, or were sent to "poor farms" (Thomas, 1969).

Such arrangements are no longer sufficient because of the vast social changes that have occurred in the United States since 1930. Families are smaller, perhaps because of the wide adoption of effective birth control methods. Presently, 80% of women work outside the home. The current job market requires, and the ease of transportation permits, families and individuals to "pull up their roots" and move thousands of miles away from their place of birth and from their parental homes (Toffler, 1970). Such changes in social structure mean that often there is no one close by or at home to care for aging parents. In addition, there may be no one at home to care for the aged because they have outlived their younger family members.

Although the proportion of families continuing to care for their elderly relatives at home has remained relatively constant since 1950, the number of aged, and particularly the number of elderly over age 80 has increased (Doty, 1986). Improved living conditions, and improvements in disease prevention and control have resulted in an increase in life expectancy for

the population. Average life expectancy at age 65 has increased from 14.6 years in 1965 to 16.7 years in 1986. As a result, the number of elderly persons in the United States has increased from 12.4 million in 1950 to 24 million in 1980 and this increase is expected to continue so that by the year 2030, 18.3% of the total United States population will be over 65 years of age (Health Care Financing Administration, 1986).

The need for both custodial and rehabilitative care for the aged has, then, rapidly increased since the turn of the century (Kosberg, 1971). Recognition of this need was first evidenced at the federal level by the Social Security Act of 1935 which made public assistance available for the care of the aged poor in for-profit boarding homes and long term care facilities (Hefferin, 1968). Since that time, the long term care industry has grown rapidly. Thus, in 1960 there were 9,585 LTCFs in the United States, but today there are almost 16,000. Most LTCFs are for-profit (Health Care Financing Administration, 1986), and many are part of large for-profit chains. For the most part, the public sector has not responded to the need for LTCFs.

Policymakers, Long Term Care (LTC) industry representatives, health care professionals and spokespersons for the aged frequently debate the issue of whether a for-profit facility can provide both quality care for its clients and profit for its owners. Increasing or improving resources or services for the elderly will usually increase the operating expenses and reduce profits. Thus, the provision of quality care and the profit motive are always in competition in for-profit LTCFs (Kaeser, 1981). Many fear

that in this contest, quality may be compromised.

Two federal legislative efforts have attempted to ensure that the quality of care provided by LTCFs is adequate. The first legislative effort was the 1967 amendment to the Social Security Act which required that administrators of LTCFs receive specific training and obtain licensure (Social Security Administration, 1968). The second legislative effort, Title XVIII Medicare of the 1965 Social Security Amendment, set the standards that must be met by LTCFs to be eligible for Medicare reimbursement (Social Security Administration, 1968). One of these standards specified the type and number of licensed nurses that must be present on each shift in all skilled nursing facilities (SNFs). This legislation also stipulated that each state must set its own standards for care in intermediate and extended care facilities.

Aged persons in LTCFs often require not only custodial care, but also treatment for illnesses and disabilities by health care professionals. The need for treatment has increased in recent years, as sicker persons are discharged from hospitals into nursing homes sooner (Lyles, 1985; Stull & Vernon, 1986) and as the number of frail elderly has grown (Soldo & Manton, 1985). Such care is mainly the responsibility of licensed registered nurses and licensed practical nurses, since physicians serve as consultants and diagnosticians, but spend little time on the premises.

The amount of time that patients actually receive care from nurses in LTCFs is very limited, and often direct patient care is given by less than expert providers. Thus, the American Hospital Association reported in

1978 that the average patient received only 12 minutes of nursing care per day, including the time spent by the Director of Nursing on administrative tasks. Moreover, nurses' aides provided most of the direct care to patients, while the licensed nurses spent their time mainly performing other services. In Oregon, under certain conditions, nurses' aides even distribute medications to patients (Kaeser, 1981).

Quite understandably, the care received is often not optimal. Professionals in the long term care field describe the quality of care in LTCFs as generally poor (Kosberg, 1971; Kaeser, 1981). Almost every month, the news media publicize instances of patient abuse and substandard care. According to a report by the United States Senate Subcommittee on Long Term Care in 1974, monitoring and enforcement of existing standards were generally poor, and the evidence was overwhelming that most LTCFs failed to meet state and federal standards of minimally acceptable care. If true, this is doubly disturbing in view of the fact that patients admitted to SNFs today may be considerably sicker and require a higher level of care than patients two decades ago when the standards were set. Early discharge of patients from hospitals into SNFs has been attributed to the adoption of the Diagnosis Related Groups (DRG) reimbursement system (Lyles, 1985; Stull & Vernon, 1986). Hence it is doubtful that existing standards are stringent enough to ensure even the barest minimum of care necessary for today's nursing home population.

It would seem plausible to assume that increasing the numbers of licensed nurses or increasing the nurse/patient ratio in LTCFs would

improve quality of care. Indeed, Schantz (unpublished manuscript, cited in Kaeser, 1981) has noted that the average number of citations for violating long term care standards in Oregon decreased when registered nurse time was increased. On this assumption, information regarding the factors which influence nurse staffing in LTCFs generally, and professional nurse staffing in particular, should prove very useful in the design of long term care programs and policies. The purpose of this investigation, therefore, was to determine the effect of certain factors on the numbers and types of nurse staffing in LTCFs. The factors selected for study were minimum staffing standards, type of reimbursement source and type of ownership.

Review of the Literature

In the following review, first the minimum nurse staffing standards set by the federal government and by the State of Oregon will be specified. Second, studies describing nurse staffing in LTCFs will be presented. Next, reimbursement mechanisms for LTC will be discussed, together with evidence that these types of reimbursement affect nurse staffing. Finally, the literature on the relation of type of LTCF ownership to nurse staffing will be covered.

Minimum Staffing Standards

LTCFs must adhere to minimum nurse staffing standards mandated by both federal and state governments to maintain licensure and to be eligible for reimbursement from Medicaid and Medicare. Federal standards generally differ in substance from state standards. Federal standards designate the nurse staffing required on each shift by type of facility,

skilled or intermediate. By contrast, state standards usually specify the type of nursing staff required for each type of patient served, whether in need of skilled or intermediate care.

The minimum federal standards mandate that SNFs have at least one registered nurse (RN) on the day shift each day and at least one licensed practical nurse (LPN) at all other times. Intermediate Care Facilities (ICFs) must be supervised by a RN or LPN seven days a week on the day shift. At least four hours of RN consultation are required weekly if the supervisor is an LPN. In all instances, sufficient staff must be available to meet the patients' total nursing needs (Health Care Financing Administration, 1984). Federal standards do not prescribe the ratio of nursing staff to patients.

State minimum standards vary widely from one state to the next. Enforcement of these standards also varies widely (Holle, 1966; Spitz & Atkinson, 1983). As a result, while nurse staffing may exceed the minimum staffing requirement imposed by the state, it more often falls below minimum standards (Subcommitte on Long Term Care, 1974).

State standards are generally more specific and more stringent than the federal standards. In Oregon, since 1983, at least two nursing staff personnel must be on duty at all times, and more according to the shift and number and type of patients; those requiring "intermediate" nursing care, and those requiring "skilled" nursing care. The specific nurse staffing requirements for each type and number of patients is specified by statute (State of Oregon; Administrative Rules ORS Chapter 333-86-015, (4) - (a)

and (b), 1985) (see Appendix A). In addition to these specific requirements, there is an overall requirement that LTCFs must have adequate nursing staff to meet patient care needs even though the staff needed to meet these needs may exceed the minimum (State of Oregon; Administrative Rules ORS Chapter 333-86-015, (3) - (a), 1985) (See Appendix A).

Nurse Staffing in Long Term Care Facilities (LTCFs)

A number of researchers (Kosberg, 1971; Kaeser, 1981; Stricklen, Einhorn & Jones, 1987; Winn, McCaffree, Bennett, Tuck & O'Connell, 1976) have investigated the number and type of nursing personnel available in LTCFs throughout the country and found great variability both between states and within states. Only one of these studies compared actual staffing to minimum standards (Winn et al., 1976).

Kosberg (1971), in an assessment of the resources of 214 LTCFs in Illinois, examined the type and number of nursing personnel available. The facilities provided one to three different levels of care: basic, intermediate and intensive. The author reported considerable variation in the ratio of total nursing personnel to patients in these facilities, with ratios ranging from .16 to 1.22. The ratio of licensed nurses to patients, however, was less, varying from 0 to .32. On the average, there were 33 nurses (both licensed nurses and nurses' aides) for every 100 nursing home residents, but only 4 were professional nurses. Also, of every 100 nursing personnel employed, 14 were professional nurses. The author did not relate the nurse staffing data to minimum state and federal standards, nor

attempt to judge the extent to which the LTCFs were complying with these standards.

In another study, Winn et al. (1976) conducted a survey of 12 efficient and effective nursing homes in five midwestern states. These facilities were selected because of the consensus among associations for the aging and among state finance officers that these facilities provided good quality care at efficient cost levels. Ten of the facilities provided both skilled and intermediate care. The researchers measured the hours of care actually provided to patients. They found that the total nursing time per patient day ranged from 1.77 hours to 4.15 hours, and time spent by licensed nurses ranged from .53 to 1.37 hours. Three of the states in the sample had very specific regulations on staffing and required 2.5 nursing hours per skilled patient day. Of these three states, two had numerous facilities with significantly more nursing staff time available than the other five states. In the third state, the facilities had on the average just the minimum amount of licensed time required. The authors concluded that how well the facilities were staffed did not depend on states' staffing regulations alone.

Kaeser (1981) described the nursing staff patterns of 98 intermediate care facilities in Oregon. Data were obtained from the Oregon State Health Planning and Development Agency and the Oregon Adult and Family Services Division. Kaeser calculated that the average amount of time nursing staff were available per patient day was 11 minutes of care by registered nurses, 11 minutes by licensed practical nurses, and 1 hour, 45 minutes by nurses' aides.

Most recently, Stricklen et al. (1987) examined the characteristics of nursing staff in six midwestern LTCFs and found from 1.56 to 3.5 patients to each nurse. Only 6.3% of the nursing staff were registered nurses, 10.7% were licensed practical nurses, 78.4% were nurses' aides and 4.4% were orderlies. No comparison to minimum standards was provided.

In summary, only one of the four studies discussed above measured the impact of a state's minimum staffing regulations on actual nurse staffing in LTCFs. The authors concluded that how well the facility was staffed could not be predicted from the states' staffing requirements.

Reimbursement Sources Influencing Staffing in Long Term Care Facilities

The availability of nursing staff in a LTCF has been shown to be related to reimbursement source (Spitz & Atkinson, 1983; Kosberg & Tobin, 1972; Lee, Birnbaum, Bishop & Jensen 1979; Bishop, 1980a; Kaeser, 1981), and specifically to the type of Medicaid reimbursement in each state (Grimaldi, 1984). A discussion of the different types of reimbursement sources for LTCFs and how they affect nurse staffing is provided below.

Types of Reimbursement Sources

LTCFs are reimbursed by a number of sources. Medicare reimburses 2% of long term care, as does the Veterans' Administration. Medicaid, which is the principal source of public reimbursement for LTCFs, pays for 48% of all care. Other forms of public assistance such as block grants pay for 3% of all LTC. Private payors account for 45% of all LTC reimbursement (Gibson, Waldo, & Levit, 1983). Only 1.5% of this is paid for by private insurance. The remainder is paid for out of pocket by individuals.

According to Harrington (1985) private patients pay a much higher average rate per day than nonprivate payors. In fact, the facility is at liberty to contract with the patient for any amount the patient will pay. It is interesting to note that on the average the aged person paying for long term care with private funds has spent all of his assets down to the poverty level after 13 months in a LTCF. Then the aged patient must rely on other sources such as Medicaid for support (Christopherson, 1987).

