

**A Medicaid Resident Assessment-Based Statewide Analysis of
Intermediate Care Nursing Homes**

by

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(ABSTRACT)

Through development of a conceptual model and an index measure based on actual performance, this dissertation focused on clarifying what is "very good" (and "very bad") in nursing home quality. The model expanded on the traditional narrow image of nursing home quality of care, and specified four major dimensions of this broader view of quality. The dimensions (staff intervention, nutrition/food service, physical environment, and community relations) were each reduced further to two sub-dimensions. Factors influencing quality were also delineated.

The new model was then used to tie specific measurable indicators to the overall quality construct. Quality indicators derived from standardized assessments of Medicaid residents were employed in a study of 135 intermediate care facilities in Virginia. Process variables, such as use of physical restraints, catheters, and receipt of various therapies, were analysed for 12,327 residents. Outcome variables (weight loss, increased dependencies in activities of daily living, new pressure sores) were determined through longitudinal analysis for residents with an appropriate preceding assessment (n = 9,006). Assessments were aggregated in each

home to calculate a mean (percentage incidence) for each of the 14 quality indicators.

A scaling system was used to clearly identify industry "norms" for each variable. Quintiles based on relative incidence were employed to assign homes to five levels of performance. Scale scores were summed to obtain a facility index measure of relative quality. Reliability and validity were evaluated. Relationships of case-mix and selected structural variables (size, ownership, location, percent Medicaid, staff ratios) to the quality measure were analysed.

Results suggested better performance by non-profit and smaller homes, but proprietary and non-profit facilities were about evenly represented among the top tenth percentile of homes. Presence of a skilled care unit appeared to negatively influence quality. Possible interactions and explanations for this finding were considered. Most significantly, the study demonstrated that resident assessments can serve as excellent information sources about what goes on in nursing homes. However, additional variables must be incorporated to make a comprehensive quality measure, based on the model. Recommendations and policy implications were discussed.

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CHAPTER 1

INTRODUCTION

More than forty billion dollars, or approximately eight percent of our national health expenditures, was spent on nursing homes in 1987 (Letsch, Levit, & Waldo, 1988). Almost half of this expense is publicly funded, and nursing homes as they exist today are shaped largely by the government regulatory process. Yet the quality of care given in these facilities is often substandard, and sometimes dangerously inadequate. This state of affairs reflects the failure of our society to establish a clear policy of what we want for our frail elderly, as the definition of quality of institutional or nursing home care is essentially a political decision. After a gloomy history of "total institutionalization," there are now encouraging signs of improvement. Fundamental is a growing recognition of the importance of quality of life for nursing home residents, and the need to alter the regulatory process to focus on this aspect.

At present, considerable interfacility variation exists; while some homes provide excellent care, a comprehensive study by the Institute of Medicine (1986) concludes that poor-quality homes were more common. Unfortunately, that report also states we have no reliable and objective way to identify these facilities--neither the very good ones nor the very bad. Through the development of a conceptual model and an index measure based on actual nursing home performance, this dissertation focuses on clarifying what is "very good" (and "very bad") in nursing home quality. Further, this research utilizes resident assessments and other data al-

ready being collected by state agencies to determine what they reveal about nursing home quality.

As a first step in examining this issue, an operational model was developed to rectify a significant gap in prior literature. Previous efforts to evaluate quality of nursing home care have been hampered by the lack of a conceptual model which (a) specifies the major components of that care, and (b) specifically associates measurable indicators with the overall construct of quality. A number of variables related to the structure, process, and outcome of care have been suggested as relevant by past research and expert opinion, but a framework demonstrating their relationships was absent. This new model expands on the traditional image of quality of institutional care, identifies the major dimensions, and clearly defines the relationships of pertinent variables to the conceptualization of quality.

A study was undertaken of 135 nursing homes in Virginia with twenty or more Medicaid-funded residents at the intermediate care level, to examine relative performance on a number of quality indicators. Data for these facilities were collected from three sources:

1. standardized resident assessments in the long-term care data base of the Virginia Medicaid program, known as the Long-Term Care Information System (LTCIS);
2. the lists of deficiencies compiled by Medicaid reviewers during their Inspections of Care;
3. questionnaires completed annually by the nursing homes and compiled by the Virginia Department of Health.

The model is used to explain the association of variables chosen from these sources to the quality construct. For the quality indicators culled from the standardized resident assessments in the Long-Term Care Information System, scales were subsequently developed from the statewide industry means and "norms" determined by descriptive statistical analysis. These scales assigned scores based on the incidence patterns of each variable. Exploring the potential uses of standardized resident assessments is a high priority research need, according to Institute of Medicine recommendations, and the need for realistic, appropriate, and refined quality norms has been recognized by many (Institute of Medicine, 1986; Roberts, 1987; Shaughnessy & Kurowski, 1982). These variable scales then served as the basis for an index of relative quality at the facility level which can be used by public agencies as well as the nursing home industry. The index score equaled the sum of the scores assigned to the individual variables. The index scores were evaluated for reliability and validity, and the relationships to selected structural variables were examined. A discussion of the findings, implications, and suggestions for further research using the model and scale system conclude this document.

CHAPTER 2

BACKGROUND AND RATIONALE

Typically, long-term care is required because of a person's inability to perform one or more of the basic activities of daily living (also referred to as ADL--i.e., bathing, dressing, using the toilet, bowel and bladder continence, getting in/out of bed or a chair, eating), due to physical or mental impairment. With more Americans living longer, we are now in the fourth stage of the epidemiological transition, known as the "age of delayed degenerative diseases" (Olshanksky & Ault, 1986), and the need for long-term care will only increase. The old-old age group (those over 85) is projected to at least double between 1980 and the year 2000. Chronic health problems, frailty, and the rate of institutionalization increase dramatically after this age. According to surveys of noninstitutionalized elders, 83 percent of the 65-74 age group have no difficulties performing these personal care activities, but only half (51 percent) of those over 85 are so fortunate (Dawson, Hendershot, & Fulton, 1987). Moreover, 61 percent of the ADL-dependent old-old reside in nursing homes, compared to only 24 percent of those aged 45-64 with ADL dependency (Doty, Liu, & Wiener, 1985). Forty-five percent of those residing in nursing homes are 85 or older (only 16 percent are aged 65-74), and 21.9 percent of all those aged 85-plus live in nursing homes, compared with a mere 1.3 percent of those aged 65-74 (Hing, 1987).

Community-based long-term care is recognized as advantageous for many frail elderly, and indeed, the majority of ADL-dependent elderly receive

most care informally from family and friends (Scanlon, 1988). However, institutionalization fills a need now which will only continue to grow. With the current trends toward smaller families and more middle-aged women employed full-time outside the home, the sources of traditional caregiving are dwindling (U.S. General Accounting Office, 1988). Furthermore, comparative studies of community versus institutional care show that, contrary to early hopes, care at home is often more expensive than in the facility (Greene, 1987; Kemper, 1988), particularly in situations where around-the-clock supervision is required. Government projections show a greater than 50 percent increase in the number of nursing home patients, beyond the current 1.4 million, by the end of this century. An estimated 4.2 million aged are expected to be institutionalized by the year 2020 (U.S. General Accounting Office, 1988). Total costs are predicted to reach 129 billion dollars in 2000 (Health Care Financing Administration, 1987)--a staggering rise from the two billion spent in 1965.

When the growing need is juxtaposed with increasing concerns over spiralling costs and subsequent action to contain them, the quality of care issue becomes even more problematic. Some nursing home administrators approach cost control through staff cutbacks, with consequent implications for quality of care. When demand for beds exceeds supply (in part due to certificate of need restrictions), residents have few options even when the quality of their care is unsatisfactory. It is clear that present regulatory mechanisms have failed to assure quality (see Butler, 1979; Institute of Medicine, 1986; Rango, 1982; U.S. General Accounting Office, 1987; Vladeck, 1980), and one reason is that despite its overwhelming importance, there is still no definitive measure of quality of

care in nursing homes. Researchers and regulatory agencies have assessed quality of care in an almost endless variety of ways. Until a consensus is established on what quality of nursing home care is, it is essentially impossible to truly demonstrate that any facility has achieved it.

Nevertheless, despite measurement problems, some nursing homes do seem far superior to others. Another flaw in the system is that these homes have not been properly recognized, analyzed, and earmarked as models for the industry and regulatory agencies to pursue.

NURSING HOME QUALITY OF CARE

The time is ripe for a cogent examination of what quality of nursing home care encompasses, as it is certain that the traditional medical model, with the emphasis on "cure" rather than "care", has been unsatisfactory. A respect for quality of life and its inseparable relationship to quality of care in institutions is raising questions about the responsibilities of the nursing home to provide a fuller spectrum of services. A clear delineation of the goals of nursing home care is urgently needed, and we have enough experience now to set more ambitious regulatory goals as well (Institute of Medicine, 1986). The release of the comprehensive study by the prestigious Institute of Medicine (a part of the National Academy of Sciences) has itself provided a major turning point for nursing home quality of care discussion and regulation. This report has already spurred passage of the first significant nursing home legislation to deal with quality care in more than a decade, as part of the Omnibus Budget Reconciliation Act of 1987 (Public Law 100-203).

One of the tasks of evaluation research is to derive a conceptual model of a construct which can be assessed logically via specified measurable indicators. The previous absence of such an operational model in the quality of nursing home care arena seriously handicaps any attempt to argue for the representativeness of the variables as used in the past. A clearly constructed model specifically designed to reflect the distinctive features of the nursing home environment would be a major step forward.

The standards or industry norms identified from the statewide study, reflecting relative quality, will be important to both government agencies and the industry. Such information can aid providers who are trying to offer good care, by improving their evaluation capabilities. The results also supplement our understanding of what the Institute of Medicine calls "key indicators of quality" in their Recommendation 4-5:

The standard survey should rely on "key indicators" of quality of resident life and care that would be prescribed by the HCFA [Health Care Financing Administration]. These key indicators would measure poor resident outcomes and other resident and facility conditions that might be caused by noncompliance with the federal conditions [for Medicare/Medicaid participation] and standards and should be investigated further by the survey agency (1986, p. 120).

Even more fundamentally, the identification of standards is essential to any effort to demonstrate the impact of public policies over time. This current period of tremendous change (in the wake of recent reform legislation) makes the need for comparative standards even more pressing.

GOVERNMENT INVOLVEMENT

Quality enhancement is a pressing obligation of the public sector, given the relative dependency of consumers of long-term care, the considerable governmental outlay for that care, and the constraints which limit the competition ordinarily found in a more conventional market structure. The institutionalized elderly are generally powerless as individuals, making them especially vulnerable to poor quality care. Often residents and their families remain silent about problems because they fear reprisal or lack of alternative placement. With the high national average nursing home occupancy rate at 91 percent in 1988 (U.S. General Accounting Office, 1988), these latter fears are not unfounded. Also, absence of informal support systems is frequently a primary factor in nursing home admissions (Barney, 1977; Doty et al., 1985), and these people may have no personal advocates.

The government is the major third-party payor for nursing homes. In 1987, private insurance and other funds covered only 1.6 percent of the total cost of nursing home care. Patients paid 49.3 percent personally, and the government paid 49.1 percent, principally through Medicaid, which paid for 43.9 percent of the total costs (Letsch et al., 1988). Medicaid pays for care when an individual's income and savings fall below certain levels; the more affluent must first "spend down" their own funds for care until they reach those levels. With nursing home costs averaging \$25,000 annually, a long stay raises a high risk of reaching Medicaid spenddown (U.S. General Accounting Office, 1988; U.S. Select Committee on Aging, 1985). Approximately 60 percent of nursing home residents re-

ceive at least partial support for their expenses from Medicaid (Scanlon, 1988). Schlenker (1986) and others (Harrington, Swan, & Grant, 1988; Institute of Medicine, 1986; Wiener & Kayser-Jones, 1989) observe state Medicaid policies are a major force shaping the nursing home sector. Therefore, as a public policy issue, it is incumbent upon the states to aggressively pursue efforts to assure high quality care in those facilities.

A focus on the state level is appropriate because although Medicaid is a joint Federal/state program, it is state administered. Differences in nursing home regulatory style among states have been cited, most pertinently by Day and Klein (1987b) in their comparative study of New York, Virginia, and England. Due to these differences, the sophisticated quality assessment system of New York does not automatically transfer to Virginia. While the New York experience sheds valuable light on the issues, a system which incorporates the existing data bases and regulatory approach of Virginia is essential to its usefulness in that state. Furthermore, while there have been efforts to look at quality assessment via licensure and survey reports (which are completed by state health facilities licensure and certification agencies, separate from Medicaid requirements), little attention has been placed on the rich potential pool of Medicaid review information. This project examines the utility of the resident assessments in that data base, and in doing so, specifically supports Virginia Medicaid's efforts to promote facility quality of care. And just as we can learn from the New York experience, while adapting those lessons to a different setting, the results of this Virginia study are not limited to Medicaid application, but will be of interest to the

large number of states that are already moving to computerized long-term care information systems. It is likely that all Medicare/Medicaid certified facilities in every state will eventually install computerized, standardized resident assessment systems, as recommended by the Institute of Medicine (1986).

Pursuant to that recommendation, this current research addresses one of the particular concerns of the Institute of Medicine. Their study notes that the installation of standard assessments will take two to three years, and that it is vital to carefully study uses of this data by state and federal governments (1986, p. 77). Specifically:

Recommendation 7-1: The Secretary of HHS should order a study to design a system for acquiring and using resident assessment data to meet the legitimate and continuing needs of state and federal government agencies. The Secretary also should order a study to determine the needs for other data about nursing homes that would facilitate regulation and policy development. This study should recommend specific ways to collect, analyze, and publish or otherwise make such data publicly available. (1986, p. 193)

Their report also points out that these data have great potential for informing consumer choices, if they can be made accessible in an appropriate format. Since the Virginia Medicaid program had the foresight to implement such a standardized system six years ago, we can progress to explorations of its utility.

Research on quality assessment is essential to facilitate improvement in both regulatory mechanisms and reimbursement systems, which are closely intertwined. The current study benefits states attempting to achieve better quality through reimbursement. "The actual development, assessment, and validation of quality measures which are parsimonious and sufficiently precise for reimbursement purposes is an area which needs

intensified effort" (Shaughnessy & Kurowski, 1982, p. 178). As Day and Klein (1987b) justly point out, this "technological" approach can only be a tool to supplement, not supplant, professional judgement and discretion. However, a good quality of care index is critical if we are ever to develop a defensible basis for judging which facilities provide better quality care. Such an index would then make possible a positive incentive approach to regulation, in contrast to our present system of negativity (citations, fines, terminations of contracts). Desired results are more often achieved when organizations are motivated by positive values like pride and accountability (Institute of Medicine, 1986). Facilities should be recognized for providing consistently good quality care. This could have public relation merit for them; some states are also investigating the use of financial incentives. In Virginia, more than ten years ago, the Joint Legislative Audit and Review Commission (1978) recommended the development of a nursing home rating system for use in Medicaid reimbursement and consumer information; this present project moves in that direction. All of these approaches hinge on having a valid, reliable means of measuring nursing home quality.

Finally, both the conceptual model and the performance scales herein reported will be of great practical application to those in the nursing home industry as well. As a heuristic device, the model can stimulate discussion of the goals of nursing homes and the mechanisms which can most successfully achieve them. The scales and index offer a great management tool for comparison of a facility's performance vis-a-vis statewide norms.

NURSING HOME CHARACTERISTICS

The 1985 National Nursing Home Survey (Strahan, 1987) indicates there are 19,100 nursing homes in the U.S., with 1,624,200 beds (an average of 85 beds per home). Seventy-six percent of these homes (and 89 percent of the beds) are certified for Medicare and/or Medicaid. The industry continues to be dominated by the proprietary homes; 75 percent of the homes are run by for-profit enterprises. The number of beds owned by chains increased from 28 percent of total homes in 1977 to 41 percent of total homes in 1985. Nursing homes enjoyed an occupancy rate of 92 percent that year, with approximately 50 of every 1,000 persons aged 65 and over residing in these institutions.

Nursing homes are currently differentiated by the level of care provided. They may be certified for Medicare/skilled level, Medicaid/skilled level, Medicaid/intermediate level (for those requiring somewhat less skilled nursing care), or a combination of these. Some homes distinguish an additional lower level, called custodial or residential care, for those individuals who need only supervision, rather than nursing services. Average per diem rates range from \$39.57 for Medicaid intermediate level care to \$62 for Medicare certified skilled care. There are conspicuous differences between regions of the country, with the highest average rates paid in the northeast, and the lowest in the south. Figures for 1986 show the average per diem rate for Medicaid-certified intermediate care facilities nationwide was \$44.84 (\$46.59 in Virginia) (Swan, Harrington, & Grant, 1988).

In Virginia, there are 165 Medicaid certified nursing homes, with about 90 percent of the certified beds at the intermediate level. Approximately 73 percent of nursing home residents are Medicaid recipients (Arling, Nordquist, & Capitman, 1987; Capitman, Arling, & Bowling, 1987). There is some question about the adequacy of the bed supply in this state: Capitman and his colleagues report no evidence for an overall bed shortage, although there is some maldistribution across regions, but Swan and Harrington (1986) might disagree. While their discriminate analysis shows no undersupply in Virginia, their regression methods indicate an undersupply for all four years studied, with only 36.6 to 39.9 beds per 1,000 population age 65 and over. For 1986, the figure was 37.2. This places Virginia on the low side, as bed supply that year ranged nationwide from 27 to 90 beds per 1,000 elderly (Harrington et al., 1988).

Two underlying characteristics of the nursing home setting are also important to keep in mind during the discussion which follows. One is the fact that most nursing homes house a heterogeneous population: the very old are heavily represented, but there may also be some young residents; about half of the residents stay less than three months, but for about 25 percent the facility will be their home for more than a year (U.S. Special Committee on Aging, 1988); and severely demented residents often coexist with residents suffering from physical impairments only. This heterogeneity complicates the capacity of the organization to clearly delineate its mission and service goals, an essential step toward the provision of high quality care.