Medicare pays for the first 20 days of charges for skilled nursing care in SNFs. After the 20th day and until the 100th day of care, Medicare pays 40% of all charges and the state of Oregon pays the other 60%. Average charges to Medicare by the skilled nursing facilities in Oregon is approximately $100.00 per day (C. Carey, Senior Services Division, personal communication, June 18, 1988). After the 100th day in a LTCF, Medicare no longer pays and the patient must obtain funding elsewhere. The patient may apply for funding from the Veterans Administration, Medicaid, or other public sources if the patient cannot afford to pay for the care himself. In Oregon, all Medicare patients must be classified as skilled patients. In accordance with state staffing standards skilled patients require more licensed nursing hours of care than intermediate patients (State of Oregon; Administrative Rules ORS Chapter 333-86-015, 1985).

As stated above, Medicaid is the principal source of reimbursement for LTCFs, paying for 48% of all LTC funding (Doty, Liu & Wiener, 1985). Unfortunately, Medicaid reimbursement is considered to be rather meager when compared to other sources of reimbursement (Kosberg, 1971). In

Oregon the average payment was $40.62 per day in 1985 and $42.54 per day in 1986 for intermediate patients. Facilities were paid $67.29 per patient day in 1985 and $77.63 per patient day in 1986 for skilled patients. This was in contrast to $100.00 per patient day for Medicare skilled patients (C. Carey, Senior Services Division, personal communication, June 18, 1988).

Each state administers its own Medicaid program, deciding on the method of reimbursement and payment rate for long term care (Grimaldi, 1984). As a consequence, three basic methods of payment have developed in the United States. These methods are the case mix in class rate system, the case mix in facility-specific system and the direct incorporation of case mix system (Schlenker & Braunstein, 1985). In each payment system there is an incentive to decrease staff. Table I summarizes the essential characteristics of these methods and indicates the number of states that employ them.

The class rate system of Medicaid reimbursement sets a fixed payment rate per diem for a given class of facility or patient. For example, some states use a class rate system based on the facility's level of care (whether it has intermediate or skilled patients), its bed size, and its geographic location. Thus, the class rate system generally attempts to address the case mix issue by using some rate differentials which are based on broad case mix categories (Schlenker & Braunstein, 1985).

Critics of this payment system argue that regardless of how many facility or patient classes there are, patients' needs within classes are

TABLE 1

Forms of Medicaid Reimbursement

Class Rate	Facility-Specific	Direct Incorporation of Case Mix
Fixed payment per diem	Payment according to facility costs	Payment according to assessment of individual patients' needs for services
Payment determined by level of care (intermediate, skilled), bed size, geographic location.	Individual audits determine payment according to facility costs. With payment ceilings, there is incentive to take only lighter care patients.	Time and motion studies determine payment rates for services Rewards efficiency but must employ quality assurance mechanisms to avoid increasing efficiency and decreasing quality.
Broad case mix categories	Without payment ceilings this system reflects moderate differences in facilities' case mix.	Reimbursement is very sensitive to differences in case mix.
Used by 6 states	Used by 38 states	Used by 6 states
Least costly for state to administer	→	Most costly for state to administer

seldom homogenous (Grimaldi, 1984). This results in the facilities' preferring patients who require less care. Under a class rate system, profits are maximized by minimizing costs, and one way to accomplish this is by decreasing staff (Kosberg, 1971).

The facility-specific reimbursement system is the most costly and complex to administer because each facility must be monitored separately. However, it is the most common type of system used. The facility-specific rates are calculated by the state both retrospectively and prospectively. The retrospective method basically reimburses full costs, subject to a year-end retroactive adjustment to reflect actual allowable costs. However, cost ceilings are often imposed in this type of reimbursement. The prospective facility-specific rate setting system establishes a payment rate in advance of a facility's "rate year" based on historical costs adjusted by inflation indexing techniques (Jazwiecki, 1984).

To some extent the facility-specific system also indirectly identifies case mix differences among facilities. If there are no payment ceilings then differences in case mix are reflected in differences in facility costs. However, there is no guarantee that higher facility costs reflect higher patient needs. Under this method, if reimbursement ceilings are imposed, the facility will again have an incentive to admit "lighter care", less costly patients. In addition, staffing may be reduced in an effort to lower costs and this may possibly impair quality (Schlenker & Braunstein, 1985).

Under the direct incorporation of case mix system state approved service costs are determined by multiplying the wage rates for nursing

personnel by the number of nursing hours needed for each service. Time and motion studies and expert opinion are generally used to arrive at the nursing time required (Foley, Zahn, Schlenker, & Johnson 1984).

Under the direct incorporation of case mix method, facilities that are the most efficient realize the greatest profits. Profits are derived from the excess of the formula-determined rate over the facility's actual cost for that patient's care. Facilities may choose to decrease staffing to lower costs and maximize profits. Quality assurance mechanisms must be employed with this method to ensure that facilities are not achieving higher efficiency at the cost of quality. The necessity of instituting quality assurance programs makes this method the most expensive to administer (Schlenker & Braunstein, 1985).

In Oregon, LTCFs were reimbursed by a retrospective facility-specific rate setting method (Jazwiecki, 1984) with an imposed cost ceiling until July, 1986. Thus, Oregon facilities had an incentive to reduce staff in an effort to keep costs under the ceiling. Decreasing staff under this method might increase profits for for-profit facilities or increase operating margin for nonprofit facilities.

Reimbursement Source and Nurse Staffing

The issue of how reimbursement source is related to nurse staffing has been addressed directly by Lee et al. (1979) and by Bishop (1980a), and indirectly by Kosberg (1971) and Kaeser (1981). The latter two authors were interested in the effect of reimbursement source on resources, as well as the quality of care provided by the LTCFs. Nurse staffing was

considered as one component of the home's resources, or as one indicator of quality of care. Both Lee et al. and Bishop (1980a) found a strong positive relationship between the percentage of private paying patients in a facility and the number of nurse staffing hours. Lee et al. also noted that operating costs of a facility rose as the number of nursing hours was increased.

Kosberg (1971), categorized a sample of 214 LTCFs in the midwest as "resource rich" or "resource poor", and then examined their nurse staffing patterns, along with professional characteristics, records and facilities, and medical and therapeutic treatments. The author found that reimbursement source was related to the availability of overall resources in the facility, including nursing staff. Facilities with a higher percentage of Medicaid patients had fewer resources in general. Kosberg also found that facilities with lower percentages of public aid recipients (Medicaid or Welfare patients) had more treatment resources. Kosberg concluded that an abundance of resources in a facility depended largely on such external elements as source of payment.

Kaeser (1981) also provided data bearing indirectly on the relationship between reimbursement system and nurse staffing. Using data collected by the Oregon State Health Planning and Development Agency and the Oregon Adult and Family Services Division, she measured the quality of care in 98 intermediate care facilities in Oregon. Nurse staffing was selected as one indicator of quality of care. Kaeser reported that Medicaid reimbursement was less than reimbursement from other sources, and that the greater the

proportion of Medicaid clients, the less the per-patient-day revenue for the facility. However, unlike Kosberg (1971), Kaeser found that reimbursement source was not related to expenditures for RN nursing hours.

Whereas Kaeser found no relationship between nurse staffing and reimbursement source, the other three researchers found that facilities with greater proportions of public aid patients provided fewer hours of nursing care per patient. It might be argued, therefore, that higher rates of reimbursement might result in an increase in nursing hours per patient day. It might also be argued that increasing the nursing hours per patient would increase the likelihood that minimum staffing standards would be met or exceeded, and would thereby improve the quality of care.

Ownership of the Long Term Care Facility

In the United States, 87% of all nursing homes are for-profit and 13% are nonprofit homes (Health Care Financing Administration, 1986). In Oregon, 80% of the LTCFs are for-profit. In recent years increasing numbers of facilities have become affiliated with, or been established by, large for-profit chains. Fifty percent of LTCFs in Oregon belong to large chains (Kaeser, 1981).

Six studies have found that the operating costs of nonprofit LTC facilities exceed those of for-profit facilities by at least several dollars per day (Bishop, 1980a, 1980b; Ries & Christianson, 1977; Walsh, 1979; Jenson & Birnbaum, 1979; Kaeser, 1981; Birnbaum, Bishop, Lee & Jensen, 1982). Administrators of for-profit LTCFs have increasingly stressed the importance of revenue and cost containment measures or, more

specifically, of decreasing operating expenses and increasing profit. Increasing the staff-to-patient ratio, improving facilities and upgrading services will obviously increase operating expenses. Kosberg (1971), Kaeser (1981), and Birnbaum et al. (1982) have all pointed out that costs per patient day are dependent on a facility's ongoing staffing level and target level of quality. When organizations are in business to provide a service and make a profit for their owners or shareholders, the quality of service competes with profit for priority (Cumming & Cumming, 1957; Kaeser, 1981).

Type of Ownership in Relation to Nurse Staffing

Anderson, Holmberg, Schneider and Stone (1969), Kosberg (1971), Winn et al. (1976) and Kaeser (1981) have all studied the relationship between the type of ownership of LTCFs and its nurse staffing with conflicting results. Anderson et al. failed to find any relationship, and Kosberg failed to confirm his hypothesis that nonprofit facilities would have more resources (including nursing staff) than for-profit facilities. However, both studies have been criticized for sample deficiencies, the former because the sample consisted mainly of for-profit units, and the latter because it consisted mainly of nonprofit units.

By contrast, both Winn et al. (1976) and Kaeser (1981) obtained a relationship between ownership type and nurse staffing. Winn et al. found that nonprofit facilities surveyed in five midwestern states provided more care, in terms of both nursing and nonnursing hours per patient day, than for-profit facilities. Kaeser (1981) reported that nonprofit facilities, in

general, compared to for-profit facilities, provided from 35% to 47% more nursing hours by registered nurses, from 23% to 47% more nursing hours by licensed practical nurses, and from 9% to 23% more nursing hours by nurses' aides. Large, for-profit "chain" facilities were distinguished by neither the highest nor the lowest costs. Large, for-profit "chain" facilities also had neither the highest or the lowest quality of care. Nonprofit status was associated with lower operating margins (which correspond to a profit margin in a for-profit organization). Nonprofit status was also associated with higher operating costs, and with better overall quality of care. All 98 units in Kaeser's sample were located in Oregon, and 85 of these were nonprofit.

To conclude, the findings from these four studies are contradictory, with two indicating that for-profit facilities generally have less nursing staff than nonprofit facilities, and two indicating no relationship between ownership type and staffing. None of these studies, however, compared the extent to which for-profit and nonprofit LTCFs adhered to state or federal minimum standards of nurse staffing.

Statement of the Problem

LTCFs must have adequate nursing staff to provide quality care to the aged. Minimum standards have been designated by state and federal agencies to assure a minimum of staff are on hand to provide this care. However, the numbers and types of nursing staff (professional and nonprofessional) as well as the nursing staff to patient ratio have been shown to vary widely both below and above minimum standards. Research

has been conducted into factors believed to influence staffing of LTCFs such as reimbursement source and type of ownership, but the results have been contradictory. The effect of these factors on staffing has been investigated in intermediate facilities in Oregon but not in skilled nursing facilities. In addition, there is reason to believe that the influence of these factors may have changed due to the advent of the DRG reimbursement method to hospitals. This reimbursement method provides hospitals with an incentive to discharge patients sooner than previously thought safe and many of these patients are discharged to SNFs. Therefore, the patient population of an SNF today is often sicker and requires more nursing care than the patients admitted to SNFs in the past. Thus, the research questions specific to this study are:

1. How many hours of nursing care, on the average, are provided per day by RNs, LPNs, and nurses' aides to patients of Oregon SNFs?

2. How many hours of nursing care, on the average, are provided per patient day by RNs, LPNs, and nurses' aides in Oregon SNFs?

3. To what extent do Oregon SNFs adhere to state requirements for nurse staffing?

4. How does reimbursement source influence the number of nursing care hours and types of nurse staffing in Oregon SNFs?

5. How does type of ownership influence the number of nursing care hours and types of nurse staffing in Oregon SNFs?

6. Do for-profit facilities differ from nonprofit facilities with respect to adherence to state staffing requirements?

Significance of this Study

Quality of care in nursing homes is a matter of great concern to the elderly, to consumers and their families, and to providers of services. It will doubtless become even more of a concern, as the number of elderly in need of such services increases over the coming decades. Assuming that the amount and type of nursing care provided is an important determinant of the quality of care given, then a description of the existing situation with regard to nurse staffing should prove highly useful in indicating the extent to which improvement is or is not urgently needed. Further, any insight into factors which might tend to increase or decrease the amount or quality of nursing care also should be useful in planning policy changes so as to improve the situation.

By describing the numbers and types of nurse staffing provided by SNFs in Oregon, and by estimating the extent to which these facilities fall below, meet, or exceed minimum standards of nursing care, this study provides some indication of quality of care. By examining the effects of different reimbursement sources and type of ownership on nurse staffing, this study also adds to our knowledge of factors which may affect nurse staffing, and thereby quality of care. These data should be useful to policymakers, nursing home owners, and third party payors in deciding on a form and amount of reimbursement which would be both equitable and efficient. Finally, this study may also prove useful in providing baseline information for future research attempting to arrive at trends in the staffing of LTCFs, or research attempting to track changes in staffing occurring with changes

in such factors as reimbursement source or LTCF ownership.

CHAPTER II

METHODS

Sample and Setting

There are 62 nursing facilities in the State of Oregon which have "skilled" beds. However, only 33 facilities met the criteria for inclusion in this sample. To be included the facility must have been licensed by the state as a skilled facility, not have been hospital based, and must have had no more than 15% of the patient days paid for by third party payors other than Medicare, Medicaid or private sources. Other criteria for inclusion were that the facility could have had no more than 5% of its residents classified as "other care" patients, or patients requiring custodial or less than intermediate care. These patients are often referred to as residential care, retirement, or "home-for-the-aged" beds. The facilities could not have had any beds for the mentally retarded or "hold bed days". The facility must also have filed a Nursing Facility Financial Statement with the State of Oregon between June 1985 and June 1986. Only facilities with 12-month reporting periods were included in this sample, since only those reported both the numbers and types of patients and the numbers and types of nursing staff for a year. Since each facility had a different budget year or "rate year", the audits were staggered over a 2-year period from June 1, 1984 to June 1, 1986.

Data Collection

This descriptive study addressed the research questions through the analysis of secondary data in the form of financial statements or audits

submitted each year by all nursing facilities to the Financial Audit Unit of the State of Oregon Department of Human Resources, Senior Services Division. This information is public.

The financial statement audits filed with the State of Oregon are prepared and reported either by the facility's administrator, or by an accounting firm appointed by the facility administrator. The 20 page audit form contains numerous items that must by reported on a yearly basis if the LTCF is to receive Medicare and Medicaid funding. Pertinent sample pages from the audit form from one of the facilities with the name and address deleted is provided in Appendix B. Included in the audit is information about the total number of hours that RNs, LPNs, and nurses' aides worked in the facility over the 12-month period (see audit form, Appendix B, p. 21). The audit also reports the number of skilled and intermediate patients served by the facility for the same 12-month period (see audit form, Appendix B, p. 17). These data were abstracted from the audits and used to determine the ratios of nursing staff to various ranks to patients. In this way, the actual staffing of each facility was evaluated against the staffing required in order to meet the minimum state standards.

The nursing facility financial audits also provided information as to reimbursement source (see audit form, Appendix B, p. 17). Reimbursement source for skilled and intermediate patients is categorized as Medicaid, Medicare, or private and other third party payors. Finally, the audit indicates the type of ownership of the facility, whether for-profit or nonprofit (see audit form, p. 1).

Data Analysis

The first research question was: How many hours of nursing care, on the average, are provided per day by RNs, LPNs, and nurses' aides to patients of Oregon SNFs? To answer this question, first the average number of nursing hours per day (NHD) was determined for each facility by dividing by 365 the number of hours RNs (or LPNs or nurses' aides) worked during the year, as reported in the audit (see Appendix B, p. 21, entries for RNs, LPNs, and nurses' aides in column headed "Total hours for the fiscal period"). The resultant data for the 33 SNFs were summarized in descriptive statistics (means, ranges, standard deviations) to answer the question posed.

The second research question was: How many hours of nursing care, on the average, are provided per patient day by RNs, LPNs, and nurses' aides in Oregon SNFs? To answer this question, the average daily patient census (ADC) was first computed for each facility. This was done by adding together all the figures regarding patient days which are entered into the row labelled "Total" on p. 17 of the audit form and then dividing by 365. Following this procedure, each facility's ratio of nursing staff to patients was calculated by dividing the number of nursing staff hours by the ADC. Likewise, the ratios of RNs, LPNs, and aides to patients were calculated by dividing the number of hours those categories of staff worked on the average day, by the ADC. Following these procedures, the ratio for all facilities was averaged to arrive at estimates for Oregon skilled nursing facilities, collectively.

In still a further analysis, the average daily census of skilled patients for each facility was estimated by first adding together the figures (see audit form, Appendix B, p.17) entered in the "Total" row in the two columns labelled "Heavy Cost, SNF/HC", and all four columns in the section labelled "Skilled Care", and then dividing this sum by 365. Finally, correlations were calculated between the percentages that RNs, LPNs, and aides formed of the total nursing staff in each facility and the percentages of skilled patients in each facility. The Pearson r was used to perform the correlations.

The third question was: To what extent do Oregon SNFs adhere to state requirements for nurse staffing? The minimum standards stipulate that a skilled patient must receive 2.5 hours of care per day by nursing staff, of which 0.45 hours must be by LPNs, and 0.14 hours by RNs. Intermediate patients must receive at least 1.6 hours of nursing care per day, of which 0.28 hours must be by LPNs, and 0.14 hours by RNs. An example of how the minimum staffing for a facility was calculated is presented in Table 2. For the 12 month period reported in the facilities' financial statement, each facility's actual staffing was compared to that required by the standard. Graphs were drawn depicting the actual nurse staffing versus the required nurse staffing for total nurse staffing, RNs and licensed (RN and LPN) nursing staff. The graphs indicated which facilities did not meet the minimum nurse staffing requirements.

The fourth research question was: How does reimbursement source influence the number of nursing care hours and types of nurse staffing in

TABLE 2

Minimum Staffing Of A Skilled Nursing Facility With 40 Skilled and 40 Intermediate Patients For One Day (24 hours)

SKILLED PATIENT CENSUS	Total nursing staff hours required/ patient/day = 2.5 For 40 patients: 40 X 2.5 = 100 hrs	* Licensed nursing hours required/ patient/day = .45 40 X .45 = 18.0	Registered nurse hours required/ patient/day = .14 40 X .14 = 5.6
INTERMEDIATE PATIENT CENSUS	Total nursing hours required/ patient/day = 1.6 For 40 patients: 40 X 1.6 = 64.4 hrs	Licensed nursing hours required/ patient/day =.28 40 X .28 = 11.2	Registered nurse hours required/ patient/day = .14 40 X .14 = 5.6
TOTAL NURSING CARE HOURS REQUIRED FOR COMBINED PATIENT CENSUS	164.4 hrs	29.2 hrs	11.2 hrs

Note: In this example, 29.2 hours of the nursing care should be given by licensed nurses and the other 135.2 hours of care must be given by nurses aides or other employees.

* Licensed nursing hours include hours by both RNs and LPNs.

Oregon SNFs? To answer this question, the number of nursing hours per patient day for RNs, LPNs, and aides which was calculated to answer the second question was used. The numbers of patient days by reimbursement source (Medicare, Medicaid, and private) were determined by summing the figures in the row labelled "Total" on p. 17 of the audit form which appear under the appropriate reimbursement source. The percentages of Medicaid, Medicare and private reimbursement were then determined for each facility, and correlations computed between these percentages and the numbers of nursing hours per patient day provided by RNs, by LPNs, and by nurses' aides. The Pearson r coefficient was used to compute the magnitude of these correlations.

The fifth question was: How does type of ownership influence the number of nursing care hours and types of nurse staffing in Oregon SNFs? Type of ownership is distinguished on the audit form (Appendix B, p. 1) as proprietary (for-profit) or nonprofit. Total nursing hours per patient day, and RN, LPN, and aide nursing hours were averaged for all for-profit facilities and for all nonprofit facilities. The t-test was employed to determine if there were significant differences in these hours between the two types of institutions. The average daily census, and the average numbers of skilled and intermediate patient days were compared for the profit and nonprofit facilities. Mean days by reimbursement source (Medicare, Medicaid and private) were also compared for-profit and nonprofit organizations. Finally, the mean percentages of days paid for by different reimbursement sources (Medicare, Medicaid, and private)

for profit and nonprofit facilities were compared by t-test.

The sixth question was: Do for-profit facilities differ from nonprofit facilities with respect to adherence to state staffing requirements? Originally it was intended to answer this question by cross-classifying facilities on the basis of ownership type and adherence or nonadherence to state standards and then performing a chi-square test. However, such a test was unnecessary because only two facilities did not meet minimum standards (according to the State of Oregon formula for calculating minimum staffing) in the category of total nursing staff.

CHAPTER III

RESULTS

Research Question #1: How many hours of nursing care, on the average, are provided per day by RNs, LPNs, and nurses' aides to patients in Oregon SNFs?

This question focused on the size and composition of the nursing staff. From Table 3, it may be seen that a total of 300.91 hours of nursing care was supplied each day in these homes, 42.81 (14%) by RNs, 27.06 (9%) by LPNs, and 231.04 (77%) by aides. Assuming an 8-hour work shift, these figures indicate an average nursing staff of 37.61 persons, with 5.35 RNs, 3.38 LPNs, and 28.88 aides per facility. There was an average daily patient census of 104.22 and there were approximately 36 nursing staff members per 100 patients.

The total staffing hours and staffing hours of RNs and aides all appear to be fairly normally distributed across the facilities. The distribution of LPN hours is skewed positively, indicating that in most institutions, LPNs provide few hours of care. The high skewness value of 1.5 may be attributed to the influence of one extreme case. That facility reported 90.4 hours; the next highest number was 45.2 hours. The facility also reported more RN nursing care hours than any other nursing home in this sample.

The peakedness of the distribution of LPN hours, indicated by the kurtosis value of 5.61, may be attributed to the relatively narrow range of values, other than the one outlier. In short, LPNs provided comparatively little care. Registered nurses provided many fewer hours of care than

Table 3

Hours of Nursing Care Per Day In 33 Oregon Skilled Nursing Facilities By Category Of Nurse

Nursing care hours per day by nurse category	Mean	SD	Range	Skewness	Kurtosis
Daily patient census	104.22	30.20	103.93	.15	-0.89
Total nursing staff					
hours per day	300.91	115.04	415.25	.52	-0.66
RN hours per day	42.81	23.19	81.23	.89	0.00
LPN hours per day	27.06	16.57	89.17	1.57	5.61
Aide hours per day	231.04	90.32	368.99	.71	0.15

aides, but more than LPNs.

Research Question #2: How many hours of nursing care, on the average, are provided per patient day by RNs, LPNs, and nurses' aides in Oregon SNFs?

In this sample, the mean number of patients per day was 104.22 of whom 78.51 were patients classified as needing intermediate care, and 25.85 patients were classified as needing skilled care. The average patient received about 2.89 hours (2 hours, 53 minutes) total care per day, of which .41 hours (25 minutes) was given by RNs, .26 hours (15 minutes) by LPNs, and 2.22 hours (2 hours, 13 minutes) by aides (Table 4). In all facilities, aides provided the bulk of care for patients, RNs considerably less care, and LPNs the least.