The other vital aspect which must be remembered is the dynamic nature of the nursing home, which can make quality findings of one week obsolete

by the next. A change in the Director of Nursing, for example, can have a major direct impact on the quality of care given. This caveat has implications for any types of regulatory-driven rating systems, as the performance of last year may tell consumers nothing about the ambience of the home today.

THE STAKEHOLDERS

Like many ill-structured policy problems, the quality of nursing home care is really a complex system of problems, with multiple decisionmakers, and an array of alternative and often conflicting goals (Dunn, 1981). Values and outcomes are difficult to quantify. Given these complexities, it is helpful to identify the many stakeholders involved in the provision of quality of care in nursing homes. Admittedly, there may be some individuals for whom quality of care is secondary to other considerations. However, it helps to put it all into context if we assume that most of those in all groups share a common interest in providing good quality care. There are at least six groups with heavy stakes in the situation: the federal government, state government, advocacy groups, providers, facility staff, and residents and their families. Each group brings somewhat different, and sometimes conflicting, perspectives to the challenge. The end of the 1980's witnesses a particularly tumultuous situation in the wake of the Nursing Home Reform legislation of 1987. Major changes are unfolding which will have massive impacts on all participants.

Due in part to pressure from a unique coalition of interested parties, the Nursing Home Reform Amendments were passed as part of the Omnibus

Budget Reconciliation Act of 1987 (Public Law 100-203). Major components of this legislation include tightening requirements for nursing aide training (a minimum of 75 hours of training will now be required), installing mandatory intermediate sanctions for violations (e.g., civil penalties for each day of noncompliance), eliminating the skilled and intermediate care level distinctions, upgrading residents' rights, and other changes in the licensure/survey process.

Now that Congress has passed the legislation, it is now up to the Health Care Financing Administration to actually interpret these intentions into specific regulations. This agency is in the unenviable position of being subjected to pressures from all the other stakeholders, who each want certain provisions to be clarified and implemented. At the same time, federal legalities and financial responsibilities constrain the Health Care Financing Administration. For example, all of these changes are mandated to be in effect by October, 1, 1990, with those possible under the existing system to become effective immediately. Even here there are conflicts. Advocacy groups want more now, providers want more time to implement the changes. The Health Care Financing Administration faces the hard fact that provisions cannot be required now if no one is legally liable for the costs involved until 1990.

As all of this activity is moving relatively quickly through federal channels, the states are bracing for the reverberations. State officials (Hawkes, 1988; Fuller, 1988) argue that they should have more input, since in many cases, implementation will come down to the state level, with the changes and necessary training often engendering massive expense. Once again the sources of supportive funding are not at all clear. State

Medicaid programs are already tightly squeezed between cost containment efforts and rising expenditures in all areas. Nursing home care is not their only responsibility--they must also, for example, provide health insurance for low-income single parents and their children, another rapidly growing expense. In addition to funding shortages, state officials often feel they do not get sufficient notice and guidelines to execute federal changes. The uncertainty over whether the new regulations will allow relevant programs already existing in some states to be adapted, or if these will be totally scrapped, is also a great concern.

Consumer advocacy groups by nature protect the consumer. In their efforts as a special interest group, they must pursue their goals with single-minded determination. Due to the persistence of nursing home residents' advocates, perhaps this time the established requirements will be more than minimal. However, while the advocates and ombudsmen know what they want, they have little control or immediate impact on the funds which, realistically, must accompany any major changes.

Sometimes it is forgotten that many providers also share a sincere desire to promote good quality care; the scandalous failures of some providers has lessened sympathy for all. However, in order to stay financially afloat, even the most compassionate providers must realistically protect their interests. They too, are "between a rock and a hard place." Administrators are bombarded with new regulatory surprises constantly, and will be even more so now. They are faced with sicker residents (Sager, Easterling, Kindig, & Anderson, 1989; U.S. General Accounting Office, 1988), nursing shortages (Harrington, 1984; Quinlan, 1988), and declining profits. Profits plunged 60.6 percent in 1987 for

investor-owned chains, and an even more drastic 86.6 percent for non-proprietary chains (Wagner, 1988).

Within the facility, the nursing staff are not paid adequately for the difficult jobs they must perform (Diamond, 1986; Quinlan, 1988; Wiener & Kayser-Jones, 1989) and they often feel they are not respected by society as much as their counterparts in the hospital setting (Ebersole, 1985). There are even conflicts and different points of view within the ranks. Supervisory nurses are frustrated by the amount of time they must spend in paperwork and away from direct patient care, which is in turn often resented by the nursing aides. The aides do not commonly receive the vital support from the management necessary to cope with the enormous stresses of their jobs (Oliver & Tureman, 1988; Tisdale, 1987). The quality of care lies in the hands of these administrators, nurses, social workers, activity directors, dietary staff, and other facility personnel. Yet the key players are those underpaid, undersupported nursing aides--they provide 90 percent of the direct care (Johnson & Grant, 1985; Vladeck, 1980), and are on duty 24 hours a day.

Finally, there are the consumers--the residents and their families. They are the most intimately involved of all, placing themselves or their loved ones in the care of these strangers, and hoping for the best. They have traditionally had the softest voice in articulating their quality of care priorities; it is only in recent years that the idea of resident and family empowerment has begun to rise (Katan, 1987). The community too must play a greater part, both to help those currently residing in nursing homes and out of self-interest as potential consumers.

Thinking about the frail individuals helps put it all into perspective. If we could all hold on to the idea of what we would want if it were us or our mothers lying in those beds, perhaps nursing homes could move closer to their potential. No one of these groups can make it happen alone. All of these participants have crucial roles to play in the difficult task of providing a high quality existence for the increasing numbers of frail elderly.

THE RESEARCH QUESTIONS

This project addresses six specific questions.

1. What is quality of nursing home care--how can it be clearly conceptualized in a model framework?
2. What key indicators of quality nursing home care can be obtained from a standardized resident assessment?
3. How can a regulatory agency such as the Virginia Medicaid program use the information from their Long-Term Care Information System (LTCIS) to describe quality of nursing home care at the facility level as conceptualized?
4. What are the statewide industry performance norms in Virginia for the selected quality indicators?
5. How reliable and valid is an index measure of quality based on LTCIS variables?
6. What relationships exist between selected structural measures of nursing homes and the quality, as measured by the LTCIS-based index?

CHAPTER 3

DEFINING AND MEASURING QUALITY OF NURSING HOME CARE

As an initial step, pertinent literature was reviewed to answer four inquiries:

- What are the definitions and goals of quality of nursing home care?
- How has quality of care been measured in the past?
- What characteristics are associated with "very bad" quality of care?
- What characteristics are associated with "very good" quality of care?

This chapter addresses the first two questions; the other two are reviewed in Chapter 4. Before proceeding with the findings, some points need clarification. First, the terms "nursing home" and "facility" are used interchangeably to refer to institutions formally providing nursing care on a "long-term" or residential basis. The terms quality assessment/measurement and "quality assurance" also engender some confusion. Berwick and Knapp (1987) make the following distinction between assurance and measurement: the "assurers" of care are those who provide the care and the environment for that care, on a daily basis, while the "measurers" develop objective information to assist the management of that care. In that spirit, quality assessment or measurement will be used in this discussion.

The realization that the quality of care provided in these facilities is in a sense a policy decision complicates the issue, especially since

this is a policy area which we as a society have yet to really face. In fact, Day and Klein (1987b) suggest that the growth of regulations followed the insertion of Medicare/Medicaid funding into the nursing home industry, stimulated more by fears that public monies would be misused than by concerns for the consumer.

Chambers (1987) sees quality as a comparison between the level and mix of care actually provided and the level defined as targeted care (adequate care), noting that the targeted care level is politically selected, and therefore may not be the optimal level possible. With the government so heavily invested in the provision of long-term care, the degree of quality typically available is heavily influenced by how much funding the nation is willing to devote to such care. Since 1981, when Fottler, Smith and James observed "our society has yet to clearly define the level of nursing home quality it wants and is willing to pay for" (1981, p. 122), we have made little progress in this direction. As R.

A. Kane (1987) notes:

decisions about the level of comfort, assistance, and even rehabilitation built into the system are political decisions. The threshold of quality that is desired for the old and infirm, the amount of money society is willing to spend to create the minimum conditions of acceptable quality, these decisions must be made collectively. Explicit attention to such decisions has largely been avoided (p. 78).

The reasons for this avoidance are not difficult to uncover. The common problem of inertia and the lack of a clear, readily apparent solution inhibit action. Additionally, an ambivalence stems from the fear of opening a "Pandora's box," as it is suspected that better quality will cost more from a public till already stretched too far. Our ambivalence also reflects the "welfare" overtones of our current long-term care sys-

tem, through the idea that demand for publicly-funded nursing home care can be controlled by making it extremely undesirable--a last resort only. To be fully understood, the consequences of improving nursing home quality should be seen in the larger context:

We may fear that if we improve nursing homes in the absence of a more generous home care benefit, we will persuade much larger numbers of eligible older citizens to line up for publicly funded nursing home services.... [For many] low-income and disabled older Americans residing in the community,...this would probably mean a substantial improvement in their objective standards of living. A good nursing home provides good food, warm shelter, and physical security in addition to long-term care services.... And good nursing homes, other things being equal, would allow some families to lay down in better conscience the very heavy burdens of caring for disabled parents in their own homes. Clearly then, systematic improvement in the nation's nursing homes needs to be part of a broader effort to upgrade both living standards for low-income older citizens and long-term care services in all settings (Branch, Sager, & Meyers, 1987, p. 222).

As observed above, recent actions (e.g., the Institute of Medicine study and the reform legislation of 1987) do hold out some hope for improvement, but there remains a lack of consensus in the U.S. which reinforces the need for an explicit conceptual model as a foundation for discussion. Beyond that, it is essential to establish standards in order to pinpoint particularly good or bad facilities, and to analyze longitudinal changes. It is only in this way that we can determine the effects (both intended and unintended) of public policy on the quality being provided (Day & Klein, 1987a).

Quality assessment regulation shapes the quality of care through three avenues: (a) delineation of explicit criteria; (b) monitoring compliance with those criteria; and (c) enforcement of compliance with those criteria. The present discussion deals primarily with the second, that is, ways of monitoring the quality of care.

DEFINITIONS AND GOALS OF QUALITY OF INSTITUTIONAL CARE

There is basic agreement on the considerable importance of quality of care in nursing homes, and even a general "feeling" of what comprises it, but there has never been a consensus on a specific definition nor on how to measure it. (See Ullman, 1985, and Caswell & Cleverly, 1983.) Scanlon (1988) urges that attempts to better define what quality is must continue. In an article on general guidelines for quality of care review in a variety of settings (including nursing homes), Roberts (1987), wondering if quality can even be defined, notes that the ongoing debate over the definition of quality heightens the need to specify one's own perspective. He argues that meeting human needs is the fundamental purpose of any health care, and suggests:

High quality health care is care by which the health care needs (educational, preventative, restorative, and maintenance) of an individual or group are identified fully and accurately and the necessary resources (human and other) are applied to these needs in a timely manner and as effectively as the practical state of the art allows (1987, p. 70).

Perhaps we are moving in this direction as we begin to identify more fully the spectrum of health care needs of the institutionalized elderly, in terms of their quality of life and restorative potential.

More specific to institutional care, Vladeck offers the following description:

High quality nursing home care consists of the maintenance of a clean and pleasant environment, in which the food is good, that there is plenty to do, assistance is readily given with dressing and bathing, people are nice to each other and respect each other's privacy and personal dignity, and good medical and nursing services are provided to those who need them (1980, pp. 148-149).

While this portrayal appeals to common sense, it is all too seldom achieved. However, it exemplifies the multi-dimensional, subjective nature of quality of care which complicates efforts to measure it. Indeed, as will be demonstrated, the selection of variables used as quality measures are almost as numerous as the different attempts.

Identification of the goals of nursing home care--what we hope to accomplish--continues to be difficult due to the ambivalence of our policies. Following is a representative sample. (The goal of cost-effectiveness is also appropriate in some contexts, but is not addressed here.)

More than ten years ago, Bloom (1975, p. 583) suggests the following six categories of long-term care goals:

1. Survival or mortality
2. Physical functioning
3. Mental functioning
4. Affective functioning
5. Social and interpersonal functioning
6. Environmental functioning

Four years later, Callahan (cited in Palmer, 1985, p. 11) turns his attention to the long-term care system (not confined to institutional settings) and identifies the following "desired outcomes."

1. Maximum Functional Independence
 - a. Rehabilitation
 - b. Maintenance
2. Humane Care
 - a. Least Restrictive Environment
 - b. Death with Dignity
3. Prolong Longevity
4. Prevent Avoidable Medical/Social Problems

The phrase "maximum functional independence" for the patient crops up again when Somers (1985) identifies it (as opposed to cure) as the over-

riding goal of long-term care. Bennett (1980) sees it somewhat differently.

...nursing homes are supposed to care for elderly people just as the heads of a household care for their family members--the responsibilities are the same, i.e., to provide support and service that are conducive to a long, healthy, and peaceful life. The ingredients for such a life are:

- Good nutrition
- Exercise
- Freedom from anxiety and stress
- Freedom from accidents
- Freedom [as much as possible] from disease and physical disabilities (p. 153).

More recently, Branch and his colleagues (1987) suggest:

We seek technically competent, proficient services that promote desired outcomes. Over time, the outcomes emphasized by long-term care professionals have evolved. Professionals have moved gradually and incompletely from emphasizing delaying death, to slowing the decline in functional ability, to promoting cognitive/emotional well-being, to compensating for those functional deficits to which informal supports are not able to respond (p. 222).

Since nursing homes are so much the product of regulation, it is instructive to examine the goals outlined by the regulations. Basically their thrust has been to ensure the adequacy of care and safety for residents (Institute of Medicine, 1986; Morford, 1988). As compliance with physical plant aspects (i.e., building construction, fire safety) and the apparent existence of resources (i.e., licensed administrator, availability of activity programs and physical therapy) has always been easier to specify and measure than the direct caring for another human being, regulatory criteria have predominantly concentrated on the former. Inspections have traditionally focussed on resident charts, rather than the actual experiences of the residents themselves.

In an effort to summarize the literature on quality of nursing home care, the following definition is offered: the degree to which appropriate services are provided in a safe and clean environment, whereby residents achieve and maintain maximal levels of functional independence, and the best possible control of physical/organic health conditions, and whereby the importance of the individual is recognized, and positive feelings, self-confidence, and dignity of residents are supported. From this definition, these corresponding goals of nursing home care can be specified:

- Maintain a safe and clean environment.
- Maximize independence in functioning for each individual.
- Obtain the best possible control and maintenance of each resident's physical/organic health conditions.
- Promote positive feelings, self-confidence, and dignity among residents.

APPROACHES TO NURSING HOME QUALITY ASSESSMENT

A "production of welfare" theoretical perspective, based on conventional microeconomics, has been applied to the nursing home (Knapp, 1984; Knapp & Harissis, 1981). In this rarely articulated view, the home is portrayed as a production unit which combines resource input (e.g., staff and capital) and non-resource input (e.g., social environment, certain residential characteristics) to produce intermediate outputs (e.g., quality of the care provided, residential dependency characteristics) and

final outputs, or the ultimate goals: functional level maximization, improvement of quality of life, and so forth.

Most of the current quality literature, however, is couched in the context of Donabedian's (1980; 1987) model of three approaches to the assessment of quality of care: structure, process, and outcome. Donabedian visualizes these in the following linkage arrangement:

STRUCTURE----->PROCESS----->OUTCOME

Originally directed toward primary medical care, his paradigm has been applied to long-term care settings. The following sections review the nursing home applications (as discussed previously by this author in Glass, 1988).

Structure

Structural variables deal with the institution and include size, ownership, staff demographics, the organization of the home, the safety of the environment, and the available resources for activities and therapy. They establish the capacity of the facility to provide quality care. Because they are more readily measured, and are generally more objective and reliable, structural factors have been most commonly employed in past attempts at quantifying quality of care (Gottesman, 1974; Greenwald & Linn, 1971; Kosberg, 1974; Kosberg & Tobin, 1972). A more recent study employed four proxy measures for quality which are all structural: age of the facility, qualifications of night shift supervisor, number of

therapies offered by the facility, and number of people on the waiting list (Ullman, 1986).

Having the capacity to provide good care, however, does not insure that it automatically follows, and structural criteria have not been shown to have a consistent relationship to quality. Linn, Gurel, and Linn (1977), for example, found few significant relationships between structural criteria and patient outcomes, except for the number of R.N. (registered nurse) hours per patient. (This latter measure continues to be commonly used as a proxy for quality.) Moreover, nursing home regulation has been fairly successful in the past fifteen years in upgrading the physical plant and safety features, and staff training is becoming more sophisticated. As noted above, structural capacity has been the main thrust of regulation. Consequently, there is less variance in this component than previously (Eustis & Patten, 1984; Stein, Linn, & Stein, 1986a). Despite mixed results, Kurowski and Shaugnessy (1985) note that structural criteria should be included in further studies, since there are indications that they can directly affect quality in certain circumstances. For example, one study (Ray, Federspiel, & Schaffner, 1980) found that staff/patient ratio was associated with the use of antipsychotic drugs (i.e., the drugs were perhaps overused in understaffed facilities.)

The use of structural variables has been fairly traditional and limited in scope thus far. Donabedian (1987) recently called attention to some additional intriguing aspects. "Less often studied are the more subtle features of organization: differentiation, coordination, power, specification of work procedure, visibility of consequences, and so on"

(p. 76). These would seem to offer a rich mine of great interest in nursing home application.

Process

Since structure alone does not explain quality, interest has turned to process. Process variables approach the issue of quality of care through the activities and services performed, i.e., how the resources are utilized. They typically tend to be specific, timely, and relatively sensitive (Donabedian, 1987). Direct observation of patients, staff, or records is considered process evaluation (Stein et al., 1986a).