There were many more intermediate than skilled patients in the nursing homes. The mean number of intermediate patients was 78.51 per day, and the range was from 0 to 145.59. The daily census of skilled patients varied from 2.6 to 142.0, with a mean of 25.85. There were three facilities with all skilled patients. For these facilities nursing hours per patient day were largely within one standard deviation of the mean. However, LPN hours for two of these facilities were greater than one standard deviation below the mean at .07 and .06 hours per patient day. The third facility had .01 LPN hours per patient day which was greater than two standard deviations below the mean.

In further exploration of the relation between the proportion of care provided by different categories of nursing staff, and the proportion of

Table 4

Nursing Care Hours Per Patient Day in 33 Skilled Nursing Facilities By Category Of Nurse

Nursing hours per patient day by category of nurse	Mean	SD	Range	Skewness	Kurtosis
Daily patient census	104.22	30.20	103.93	.15	-0.89
Total nursing hours per patient day	2.89	.45	1.9	.30	-0.15
RN hours per patient day	.41	.17	.67	.78	.18
LPN hours per patient day	.26	.12	.56	.05	.42
Aide hours per patient day	2.22	.36	1.7	.28	.41

patients classified as skilled, correlation coefficients were calculated. The correlations were not significant between the percentage of intermediate patients in a facility and the percentages of nursing care hours per patient day provided by RNs, LPNs, or aides (see Table 5). The percentage of skilled patients was significantly correlated with the percentage of nursing care hours provided by RNs ($r = .36$, $p < .03$), but not with the percentages of nursing care hours provided by LPNs or aides (see Table 5). In short, the more skilled patient days recorded in a facility, the greater the number of hours of RN care provided.

Research Question #3: To what extent do Oregon SNFs adhere to state requirements for nurse staffing?

During the period under study, only one of the facilities in this study received citations for quality of care problems (see Figures 1, 2, and 3). Facility no. 17 received a citation for not having adequate nursing staff to meet patient care needs, even though it met the minimum staffing requirements for all categories of nursing staff outlined in the State of Oregon regulations (see Appendix A).

In actuality, two facilities failed to meet the state's minimum requirement with respect to total staffing. These facilities are depicted in Figure 1 and are facilities nos. 27 and 31. Facility no. 27 failed to reach the minimum by only a few hours, with 233.17 total nursing hours instead of the 236.50 total nursing hours required. This facility was for profit. All of its patients were skilled and all of its nursing hours per patient day were within one standard deviation of the mean (see Table 4) except LPN hours

Table 5

Percentage Of Nursing Care Hours Provided By RNs, LPNs, and Aides In Relation To Percentage Of Skilled Patients In 33 Oregon Skilled Nursing Facilities

Percentage of nursing care hours per patient day	Correlation between percentage of nursing care hours per patient day and percentage of skilled patients	
	r	(p)
RN Hours	.36	(.03)*
LPN Hours	-.27	(.12)
Aide Hours	.01	(.91)

* Significant at $p \leq .05$

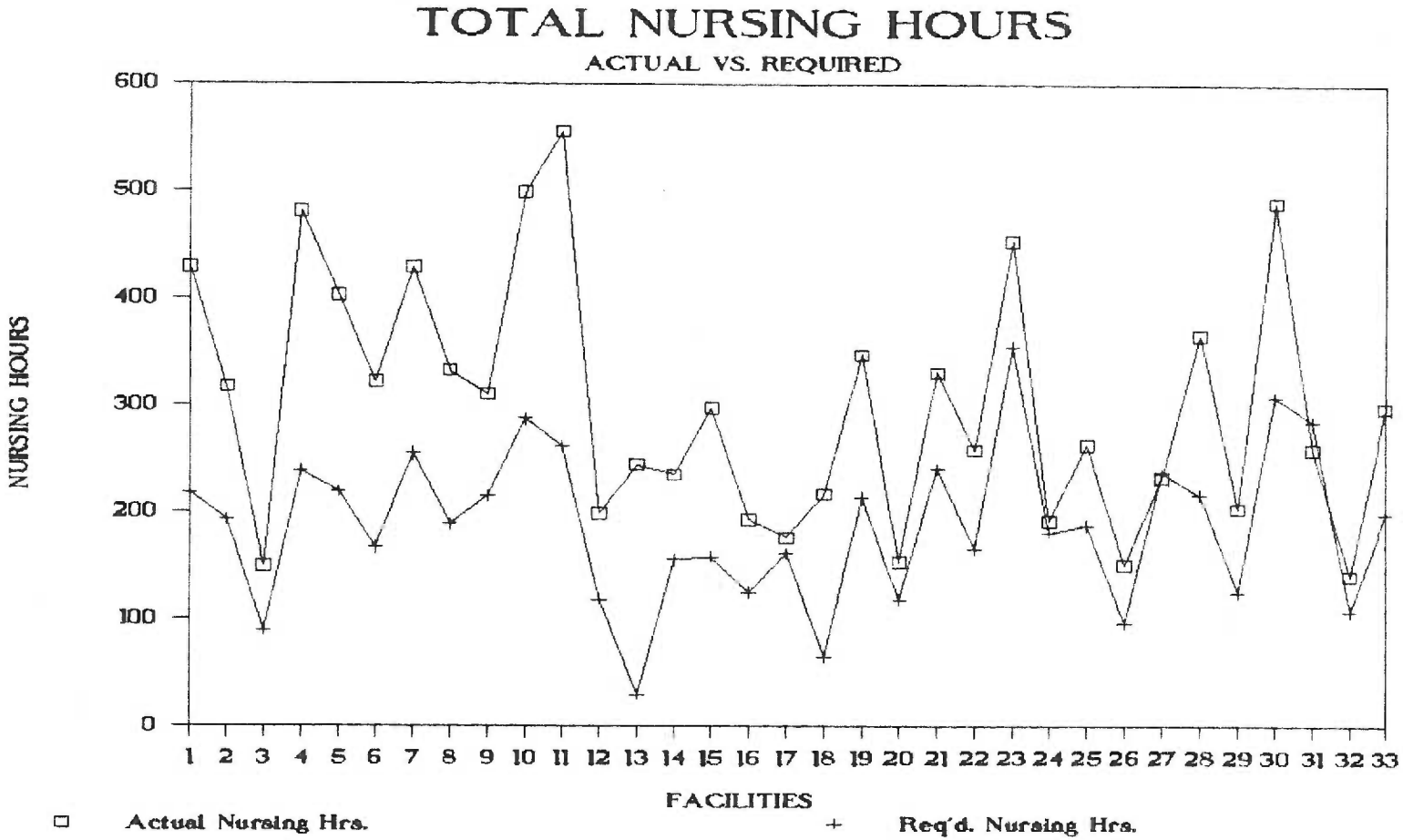

Figure 1. Facilities number 27 and 31 did not meet minimum total staffing requirements.

Facilities number 1 through 11 are nonprofit. Facilities number 12 through 33 are for-profit.

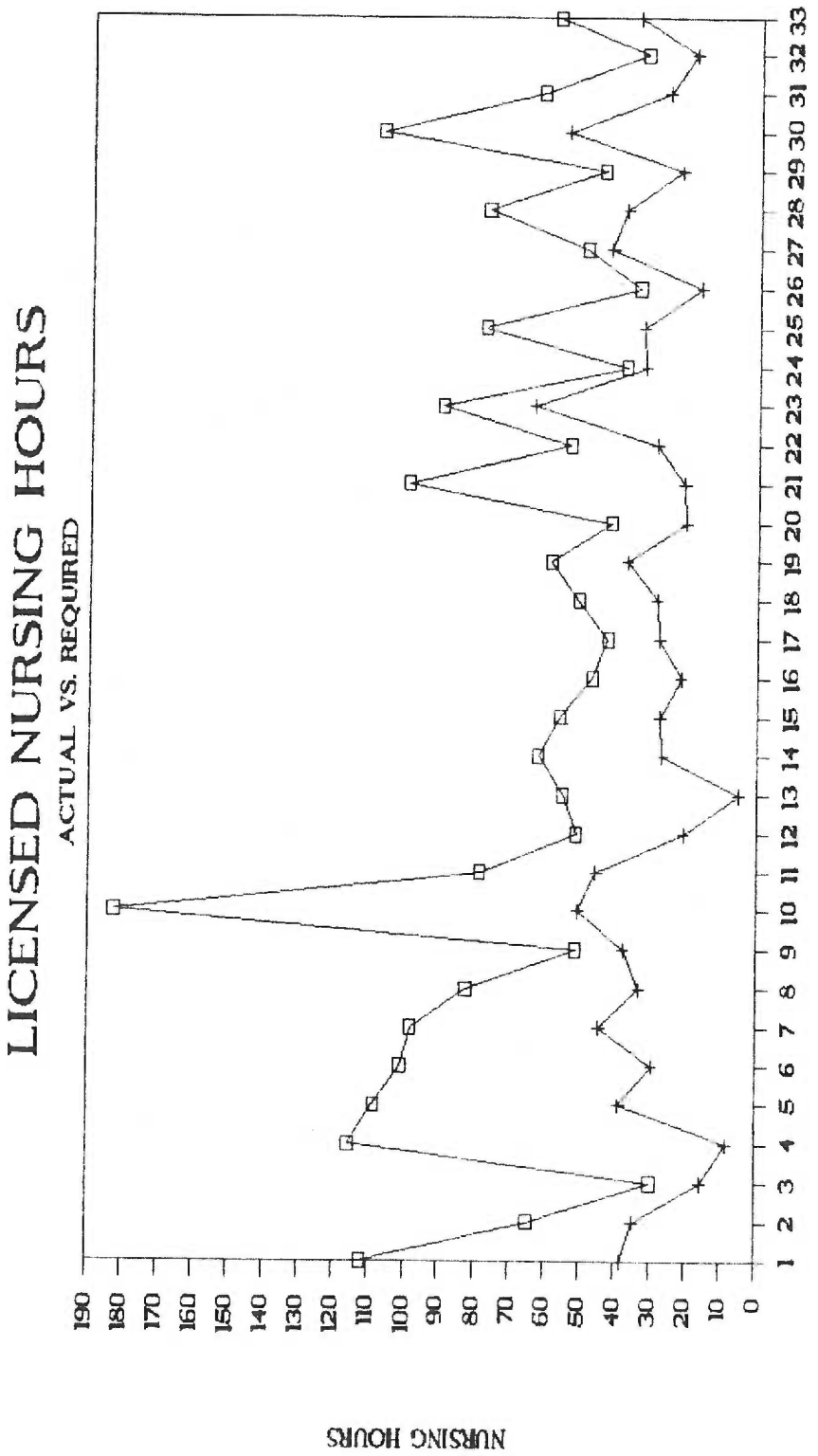

Figure 2. All facilities met minimum staffing requirements for licensed (RN and LPN) nursing hours. Facilities 1 through 11 are nonprofit. Facilities 12 through 33 are for-profit.