Studies have examined the relationships between structural and process variables (Connelly, Cohen, & Walsh, 1977; Levey, Ruchlin, Stotsky, Kinloch, & Oppenheim, 1973; Shaughnessy et al., 1980), but no consistent relationships have been identified. Gottesman and Bourestom (1974) observed patients and how their time was spent, to obtain measures of the amounts of nursing and other services which were actually received. These in turn were used as quality estimates. This was an extensive and productive study, but the validity and reliability of these criteria were not thoroughly documented. More recently, an example of the use of process variables in quality assessment is found in an exploration of cost, quality, and case mix interrelationships by Schlenker and Shaughnessy (1984). Twenty-seven long-term care problems, and the recommended treatments for each problem, were identified, and quality measures were determined by how closely a facility met the recommendations relevant for their residents. After further investigation, the re-

searchers chose to include only two of these problems (subcutaneous or complicated skin care and immobility) to determine a facility quality score, while noting more comprehensive measures would be necessary in an operational reimbursement system.

In comparison with structure, process has the advantage of greater validity in relation to actual patient experiences. As with structure, however, efforts to demonstrate causal relationships with patient outcomes have had uneven results (see for example, Chekryn & Roos, 1979). Some studies have shown positive relationships (Langer & Rodin, 1976), and most experts concede that process criteria must be included, even though they too do not tell the whole story (Institute of Medicine, 1986). Kurowski and Shaughnessy (1985) agree, recommending specificity of both process and outcome measures as the best avenue to clarify their relationships.

Outcome

In light of the evidence, there is increasing recognition of the necessity of incorporating outcome measures, which look at the consequences of structure and process for the patient, i. e. , health changes or outcomes which are associated with the care provided. Traditionally, rough outcome measures such as mortality, morbidity, and hospital admissions have been used, but more precise measures are being explored. This approach is intuitively appealing; the patient outcomes would testify for the structural and process components which presumably lead to them. With this as a regulatory focus, facilities would enjoy more flexibility allowing

for innovation, and be held accountable primarily for their results (Butler, 1979).

Research into outcome-based measures is complicated by the nature of chronic illness and the aging process. Most nursing home residents are never going to get "well" in the traditional sense, so there has been understandable hesitation about using this approach. Trying to establish "good" resident outcomes is extremely complex, since a multitude of factors must be considered, such as, identifying the "normal" course of each specific health problem, assuming that the appropriate treatment (Donabedian's "process") is given, and recognizing the interplay between multiple health problems and between mental and physical health. "Outcomes, by their nature, are delayed, less sensitive, and less specific....[their use as a measure suffers] in not being able to tell us precisely what may have gone wrong, in whose hands." (Donabedian, 1987, p. 77). In addition to these inherent complications, drawbacks to outcome studies are the length of time and relative expense involved (Kurowski & Shaughnessy, 1985; Linn et al., 1985; Stein et al., 1986a).

Despite these obstacles, researchers have made some headway in measuring improvement in residents in terms of expectations (Kane, R. L., 1986; Kane, Bell, Riegler, Wilson, & Keeler, 1983). Outcomes include both functional and psychosocial measures (i.e., objective and subjective measures); some researchers are examining the effects of the institutional atmosphere on residents' mental and social well being (see Bowker, 1982, for example). Rohrer and Hogan (1987) found improved physical functioning was associated with non-RN treatment, psychosocial care, and physicians' notes in the medical records. Weissert, Scanlon, Wan, and

Skinner (1983) report on an NCHSR experimental project in which nursing homes receive incentive payments for optimal patient outcomes; Thorburn and Meiners (1986) evaluate a similar experiment.

Day and Klein (1987a) point out that an emphasis on negative outcomes--occurrences which should be preventable depending on quality of care--eliminates many of the above obstacles. An example of a negative outcome is the in-house acquired decubitus ulcer (pressure sore). While some patients enter the nursing home with decubiti, none should develop after admittance, if residents are receiving proper nutrition and skin care, and are being positioned regularly. The Sentinel Health Events System (SHEs) employed by New York (New York State Department of Health, 1984) embodies this approach, examining presumed negative outcomes relative to statistical standards. The 1984 version utilized the following SHEs:

- Accidents/Incidents
- Behavioral Problems
- Decubitus Ulcer
- Contractures
- Lack of Ambulation
- Indwelling Catheter
- Poor Nutrition
- Poor Grooming
- Discharge/Transfer
- Medication Regimen Review
- Activities

The structure, process, and outcome framework has been widely accepted. It is only recently that investigators are beginning to question and stretch the (self-imposed) envelope. For example, in an observation particularly relevant to nursing home application, Berwick and Knapp (1987) argue:

Unless we define outcome very broadly, to include many elements of the patient's feelings, attitudes, and satisfaction, then the tyranny of outcome in defining quality risks calling much of the activity in health care wasteful, useless, and scientifically unsupported. But doctors and patients know better; they know that, often, what health care delivers is not outcome--in the sense of improved longevity or function--but rather process, itself (p. 51).

Relatively few projects and programs have tried to include all three components. Since, contrary to assumptions, the three dimensions do not appear to relate strongly to each other (Kurowski & Shaughnessy, 1985; Schlenker, 1986), it is likely that they can complement each other productively in quality of care assessment. Kurowski and Shaughnessy (1985) note the need for continued study and refinement of these measures. Those researchers also cite the conditions requisite for research on the relationships between the three domains: "validated measures and accurate data,...adequate sample sizes, financial resources, and time (1985:115)." Schlenker and Shaughnessy (1984) observe that composite measures warrant further investigation.

Structure, process, and outcome encompass a large number of variables which can be combined in almost infinite variety. Almost every quality of care index which has incorporated these domains is calculated differently. This again reflects the lack of an underlying conceptual model and makes comparative analysis difficult. The role that the quality variable plays varies from study to study as well; sometimes it is the dependent variable, sometimes the independent. There is also a common tautological problem, as for example, when staff/resident ratio is used to assess relationships between cost and quality, and is simultaneously largely associated with cost (Kane, R. A., & Kane, R. L., 1987; Schlenker,

1986). Obviously, how quality is defined greatly influences what measurement will be considered acceptable.

APPROACHES TO SELECTION OF CRITERIA AND DATA SOURCES

Beyond the decision on what to include in quality measurements--structure, process, and outcome--comes the decision on how the measures will be obtained. Basically, they can be divided into three approaches: (1) "primary" judgements by individuals with first hand experience in the facilities, (2) analysis of secondary data collected for this or for other purposes, and (3) the use of "sentinels." The first two approaches parallel the implicit and explicit judgements first described by Donabedian (1969), and recently outlined by Stein, Linn, and Stein (1986a). The implicit judgement is a global assessment of care based on observation in the facility, while explicit judgements "involve experts setting detailed criteria for quality of care related to specific diagnoses or types of care" (p. 425). Schlenker and Shaughnessy's (1984) study, cited earlier, is an instance of the latter. The potentially more subjective primary or implicit judgements employ, for example, a nurse and a social worker familiar with the facilities rating them on a 1 to 4 scale of quality (Stein et al., 1986a), or a larger multidisciplinary team approach (Connelly et al., 1977). This latter study also offers one of the only discussions of using data collected for Medicaid for determinations of facility quality of care.

Of direct relevance to the present research are those efforts to devise measures or indices from existing secondary data. This approach is

an attractive option because the data are readily available. Kurowski and Shaughnessy (1985) and Scanlon (1988) agree that ease of data collection is essential for incorporation into quality regulatory systems. Willemain (1983) provides a helpful review of past attempts, most of which have relied on licensure survey reports. (Facility licensure and periodic survey inspections are typically conducted by the state health facilities licensure and certification agency, and are separate from, though often coordinated with, the mandatory medical care review/Inspection of Care visits conducted by the Medicaid program.) Massachusetts is one of the states which have experimented with the use of survey-based indices for reimbursement purposes, with mixed results. Lee and Braun (1981) offer another example of a data-based quality measure using licensure/survey reports. Validity problems trouble these indices, but considerations of their face validity and economy support the likelihood that states will continue to move in this direction. Willemain recommends "the indices should be constructed in a novel way and their use tempered by recognition of their deficiencies" (1983, p. 85). He concludes that continued consideration of such indices is warranted by the potential value indicated thus far. The aggregation of process quality measures from the resident level to the facility level is nascent.

Few studies have specifically examined the validity of such indices against implicit ratings of quality of care. One of the only reported efforts was by Linn (1974). Implicit ratings of quality of 40 facilities were obtained from six social workers familiar with the homes. These were then used as the dependent variable in a multiple regression analysis designed to test the predictive capacity of the survey-based index. The

latter was a ninety-item scale which was completed by independent researchers; it accounted for approximately 25 percent of the variance in the implicit ratings. The significant predictors from the explicit scale were the subscores for the physical plant, administrative policies, dietary service, and staff-patient ratios.

The use of sentinels is the third major approach to "quality review." Categories of unacceptable or "red-flag" events are identified and then investigated explicitly or implicitly. They can incorporate structure, process, and outcome, and be used at either individual or systemic levels. Morbidity and mortality are the obvious examples; the New York regulatory system offers others.

To some extent, the review techniques ...[which] search particularly for statistical outliers in rates of utilization, are connected with this notion of surveillance for sentinel events. Sentinel events can also be used directly as indicators of quality when they are judged to be outcomes that ought to be avoided by a sound health care system (Berwick & Knapp, 1987, p. 50).

The problem of bias in quality assessment must temper any judgements made, cautions Ullman (1987). The New York State Moreland Act Commission found regulatory authorities hesitant to give deficient ratings to facilities because of the perceived shortage of nursing homes. Even a sophisticated system incorporating structure, process, and outcome, can be unreliable when humans have some discretion. He identifies further shortcomings in past evaluation procedures as the failure to capture "staff attitudes, encouragement of individual thoughts and actions, and additional aspects of resident care performance which are critical elements affecting quality of life" (1987, p. 235). Scanlon (1988) expands on these concerns:

It is most important to recognize the limits of any endeavor to specify quality. Quality has many intangible aspects. Those measurable phenomena that can be incorporated into reimbursement policy only represent a piece of quality. Care must be taken in designing...policies that positively promote the measurable aspects of quality to avoid creating a system that discourages provision of other less tangible aspects (p. 12).

SUMMARY

Quality of institutional care has been represented in a myriad of ways, almost unique to each investigator. Such variations make it difficult to draw direct comparisons between studies. However, it can be seen that most of the current efforts to assess quality of nursing home care represent a relatively narrow image of quality. Often only one or two variables are used as proxy measures of what is in reality a multifaceted phenomenon.

There is no conceptual model for operationalizing the measurement of quality of nursing home care, nor is there even a consensus on definition. The following definition integrates the existing literature: the quality of nursing home care is the degree to which appropriate services are provided in a safe and clean environment, whereby residents achieve and maintain maximal levels of functional independence, and the best possible control of physical/organic health conditions, and whereby the importance of the individual is recognized, and positive feelings, self-confidence, and dignity of residents are supported.

Donabedian's three approaches to quality assessment--structure, process, and outcome--dominate the literature. Structure describes the institutional capacity, process equals the care/treatment given, and

outcome represents (at least in theory) the results of structure and process for the resident. Most experts believe all three contribute to quality care, but structure, and process to a lesser extent, has been the traditional focus.

Past research is a jumble of efforts which differ in how the quality measure is defined and whether primary or secondary data are used. Few studies have compared the two types of assessments. Almost nothing has been done to utilize the rich pool of Medicaid review data, though licensure survey reports have been used to develop quality indices. The use of sentinels is nascent.

To be truly effective, an evaluation of any organization must begin with a clear understanding of that organization, how it functions, and a specification of the goals. This entails specifying a conceptual model, something which is glaringly absent in the nursing home arena.

CHAPTER 4

LESSONS LEARNED FROM VERY BAD AND VERY GOOD HOMES

As with all organizations, the nature and structure of the long-term care institution is laced with internal conflicts. In addition to philosophical issues like conflicts between custodial care and active treatment of problems, and between overlooking nonmedical needs in favor of medical ones, there is a major and ongoing conflict between cost-containment and the provision of services (Bennett & Eisdorfer, 1975; Edinberg, 1985; Fottler et al., 1981). Several studies have raised this question, usually through comparisons of "quality" in not-for-profit homes versus proprietary ones. The assumption is that the latter have a stronger money-making motive which probably bodes poorly for quality care. Other types of conflicts have been identified in terms of values and ethics, as in conflicts between professionally prescribed care and the resident's right not to submit to a particular treatment if desired (Institute of Medicine, 1986), and in everyday institutional life (Kane, R. A., 1989).

Staffing patterns (generally borrowed from the hospital) may also work against achieving the secure consistent homelike setting which might be more appropriate for long stays. The strict hierarchy (Bennett & Eisdorfer, 1975), the tightly prescribed duties (Brannon et al., 1988), the shift arrangements, the charting systems, and the heavy focus on "bed and body work" (Gubrium, 1975) all contribute to the problems. The current situation is in part attributable to governmental regulatory proce-

dures, which have focused on "paper compliance," until the recent changes which place a greater emphasis on spending time with residents and observing. If too much charting is mandatory, it may get done perfunctorily whether or not the care itself is given. The staff may be led to believe that charting is more important, an atmosphere well exemplified by the expression, "If's it's not charted, it didn't happen" (Diamond, 1986), as far as government inspections are concerned. The result of all these factors is task orientation, rather than resident orientation, and a heavy stress on paperwork, rather than direct care.

WHAT COMPRISES "BAD" QUALITY OF CARE?

With the rapid and relatively unregulated growth of the nursing home industry in the late-1960s and early 1970s came heart-rending tales of resident maltreatment. (See Mendelson, 1974, for an early and comprehensive expose; see also Moss & Halamandaris, 1977.) The U.S. Senate Sub-committee on Long-Term Care compiled the following "Litany of Nursing Homes Abuses" in 1974. (These represent the most common complaints received by newspaper offices, which were among the earliest to investigate and raise an alarm about the scandals.)

- Abuse and Poor Treatment of Patients
- Deliberate Physical Injury
- Unsanitary Conditions
- Poor Food or Poor Preparation
- Misappropriation and Theft

- Inadequate Control of Drugs
- Other Hazards to Life and Limb
- Unauthorized or Improper Use of Restraints
- Reprisals Against Those Who Complain
- Lack of Eye Care, Dental Care and Podiatry
- Assaults on Human Dignity
- Profiteering and Cheating the System

Some of the specific complaints most often made were: (a) poor care; (b) untrained and inadequate personnel; (c) lack of human dignity; (d) lack of activities; (e) doctor's absent; and (f) ineffective inspections--lax enforcement. (Cited by Vogel, 1985, pp. 605-606.)

Fifteen years and thousands of regulations later, how well have nursing homes done at eliminating these problems? Certainly, scandals of the scale of the earlier years are far less common, or at least, they less often receive the media coverage they appeared to warrant previously. However, in at least three states, nursing homes have recently featured heavily in the news.

Following an "undercover" operation coordinated by the Arkansas Attorney General's office, the problems found in some homes have caused a public outcry that turned the state's nursing home industry upside down (Oswald, March 20, 23, 1988; Van Laningham, March 22, 1988) At hearings held around the state these investigators and others testified about a multitude of problems, including "understaffing, improperly trained staff, infestations of mice and roaches, residents left unattended and covered in urine and feces, linen shortages, falsified charts, infectious

bedsores, physical abuse and rape" (National Citizens' Coalition for Nursing Home Reform, 1988, p. 6).

Chilling stories of drug abuse and misuse in nursing homes are revealed in a special series in an Arizona newspaper (Cook & Masterson, June 26-July 2, 1988). Even worse, in St. Paul, Minnesota, several homes belonging to a major chain have recently come under heavy fire in the wake of eight resident deaths which appear to be due in part to negligence (Kummer, August 25, 1988).

Characteristics of Poor Quality Homes

There has been (to my knowledge) no systematic study focusing on poor facilities in an effort to identify their common underlying characteristics. Researchers have usually examined various features, such as ownership and size, in relation to general performance.

Many experts have suggested ownership as a key variable. Spurred by concerns over the consequences of the presumed profit-maximizing philosophy of proprietary homes, the performance of those homes versus not-for-profit ownership has drawn the most research attention (Arling et al., 1987; Elwell, 1984; Fottler et al., 1981; Gottesman, 1974; Greene & Monahan, 1981; Holahan & Cohen, 1984; Holahan, Cohen, & Scanlon, 1983; Lemke & Moos, 1986, 1989; Ullman, 1987). For example, Gottesman's and Bourestom's (1974) early work showed higher quality in non-profit homes, and those proprietary homes distinguished by a large proportion of private pay residents. Greene and Monahan (1981) found proprietary ownership to be a significant negative predictor of quality of care. Recent evalu-

ations by Lemke and Moos (1989) also conclude proprietary homes compare unfavorably with non-profit. Overall there is a general sense that the former homes provide lower quality, but this has not been conclusively proven (Kane, R. A., & Kane, R. L., 1987). Proprietary homes tend to have lower costs; non-profit tend to spend more on direct patient care and the physical plant, and have better staff/resident ratios, but neither has been persuasively shown to offer consistently worse care. The Institute of Medicine (1986) concludes there are good and bad homes in every category.

The growth of for-profit chains has stimulated additional interest in how chain ownership affects performance (Ullman, 1986). Greene and Monahan (1981), for example, found homes owned by distantly-based chains offered lower quality care. Another study (Arling et al., 1987) reports chain homes appear to have relatively large percentages of Medicaid residents and relatively low costs, suggesting a cost-efficient standardized product targeting the Medicaid market.

Considering that in some states, the rates paid by Medicaid are as much as 30 percent lower than the private pay rates (Institute of Medicine, 1986), the percentage of Medicaid recipients might be assumed to affect the level of quality provided. Indeed, some studies do suggest homes with higher percentages of Medicaid residents (and high overall occupancy) provide lower quality care (Gottesman & Bourestom, 1974; Schlenker, 1986; Schlenker & Shaughnessy, 1984). However, a review of pertinent literature commissioned by the Institute of Medicine found that existing research has not yet encompassed the complex relationships between costs and quality. Further, what evidence there is does not expose

any distinct relationship between Medicaid rates and quality. Again, good quality and bad quality homes with comparable case-mixes function in the same reimbursement environment.