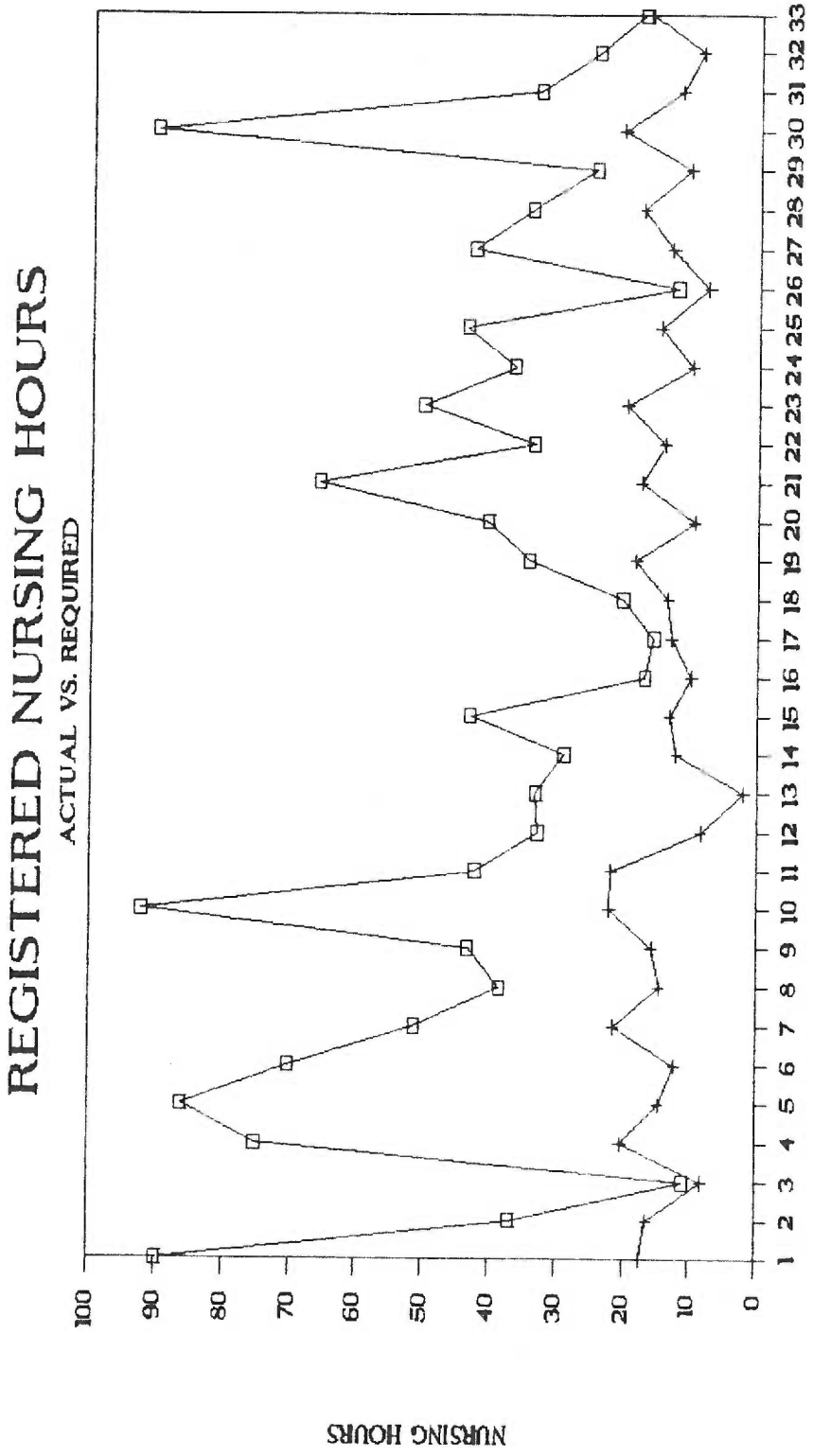

Figure 3. All facilities met minimum staffing requirements for RN staffing. Facilities 1 through 11 are nonprofit. Facilities 12 through 33 are for-profit.

which were greater than one standard deviation below the mean with .06 hours per patient day. This facility also had an average daily census below the mean. The second facility, no. 31, did not meet total staffing requirements with 259.34 total nursing care hours instead of the 285.19 total hours required (see Figure 1). That facility was for-profit and had an average daily census of 84.60 in contrast to the mean daily census of 104.22 for all facilities. The proportion of private paying patients for this facility was above the mean at 53.35% in contrast to 42.2%.

Thirty-one facilities exceeded the state's minimum staffing requirements by a wide margin. Figures 1, 2, and 3 depict the margins between actual and required nurse staffing. The mean number of total nursing hours of care provided was 300.91, whereas the mandated number of total nursing hours was 187.24 (see Table 6). The mean number of RN staff hours was 42.81 in contrast to the required 14.26 hours. The mean number of licensed staff hours was 70.24 in contrast to the required 31.28 hours.

Research Question #4: How does reimbursement source influence the number of nursing care hours and types of nurse staffing in Oregon SNFs?

Over the 12-month period, the facilities were reimbursed, on the average, by Medicare for 5.47% of the total patient days, by Medicaid for 48.77% , and by private sources for 43.05%. Nineteen facilities also received reimbursement from an additional source such as veterans' administration, although this amounted to only an average of 1.83 patients per day. As expected, Medicare reimbursed the facilities for only a small

Table 6

Relation Of Actual To Required Nurse Staffing In 33 Oregon Skilled Nursing Facilities

Nursing hours by category of staff	Mean	SD
Total staff hours		
Actual	300.92	115.04
Required	187.14	72.87
RN staff hours		
Actual	42.81	23.19
Required	14.26	4.74
Licensed staff hours[a]		
Actual	70.24	32.35
Required	31.28	12.69

[a] Includes RN and LPN hours

portion of patient care. This is because Medicare reimbursement is limited to the first 100 days of a patient's stay, after which the patient must either find private sources of funding or apply for Medicaid.

Table 7 shows the correlation coefficients obtained between number of hours of care per patient day by different categories of staff, and the percent of patient days reimbursed by Medicare, Medicaid, or private sources. It appears that the greater the percent of patient days paid by Medicare, the greater the number of total nursing hours per patient day ($r = .41$, $p < .05$), and the greater the number of RN hours per patient day ($r = .60$, $p < .01$).

Medicare patients are all classified as skilled patients, and skilled patients by definition require more hours of licensed nursing care. Thus, it is difficult to determine if the observed relationships are due to the facilities' need to comply with the higher staffing levels required by law for skilled patients, or because of the form of reimbursement. Facilities may also be providing more nursing care hours because patients are sicker and require more care, but this cannot be determined from these data.

Research Question #5: How does type of ownership influence the number of nursing care hours and types of nurse staffing in Oregon SNFs?

There were 11 nonprofit and 22 for-profit facilities. Fifteen of the latter group belonged to for-profit chains. The total hours of nursing care per day and hours of care by RNs and aides were significantly greater in nonprofit facilities than in for-profit institutions. The results of the relevant t-tests are shown in Table 8.

Table 7

Relation Of Form Of Reimbursement To Hours Of Nursing Care Provided Per Patient Day In 33 Oregon Skilled Nursing Facilities

Number of nursing care hours per patient day	Correlation between number of nursing care hours per patient day and percentage of days reimbursed by:					
	Medicare		Medicaid		Private Payor	
	r	(p)	r	(p)	r	(p)
Total hours per patient day	.41	(.01)*	-.13	(.45)	.02	(.89)
RN hours per patient day	.60	(.0002)*	-.26	(.13)	.00	(.98)
LPN hours per patient day	.10	(.56)	.13	(.44)	.10	(.57)
Aide hours per patient day	.19	(.28)	.08	(.63)	-.22	(.20)

* Significant at $p \leq .05$

Table 8

Relation Of Type Of Ownership And Nurse Staffing To Hours Of Nursing Care Provided Per Patient Day In 33 Oregon Skilled Nursing Facilities

	Type of Ownership					
Nursing Care hours per patient day	For-Profit (N = 22)		Nonprofit (N = 11)			
	Mean	SD	Mean	SD	t	p value
Total nursing staff hours per patient day	2.65	.38	3.10	.41	3.81	.0003*
RN hours per patient day	.36	.13	.47	.21	1.90	.03*
LPN hours per patient day	.23	.11	.27	.13	0.78	.22
Aide hours per patient day	2.04	.30	2.42	.33	3.25	.0014*

*Significant at $p \leq .05$

The average number of patients per day in the nonprofit facilities was 120.25, of whom 21.85(18.18%) were skilled patients, and 98.40(81.82%) were intermediate. The average number of patients per day in the for-profit facilities was 96.40, of whom 27.83(28.9%) were skilled and 68.57(71.1%) were intermediate (see Table 9). Although the proportion of skilled patients was greater in the for-profit homes, the number of nursing care hours per patient day was less. This lower level of nurse staffing in for-profit facilities cannot be attributed to reimbursement source since there was no significant difference between nonprofit and for-profit facilities. Percentage of reimbursement sources for patient days were as follows: for nonprofit organizations, 5.75% by Medicare, 51.60% by Medicaid, and 40.59% by private payors; for for-profit organizations, the corresponding percentages were 5.47%, 48.77%, and 43.05% (see Table 10).

Research Question #6: Do for-profit facilities differ from nonprofit facilities with respect to adherence to state staffing requirements?

There was no significant difference in the extent to which the two types of nursing homes met state nursing requirements. Only two facilities did not exceed the state requirements for total nursing staff. These are facilities nos. 27 and 31, and they did not meet the staffing regulations for total number of nursing staff (see Figure 1). However, it is clear from the results presented above, that nonprofit facilities tended to exceed staffing requirements to a greater degree, in that they provided more nursing care in all categories of staff and significantly more hours of total nursing care,

Table 9

Comparison Of Nonprofit and For-Profit Skilled Nursing Facilities In Oregon By Number and Type Of Patient, and By Reimbursement Source

Number and type of patient and reimbursement source	Type of Ownership: For-Profit (N = 22) Mean	For-Profit (N = 22) SD	Nonprofit (N = 11) Mean	Nonprofit (N = 11) SD
Average daily census	96.40	26.60	120.25	32.01
Average number of skilled patients/day	27.83	36.49	21.85	16.91
Average number of intermediate patients/day	68.57	40.71	98.40	37.08
Average number of Medicare patients/day	4.73	3.98	7.40	5.74
Average number of Medicaid patients/day	48.41	21.95	55.82	21.04
Average number of private patients/day	41.43	20.60	52.93	24.34

Table 10

Relation Of Type Of Ownership To Proportion Of Reimbursement Source In 33 Oregon Skilled Nursing Facilities

Reimbursement Source[a]	Type of Ownership: For-Profit (N = 22) Mean	SD	Nonprofit (N = 11) Mean	SD	t	p value
Percentage of Medicare days	5.47%	4.96	5.75%	5.63	.14	.89
Percentage of Medicaid days	48.77	20.65	51.60	13.35	.47	.63
Percentage of private days	43.05	20.31	40.59	11.54	.44	.66

* Significant at $p \leq .05$

[a] A variety of other public reimbursement sources accounted for the remaining 2.71%.

RN care, and aide care than did their for-profit counterparts. Figures 1, 2, and 3 show the extent to which the facilities exceeded staffing requirements. Facilities nos. 1 through 11 are nonprofit, and facilities nos. 12 through 33 are for-profit.

CHAPTER IV

DISCUSSION

In this sample, the average facility had a nursing staff composed of 14% RNs, 9% LPNs, and 77% aides. The corresponding figures from a study by Stricklen et al. (1987) of six SNFs were 6.3% RNs, 10.7% LPNs, 78.3% aides, and 4.4% orderlies. The percentage of aides in both studies was very similar, but the percentage of RNs was greater in the Oregon SNFs.

In the facilities of this study, there were 36 nurses per 100 patients. This is similar to a nurse-patient ratio close to that of 33 to 100 reported by Kosberg (1971) for his sample of 214 facilities in Illinois. However, the number of licensed nurses (RNs and LPNs, combined) for the Oregon SNFs was almost 9 per 100 patients, whereas Kosberg reported a total of only 4 per 100 patients for his sample. This difference in licensed nurse to patient ratios may be due to the fact that many of the facilities in Kosberg's sample only provided basic or intermediate care and did not provide any skilled care. Basic or intermediate patients generally are less severely ill and do not need as much nursing care as skilled patients. They require mainly supportive care which may be given by aides and less of the more technical or skilled care that licensed nurses provide.