Size, too, is often discussed. The case for its positive relation to quality is made on the grounds of greater economies of scale that enable larger facilities to provide more services at lower cost, and with lower staffing levels (Greene & Monahan, 1981; Kosberg & Tobin, 1972; Lemke & Moos, 1986; Ullman, 1981; Wiehl, 1981). However, Lemke and Moos (1986) suggest that a price may be paid in terms of lower quality of interpersonal associations, as larger homes may be more depersonalized and routinized (see also Curry & Ratliff, 1973). Ullman (1981) found no significant difference between size and quality of nursing services.

Shortcomings of Regulatory Policies

Although the industry has taken many steps to pursue better quality (see for example, the American Health Care Association's "Quest for Quality" self-appraisal guide), the failures of some have necessitated the intervention of government regulation. A review of the past record of regulatory attempts in relation to quality of care is also discouraging. The explosive growth of the nursing home industry in the past two decades has been accompanied by an incredible mass of regulations, particularly in the last ten years. Obviously, despite the "best" efforts of industry and regulatory agencies, and the years they've had to get it "right," problems continue to surface.

A recent analysis by the U.S. General Accounting Office (GAO) (1987) provides alarming examples. The GAO studied four recent inspections, representing a four-year period, for the nursing homes participating in Medicare and Medicaid programs in November, 1985. This study included 8,298 skilled nursing facilities and 5,970 intermediate care facilities, for a total N of 14,268 nursing homes. They found that 71 percent of the skilled and 64 percent of the intermediate level certified homes were "out of compliance with one or more of the 126 skilled nursing facility standards and elements, or 72 intermediate care facility requirements nursing home experts judged most likely to affect patient health and safety," (1987, p. 15) in two consecutive inspections. Forty-one percent of the skilled and 34 percent of the intermediate level homes were noncompliant during three or more consecutive inspections. This means not only were the majority of homes out of compliance, but many continued to operate while noncompliant repeatedly over a period of time.

Extensive reviews of the failure of past regulatory efforts have been reported elsewhere (see for example, Butler, 1979; Institute of Medicine, 1986; Rango, 1982; Vladeck, 1980). Basically, regulatory procedures have been tied to state licensure and to Medicaid and/or Medicare certification requirements. Butler (1979) summarizes the problems of licensing and regulatory agencies as follows: insufficient funds, phlegmatic staff, unwieldy legal solutions, interagency fragmentation, and inappropriate standards and distribution of long-term care resources. She also notes the forces operating in the life cycle of any regulatory process, which eventually cause the agency to become weak and ineffectual, "the captive of the industry." This tendency is exacerbated by a lack of active public

support and interest. In the past absence of lesser intermediate sanctions (a matter addressed by the 1987 reform legislation), regulatory agency frustration has been fueled by their general inability to execute serious sanctions against nursing homes with poor records. The threat of closing down a delinquent facility is hollow if there is nowhere else for the residents to go.

WHAT COMPRISES "VERY GOOD" QUALITY OF CARE?

Nursing homes are in the demanding business of meeting both the physical and social needs, on a long-term basis, of groups of individuals with multiple chronic impairments. Facility administration and personnel are in an unenviable position: they must contend with an ever increasing number of regulations as well as tightening budgetary constraints, while giving the best care possible. It is frequently argued, with some degree of accuracy, that current reimbursement levels are inadequate. However, there are some homes which function in the same setting and somehow manage to provide exemplary care. What characteristics are associated with these facilities?

"Excellence"

Much has been written about excellence in the business world, whereby researchers examine successful business organizations. Tropman (1987) recommends the application of this approach to long-term care.

Attempts to isolate "excellence" in nursing homes provide additional insight into the definition of quality. An analysis of Ten Kerslaere, a model geriatric center in Belgium (Schildermans, 1987), and an ethnographic study of eight exemplary nursing homes in Illinois (Tellis-Nayak, 1988) identify several critical components. Schildermans focuses on (a) the combined role of management and staff attitudes in establishing a common philosophy, motivation, and an emphasis on rehabilitation; (b) an individualized approach to care; (c) support of social relationships; and (d) dynamic and creative architecture which inspires a more normal lifestyle while maintaining maximum privacy and comfort. Tellis-Nayak likewise identifies strategies found in all eight of the "excellent" Illinois homes, which were otherwise quite disparate. These factors are: (a) a distinct philosophy and a staff committed to it; (b) first-class management; (c) an atmosphere more like a "home," encouraging individuality; (d) involvement of the community; and (e) an organization incorporating the psycho-social model as well as the medical model. Anderson's (1987) analysis of nineteen Danish nursing homes also confirms the presence of the psycho-social model and better interpersonal relationships as distinctive features of the "excellent" homes.

Differences in nursing staff between excellent and poor quality homes were identified in a survey of residents (Stein et al., 1986b). Ten nursing homes were judged implicitly by three hospital staff members on a four point scale of quality, and a survey was conducted of 239 residents one month after admission. Residents' perceptions of how much the staff liked their work, whether the staff liked and respected the residents, how soon call bells were answered, and whether residents felt there was

at least one staff member special to them differed significantly between the excellent and poor quality nursing homes. (In each instance, the more favorable responses characterized the better quality homes.)

The fact that these studies share significant commonalities, despite the cross-cultural aspect, lends strength to the likelihood that these are important facets. Though previously neglected in quality of care evaluation, these reports suggest such factors as staff attitudes, community involvement, and respect and promotion of the individual should be considered.

The Consumer's Perspective

The individuals who perhaps have more at stake than any others in the issue of quality of care in nursing homes--the residents themselves--are seldom consulted about their experiences and perceptions. However, another approach to defining quality of nursing home care is to solicit their input and to think about what you yourself would desire if placed in that situation.

There are some poignant published accounts of institutional life by those on the "inside" (Horner, 1982; Laird, 1979; Newton, 1980; Tulloch, 1975). Bennett (1980) offers a particularly insightful description, coming as it does from a nursing home administrator after having himself admitted into a nursing home as a participant observer. His central theme is that quality of life must be a primary concern, with residents' needs analyzed from their perspectives; he argues the medical model alone is insufficient to meet those needs.

A landmark contribution to this body of literature is the study conducted by the National Citizens' Coalition for Nursing Home Reform in the early 1980's. Over 450 residents in 107 nursing homes participated in this project, which was specifically designed to solicit information about perceptions of quality care from nursing home residents. The factor named most often as an influence on the quality of care was the staff (e.g., their attitudes, qualifications, sufficient numbers, the way they interact with residents). Some of the other significant components of quality care identified by the participants were: environmental factors (e.g., "homelike," privacy, safety, quiet), food service, activities, medical care, having choices, and more community involvement (Holder, 1987; Spaulding, 1985). These aspects again go beyond the strict medical model.

Staffing issues also dominate a more recent study of nursing home residents and their families (Washington State Nursing Home Resident Councils, 1988). Among nearly 900 respondents, once again quality of care was strongly associated with how the residents are "treated as human beings. The attitudes and feelings of staff make a big difference in the quality of residents' lives" (1988:ii). Specifically, adequacy of staff in terms of numbers, training, attitudes, and supervision, consistency of care, and better communication were major concerns. Issues related to privacy and safety in the environment and food services were ranked next in priority.

The study cited earlier (Stein et al., 1986b), reporting residents' perceptions of nursing staff, confirms that the quality of staff-resident interaction is critical to the residents' image (as well as outside

judgements) of quality of care. Evidence indicates that the focus must be on the manner in which care is delivered (Day & Klein, 1987a). Another way to express this is to refer back to "process," but in a broader context than is usually associated with Donabedian. The essence of nursing home quality is process, not just the treatment itself, but rather, how the residents are treated. In a recent essay, Donabedian (1987) himself suggests the definition of quality may be broadened to include this dimension, in his words, "the manner in which a practitioner manages the personal interaction with the patient" (1987, p. 75).

Community Involvement

One of the factors which repeatedly crops up as critical to improved quality is community involvement (see Glass, 1988). Basically, we need to make nursing homes more accountable. The isolation of nursing home residents from the outside community has been well documented, as have the results of this public abandonment (see for example, Moss & Halamanderis, 1977). In his still timely article on institutional accountability, Kosberg (1974) delineates seven systems for making nursing homes more permeable to the community. Calling for greater involvement from each, he identifies: (a) fiscal (i.e., through reimbursement), (b) medical, (c) professional organizations, (d) professional staff within the institutions, (e) formal policy, (f) community services, and of course, (g) the clients, their families and friends.

As early as 1974, there was evidence that having visitors was highly correlated with more and better care in a representative sample of nursing

homes (Barney, 1974; Gottesman & Bourestom, 1974; see also Harel, 1981; Manard, Woehle, & Heilman, 1977; Retsinas, 1986; Wells & MacDonald, 1981). Unfortunately, many nursing home residents have no family or other visitors, or if they do, they may hesitate to complain about problems for fear of reprisal. Better awareness and access to state (and regional) ombudsman programs might ameliorate the situation. In Michigan, community councils formed by residents, family members, and local citizens have improved quality of care in several homes (Barney, 1987).

There is a role for community advocacy groups as well, as demonstrated by Williams (1986). Her case study documents the successful intervention by a group in California, who not only had to fight the owners of a nursing home providing poor care, but found it necessary to prod the government regulatory agencies as well.

Their experience offers another avenue for increased involvement: more public interaction with those regulatory agencies. Some states allow people making complaints to accompany the investigator. However, in most, the nursing home industry has been able to control tightly access by outsiders. Inspectors would gain strength and dignity with increased public support and interest to help them remain objective about the facilities they regulate. The list of deficiencies which they compile should be more widely available to the public. We could perhaps follow the lead of Kansas, where state law requires the publication of such citations in a generally circulated local newspaper (Butler, 1979). In California, consumers can now call up a statewide computerized system of health facility licensing records. Better access to this information could help mobilize community pressure on the facilities for improvement.

Recognizing the vital necessity of community involvement in lessening resident abuse and neglect, Doty and Sullivan (1983) review five strategies: (a) friends and family associations, (b) volunteer ombudsmen, (c) community receiverships, (d) private legal action, and (e) mandatory abuse reporting by licensed professionals. They conclude that such community efforts are effective in terms of "case-finding" and cooperative mediation, but the potential is constrained by their limited authority. They advocate a new judicial entity, the "Institutionalized Persons' Protection Board," consisting primarily of community representatives, that would "extend jury principles into...administrative law."

Quality of Life

As noted in Chapter 3, our conception of quality and the level we demand for our institutionalized elders is essentially a political decision. Thus far, we've built our policies incrementally with no clear consensus on our real ultimate aims. The traditional acute-care medical model for assessing quality focuses on the physician and protocols. It is increasingly clear that this approach is inadequate to address the unique aspects of the nursing home setting, as for example, when it indeed becomes a long-term "home" for residents.

A compelling argument can be made that in these facilities, quality of care is inseparable from quality of life. For frail individuals, severely limited by their dependencies, the essence of life is largely determined by the quality of caring in the institutionalized environment. Psychosocial care is positively associated with improved physical func-

tioning (Rohrer & Hogan, 1987). The study of Danish nursing homes found that quality of life was the critical factor separating the excellent homes from the ordinary (Anderson, 1987). Ramian (1987) suggests a "resident oriented nursing home," with a focus on living rather than nursing. After experiencing life as a resident, a nursing home administrator (Bennett, 1980) concludes nursing homes must deliver care that honors all of the resident's needs as equally important. He offers the following principle: "Empathy + Philosophy + Gerontological Environmental Dynamics + Management Functions = Patient Well-Being and a Good Quality of Life," explaining:

When the empathetic feelings of the staff (the foundation of good care) are motivated by the philosophy of the nursing home, and the staff understands gerontological concepts and environmental factors, and when the management functions are designed to recognize the total needs of the patients, the patients' well-being and quality of life will be enhanced. (p. 169).

According to the long-term care standards of the Joint Commission on Accreditation of Health Care Organizations, quality of life pertains to the degree to which "independent expression, decision making, and action is preserved" (1988, p. 51). The Institute of Medicine clearly ties the quality of life to the quality of care, suggesting that a required condition of participation should state "residents shall be cared for in such a manner and in such an environment as will promote maintenance or enhancement of their quality of life without abridging the safety and rights of other residents" (1986, p. 81). They strongly recommend that quality of life must be included as a regulatory focus. This recommendation has now been enacted as part of the 1987 reform legislation.

While advocates of this direction are growing more numerous, this idea is not new. More than a decade ago, for example, Sherwood (1975, p. 63) stated quality of institutional care should be examined "in terms of the extent to which 'care' maximizes quality of life (including physical, social, cognitive, and emotional functioning as well as feelings of life satisfaction)."

Until recently, regulatory quality assurance systems have focused primarily on structural capacity and resident charts, which reveal almost nothing about the quality of day-to-day staff/resident interaction, and the general atmosphere of the facility. As recognition dawns that this focus is unsuccessful in assuring quality, resident care inspections are now relying less on paper compliance and more on observation and resident interviews. States are moving in this direction with the adoption of new resident and outcome oriented licensure surveys (Morford, 1988). This change was developed in 1982 by the Health Care Financing Administration specifically to place greater emphasis on direct resident care.

SUMMARY

There are more "bad" nursing homes than very good ones. The majority of nursing homes are not in compliance with all the federal and state regulations deemed most critical to resident well-being (U.S. General Accounting Office, 1987). Despite some studies of various factors in relation to quality, there has been no systematic documentation of the characteristics of the negative outliers--the very bad homes. However, the few analyses of excellent homes, as well as surveys of residents and

their families, illuminate by implication what characterizes the poor facilities.

While critical, effective regulation alone cannot ensure high quality of care and life for residents. The literature and the Institute of Medicine (1986) identify additional essential factors: more consumer and community interest and involvement, and "positive motivation on the part of the owners and managers of nursing homes, and well-trained, well-supervised, and properly motivated staff" (p. 171).

Clearly, the nursing home is a specialized setting in which quality of care and quality of life are uniquely and tightly intertwined. Residents and their families, as well as researchers, urge that quality of care should go beyond the traditional medical model and include an environment that supports autonomy, psycho-social aspects such as staff attitudes, and continuity of ties with the community.

CHAPTER 5

A CONCEPTUAL MODEL OF NURSING HOME QUALITY

A review of literature reveals an abundance of fragmented pieces of knowledge about nursing home quality. A major weakness, however, is the lack of a comprehensive framework to facilitate effective use of this information. Developing such a conceptual framework entails not only a specification of what nursing home quality is, but to be complete, it should also portray the process through which that quality is achieved. Such a complex phenomenon cannot truly be understood without placing it in the larger context. Moos and Lemke (1985) have noted that past evaluation efforts tend to proceed as though nursing home care happens in a little black box, looking only at inputs and outcomes; no one has demonstrated the passage. In the spirit of aiming for a more complete understanding of nursing home quality, the following model attempts to illuminate that passage, as well as clarify the construct of nursing home quality.

CONCEPTUALIZATION OF NURSING HOME QUALITY

The term "nursing home quality" is used intentionally to distinguish this conceptualization from the more narrow and traditional "quality of care" concept. This model of nursing home quality must also mesh with the goals of nursing home care identified earlier. To reiterate, they are:

1. Maintain a safe and clean environment;
2. Maximize independence in functioning for each individual.
3. Obtain the best possible control and maintenance of each resident's physical/organic health conditions.
4. Promote positive feelings, self-confidence, and dignity among residents.

A global concept or construct traditionally corresponds with some complex phenomenon (Mayer & Greenwood, 1980), that is, one with multiple dimensions. The global concept is not directly observable. Therefore, after choosing a global concept (in this case, nursing home quality), it is necessary to first identify the dimensions which comprise it. Only then should the measurable indicators be specified as an operational definition.

This process of conceptual clarification has been largely overlooked in the quality of nursing home care arena. Synthesizing existing knowledge, this author proposes the following conceptual model as an effort to rectify this significant gap in the existing literature. It is proposed that the above goals can be achieved through four major dimensions of nursing home quality: (a) staff intervention, (b) nutrition/food service, (c) physical environment, and (d) community relations.

The goal of a safe and clean setting is captured in the physical environment dimension, and is achieved largely through staff intervention, (i. e. , custodial efforts, upkeep, infection control). The goal of maximal functional independence can be pursued on several fronts: the design of the physical environment, the attitudes of the caregivers, solid nutri-

tion, and, at times, through importing outside therapists when necessary. Likewise, good control of health conditions requires a team effort, and results from good in-house medical care and supervision, nutritionally adequate meals, and dependable and concerned support from medical professionals in the community. The promotion of self-esteem is also multi-faceted and relates to all four dimensions. For example, permitting personal possessions and privacy in the physical dimension, having supportive and empathic staff attitudes, providing a pleasant dining experience, and continuing ties with the community are likely to strengthen this area.

Of these four major dimensions, staff intervention, which includes both the skill and appropriateness of the care provided, as well as the quality of the interaction, has the most potent impact. Each of these four dimensions can be divided into two "sub-dimensions" as listed in Figure 1. It is proposed that indicators for each of the eight sub-dimensions can be combined to make an effective and comprehensive quality measure.