All patients in long term care facilities require at least some assistance with activities of daily living such as bathing, dressing, or feeding, but not all residents are so ill as to require skilled nursing care. Aides provide the bulk of supportive care while RNs provide the bulk of

skilled care, and LPNs provide a variety of both. These facts account for the preponderance of aides in all facilities, regardless of the levels of care provided.

With regard to the amount of nursing care per patient, it was found that patients received from 1.94 to 3.84 hours of care per day, with a mean of 2.89 hours, or 2 hours, 53 minutes. The number of hours of care by RNs and LPNs together averaged .67. By comparison, Winn et al. (1976) reported that total nursing hours in their sample of 12 facilities varied from 1.77 to 4.15 per patient day, and the mean number of hours of care by licensed nurses was .80. The fact that licensed nurses provided fewer hours of care in the Oregon SNFs is surprising, in that patients currently being admitted to LTCFs are presumably sicker than those admitted in the past (Lyles, 1985; Stull & Vernon, 1986). However, it should be noted that 66% of the facilities in this sample were for-profit, as compared to 50% in Winn et al.'s (1976) sample. Moreover, the latter sample was not representative, since Winn et al. purposely selected only facilities with a reputation for efficiency and effectiveness.

Patients in this sample of SNFs received, on the average, 2 hours, 53 minutes of care, of which 25 minutes were given by RNs, 15 minutes by LPNs and 2 hours and 13 minutes by aides. Kaeser (1981) reported that the residents of 98 ICFs in Oregon received a total of 2 hours and 7 minutes of nursing care per day, of which 11 minutes were by RNs, 11 minutes by LPNs, and 1 hour 45 minutes by aides. The difference in the results of this and Kaeser's study seems reasonable in that the nursing homes in Kaeser's

sample accepted only intermediate patients, whereas the homes in the present study accepted both intermediate and skilled patients. The latter, by definition, require more hours of care than intermediate patients.

Of the 33 SNFs in this study, 31 exceeded Oregon minimum state staffing requirements by considerable margins. The facilities averaged 60.7% more total nurse staffing hours than required, 200% more RN hours, and 125% more licensed nurse staff hours. Only two facilities failed to meet state minimum staffing requirements in the category of total staffing. All facilities had more RN and LPN hours than were required according to the state's formula for minimum staffing. With this large discrepancy between actual and required nurse staffing it may appear that the SNFs in Oregon are providing more than enough hours of nursing care to their patients and thereby a very high quality of care. Some might conclude that Oregon SNFs are providing too many hours of nursing care. But this may be an erroneous conclusion because the state minimum staffing requirements are most probably too low for patients today.

The state of Oregon minimum staffing requirements were originally enacted in 1983. According to at least two researchers, Lyles (1985) and Stull and Vernon (1986) patients in SNFs today are sicker and require more hours of nursing care than in the past. This need for more hours of care is related to the DRG reimbursement system imposed on hospitals by Medicare (Lyles, 1985; Stull & Vernon, 1986). The system fixes payment per admission, thereby providing an incentive to hospitals to discharge patients sooner than had previously been thought to be safe practice (Kropf &

Greenburg, 1984). Many patients discharged from the hospital today are admitted to SNFs since they still require skilled nursing care. In short, it is probable that state minimum staffing standards are insufficient to meet the needs of patients in LTCFs today. Thus it is very doubtful that the amount of care mandated by state law (8.4 minutes by RNs, 18.6 by LPNs, and 2 hours, 2 minutes by aides, for a total of 2 hours, 30 minutes) is sufficient to meet the needs of the average "skilled patient" today. In fact, the amounts of care actually given the average patient in this sample of facilities (25 minutes by RNs, 15 by LPNs, and 2 hours, 13 minutes by aides, for a total of 2 hours, 53 minutes) does not seem at all excessive. Research is obviously needed to determine the minimum hours of care by different categories of nursing personnel required to meet the needs of skilled patients today, given present acuity levels.

In addition, by state mandate, the SNFs in Oregon must provide sufficient staff to meet total patient care needs even though that means exceeding the minimum staffing regulations. Adherence to this broad rule is monitored by Oregon's aggressive quality assurance surveillance program for SNFs. The state of Oregon will begin delicensure proceedings when it appears that patient care needs have not been met. Since only one facility in this study received a citation for failing to have adequate staff to meet patient needs, it is highly probable that SNFs are staffing with more than required given the minimum formula for nursing hours because patient needs have increased since the state minimum standards were enacted.

Only facility no. 17 received a citation for failing to have adequate staff

to meet patient care needs, and that facility still had the minimum amount of nurse staffing according to the State of Oregon formula for calculating minimum nurse staffing. As facilities decrease their staffing to near (but still slightly above) the minimum requirements, they take the chance that they may not abide by the broader rule of providing adequate care to meet patient needs. This puts the facility at risk for not passing quality assurance inspections.

It is interesting to note that facilities nos. 20, 24, and 32 also had low levels of total nurse staffing (see Figure 1) but received no citations. On closer scrutiny, however, facilities 20, 24, and 32, had considerably more RN hours than were required (see Figure 3). These additional RN hours could have provided the expertise needed to compensate efficiently for the lower levels of total nurse staffing and still adequately meet patient care needs.

It is also interesting to note that facility no. 27 (see Figures 1, 2, and 3) had 2.46 total nursing hours per patient day, .45 RN hours, .06 LPN hours and 1.94 aide hours as compared to the mean for all facilities of 2.89, .41, .26 and 2.22 respectively (see Table 4). This facility had a patient population composed totally of skilled patients. By state mandate, skilled patients require more hours of nursing care than intermediate patients. Thus, one might expect facility no. 27 to have nursing hours per patient day above the mean for all facilities. In fact, facility no. 27 was below the state minimum staffing requirements in the category of total nurse staffing. However, despite these staffing levels, facility no. 27

received no citations for failing to have adequate staff to meet patient care needs. Again, because the facility had considerably more RN hours than were required, these RN hours could have provided the expertise needed to compensate for the lower levels of nurse staffing in other categories so that patient care needs were met adequately.

The fourth research question inquired into the effect of form of reimbursement on nurse staffing. It was shown that reimbursement source had little effect on the amount and type of nursing care available in the facilities. It is true that facilities with more patients insured by Medicare provided their patients with more hours of nursing care generally, and more care by RNs specifically, than other nursing homes. It is also true that all Medicare patients are classified as skilled and by definition require more hours of nursing care. Nonetheless, Medicare remained a minor source of revenue, paying for less than 6% of all care given in the 33 facilities.

Unlike Bishop (1980a), the present investigator failed to find a positive relation between the percentage of private paying patients in a facility and the number of nursing care hours per patient day. Unlike Kosberg & Tobin (1972), this investigator did not find a negative relation between the percentage of Medicaid patients and amount or type of staffing. Finally, unlike Kaeser (1981), this investigator found that the percentage of patient days paid for by Medicare was related to the amount of RN care per patient.

It has been noted that 48.77% of all patient days were paid for by Medicaid, 43.05% by private payors, and only 5.47% by Medicare. A mean

of 1.83 patients per day or 2.71% patient days were reimbursed by a variety of public sources such as Veterans Administration. These percentages are close to those reported by other investigators. For example, Gibson et al. (1983) reported 48% reimbursement by Medicaid, and 45% reimbursement by private sources.

In answer to the question regarding the influence of type of ownership on amount and type of nursing care, it may be noted that the 11 nonprofit facilities provided approximately .45 more hours of nursing care per patient day (.11 more hours of RN care, .04 more of LPN care, and .38 more of aide care) than did the for-profit facilities. The statistically significant heavier staffing of nonprofit facilities cannot be explained on the basis of larger patient loads, because staff hours per patient day (total, RN, and aide) were also greater for nonprofit facilities.

This finding of heavier staffing by nonprofit than for-profit organizations accords with those of Winn et al. (1976) and of Kaeser (1981). Winn et al. reported nonprofit facilities in five midwestern states provided more nursing hours per patient day than for-profit facilities. Kaeser (1981) found that nonprofit intermediate care facilities in Oregon provided more RN time, more LPN time, and more aide time than did for-profit facilities.

To determine whether differences in reimbursement source could account for the differences in amount and form of nursing care provided patients by for-profit and nonprofit facilities, t-tests were performed. No significant differences were found between for-profit and nonprofit

facilities with respect to the percentages of patients reimbursed by Medicare, Medicaid or private payors (the t-tests were respectively $t = .14$, $p = .89$; $t = .47$, $p = .63$; $t = .44$, $p = .66$). Hence, it cannot be claimed that for-profit facilities staffed less heavily because they accepted disproportionate numbers of patients covered by a source such as Medicaid which paid relatively low rates. Conversely, it cannot be said that nonprofit facilities staffed more heavily because they had a greater proportion of patients whose care was covered by sources such as private insurance agencies which paid relatively higher rates. We may conclude that incentives exist for proprietary facilities to limit staff. For-profit facilities may have deduced there is a point of diminishing returns whereby third party reimbursement is insufficient to offset the cost of additional staff and that decreasing nursing hours is an easy way to increase profits.

In answer to the final research question, little difference was found between for-profit and nonprofit facilities in regard to their adherence to state staffing requirements. Only two of the for-profit facilities failed to meet requirements in one category of staffing; total nursing staff hours. The rest all exceeded those requirements by a wide margin. All the nonprofit facilities met the state requirements, and exceeded them to an even greater degree than did the for-profit agencies.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The purpose of this study was to compare actual nurse staffing of SNFs in Oregon with the staffing standards mandated by law, and to explore the relationships between nurse staffing, and both reimbursement source and type of ownership. Reimbursement for most SNFs comes from at least three different sources, each paying at a different rate. It has generally been believed that for-profit SNFs have more incentive to limit the number of staff than do nonprofit facilities. Although these beliefs are widely held, research to date on these issues is scarce and has produced conflicting results. For example, only one study could be located which explored the relation between actual and required nurse staffing, and it reported a wide variation in nursing home compliance with requirements across states.

The nurse staffing and the nurse/patient ratios prevailing in these Oregon SNFs were similar to those reported by other researchers, with one exception. Over a decade ago, Winn et al. (1976) reported a higher mean nurse/patient ratio for her sample of 12 LTCFs in the midwest. This is surprising in light of the fact LTCF administrators claim they have been admitting sicker patients since the DRG reimbursement system was instituted.

The majority of these Oregon facilities were staffed well in excess of the numbers required by state law. Two exceptions failed to meet the requirement for total number of nursing staff hours. In addition, one facility was cited for failing to have enough nursing staff to provide

adequate patient care despite the fact that the facility had the minimum amount of nursing staff required by state mandate. All three of those facilities were for-profit. Overall, nonprofit facilities exceeded staffing requirements by a much larger margin than did the for-profit facilities.

A cursory review of this study might cause one to conclude that SNFs in Oregon are providing many more hours of nursing care than is required and also, that the quality of care is very high in Oregon SNFs. One might even conclude that the SNFs in Oregon provide too many hours of nursing care. However, three other factors must be considered. First, facilities are required to have adequate numbers of staff and hours of care to meet patient care needs even if nurse staffing exceeds the state's minimum mandate. Second, if during the state's quality assurance monitoring process, the facility receives citations for not meeting patient care needs, delicensure proceedings will begin. Lastly, patients in SNFs today are sicker than patients in SNFs when Oregon's minimum staffing standards were enacted. Thus, it is just as likely that the state's minimum staffing standards are too low to meet patient care needs today; and nursing homes today find they must exceed the minimum in order to avoid citations and delicensure.

The higher level of nurse staffing per patient in the nonprofit facilities cannot be adequately explained by their greater number of patients. Although the mean daily patient census of the nonprofit facilities was greater, the proportion of skilled patients was less than in the for-profit homes. In addition, the increased number of nursing hours in the nonprofit

facilities cannot be explained on the basis of a disproportionate share of any particular reimbursement source.

Although the for-profit facilities in this study had more skilled patients, who by definition are sicker and require more care, it is possible that for-profit facilities had patients who were less sick within the broad categories of skilled and intermediate than did nonprofit facilities. Whether or not this would justify the lower staffing levels of for-profit facilities, one can only speculate.

One might also speculate that for-profit facilities have chosen to engage less nursing staff than their nonprofit counterparts because they do not see the benefits of providing care over and above that required to pass quality assurance inspections. For-profit facilities may see additional nurse staffing as encouraging inefficiency (Bishop, 1980a). On the other hand, nonprofit facilities may place less importance on efficiency, and may elect to increase nursing staff so as to provide additional services or comforts to their patients. In addition, nonprofit facilities may add staff in the belief that this may create a better working environment, increase job satisfaction and decrease staff turnover.

Limitations

This study had at least five areas of weakness. First, it used nurse staffing levels as a proxy measure of quality of care in SNFs. However, it cannot be assumed that maintaining a higher level of nurse staffing necessarily indicates a higher quality of care than prevails in a facility staffed at a lower level. It can also not be assumed that the number of

hours of nursing care paid for is the same as the number of hours of care patients actually receive. Further studies are needed to determine the relationship between nurse staffing level and other measures of quality of care.

Another limitation of this study is that it did not measure compliance with requirements for the distribution of nurse staffing on various shifts as specified by the state. Such data were not available from the audit tools. SNFs in this study could have exceeded the daily staffing requirements, but still maintained a dangerously low level of staffing during night or evening shifts.

A third weakness lies in the possibility that the self-reported data of these Nursing Facility Financial Statements lack reliability or validity. However, that possibility may be minimized by two factors. First, facilities have an incentive to report their costs accurately to receive the maximum reimbursement for which they are eligible. Second, both patient days and nurse staffing are verifiable by the state through other data collection sources such as the states' quality assurance program which performs inspections for licensure of all LTCFs.

A fourth weakness of this study is that the results may only be generalizable to states which employ a Medicaid reimbursement system similar to the one used in Oregon prior to July 1986. Oregon has recently begun implementation of a new prospective reimbursement system for all LTCFs, in order to cut costs to the state (C. Carey, 1986). Hence, the results of this study may not hold in the future for Oregon facilities.

In evaluating the present findings relating type of reimbursement to nurse staffing, it should be recognized that each type of reimbursement system provides different incentives to decrease or increase costs and staff size. Likewise, each state develops its own audit, licensure and quality assurance mechanisms which concurrently may effect incentives for staffing and influence reporting of compliance. How these factors affect nurse staffing was not examined in this study. However, these factors should be considered when generalizing study results to other states.

Recommendations for Further Study

This study has provided a description of nurse staffing in Oregon SNFs, and explored the effects of type of ownership and source of reimbursement on the amount and type of such staffing. Research is now needed to aid in the interpretation of the present findings, and to expand our understanding of the phenomenon of staffing generally. In particular, the role of factors other than reimbursement source and ownership type in determining staffing should be assessed. Among these factors which may help account for the variability in staffing among facilities are the facility's patient acuity, rate of nursing turnover, and number of ancillary personnel.

In discussing the findings of this study, it was hypothesized that differences in patient acuity might account in part for differences in staffing levels. To test this hypothesis would require, first, measuring patient acuity within both skilled and intermediate categories for each facility, and, second, correlating the patient acuity scores of the facilities with their nursing care hours. If it could be shown that facilities with sicker

patients indeed provided more nursing care hours, then this would lend credence to the hypothesis.

In attempting to explain why Oregon SNFs were staffed at levels higher than required by state standards, it was argued that patient acuity increased in the period since the standards were enacted because of the implementation of the DRG reimbursement system, and that SNFs were able to meet these increased patient needs only by increasing their staff. To test the correctness of that argument, research is needed to determine whether in fact facilities do staff at significantly higher levels now than they did prior to the institution of the DRG system. Data are available for such a comparison from the audits filed by the SNFs with the State of Oregon. Research is also needed to determine whether patient acuity did in fact increase after the DRG system was started in Oregon hospitals; but data for such a comparison are less readily available. The results of such research, should they accord with expectations, might lend some indirect support for the conclusion that the state's minimum staffing standards underestimate the need for skilled nursing care today, and are too low to provide acceptable care.

A second possible explanation of the variability among facilities in their staffing lies in the turnover rate of nurses. Nurse turnover may result in a facility's "doubling up" on staff while one nurse is training another, and until such time as the new nurse can function independently. It is possible that some facilities in this study experienced considerably more nurse turnover than others during the time period observed, and this resulted in their

increasing staff hours while training new recruits. This possibility needs investigation.

Still another factor which may affect nurse staffing is the use of ancillary staff. This effect might be estimated by measuring the extent to which the SNFs of this study employed ancillary personnel in the corresponding time period, and noting whether facilities with fewer nurse staffing hours per patient day tended to use the services of ancillary staff more.

The research possibilities outlined above all focus on explaining the variability in staffing patterns among facilities. In addition, the following investigations are recommended. First, inasmuch as Oregon is now implementing a new prospective reimbursement system for LTCFs, the effect of this new system on staffing should be studied. Staffing today should be compared with staffing after the change is made; and the relationships examined in this study should be reexamined under the new system. Such research should be very useful inasmuch as the new prospective payment system was designed with the hope that it would not adversely affect nurse staffing in LTCFs. Thus, in the new Medicaid system, funds are designated for specific purposes such as nursing staff, and if not used for that purpose must be refunded to the state. Since the facility cannot "make a profit" by decreasing nursing staff, nursing staff levels should in principle not be affected. Only future study, however, can test the correctness of that assumption.

Finally, research is essential in order to explicate the relationship between the quality of care provided by a facility and the number and type of nursing care hours per patient day. Only when that relationship is known will it be possible to determine the number of hours of nursing care required to meet the needs of patients at an acceptable level so that realistic standards may be set by the state.

Importance of this Study

The United States is facing an exponential growth of its aging population. How the health care needs of this population will be provided for and financed are topics of great concern for both private industry and government. It is anticipated that there will be a greater need for more SNF beds, as well as other forms of health care, housing and support for the aging. Currently, health care policy measures seem to be favoring a cooperative effort between public and private industry to meet the needs of this population.

Increasing reimbursement to SNFs may increase inappropriate utilization, causing patients' to be inappropriately admitted and retained and thereby increasing their length of stay. Conversely, decreasing reimbursement may bring about a decrease in services or a decrease in the quality of care. Information regarding the incentives produced for SNFs by various forms of staffing regulations, reimbursement, and type of ownership and their effects on quality of care are useful as the private and public sector attempt to provide services to meet the needs of the aging.

Implications for Nursing

Medicaid and Medicare pay for the largest proportion of health care the aged receive in nursing homes, and nurses and nurse aides provide most of that care. Current public policy by limiting reimbursement influences the type and number of the nursing personnel hired to provide care. Yet institutions are charged with providing enough nursing staff to meet patient needs. Thus, the quality of care patients receive is also largely controlled by public policy. Nursing leaders interested in improving the quality of care for the aged must become involved in the development of public policy because it affects their practice and the care that patients receive. This study has provided information that should be useful to nursing leaders and policymakers as they work together to develop a public policy that will assure the provision of adequate care for nursing home residents.

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APPENDIX A

Oregon Minimum Nurse Staffing Regulations

(vii) Productively and/or enjoyably occupy one's time;

(e) Observe and report to the DNS and the patient's physician, when appropriate, any significant changes in the patient's condition that warrant medical and/or nursing interventions that have not been previously prescribed or planned for:

(A) The change and the medical and/or nursing response to that change shall be documented including, if a physician is contacted, the time, date, response and later signature of that physician.

(B) Significant changes in: vital signs, ability to maintain skin integrity (decubiti development); ability to take or retain food or fluids; hydration; ability to evacuate bowel or bladder, affect behavior; and/or complaint of pain; suspected reaction to medication; and/or injury shall be reported.

(C) When the RN questions the efficacy, need or safety of continuation of medications being administered by that RN or by another employe of the facility to a patient therein, the RN shall report that question to the attending physician or nurse practitioner authorizing the medication and shall seek further instructions concerning the continuation of the medication.

(f) Coordinate the provision of nursing services for the patient with the provision of services for the patient by other health care providers;

(g) Assure the provision and documentation of patient care interventions prescribed by other health care professionals including timely medications and treatments ordered by the patient's physician;

(h) Evaluate and document the effect of nursing services on the patient's condition;

(i) Consult with the patient's significant others in a timely manner when the patient's condition has significantly changed;

(j) Notify the patient's significant others as soon as possible, and document that notification whenever the patient's situation is serious (patient has wandered away from facility, has suffered an injury, or has died).

(5) The RN patient care manager may delegate some or all of the nursing functions and tasks to another registered nurse or practical nurse licensed to practice in Oregon:

(a) The RN shall delegate to other licensed personnel only those nursing functions and tasks that the licensees are competent to perform and that are permitted by ORS 678 (laws regulating the practice of nursing).

(b) The RN patient care manager shall have final authority, responsibility and accountability for the nursing care of his/her assigned patients.

(c) The RN or LPN with delegated responsibility for patients who does not have on-site supervision from an RN patient care manager shall by July 1, 1988, have successfully completed a 3 credit hour course from an accredited school, or 30 continuing education hours, pertinent to gerontology, rehabilitation or long term care.

(6) The RN patient care manager or the RN or LPN with delegated authority for that patient's nursing care, may assign certain nursing tasks to a nursing assistant, certified to practice in Oregon:

(a) The certified nursing assistant (CNA) shall be supervised by the RN or LPN responsible for that patient's care during that shift.

(b) The CNA shall provide only those nursing services that the CNA is qualified to provide:

(A) CNA's may provide patient comfort services and patient assistance with activities of daily living.

(B) Additional CNA nursing service activities and functions shall be in accordance with ORS Chapter 678 (laws regulating the practice of nursing).

(c) The CNA shall receive an RN supervised inservice orientation to the LTCF and shall receive RN supervised inservice education programs relative to the CNA's job functions and activities.

Stat. Auth.: ORS Ch. 441
Hist.: HD 22-1985, f. & ef. 10-7-85

Nursing Services

333-86-015 (1) The LTCF shall provide a nursing service department which provides 24-hour, 7 days per week, nursing care.

(2) The nursing services department shall be under the direction of a director of nursing services (DNS) who is a registered nurse, licensed to practice in Oregon.

(3) The LTCF shall be responsible for developing, and maintaining, under the direction of the DNS, a documentable staffing plan following the defined scope of practice for RN's and LPN's:

(a) Each staffing plan shall make allowances for sickness, vacations, vacancies and other absences and shall list the service(s) or persons to be called for replacement of nursing personnel. Nursing care required by different types of patients shall be the major consideration in determining number, quality and categories of nursing personnel needed. This need must be met even though it exceeds the minimum staffing requirements contained in this rule.

(b) Each staffing plan shall:

(A) Meet or exceed the minimum staffing requirements as listed in section (4) of this rule; or

(B) Be an alternative plan submitted to and approved in writing by the Division. The LTCF must comply with paragraph (A) of this subsection until written approval is received. In order for an alternative staffing plan to be approved it must:

(i) Be in compliance with subsections (4)(a) and (b) of this rule; and

(ii) Establish minimum numbers of nursing staff personnel (licensed nurses and nursing assistants) on specified shifts, but in no case shall fewer than two nursing care personnel be on duty;

(iii) Require no less than the total number of staff (based upon an eight-hour shift) as would be required under subsection (4)(c) of this rule (total number required is calculated by adding the number required on each shift);

(iv) Require no fewer than 15% of the total number of staff (as would be required under subsection (4)(c) of this rule) at any point in time.

(c) Each LTCF shall post a Public Notice specifying the minimum number of licensed nurses and the mimimun number of nursing assistants required on each shift under the written staffing plan. The Notice shall be posted and shall be clearly visible to the visiting public. The Notice shall be in substantial compliance with the format in exhibit 2, and shall be kept current at all times.