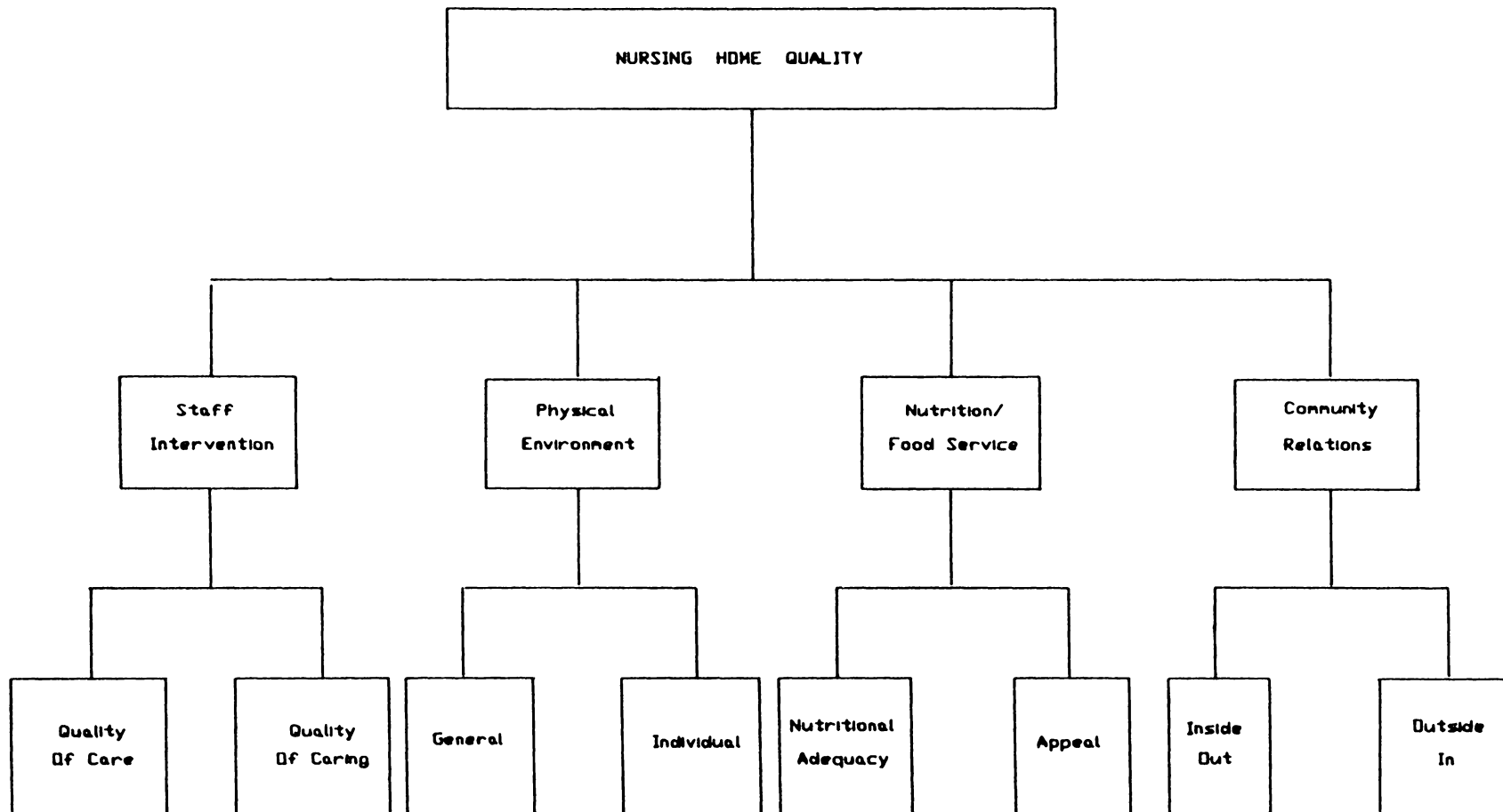


FIGURE 1
CONCEPTUAL MODEL OF NURSING HOME QUALITY

Staff Intervention

This dimension encompasses both the treatments and care given and the tone of staff/resident interaction. In other words, the actual physical care provision is differentiated from the way that care is given--whether with a kind word, warmth and good humor--in terms of "quality of care," and what I call "quality of caring."

Quality of Care

Traditional quality assessment has focused almost exclusively on this area--that is, the quality (skill and appropriateness) of the medical and physical care. Indisputedly this is of tremendous importance, and with the current trends toward admissions of more debilitated residents (due to an older population, Medicare's DRGs and more widespread preadmission screening), the medical demands will only increase. This category incorporates a wide range of variables such as whether relevant therapies and treatments are consistently given as needed; whether catheters, physical and psychotropic restraints are used or abused; and whether staff members are adequately trained to conduct their duties. Outcome variables feature here too, for example, the incidence of urinary tract infection, which is the most common infection seen in nursing homes (with 15 to 50 percent prevalence), and the most frequent cause of sepsis. The use of indwelling urinary catheters contribute to the presence of these infections (Norman, Castle, & Cantrell, 1987).

The level of physician involvement is also included here. Although they generally exert a weak presence in the daily functioning of the home (Kayser-Jones, 1981; Mitchell, 1982; Mitchell & Hewes, 1986; Retsinas, 1986; Siu, 1987; Tisdale, 1987; Vladeck, 1980; Wiener & Kayser-Jones, 1989), at least their perfunctory participation is required, and monthly or bi-monthly visits are mandatory for Medicaid residents. [A major part of their involvement is the requirement that the M.D. must repeatedly certify (every 30 days for skilled care, every 60 days for intermediate level) that each Medicaid resident is appropriately placed at that level of care. This regulation encourages suspicion that a main interest of the regulatory process is to avoid the misuse of public funds, as well as concern for the resident.]

Quality of Caring

As in the case of administrative attitudes, the quality of staff/resident interaction has rarely if ever been specifically articulated in any quality assessment, but again an extensive review of a broad range of literature reiterates this theme as an equally, if not more crucial element of the nursing home experience than the actual care received (Day & Klein, 1987b; Gubrium, 1975; Pillemar, 1988; Stein et al., 1986a; Ullman, 1987; Wiehl, 1981). As residents become somewhat isolated and dependent in varying degrees, they inescapably rely increasingly on staff to meet psychosocial needs while providing intimate physical care. Diamond (1986) eloquently describes:

Much of what [nursing assistants] do does not fit into the chart as it is presently constructed...[what] might be called caring work. The social relations involved in holding someone as they gasp for breaths fearing that it might be their last, or cleaning someone, or laughing with them so as to keep them alive,...helping them hold on to memories of the past while they try to maintain sanity in the present--these are constant, essential and difficult parts of the work (p. 1291).

For those residents who will never return home, the "way they are treated on their way to the grave--with kindness, courtesy, and consideration--will always be more important than whether they arrive there a little fitter or later" (Day & Klein, 1987b, p. 339). The residents themselves state this whenever anyone asks (DiBerardinis & Gitlin, 1980; Spaulding, 1985; Stein et al., 1986b; Washington State Nursing Home Resident Councils, 1988).

Physical Environment

This conceptualization departs from the broader idea of environment put forth by Moos and Lemke (1985), and others. Rather than include organization, etc. as part of "environment," this dimension concentrates on the features of the actual physical (or "built") environment.

General Level

Under this sub-dimension fall the common decencies which could be said to be generally desirable to all, in or out of a nursing home, and at any age, i. e., considerations of safety and cleanliness. A safe and clean setting is an essential prerequisite to good nursing home quality. This

sub-dimension has been a major target of regulations, and these basic needs must be met before attention can appropriately be directed toward the higher needs (as per Maslow's hierarchy of needs). Unfortunately, while much progress has been made (e.g., in fire safety), many homes still seem unable to manage to maintain clean and reasonably odor-free facilities. An administration and staff strongly committed to these goals can do a lot to present a more appealing environment for residents and visitors.

Good illumination, with reduced glare, is another component of safety. The continuum of safety of the nursing home environment can also be examined in terms of the steps taken to provide safe outlets for confused wanderers, instead of relying on overuse of restraints; some helpful environmental interventions have been identified such as enclosed courtyards and special lounge areas (Hegeman & Tobin, 1988; Hiatt, 1985; McGrowder-Lin & Bhatt, 1988).

Another aspect likely to be desired by all is a degree of quiet. Institutional walls often do not provide sufficient auditory privacy. Consequently, residents are exposed to music or verbalizing of others which they may find annoying or offensive, and particularly distressing when trying to sleep.

Individual Level

If the above items might be labelled "life safety" considerations, for the most part, this category could be said to target the often overlooked "mind safety" aspects of the environment. Marlow (cited in

Minkler, 1984) uses this term to discuss the need for normalizing the facility atmosphere as much as possible.

These aspects of the environment may be adapted to meet individual preferences. These considerations should be extended to all residents, but how the residents utilize them will vary from person to person. Studies suggest, for example, that residents vary in the amounts of privacy and social interaction they find desirable (Firestone, Lichtman, & Evans, 1980; Kayser-Jones, 1986), and even in the importance they attach to personal possessions (Fawcett et al., 1980; Harel, 1981; Harel & Nagpaul, 1979). However, to have some degree of privacy and to maintain some of the treasured possessions collected over a lifetime would seem to be basic rights. It is not unreasonable to hypothesize that most residents might prefer a homier atmosphere as opposed to living in a sterile, hospital-like room for a prolonged period of time. There appears to be a side benefit to having personal possessions: residents surrounded by such items may be perceived in a more positive light by staff than those without any (Gottesman & Bourestom, 1974; Millard & Smith, 1981). Unfortunately, nursing home residents are often routinely stripped of their possessions upon admission, and jammed into "cost-efficient" rooms, as small as regulations allow, with usually at least one roommate. Again, the voices asking for a little private and personalized space are there, if we as a nation care to listen. (Berdes, 1988; Bowker, 1982; Horner, 1982; Institute of Medicine, 1986; Laird, 1979; Spaulding, 1985; Tulloch, 1975; Washington State Nursing Home Resident Councils, 1988).

Alternative models are possible: in Denmark, for example, an adjustable bed is the only furniture provided; residents are responsible

for furnishing the rest of the room with their own belongings (Millard & Smith, 1981). Furthermore, 90 percent of Danish nursing home beds are in single rooms, and these rooms can be locked for privacy (Andersen, 1987; Krause, 1982).

The issue of whether residents should be able to have a key to their rooms has caused much controversy, due to regulations and concern over confused residents and the need to provide consistent supervision. Some homes and some states are experimenting with the idea of providing each resident with at least a small lockable box or drawer, to which only they and the Director of Nursing carry the key. In addition to giving the residents a greater sense of control, this procedure may also prevent a portion of the theft which sometimes goes on in nursing homes. More attention also should be given to providing privacy for residents having visitors, and the careful use of curtains and drapes during routine daily personal care, to ensure the dignity of the resident. These kinds of elements are in fact included in the federally mandated residents' rights.

Another seemingly basic provision, which has somehow been overlooked in most past nursing home design, is constant access to a window with a view. Most double rooms are arranged so that only one person has clear access to the one window, and if privacy curtains are pulled, the resident nearest the door is closed in. Other individualized adaptations can be made in the home, such as easy to open door handles, color coding to help confused residents, and room to maneuver a wheelchair. These are measures to facilitate independence, and make the environment "user-friendly." Bowker (1982) categorizes a number of ways to humanize the nursing home environment.

Nutrition/Food Service

Meals assume tremendous importance in the daily lives of nursing home residents. Food service is generally ranked near the top when residents and their families are queried about their priorities and concerns (Bennett, 1980; DiBerardinis & Gitlin, 1980; Jarboe & McDaniel, 1985; Spaulding, 1985; Washington State Nursing Home Resident Councils, 1988). Fawcett and her associates (1980) found institutional constraints associated with food were one of those most highly correlated with low resident satisfaction. A connection between food services and quality measures is apparent even in one of the earliest studies (Linn, 1974), and the importance is cited by the Institute of Medicine (1986). This dimension too can be split into two sub-dimensions.

Nutritional Adequacy

A number of regulations address the necessity for appropriate dietary provisions. Again, meeting the basic nutritional needs of the residents is fundamental toward keeping them alive, and can ameliorate some disease processes, and improve immune systems and skin conditions. Nutritional adequacy signifies offering nutritionally balanced meals in accordance with therapeutically modified diets when appropriate, both in terms of restrictions such as low salt or diabetic, and manner of feeding (e.g., soft or pureed).

Nutrition is also critical in terms of preventing decubitus ulcers. One recent study showed 59 percent of their resident sample had some de-

gree of malnutrition, and those with decubiti were all in the severely malnourished group, representing a significant correlation (Pinchcofsky-Devin & Kaminski, 1986). Also included here is the encouragement of liquid intake to assure proper hydration, since dehydration is a common fluid and electrolyte disturbance in the aged.

Appeal

Beyond meeting the basic nutritional needs comes the additionally important manner of presentation. This too is in a sense a basic need: to encourage adequate consumption, the food must appeal to the residents. Adequate dental health, including use of dentures when appropriate, is vital to insure residential enjoyment of meals. Other aspects of appeal include an appetizing array of food served at the proper temperatures; in a setting that stimulates the appetite (i.e., a dining room arrangement where prompt care is taken of any incontinent residents); and with appropriate help and care taken to promote consumption (i.e., helping residents get cartons open, butter bread, "fix" baked potatoes, or even feeding if necessary). These labor-intensive efforts can be expensive and difficult to provide, as they require a lot of time and motivation. Eating dependencies, often associated with multiple impairments, are significantly related to early mortality (Siebens et al., 1986).

Community Relations

The importance of the community has already been spelled out in Chapter 3. Here the two sub-dimensions are: (1) "inside-out" (i.e., residents leaving the facility for various activities), and (2) "outside-in" (i.e., visitors and other evidence of interest on the part of the outside community).

"Inside-out"

A vital aspect of the "inside-out" is supporting associations with friends and family members; nursing home residents assign great importance to continuing such ties, especially with preferred visitors (Harel, 1981; Harel & Nagpaul, 1979), and close interpersonal relationships can mitigate some of the negative effects of relocation (Wells & MacDonald, 1981). Results of resident surveys indicate a strong desire that all residents should have an opportunity to get out of the facility at least monthly (Washington State Nursing Home Resident Councils, 1988). Promoting trips home to visit family would be one way to accomplish this. In addition to in-facility activities, there are also many ways nursing home residents could participate in outside community activities: attending services at their old churches, involvement in charity work, participating in outside classes. These efforts promote better self esteem and lessen feelings of isolation among residents, as they can still feel a worthwhile part of the larger community.

A less commonly articulated component of this dimension is the effort of the administrator and other staff members to get out into the community and help educate the public about the realities of the nursing home. Peterson and Thompson (1983) advocate the responsibility of the administrator in particular to become involved in "public relations." It has fallen to the facilities to help eliminate the pervasive misunderstandings and stereotypes among community members, which ultimately affect the quality of the nursing home.

"Outside-In"

Actions as described above are two-sided: facility efforts to make contact with the community can create opportunities for the community to become involved with the facility--what Barney (1974; 1987) calls "community presence in nursing homes." Likewise, steps taken by the facility to encourage family ties result in more visitors coming into the home. (See Brody, 1986; Pratt, Schmall, Wright, & Hare, 1987, for useful reviews.) Rubin and Shuttleworth (1983) suggest ambiguity over the subdivision of tasks discourages family members from being involved to the fullest, underscoring the importance of good communications between staff and family members. Clarke (1980) improved communications between visitors and nursing home administrators through use of visitor evaluation forms and the organization of FRAT--Friends, Relatives, and Administration Together. The ways they can work together are almost endless, including community councils (Barney, 1987), and making the home available for other uses (child and/or adult day care, meeting rooms, etc.).

An active volunteer program can provide resources that are a much needed supplement to the paid staff. Organized programs that bring young adults in for visits can improve residential functioning and self-esteem (Newman, Lyons, & Onawola, 1985). All of these help make the institution more permeable (to use Kosberg's term) to the community and increase accountability.

Every nursing home has its own personality, which is shaped in part by community expectations. Studies in several small communities indicate that each community has its "own distinctive culture" of perceptions about nursing homes, so each facility functions in subtly diverse situations (Gordon, 1983), which contribute to the individuality of the home. If respected members of the community demonstrate an interest in the residents and what goes on in the nursing home, everyone involved begins to feel a little more positive and dignified about the process--staff, residents, and families.

IDENTIFICATION OF THE FACTORS AFFECTING NURSING HOME QUALITY

A comprehensive model should also delineate the major factors influencing nursing home quality, to place it in the larger context (Figure 2). Most prominent among these are the commitment, attitudes, and policies of the administrator and supervisory nursing staff, in terms of rehabilitative orientation versus custodial, psychosocial versus medical emphasis, a focus on the individual, and responsiveness to and respect for residents and staff. Intervening variables include resource allocation, staff attitudes, and staff/resident ratio.

Additionally, since nursing homes do not function in a vacuum (though much of the research neglects this fact), some of the exogenous constraints and "enablers" are portrayed. These include the owner's policies, which may be driven by resistance to change, societal attitudes, and regulatory systems. The level and sources of funding, especially Medicaid, also play an important role. The larger economic environment in which the nursing home functions is recognized as well.

These groups of factors are discussed in the following sections. Rationales for their inclusion, based on a synthesis of the literature, are detailed. Though beyond the scope of the present project, it is believed that eventual testing of this entire model would be feasible. In any event, this larger model helps place the current quality discussion and analysis in context.