(4) Minimum staffing in a LTCF shall conform with the following:

(a) Skilled care patients:

(A) There shall be 2.50 nursing care hours per skilled care patient per day.

(B) Nursing care hours shall include 0.45 licensed nurse hours per skilled care patient per day.

(C) Licensed nurse hours shall include one RN hour per skilled care patient per week.

(D) All LTCFs with skilled care patients shall have a censed nurse on duty 24 hours per day, directly involved with patient care, including an RN charge nurse on the day shift, seven days per week.

(E) DNS hours shall not be counted as nursing care hours in LTCFs admitting skilled care patients.

(F) Nursing care hours required for skilled care patients are in addition to nursing care hours required for intermediate care patients.

(b) Intermediate care patients:

(A) There shall be 1.61 nursing care hours per intermediate care patient per day.

(B) Nursing care hours shall include 0.28 licensed nurse hours per intermediate care patient per day.

(C) Licensed nurse hours shall include one RN hour per intermediate care patient per week.

(D) DNS' hours may be counted as nursing care hours in LTCFs admitting only intermediate care patients.

(E) In LTCFs with only intermediate care patients, there shall be a at least one RN or LPN on site 12 continuous hours per day, seven days per week, directly involved with patient care. A DNS on duty, directly involved with patient care, meets this requirement.

(F) Nursing care hours required for intermediate care patients are in addition to nursing care hours required for skilled care patients.

(c) All LTCFs are required to have two nursing staff personnel on duty at all times, or the number of nursing staff indicated in the following formula, whichever is greater:

(A) On night (11 PM until 7 AM) shift:

$$\frac{\text{\# Skilled Pts.}}{19} + \frac{\text{\# Intermediate Pts.}}{30} = \text{\# Nursing Staff Required.}$$

(B) On day (7 AM until 3 PM) shift:

$$\frac{\text{\# Skilled Pts.}}{8} + \frac{\text{\# Intermediate Pts.}}{12} = \text{\# Nursing Staff Required.}$$

(C) On evening (3 PM until 11 PM) shift:

$$\frac{\text{\# Skilled Pts.}}{13} + \frac{\text{\# Intermediate Pts.}}{20} = \text{\# Nursing Staff Required.}$$

(D) All sums (number of nursing staff required) resulting from the above formula are rounded (i.e., 6.4 would be rounded to 6; 6.5 would be rounded to 7).

NOTE: In the formulas listed above, actual content of the rule has been abbreviated, i.e., "# Skilled Pts." actually reads "Number Skilled Care Patients".

(4) Each LTCF shall maintain a written weekly staffing schedule showing the number of persons and the licensure status, if any, of such persons assigned to each shift.

(5) The LTCF shall be responsible for developing facility policies including admission policies. The LTCF shall assure that quality nursing services are provided under the direction of the DNS. The LTCF shall further assure that the DNS organizes and directs the nursing service department and is knowledgeable regarding patients' conditions, to include as a minimum:

(a) Developing and maintaining nursing service objectives, policy and procedure manuals, job descriptions, shift duties, staffing patterns, orienting, evaluating qualifications and performance, counseling, hiring and discharging of nursing personnel.

(b) Maintaining standards of nursing practice.

(c) Being aware of the patients' conditions and assuring that necessary treatment is provided.

(d) Insuring that all medications and treatments are given promptly as ordered.

(e) Coordinating nursing service with other services.

(f) Reviewing nursing service needs for development of budget.

(6) The qualifications for director of nursing service shall be:

(a) As specified in OAR 333-23-752(2); and

(b) The ability to carry out functions, outlined in section (5) of this rule.

(7) Each LTCF shall conduct continuing inservice training. All inservice training programs shall be supervised by the DNS or designee and designed to meet the needs of nursing and other facility personnel. Training shall include the Heimlich maneuver.

(8) The LTCF shall be responsible to present Division personnel accurate staffing records on request.

Stat. Auth.: ORS Ch. 441

Hist.: HD 9-1980, f. 7-8-80, ef. 10-1-80; HD 21-1982, f. & ef. 11-3-82; Renumbered from 333-23-791; HD 22-1985, f. & ef. 10-7-85

Director of Nursing Services (DNS)

333-86-017 (1) The director of nursing services shall be full-time (40 hours per week) in a single LTCF. Time spent in professional association workshops, seminars and continuing education may be counted as his/her duties in considering whether or not he/she is full-time.

APPENDIX B

Nursing Facility Financial Statement

State of Oregon
Department of Human Resources
Senior Services Division

NURSING FACILITY FINANCIAL STATEMENT
Submitted To
FINANCIAL AUDIT UNIT
of the
STATE OF OREGON
DEPARTMENT OF HUMAN RESOURCES
SENIOR SERVICES DIVISION

FOR THE PERIOD:
BEGINNING 7/1/85
AND ENDING 6/30/86

ENDING MONTH OR NORMAL
FISCAL YEAR JUNE

NAME ON LICENSE

MAILING ADDRESS

STREET ADDRESS SAME

CITY-STATE-ZIP

BRANCH

MMIS #

PHONE

STATEMENT SUBMITTED FOR:

X ANNUAL FILING REQUIREMENT

___ INTERIM RATE REVIEW

___ CHANGE OF OWNERSHIP

HOME OFFICE NAME

ADDRESS PHONE

ACCOUNTANT NAME

ADDRESS PHONE

TYPE OF ORGANIZATION:

X PROPRIETARY CORPORATION

___ NON PROFIT CORPORATION

___ INDIVIDUAL

___ PARTNERSHIP

OTHER

I (we) have compiled the accompanying financial statements. They were prepared in accordance with the Title XIX Long-Term Care Facility Services Guide. A compilation is limited to presenting, in the form prescribed by the Senior Services Division, information that is a representation of management. I (we) have not audited or reviewed the accompanying statement and, accordingly, do not express an opinion or any other form of assurance on the report.

SIGNATURE SEE ACCOUNTANTS' COMPILATION REPORT FIRM DATE

Under penalties of law, I declare that I have examined this statement, including the accompanying schedules, and that this material is complete, accurate, true, and has been prepared in accordance with the rules of the Senior Services Division of the State of Oregon. I understand that any false statement, claim or document, or concealment of material fact therein may result in prosecution under applicable federal or state laws.

SIGNATURE FIRM DATE

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MONTH	HEAVY COST				SKILLED CARE				INTERMEDIATE CARE				OTHER	
	Private		Medicaid											
	SNF/NC	ICF/NC	SNF/NC	ICF/NC	Private	Medicare	Medicaid	Other	Private	Medicaid	N/A	Other	N/A	Retirement
JANUARY			31		171	122	100		688	1517				
FEBRUARY			28		81	191	104		633	1375				
MARCH			31		138	287	113		683	1563				
APRIL			30		155	75	130		765	1457				
MAY			43		134	158	168		725	1408				
JUNE			43		146	193	192		708	1425				
JULY			29	31	189	207	95		850	1374				
AUGUST			31	31	188	215	123		854	1427				
SEPTEMBER			30	52	150	214	136		836	1288				
OCTOBER			31		172	222	198		845	1360				
NOVEMBER			30		182	187	152		738	1237				
DECEMBER			31		182	211	82		676	1404				
TOTAL			388	114	1838	2281	1618		9001	16835				

Facility Bed Capacity*	Beginning	Change	Change	Change	Ending
Intermediate Certified	66				66
Skilled Certified	34				34
Total Licensed Long Term Care	100				100
RCF					
ICF/HA Beds					
Other					
Total Facility Capacity	100				100
Certificate of Need Capacity					

* Please include dates of change

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"SEE ACCOUNTANT'S COMPILATION I

SUPPLEMENTAL SCHEDULE
FACILITY STAFFING

Salary Classification	Total Hours for the Fiscal Period	Total Dollars for the Fiscal Period	Salary Classification	Total Hours for the Fiscal Period	Total Dollars for the Fiscal Period
Administrator (owner)	2080	35606	Medical Records	1937	11191
Administrator (non-owner)			Licensed Practical Nurses	12236	94034
Assistant Administrator	2080	20621	In Service Director		
Bookkeeping/Accounting	1546	7240	Physical Therapist	1072	2189
Other Administrative			Physical Therapy Aides		
Maintenance	3276	18719	Occupational Therapist	601	12485
Housekeeping	9400	41619	Occupational Therapy Aides		
Laundry	5725	23986	Speech Therapist	220	8175
Dietary	14725	72000	Speech Therapy Aides		
Director of Nursing	1980	25579	Activities/Social Work	3512	16735
Registered Nurses	10606	97893	Nursing Aides	62989	278871

LOCATION OF FACILITY ACCOUNTING RECORDS

PUBLIC BILLING RATES
DURING THE TIME PERIOD COVERED BY THIS COST STATEMENT, THE RATES THAT WE CHARGED OUR RESIDENTS WERE AS FOLLOWS:

INCLUSIVE DATES	LEVEL OF CARE*					
	ICF #1	SNF #2	SNF c&r #3	#4	#5	#6
7/1/85 - 12/31/85	$43.90 - $49.95	$54.10	$80.00			
1/1/86 - 6/30/86	$45.00 - $51.20	$55.50 - $66.65	$84.00			

*Attach a separate schedule defining each level of care.

605IC

AN ABSTRACT OF THE THESIS OF

D. LYNETTE JONES

For the MASTER OF SCIENCE IN NURSING

Date Receiving this Degree:

Title: The Effect of Staffing Regulations, Type of Reimbursement and Type of Ownership On Nurse Staffing In Oregon Skilled Nursing Facilities

Approved: _____

Julia S. Brown, Ph.D. Thesis Advisor

In this study, the effects of state nurse staffing regulations, type of reimbursement (Medicaid, Medicare, and private) and type of ownership (for profit and nonprofit) on nurse staffing in 33 Oregon Skilled Nursing Facilities (SNFs) were examined. Financial audits reported by the facilities to the state of Oregon provided the data for these analyses.

Nursing hours per patient day were 2.89 for total nursing hours, .41 for RN hours, .26 for LPN hours, and 2.22 for aide hours. Thirty-one facilities exceeded minimum state staffing requirements by a wide margin. The facilities averaged 60.7% more total nurse staffing hours than required, 200% more RN hours, and 125% more licensed nurse staff hours. Thirty-two facilities passed quality assurance inspections which require the SNFs to have enough nursing staff to meet the needs of patients even though it may exceed the minimum staffing requirements. Other researchers have reported that patients in SNFs today are sicker today and require more

hours of nursing care because the DRG reimbursement system promotes the early discharge of hospitalized patients with referral into SNFs for continued nursing care. Thus, the state minimum nurse staffing standards created for yesterday's patients may be too low to meet the needs of today's sicker patients. Hence, facilities may have to staff at levels considerably above the stipulated minimum just in order to avoid delicensure.

Total nursing hours were significantly greater in nonprofit facilities ($p = .0003$) than in for-profit facilities, as were RN hours ($p = .03$), and aide hours ($p = .0014$). Since neither for-profit nor nonprofit facilities served a disproportionate share of patients reimbursed from a low-paying reimbursement source, such as Medicaid, the differential in their nurse staffing cannot be explained on that basis.

The findings of this study should not be viewed as cause for complacency. They may not necessarily be interpreted as indicating that Oregon SNFs are today delivering either superior care or unneeded care. Rather, the findings may be interpreted as indicating that state standards are unrealistically low, and in need of revision. In short, the quality and adequacy of the care presently being delivered cannot be assessed from these data. Only further research which is specifically designed for that purpose can provide such an assessment, and permit an estimate of the size and composition of staff needed to achieve an acceptable level of care for nursing home patients. Such data will be needed before appropriate nurse staffing standards and reimbursement policies can be developed.