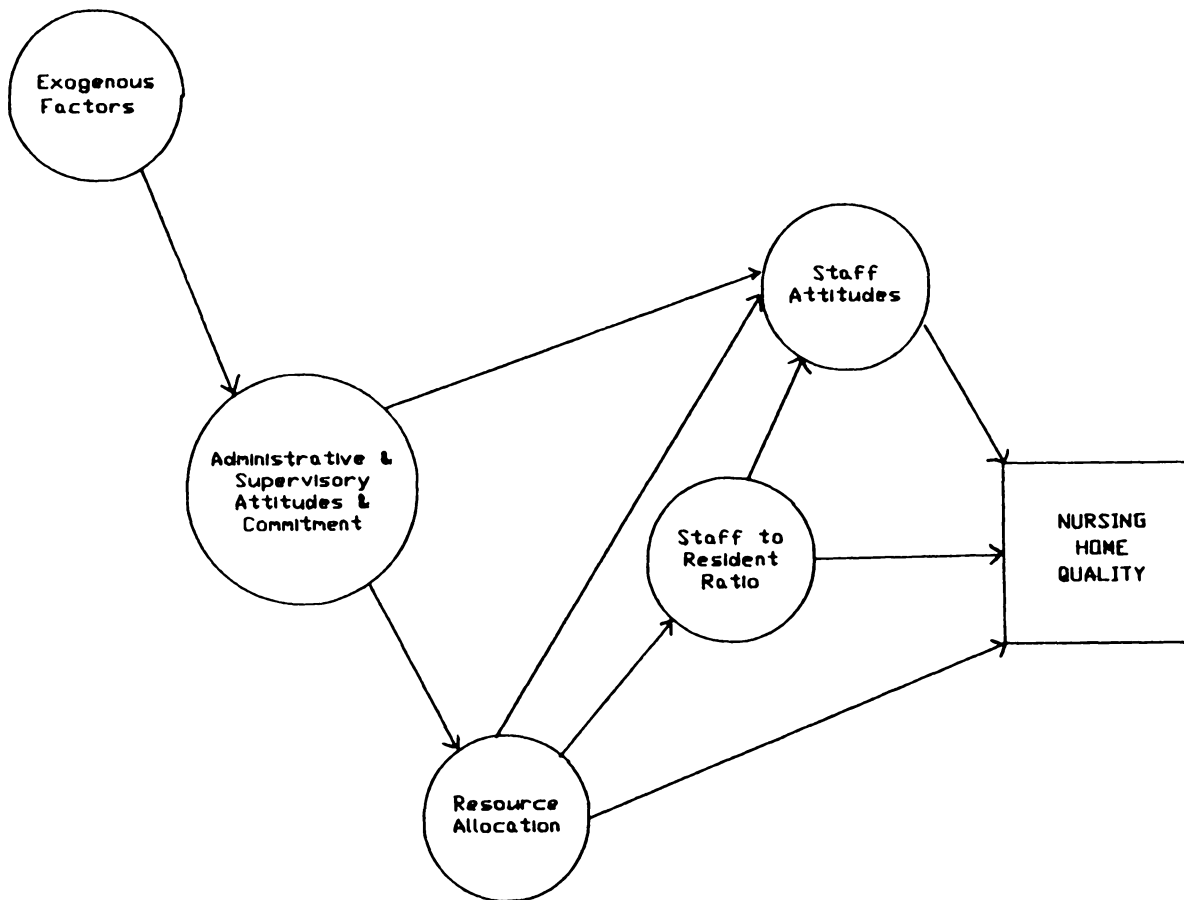


FIGURE 2

FACTORS AFFECTING NURSING HOME QUALITY

Exogenous Factors

This category incorporates several components that significantly affect the attitudes of both administrators and staff. Societal attitudes in general are another external factor that exert an influence, but they will be considered at the community level.

State of the Economy

The state of the economy obviously wields a massive force in shaping what happens in nursing homes. It affects the amount of funding available to government programs that regulate and reimburse nursing home care. When money is tight, as it is now with the large federal deficit, the overall emphasis shifts from issues of quality and access to cost containment. Shifts at this level may have a general effect on the quality of all nursing homes. At another level, the supply of nursing personnel and the local unemployment rates factor into staff turnover (Halbur, 1983; Knapp & Harissis, 1981; Waxman, Carner, & Berkenstock, 1984). Turnover rates have consequences for quality, as consistency of care has been demonstrated to help improve care. This category corresponds to what Hage (1980) calls the "opportunity structure," the larger setting in which organizations are in competition for workers.

Government Regulatory and Reimbursement Policies

The increase in nursing home regulation has forced significant improvements in the nursing home in the last fifteen years. However, there is still a long way to go. Generally, whatever have been set forth as "minimal requirements" are embraced by the providers as the maximum offered. Further, traditional regulation has focused almost exclusively on structural capacity; accordingly, the facilities have followed this lead. It is only very recently that awareness is growing among all concerned that quality of life issues are at least as important.

Regulatory agencies also influence nursing home care through supply limitations, sanctions, and the systems and levels of payment (Institute of Medicine, 1986). Many of these aspects vary from state to state; while all the nursing homes in a given state must function under similar arrangements, their governmental environment may be quite different from other states. The bed supplies have generally been limited by certificate of need policies, which while desirable from a cost-effective point of view, also limit the potential of a more competitive market (Bishop, 1988). In such a market system, consumers could conceivably go elsewhere if care were poor in a specific home, and the government would have more freedom to close bad facilities if necessary. The past absence of intermediate sanctions accentuates this problem.

Several researchers have examined the relationships of reimbursement systems to nursing home care, and the impacts of various case-mix and incentive-based schemes (see Schlenker, 1986 for a review; see also Grimaldi, 1984; Nyman, 1985; Schlenker & Shaughnessy, 1984; Shaughnessy &

Kurowski, 1982, Shaughnessy et al., 1980; Smits, 1984; Thorburn & Meiners, 1986; Ullman, 1984, 1987). Possible differences between prospective payment, now used in 37 states (Rosko, Broyles, & Aaronson, 1987), and retrospective systems have also been analyzed. Flat-rate or prospective systems are associated with lower daily costs (Harrington & Swan, 1984; Schlenker, 1986). The Institute of Medicine (1986) noted the need for continuing effort to develop sophisticated new ways to tackle the study of these complex relationships.

Other Available Long-term Care Funding

It is hypothesized that long-term care funding options available locally can also indirectly affect the quality of nursing homes. Such options could either (a) create more demand for institutional care through private insurance coverage or lack of community-based alternatives, which could potentially weaken the level of accepted quality, or conversely, (b) if continuing care communities and home-based services, or "life care at home," the new experiment that combines the premise of the former at the latter setting (Tell, Cohen, Larson, & Batten, 1987) are accessible, the nursing home may be subject to greater competition, which could force improvements in quality.

Ownership Policies

The policies and priorities of the owners, and intermediary management if any, are critical to nursing home performance. Differences between

free-standing and hospital-based facilities have been explored, since costs of the latter tend to be significantly higher (Schlenker, Shaughnessy, & Yslas, 1983). Case-mix appears to explain much of the cost disparity, and while hospital-based homes have slightly higher quality medical care, free-standing homes performed relatively better on some psychosocial aspects. The consequences of the presumed profit-maximizing philosophy of proprietary homes versus the performance of not-for-profit, as well as chains versus individually-owned homes, have already been discussed.

Administrative and Supervisory Commitment, Attitudes, and Policies

Within the home, it is hypothesized that the commitment, attitudes and policies of the administrator and Director of Nursing are central to the residential experience in a given home, as reflected in the philosophy, management, and organization of the facility.

Philosophy and Commitment

It is the administrator and Director of Nursing who determine the ambience of a facility. Although it has never been clearly singled out in any relational model or framework of quality of nursing home care, the importance of this component is mentioned repeatedly in a wide range of relevant literature (DiBerardinis & Gitlin, 1980; Gordon, 1982; Gustafson, 1983; Kane, R.A. & Kane, R. L., 1987; Linn, 1974; Peterson & Thompson, 1983; Poppleton & Cox, 1985; Schildermans, 1987; Sundram, 1986;

Tellis-Nayak, 1988), leading to its prominent position in this model. The way the aides and other personnel feel about their work and deal with the residents depends in large part on the mood that has been established by those at the top. A commitment to excellence at that level can filter down to the residents; without it, even the most dedicated nursing aides can't carry it off. This characteristic administrative philosophy is congruent with the findings on corporate management excellence (Peters & Waterman, 1982), and is accentuated by the relatively flat structure of the nursing home organization, which has few middle-management layers. The vital role played by this level also explains why there is so much variation between homes otherwise comparable in terms of available funding, ownership, and so forth. It is proposed that managerial differences account for the coexistence of low cost, high quality homes as well as high cost, low quality homes. For homes owned and managed by chains, this philosophical commitment must also be present at the corporate level.

Management characteristics likely to promote good quality include:

(a) more rehabilitation-oriented, as opposed to custodial maintenance; encouraging independence whenever possible (Dixon, 1986; Fawcett, Stonner, & Zepelin, 1980; Gottesman & Bourestom, 1974; Gustafson, 1983; Harel & Nagpaul, 1979; Hay, 1977; Lieberman & Tobin, 1983; Minkler, 1984; Schildermans, 1987);

(b) awareness of residents' psychosocial, as well as medical needs (Anderson, 1987; Bennett, 1980; DiBerardinis & Gitlin, 1980; Institute

of Medicine, 1986; Ramian, 1987; Rohrer & Hogan, 1987; Tellis-Nayak, 1988);

(c) an individualized approach that incorporates personal choice and residential autonomy whenever possible* (DiBerardinis & Gitlin, 1980; Dixon, 1985; Edelson & Lyons, 1985; Schildermans, 1987; Tellis-Nayak, 1988).

(d) interactive; responsive to input from residents and their families (Washington State Nursing Home Resident Councils, 1988) and staff from all departments (Peters & Waterman, 1982; Waxman et al., 1984); and

(e) perception of employees as the greatest resource (see next section).

* It should be mentioned that one English study (Booth, 1986a, 1986b) found no relationship between institutional regime (in terms of emphasis on individuals and independence) and resident outcomes, based on the measure developed in that research, but there are a variety of possible explanations for that: weaknesses of the instrument; all relevant factors were not considered; differences between regimes among homes in England may not be sufficiently pronounced.

Attitudes and Management

Studies of nursing personnel in long-term care facilities illustrate the importance of management style and the desire for supportive supervision (Burpee, 1988; DiBerardinis & Gitlin, 1980; Poppleton & Cox, 1985; Rader, 1988; Stryker, 1982; Waxman et al., 1984). The way the administrator and supervisors treat their staff has a significant impact on quality. Staff support has been called the "single, cheapest, quickest, best way to improve quality of care" (Rader, 1988).

If the staff are treated with respect, obtain necessary support, and are encouraged to become creatively involved with individualizing care, they tend to show this in their work and the way they deal with residents. Herzberg's 2-factor theory accounts for this relationship, holding that management must provide "satisfiers" or motivators (e.g., performance recognition, promotions), as well as more material assets such as job security, clear supervision, and decent pay (Gordon, 1983; Smith, H. L., 1980). A good work environment is one in which workers feel they make worthwhile contributions, and also meet their personal needs (Peterson & Thompson, 1983). Gordon (1983) argues that two hallmarks differentiate excellent as opposed to ordinary organizations: (a) workers know management cares about them, and (b) they are allowed to be their own unique selves. Wages and benefits are important, but this kind of intangible support is even more fundamental to keeping satisfied employees and providing good, consistent care (Waxman et al., 1984).

Solid emotional and financial support are likely to ameliorate the tremendous daily stress under which nursing home staff function, thereby

lessening the likelihood of resident abuse (Sundram, 1986) and the rates of staff turnover. Excessive turnover has long been a problem in nursing homes, with rates of 70 to 400 percent--well above the 50 percent termed problematic for any organization (Halbur, 1983; Tellis-Nayak, 1988). While some fresh "blood" can be beneficial (Knapp & Harissis, 1981), most experts agree that constant changes in staffing bode poorly for quality of care and residential peace of mind. It takes time to build a relationship with a resident and develop the most effective way of getting the daily tasks done with regard to resident idiosyncracies.*

Policies and Organization

Administrative and supervisory policies are reflected in how the employees are treated. Additionally, the administrator and Director of

* Halber and Fears (1986) report that turnover was actually higher in better quality homes, contradicting the traditional body of literature in this area. However, these findings are suspect because their measure of quality is based solely on the number of deaths and number of discharges (i. e. , they assume low death rates and high discharge rates indicate better quality). This assumption is problematic because other evidence shows the bulk of discharges are to hospitals or other nursing homes, and do not necessarily represent rehabilitation as they suggest. Only 22-28 percent of discharges are back to a family home in the commu-

nity (Lewis, Cretin, & Kane, 1985; Retsinas & Garrity, 1986; Vicente, Wiley, & Carrington, 1981).

Nursing control the structural organization of the staff, or the "organizational climate" (Myrtle & Robertson, 1979), which can also directly affect the quality of care. Although research in this area has been neglected, it is beginning to be apparent that there are alternative ways of organizing care provision which can lead to demonstrable improvements (Novick, 1980). Three examples are: using resident-based instead of task-based assignments (Knapp & Harissis, 1981), teamwork (Myrtle & Robertson, 1979), and differentiating between direct care (meeting physical needs of residents) and unit (indirect) care aides (changing beds, taking residents to activities...) (Mason, 1988). Brannon and her colleagues (1988) examine the possibilities of job redesign for nursing home staff, based on a job diagnostic survey. Residents indicate they prefer staff to be assigned at least two to four weeks to facilitate consistent care (Washington State Nursing Home Resident Councils, 1988). In their excellent guide for nursing home supervisors, Edelson and Lyons (1985) discuss in detail the practical application of some suggested changes.

Another recently advocated aspect of organization is to set apart a separate unit for those with severe dementia. This concept is so new it has not yet been properly evaluated (Ohta & Ohta, 1988), but when well-planned, this can potentially concentrate the staff best-equipped to deal with the special needs of these residents, and appears to benefit both the cognitively impaired and the cognitively intact (Benson, Cameron, Humbach, Servino, & Gambert, 1987; Kane, R. A., & Kane, R. L., 1987).

Resource Allocation

The philosophies of the administrators will guide their use of available resources. While there will always be some fixed expenses, every administrator has some leeway in the distribution. Their attitudes about their employees are reflected in how staff funds are used; extremely low salaries for example may seem to save money, but should be weighed against the greater expenses associated with the probable high turnover. Each staff opening means costs to recruit, interview, and train new replacements, and new workers are also not likely to be as efficient in the early months of employment. Hiring a new nursing aide has been estimated to cost as much as four months of the old aide's salary (Schwartz, 1974). Additionally, nursing aides who receive near minimum wage for full-time hours may find it necessary to hold two jobs to earn a decent income (Burpee, 1988; Diamond, 1986). I propose this sort of strain is likely to have a negative effect on quality.

The purchase of cheap or inadequate quantities of linens and other supplies also results in lower quality of care, causing stress to staff members as they scramble around to scrounge up vital supplies (Wilson & Patterson, 1988). Unfortunately, this is probably a common occurrence: 74 percent of a sample of nursing home aides in New York believed their facility was inadequately supplied with linens, Chux (used for incontinence), and related items (Nursing Home Community Coalition of New York State, 1988). As Poppleton and Cox (1985) state:

Nothing can be more consistently disruptive than to have to "beg, borrow, or steal" the linen, treatment supplies, medications, or personal care items essential for patient care. Professionals or

paraprofessionals who have any pride in their capacities to provide needed services will not long put up with such artificial restrictions, poor planning, or power-motivated economies in the physical environment...Supplies are needed for service. It is that simple (pp. 43-44).

Another aspect is the wise use of employees (Gordon, 1983) in the sense of developing job assignments with different staff strengths and weaknesses in mind. Leiken, Sexton, & Silkman (1986) designed a model using linear programming techniques to examine quality-cost tradeoffs of various staffing patterns and task assignments. The model is sensitive to resident needs, labor availability and wage rates, and can be used to evaluate new technology.

This component can also include the caliber of in-service training for staff. The priority assigned by the administration to such educational efforts is reflected in the quantities and quality of staff and time allocated for these purposes.

Staff Attitudes

While subject to administrative policies and philosophies, the attitudes the staff bring with them also obviously play a giant part in the presentation of care (DiBerardinis & Gitlin, 1980; Dixon, 1986; Institute of Medicine, 1986; Washington State Nursing Home Resident Councils, 1988; Ullman, 1985; Weihl, 1981). Gustafson (1983) suggests four major influences on the formation of staff attitudes: (a) societal values (reflecting the often negative stereotypes found generally); (b) organizational behavior (discussing it mainly in terms of Goffman's "total institutionalization"); (c) available technology (questioning why

more is not used in nursing homes, including resident assessments); and (d) professional values (citing conflicts between different departments). A long history of social psychology literature proposes a linkage between attitudes and behavior (see for example, Fishbein & Ajzen, 1975), and some such links have been documented in terms of nursing home staff/resident relationships (Kahana & Kiyak, 1984). The facility staff, and particularly the nursing aides who provide at least three quarters of the direct care to residents, face an incredibly stressful and demanding job with too little support in the way of wages, training, and respect. Yet they are the ones with the greatest direct influence on the quality of life for the residents--the ones who make the difference. Rader (1987) and others (Hoffman, Platt, & Barry, 1987; 1988) note the impact of staff attitudes on the confused elderly and conclude staff attitudes are contagious. Ullman's (1987) work indicates that, compared to capital-intensive areas, improvements in labor-intensive arenas such as staff attitudes can promote quality at relatively less expense. He states, "survey teams may be able to assess the medical aspects of nursing care; yet the nurse-patient relationship in nursing home care is a long-term relationship where staff attitudes play a major role" (p. 237).

The scant research in this area among nursing home personnel indicates significant positive correlations between low levels of empathy, negative attitudes about the aged, and custodial orientation toward care (Bagshaw & Adams, 1986), and suggests that staff with empathic attitudes can enhance the sense of well-being among residents (Gaspar & Lund, 1988). Significant relationships were also found between bias toward independence for the elderly and exhibiting positive affect toward residents;

conversely, dependency endorsement and negative affect were associated (Kahana & Kiyak, 1984). Attitudes about the elderly tend to be more positive among those with more education (i.e., registered nurses as opposed to aides, who do more stereotyping) (Bagshaw & Adams, 1986; Gustafson, 1983). Length of employment may have a curvilinear association, with more empathic attitudes found among those who have worked in the nursing home more than a year, but not so long that "burn-out" is an issue (Pennington & Pierce, 1985).

Just as they can be important facilitators, staff attitudes can also obstruct installation of new, more "resident-oriented" care systems. Even the most enlightened and best-intentioned administrators can run into brick walls if their employees are unwilling to work as a team with them. A "Less Than Whole Person" (LTWP) attitudinal construct is not uncommon among nursing home staff (Dixon, 1986), which fails to see the emotional independency needs of the resident that can coexist with their various physical dependencies.

The key to this attitudinal position is...the 'defensive dynamic of the carer.' In order to cope with their own feelings of inadequacy and lack of self worth, staff...perceive themselves as strong whole people who are taking care of these unfortunate residents. Residents are treated in routinised ways since staff are seen to know what is best for them; this renders them dependent on the institution, providing further proof of their less-than-wholeness (Dixon, 1986, p. 253).

Dixon suggests this position is a major obstacle to actual implementation of the resident-centered, individualized approach which often receives only lip service, and explains why there is such a gap between the reality and what is recommended for the residents' quality of life. She notes that for positive changes to occur, workers must move "away from doing

things to people towards helping people live the life they want to lead" (p.255). This is only possible if the staff can derive sufficient satisfaction and value from enabling.

There is also a fine line between helping appropriately and "inducing dependency" among residents. While "infantilization" of residents is often criticized, at least this behavior, though inappropriate, sometimes denotes an emotional connection between staff and residents (Retsinas, 1986; Wright, 1988). The problem is criticisms of such interaction have not customarily been followed by clear definitions of what is appropriate behavior.

To criticize aides for helping "too much" asks from staff an uncanny ability to demarcate the point where helping is harmful. An aide who is faulted for feeding a resident (the sin of inducing dependence) may just as easily be faulted for not feeding a resident (the sin of neglecting or even abusing). Similarly, the truism that aides should "encourage" residents to do as much as possible does not offer clear guidelines as to how much, how long, and with what consequences. Although the aide should offer encouragement, no guidelines specify how much encouragement. After one suggestion that the resident feed himself, should the staff member then offer to feed the resident? After three suggestions? (Retsinas, 1986, pp. 103-104).

With the heterogeneous collection of individuals who comprise the nursing home population, there are no easy answers to these questions. The point is well taken, however: recommendations for encouraging resident independence should be coupled with specific guidelines. Perhaps the individualized resident care plan is the proper place for identifying and spelling out appropriate suggestions.

Staff to Resident Ratio

No matter how dedicated and motivated the staff are, they cannot provide good quality of care if there are not enough of them. This is clearly a structural variable which does directly suggest the fundamental capacity to offer quality care. The ratio of nursing staff to residents, particularly in terms of the registered nurses and the nursing aides, has long been considered to be closely affiliated with quality, ever since Linn's (1974) report that ratio was one of the significant predictors of quality of care. Knapp and Harissis (1981) found homes with more residents per aide experienced higher rates of aide turnover. Understaffed shifts must struggle to accomplish even the basic daily tasks; time and energy for psychosocial interaction with residents is almost nonexistent. Insufficient staffing has been linked with high use of anti-psychotic drugs (Ray et al., 1980), and the use of physical restraints (Evans & Strumpf, 1989), implying overuse of such techniques to make residents easier to manage. However, no clear optimal number of staff to residents has been identified, and many states, including Virginia, have chosen not to specify minimum staff/resident ratios for intermediate care homes.

SUMMARY

Drawing from a wide range of literature, a conceptual model of nursing home quality is presented here which specifies four major dimensions of the quality construct: (a) staff intervention; (b) physical environment; (c) nutrition/food service; and (d) community relations. Each of these

four dimensions can be further broken into two sub-dimensions. It is proposed that if all of these sub-dimensions are represented by measurable indicators, a comprehensive quality measure could be derived.

Additionally, to place the actual "quality" in context, the factors that influence it are also identified in an expanded model. (Figure 3 displays the hypothesized relationships.) It is suggested that the most pronounced impact stems from the commitment, attitudes, and policies of the administrator and supervisory nursing staff, in terms of rehabilitative orientation versus custodial, psychosocial versus medical emphasis, a focus on the individual, and responsiveness to, and respect for, residents and staff.

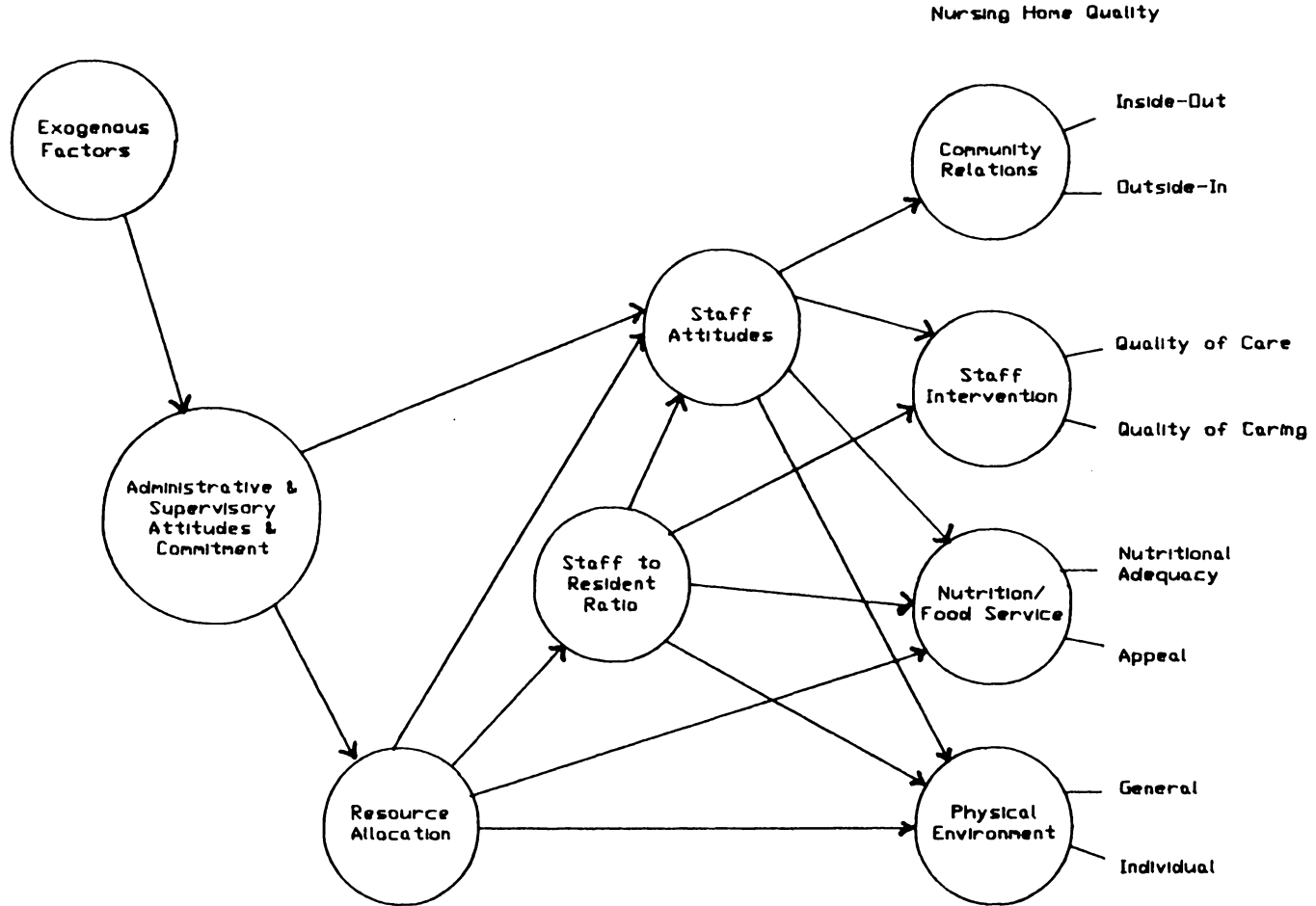


FIGURE 3

RELATIONSHIPS BETWEEN FACTORS AFFECTING QUALITY AND THE FOUR DIMENSIONS OF NURSING HOME QUALITY

CHAPTER 6

METHODOLOGY

In Chapter 5, it was proposed that measurable indicators for each of the eight sub-dimensions portrayed in the conceptual model could be combined to make an effective and comprehensive measure of nursing home quality. The next phase of this study was to examine the relationship of existing state data to the model, to ascertain what key quality indicators could be obtained, and then to see what these indicators revealed about nursing home performance. Specifically, this study explored the potential of standardized resident assessments already in use by the Virginia Medicaid program. The need to find out how standardized resident assessments can be utilized to evaluate nursing home quality was stressed in the Institute of Medicine (1986) report, which noted that the first step is to identify standards of reference for future comparisons. Accordingly, the determination of the industry performance norms was a key focus of this data analysis.

THE DATA SET

Most of the data for this project came from the Long-Term Care Information System (LTCIS) of the Virginia Department of Medical Assistance Services (which administers the Medicaid program). The use of existing data saves the considerable expense of collection and maximizes the application of what is already available for the Virginia Medicaid program.

Furthermore, the components of a data-based approach are not limited to Medicaid purposes, and will be readily replicable by other states without undue expense.

In 1983, Virginia took a major step in compiling nursing home data by placing all Medicaid-eligible resident assessments on a computerized Long Term Care Information System (LTCIS) (Lloyd, Bowling, & Koslowski, 1985). This information is collected in the course of meeting the requirements for annual Inspections of Care stipulated in the Social Security Act. Medicaid reviewers conduct inspection visits to evaluate appropriateness and quality of care. Standardized assessment forms developed by Falcone (1982), based on the Patient Classification for Long-term Care (Jones, 1974), have been used to collect the data.

These assessments are completed at the time of preadmission screening and at various times thereafter. Generally, two assessments are completed on each patient yearly: one by the Medicaid reviewers, and one by facility personnel. For each resident, the original assessment and the three most recent assessments are maintained in the active file, and other assessments are moved to history files. Since August 1983, over 41,000 patients, and more than 110,000 assessments, have been entered onto the system.

Medicaid personnel review 100 percent of the Medicaid residents at each facility once a year during one of their Inspection of Care visits. The year chosen for this study was July 1, 1987 through June 30, 1988. The assessments completed by Medicaid personnel during their Inspections of Care in each facility, conducted between July 1, 1987 and June 30, 1988, were used to examine the performance of homes on a number of

cross-sectional variables. Those residents whose preceding assessment was (a) completed by nursing home personnel, and (b) still in the active file, were further analyzed for performance on certain longitudinal indicators. A SAS-compatible dataset that included the necessary assessment information was made available to the researcher by the Virginia Department of Medical Assistance Services. These resident data were supplied with the social security numbers and other identifiers removed, so that it was impossible to identify any particular resident (addressing any human subjects considerations).

THE NURSING HOME SAMPLE

In Virginia, approximately 165 nursing homes have Medicaid-supported residents at the intermediate care level. As a first step toward controlling for case-mix, only intermediate care residents were used in this project. Skilled care residents, by definition, typically have more strenuous medical requirements. The final set of 135 nursing homes used in this study were those that met the following criteria:

1. They had twenty or more Medicaid-funded residents at the intermediate care level, with assessments completed by Medicaid personnel in a 100 percent review during the period of July 1, 1987 to June 30, 1988. This minimum number was chosen to assure there would be an adequate number of individuals with preceding assessments available for the subsequent longitudinal analysis.

2. They were not associated with a general hospital, mental hospital, or mental retardation facility. This study specifically targeted free-standing intermediate care nursing homes; the mental hospital and mental retardation facilities represent somewhat different populations and problems than the average intermediate care nursing home.
3. Complete data were available, from both the Health Department and the Medicaid program. Problems with the latter arose with a few (ten) homes which no longer had the previous assessments available in the active file that were necessary for longitudinal analysis.

Data provided by the Virginia Health Department were used for some of the structural variables examined in the final analysis, particularly the staff ratios: registered nurse hours per resident, licensed practical nurse hours per resident, and nursing aide hours per resident. The total number of beds, resident census, ownership, and location were also found here. The source of this information was a computer print-out of the 1987 Annual Survey of Nursing Homes (the most recent survey available), covering the report period of October 1, 1986 through September 30, 1987, and self-reported by the nursing home administration. Since these questionnaires were completed in the latter part of 1987, and were to reflect staffing levels at the time of completion, this time frame was compatible with the Medicaid data. Nursing homes were not included in the study sample if no survey was available; however, three homes were included in the sample which had everything except a report of nursing and/or aide hours. (These three were not represented in later staffing analyses.)

For the homes with staffing information, the hour figures used in the present study were calculated from the reported number of full-time personnel (labeled 35 hours/week or more in the questionnaire) and total part-time hours average/week. Specifically, the number of full-time employees at each level was multiplied by 35, added to the number of part-time hours, and then divided by the number of residents reported for that time period to obtain the number of hours weekly per resident. Some full-time employees work 40 hours per week (or more!), rather than 35, and in those cases, estimates would be slightly deflated; however, rough relative figures were adequate for this project. Unfortunately, while only intermediate care residents were utilized from the Medicaid data base, the health department surveys did not break down staff hours by intermediate versus skilled care units. Because of this, the ratios, especially for registered nurses, would be expected to be higher for the homes with skilled care beds, reflecting current regulatory requirements. Therefore, in later analyses, the multiple-level homes and the intermediate care-only homes were studied separately in terms of the relationship of staff ratio to the quality measure.

CHOICE OF VARIABLES

Several variables were identified as key indicators of quality in the Institute of Medicine (1986) study. New York and Rhode Island are presently testing specific choices of indicators. In addition, the administration of Virginia's Medicaid Medical Social Services Division identified variables they felt were items reflecting quality of care.

Based on literature reviewed earlier and these four sources, and working within the constraints of the LTCIS format, eighteen variables were selected from the more than 160 items covered in the LTCIS assessment forms (Appendix I) as representative of quality. (Two of these variables--on-site observation of resident cleanliness and appropriateness of dress--were later combined into one scale.) These variables were the measurable indicators of the quality concept. They are listed below under the model sub-dimensions that they represent. Following each variable in the list are labels identifying them as process or outcome (to place them in Donabedian's framework), and letters indicating which of the four above sources support their inclusion (i.e., Institute of Medicine, Virginia Medicaid, New York SHEs, Rhode Island study). The letters correspond to these specific references as subsequently noted.

With a few exceptions, these variables were used on a cross-sectional basis, that is, only the information from one assessment was analyzed for each individual. This was also the case for the on-site observation variables.

For the exceptions--activities of daily living, new pressure sores, and weight loss--the previous assessments were also examined to obtain a longitudinal measure to better represent outcomes. Specifically, the goal was to determine the number of residents in each facility who had experienced negative outcomes: those who had increased the number of dependencies in their activities of daily living, who had developed pressure sores, or who had significant weight losses (ten pounds or more). In this way, it was possible to focus on negative resident outcomes, and then later identify the homes with excesses in these areas. Other nega-

tive outcomes that might appropriately be included, such as contractures, were not used in this study because the wording on the assessment form was not sufficiently precise. Only assessments completed by nursing home personnel as the regular six-month review were accepted for longitudinal analysis, to assure that all residents' outcomes were measured for the same time-frame. It will be noted that the cross-sectional variables represent process and the longitudinal and on-site observation variables represent outcomes.

1. STAFF INTERVENTION

a. Quality of Care

- 1) Restraints--any use of any type, excluding gerichairs and bedrails: posey, mittens, waist, or wrist/ankle (process) [A,B,D]
- 2) Sedatives/barbituates/tranquilizers/antidepressants--more than two prescribed per resident (process) [A,B]
- 3) Bladder--use of indwelling catheters (both self and not self care) (process) [A,B,C]
- 4) Therapies--those not receiving any: inhalation, occupational, physical therapy, speech, reality orientation, other (process) [A]
- 5) Range of motion exercises--those not receiving (process)
- 6) Bowel and bladder training--those not receiving (process) [A]
- 7) Other additional nursing procedures--those not receiving (process)
- 8) Recreation/activities--those not receiving (process) [C,D]

- 9) Activities of daily living (ADL)--(compare number of dependencies with previous assessment) (outcome) [A,B]
 - 10) Decubiti--(those acquired since the last review to limit it to those acquired in-house) (outcome) [A,B,C,D] (also a reflection of nutrition)
 - 11) Observation of residents--skin problems (outcome)
 - 12) Observation of residents--whether clean and appropriately dressed (outcome) [A,C]
2. NUTRITION/FOOD SERVICE
- a. Nutritional Adequacy
 - 1) Weight--(compare with previous weight to observe pounds lost) (outcome) [A,B,C]
 - b. Appeal
 - 1) No teeth or no opposing teeth--no compensation (process) [A]
 - 2) Eating--use of syringe or tube (process) [B,D]
 - 3) Dining location--those eating meals in their rooms (process)
3. COMMUNITY RELATIONS
- a. Outside-in
 - 1) Visitors--those not receiving (process) [A]

Reference Code:

A=Institute of Medicine, 1986

B=Virginia Medicaid Identification of Trigger Items, 1987

C=New York Sentinel Health Events (SHE), New York, 1984

D=Rhode Island project, Spector, Rosenstein, Frieberger, & Hudson,
1987

In operationalizing the model it was readily apparent that staff intervention (particularly the quality of care sub-dimension) was most heavily represented, while there were no indicators available for the physical dimension at all. This was not unexpected as these variables were drawn from a fairly conventional system that was designed to assess the individual. Obviously, the ideal quality assessment system would incorporate indicators representing each of the eight sub-dimensions. Unfortunately, when operating within an existing system, constraints were imposed by the limitations of the data and the way it was coded into the computer. Since the goal of this project was to explore what existing data reveals about nursing home quality, we can proceed within these limits, while recognizing that an index measure derived from these variables alone will not give the complete picture.

All variables were dichotomized, and coded "1" for "yes" answers or those representing the presence of the less desirable characteristic. For each variable, individual resident assessments were then aggregated to obtain a proportion or incidence measure for each facility, i.e., the number and percentage of residents using indwelling catheters, not receiving bowel and bladder training, and so forth. The recoding resulted in the means being equivalent to the percentage of residents in each home with the negative characteristic.

The ADL variable differed from the others and bears further mention. The LTCIS assessment form included seven activities of daily living

(ADLs): bathing, dressing, transferring, toileting, bladder control, bowel control, and eating. The researcher first determined the number of activities in which each resident had become more dependent since the last review (possible score: zero to seven), and then the facility average. This figure was the variable used for developing the norms and quality index.

DEVELOPING THE NORMS AND INDEX

By aggregating the individual resident assessments within each facility, facility means and standard deviations were determined for each variable. A univariate procedure was then used to identify the mean, median, range, standard deviation, and other such descriptive factors for each variable across all nursing homes in the sample.

Part of this research effort was aimed at establishing statewide "norms" or standards of percentage incidence. A norm has been defined as "a pre-established benchmark which can change, is derived from the experience of a group, and is used to compare the experience of individual members of group" (New York State Department of Health, 1984, p. 17). This initial identification of nursing home norms was appropriate at this early stage of research. The Institute of Medicine (1986) stated:

Pass/fail and other scoring criteria for facility performance in each area,...should be established in advance. At the beginning, however, scoring will have to be more discretionary until analyses of the data base from the residents' assessments reveal the population-based outcome norms for each key indicator (p. 122).

Additionally, the development of an index measure based on this data was to be explored. The researcher chose to adapt the system of "goal attainment scaling" as a way to accomplish both these tasks.

Determination of Scales

Goal attainment scaling was originally developed in the 1960s, for the Hennepin County Mental Health Service in Minneapolis, Minnesota (Kiresuk and Sherman, 1968), as a means to evaluate individual client outcomes. Goals could be set for each individual, and that individual served as his or her own control group in defining "success" (Kiresuk and Lund, 1978). The system can also be used to evaluate programs. In either case, the goals are identified and a goal attainment follow-up guide is devised for use in subsequent evaluation. Five categories of attainment are specified, and these five categories are labeled "worst expected performance," "less than expected performance," "expected performance," "better than expected performance," and "best expected performance." Each of the five categories carries a point value, from (-2) for the "worst expected," (-1) for "less than expected," zero for "expected performance," (+1) for "better than expected," to (+2) for the "best expected performance." The scores for each goal can then be summed to obtain an index measure of performance.

This researcher used the system in a somewhat different way. Rather than establishing pre-determined goals and comparing later performance, or "goal attainment," here it was used after the fact, and not really to measure the attainment of pre-set goals at all. The format was merely

borrowed to help make sense of what has already happened, and in effect begin to identify what might be appropriate goals or norms to be used in the future.

Drawing from the goal-attainment technique, a five-category scale was developed for each variable thought to be an indicator of quality. These five categories of performance were labeled worst performance, less than average performance, average performance, better than average performance, and best performance. Quintiles, based on the percentage of residents described by the variable, were used to assign homes to performance levels. For example, homes in the quintile with the highest incidence of the negative indicator were assigned to the worst performance category.

Each of the five categories for each variable scale carried a point value, from (-2) for the "worst performance," (-1) for "less than average," zero for "average," (+1) for "better than average," to (+2) for the "best performance." The Quality Index measure was calculated by adding the scale scores for each of the variables to derive a facility measure. The mean was expected to approximate zero.

Advantages of Scaling System

When applied to nursing home quality in this way, the technique has several advantages.

- Unlike traditional measures which are dichotomous, that is, for example, a facility is said to either "meet" or "not meet" each licensure requirement, this system provides for five categories of

attainment. This is a significant improvement, as it makes it possible to identify when expectations are significantly exceeded, or conversely, the extent of the failure to achieve them (Kiresuk and Lund, 1978).

- It enables current standards or "norms" to be clearly defined, based on actuality. This overcomes criticisms of some past quality discussions, which often leave readers frustrated due to the lack of practical and meaningful measurement (Phillips, 1989).
- Such a scaling technique also clearly shows where we are now in terms of performance, so we can document progress or regression over time. Also, the standards can be upgraded as overall nursing home performance improves. The design lends itself well to examinations of relative performance, making it an appropriate choice for the current state of nursing home quality measurement.
- This scaling framework can be a useful management tool for nursing home providers, to evaluate how they compare to their peers.
- The system also lends itself well to use by regulatory agencies, which could readily access such data if standardized resident assessments are in place. Comparable standards could thus be established each year based on an annual analysis. Beyond utilization for evaluation purposes, as described above, these could easily be used for reimbursement purposes; i. e., homes could be paid bonus incentives for each upper category they met.
- The scores for each "goal" or variable can be combined into a summary goal attainment score, or index measure, for each facility. This type

of measure is essential to attempt to reflect a multi-dimensional concept like nursing home quality.

- Further, since the goal attainment scores approximate normal distributions, parametric statistical tests may be applied (Kiresuk and Lund, 1978).

The idea of setting criteria by present industry performance has some drawbacks, particularly if present performance is minimal. However, if quality is viewed as a construct which can be defined by consensus, then industry norms provide a reasonable standard for establishing that consensus. Relative quality is more easily judged than absolute quality (Institute of Medicine, 1986). Furthermore, the standards also lend themselves easily to modifications if the industry, as hoped, improves their performance on these variables. In fact, clarification of these standards is a necessary foundation and impetus for regulatory pressure for improvement. As R. A. Kane (1987) observes, "an ideal regulatory system should be designed not only to identify and correct instances of poor care, but as a force to raise the standards of overall care" (p.79).

CASE-MIX

Obviously many of these criteria are tied to the case-mix of the facility. More debilitated patients may require mechanical feeding, for example, but the latter may also be used for staff convenience. Thus, controls on case-mix should make it possible to focus on variations in variables that may be related to quality rather than actual patient need.

Kurowski and Shaughnessy (1985) note that theoretically, quality and case-mix are inseparable.

The case-mix is reflected in the skilled versus intermediate care level distinction, so for this study only intermediate care residents were included. As a further control, a case-mix score was established for each facility using a case-mix algorithm, and the relationship of case-mix to the Quality Index was examined. The algorithm was based on the formula developed by the Virginia Center on Aging (1986) for the Virginia Long-Term Care Information System. Depending on their functioning status and service needs, residents were assigned to one of six groups, each of which carried a case-mix score ranging from .46 to 1.89 (the heaviest case load). The facility case-mix score equaled the mean score when the individual resident scores were combined.

RELIABILITY AND VALIDITY

The assessment forms that comprise the LTCIS data base have already been extensively tested for reliability. Falcone reported interrater agreement of .9 or higher on several of the basic patient characteristic items. (Kane, R. A. & Kane, R. L., 1983). Studies by the Virginia Center on Aging (1986) on the state's LTCIS data base confirmed the stability of the instrument.

The choice of quintiles for the assignment of nursing homes to the performance level categories makes the scaling system easily replicable by others. If comparable analyses using this format were executed in

other states and added to our knowledge base, meaningful cross comparisons would be possible.

Internal Validity

Item analysis was used to examine the relationship of the multiple-item index to the individual items included. To determine how well the Quality Index predicted these variable scales, the Quality Index measure was the independent variable in a series of individual regressions, one with each variable scale measure. Any items with less than one percent of their variance explained were dropped from the index as non-contributory. The Quality Index was also correlated with each scale measure to obtain an additional indication of their relationships.

External Validity

The problem of external validity, or how well this model reflects other actual observations of the population, was tested in relation to findings from the Inspection of Care reports compiled by the Medicaid reviewers after their annual (100% review) visit. The findings were outlined in letters which were returned to the facilities after each visit. The letters include listings of all observed deficiencies, subdivided into the following categories: (a) health and safety; (b) nursing; (c) dietary; (d) activities; (e) social services; (f) physical therapy; (g) interdisciplinary care plans; (h) physician documentation;

(i) pharmacy; (j) housekeeping and physical plant; and (k) resident observation.

While recognizing that these reports were not totally independent of the LTCIS assessments, since both were completed by the Medicaid reviewers, it was felt that the Inspection of Care reports offered an approximation of an implicit or primary measure of quality of care which could reasonably be applied in this context. Also, while the focus was partly on resident observation, documentation problems weighed quite heavily in the deficiency lists. Assessment variables that dealt with documentation errors (e.g., medication and treatment charting omissions) were purposely omitted from the index for this reason. Therefore, these lists tapped somewhat different data.

Copies of these report letters were on file at the state Medicaid office, and the researcher tallied and coded the number of deficiencies by category for each facility in the sample. In doing so, the researcher noted some problems; for example, some reviewers listed a particular item under health and safety, while others placed the same item under resident observation. Another problem occurred in that each separate type of deficiency was counted as one, whether it reflected one chart or one hundred. The researcher made every effort to code them consistently, and all were coded by the same individual with this goal in mind, but the imperfections must be recognized. Those facilities with greater total numbers of deficiencies were judged to be providing lower quality care, on a scale of zero (equivalent to high quality) to the highest number of deficiencies, representing the poorest quality.

At this point, correlational analysis was used to test the construct validity of the new index, that is, the extent to which the index was associated with the measure of quality derived from the Inspection of Care (IOC) reports. The null hypothesis was that there would be no correlation between the two measures. Individual correlations with the separate deficiency categories were also run.

STRUCTURAL VARIABLES

Finally, the Quality Index was used in an exploratory analysis of the relationships with selected structural variables. The structure variables were: (a) ownership (non-profit/proprietary/public); (b) size (total number of beds); (c) location (rural/urban, where urban includes all counties with population density above the state average (1980) and that are included in Metropolitan Statistical Areas (as of 1984), and all cities (Center for Public Service, 1987; U.S. Department of Commerce, 1986)); (d) staff/resident ratio (R.N., L.P.N., and nursing aides); and (e) percentage of Medicaid patients. The inter-relationships between these variables were examined, and then analysis of variance was used to determine if the mean Quality Index scores within these groups were significantly different. The relationships were analysed through regression techniques to evaluate their predictive strength in regard to quality. Based on the literature review, the relationships were hypothesized as follows:

1. Ownership: The non-profit homes will have higher quality scores, the government-run homes will be in the middle, and the proprietary homes will have lower quality scores.
2. Size: The number of nursing home beds will be positively associated with the quality measure.
3. Location: This will be strictly exploratory, as there was no literature found to serve as a basis for prediction. The suspicion is that rural homes tend to provide more personalized care. The reasoning behind this supposition is that, in small towns and rural areas, where there is a smaller labor pool to draw from, the staff members are more apt to know residents personally from their pre-institutional existence, and even be related to some. Therefore, my hypothesis is that this personal interest and increased accountability to the community will result in better quality in the rural homes.
4. Staff/resident ratio: Higher ratios of registered nurses, licensed practical nurses, and nursing aides will all be positively associated with the quality measure.
5. Percentage of Medicaid residents: The percentage will be negatively associated with the quality measure. This hypothesis reflects the complaints by providers that levels of Medicaid reimbursement are not sufficient to support good quality.

SUMMARY

This research project used the newly developed conceptual model of nursing home quality to develop an index measure of quality in that set-

ting. The measurable indicators were drawn from resident assessments in the Long-Term Care Information System of the Virginia Medicaid program, to examine the utility of this data base for these purposes. Statewide industry performance standards were identified as a part of the process, and scales for each variable were established, borrowing from the goal-attainment system. The reliability and validity of the index were evaluated. Finally, the relationships of specific structural variables and nursing home quality were analyzed.

CHAPTER 7

RESULTS

The core sample of 135 nursing homes represented all areas of the state and was comparable to state and nationwide figures on percent proprietary (74 percent) and other structural variables. (See Tables 1 and 2 for summaries.) The average size (139 beds) in the sample was larger than the national average; this was not unexpected since an earlier study of Virginia's nursing homes (Arling et al., 1987), reported an average of 135.6 beds. The sample mean percent of Medicaid-funded residents was 72.6, and the facilities enjoyed an average occupancy rate of 97.6 percent; these rates were both somewhat higher than the national averages of 60 percent (Scanlon, 1988) and 91-92 percent (Strahan, 1987; U.S. General Accounting Office, 1988), respectively. Almost two-thirds (62.2 percent) of the nursing homes were in urban areas and approximately one-third (37 percent) offered skilled care.

THE DATA

The data set for the final sample of 135 nursing homes yielded 12,327 resident assessments completed by Medicaid reviewers between July 1, 1987 and June 30, 1988. These were used for the cross-sectional and observation variables. A subset of 9,006 of these residents also had a previous assessment available for longitudinal analysis.

Table 1. SAMPLE FREQUENCIES

NO. BEDS	FREQUENCY	PERCENT
0 - 60	19	14.1
61 - 120	52	38.5
121 - 180	39	28.9
180+	25	18.5
TOTAL	135	100.0%

OWNERSHIP	FREQUENCY	PERCENT
Public	11	8.1
Private Non-profit	24	17.8
Private For-profit	100	74.1
TOTAL	135	100.0%

LOCATION	FREQUENCY	PERCENT
Rural	51	37.8
Urban	84	62.2
TOTAL	135	100.0%

SKILLED UNIT	FREQUENCY	PERCENT
Yes	50	37.0
No	85	63.0
TOTAL	135	100.0%

Table 2. COMPARISON OF SAMPLE TO POPULATION

VARIABLE	SAMPLE	U. S.	STATE**
Percent Proprietary	74.1	75*	77.3
Average Number of Beds	139.0	85*	135.6
Occupancy Rate	97.6	92*	92.0
Percent Medicaid	72.6	60a	79.0
Percent Urban	62.2	N. A.	58.0
Percent With Skilled Units	37.0	N. A.	36.0

SOURCES:

* Strahan, 1987

a Scanlon, 1988

** Arling et al., 1987 ("Urban"=communities of 50,000+)

Means and standard deviations for each of the seventeen variables were determined for each home. Then the mean scores, standard deviations, and ranges of these facility means were computed for each variable (see Table 3) Some of the variables exhibited a very narrow range (the smallest were the tube feedings and new pressure sores); other varied across the full range from zero to one, or nearly so (e.g., no therapies, dining location, and use of physical restraints). Because the incidence and variance of tube feeding was so small, it was dropped from further analysis and excluded from the index.

The average number of activities of daily living that residents had become more dependent in, over the six-month period, was 1.09 out of seven, with a range of .22 to 2.5. Also notable among the mean findings were that approximately 85 percent of residents in an average nursing home were receiving additional nursing services, beyond those specified in the assessment form, but only five percent were reportedly receiving bowel or bladder retraining. Just over half (52 percent) of the residents were getting therapy from one or more disciplines (physical, occupational, reality orientation, inhalation, speech, or other). Physical restraints were used on approximately half of the residents (56 percent). Belying the image of nursing home residents as abandoned, only 14 percent were reported to have no visitors.

Table 3. MEAN SCORES AND VARIABILITY OF QUALITY INDICATOR VARIABLES

Variable	Mean	Std Dev	Variability
STAFF INTERVENTION			
Physical Restraints	.56	.166	.0648 - .9552
Psychotropic Drugs	.181	.081	.0357 - .4848
Indwelling Catheter	.102	.077	0 - .4
No Therapies	.484	.267	0 - 1
No Range of Motion	.831	.173	.1842 - 1
No Bowel/Bladder Training	.948	.065	.6364 - 1
No Additional Nursing	.151	.118	0 - .5761
No Activities	.10	.095	0 - .561
Sum Declines in ADLs*	1.092	.459	.2162 - 2.5
New Pressure Sores	.037	.033	0 - .1667
Observed Skin Problems	.091	.059	0 - .2651
NUTRITION/FOOD SERVICE			
No Teeth/No Dentures	.285	.105	.04-.5057
Tube/Syringe Fed	.017	.023	0-.1531
Eats in Room	.56	.211	0-.9815
Weight Loss (10+ lb)	.132	.062	.0208-.375
COMMUNITY RELATIONS			
No Visitors	.14	.125	0-.6522

* Average number of decreasing dependencies out of seven activities of daily living--this is not a percentage of residents as reported for the other variables.

THE SCALES

The next step was to establish scales for each of the variables, using the goal attainment framework. The scales were constructed from the mean scores from all the facilities in the sample. Since the variables were dichotomized, the means were equivalent to the percentage of residents who scored "1," and who therefore had the negative characteristic. Five category scales were developed, with scores ranging from (-2) for "worst performance," to (+2) for "best performance." Homes were divided into quintiles based on the percentage of residents with the negative characteristic in relation to the performance of the other homes. For example, homes in the quintile with the highest incidence of the negative indicator were assigned to the worst performance category (-2). Table 4 displays the scales, showing the range of percentages of residents in the homes corresponding to each performance level. Approximately 27 homes were assigned to each box.

As noted earlier, the incidence and variance of tube-feeding was so low, this variable was deleted. The observation scale that combined two variables--resident cleanliness and appropriateness of dress--was also dropped from the index when item analysis revealed it had a very poor relationship to the Quality Index measure. In more than half the homes (57 percent), all residents were observed to be clean and appropriately dressed, so the variance was relatively low as well. The use of psychotropic drugs was also deleted after the item analysis showed it did not fit with the other variables. Therefore, the final Quality Index was constructed from fourteen variable scales: physical restraints, urinary

catheterization, no therapies, no range of motion, no bowel/bladder retraining, no additional nursing, no activities, no teeth/dentures, dining in room only, no visitors, average number increasing dependencies in activities of daily living (ADL), new pressure sores, weight loss, and observed skin problems.

Table 4. QUALITY INDICATOR SCALES
(Representing Percentage Incidences Found in Sample of 135 Nursing Homes)

	PHYSICALLY RESTRAINED	INDWELLING URINARY CATHETER IN USE	NOT RECEIVING ANY THERAPIES	NOT RECEIVING RANGE OF MOTION EXERCISE	NOT RECEIVING BOWEL/BLADDER TRAINING
WORST PERFORMANCE (-2)	70.16%-95.52%	15.84%-40%	74.49%-100%	97.06%-100%	99.01%-100%
LESS THAN AVERAGE PERFORMANCE (-1)	59.26%-70.11%	11.01%-15.79%	60%-74.31%	93.06%-97.03%	97.83%-99%
AVERAGE PERFORMANCE (0)	51.02%-58.72%	6.76%-10.53%	38%-59.74%	85.19%-92.94%	95.56%-97.75%
BETTER THAN AVERAGE PERFORMANCE (+1)	44.32%-50.77%	3.3%-6.67%	21.2%-37.5%	68.71%-85.05%	92.45%-95.39%
BEST PERFORMANCE (+2)	6.48%-44.12%	0%-3.23%	0%-21.05%	18.42%-67.88%	63.64%-92.31%

Table 4. Continued

	NOT RECEIVING ADDITIONAL NURSING SERVICES	NOT PARTICIPATING IN ANY ACTIVITIES	NO OPPOSING TEETH/NO DENTURES	DOESN'T LEAVE ROOM FOR MEALS	NO VISITORS
WORST PERFORMANCE (-2)	22.58%-57.61%	17.58%-56.1%	38.41%-50.58%	74.82%-98.15%	21.33%-65.22%
LESS THAN AVERAGE PERFORMANCE (-1)	17.78%-22.53%	10.55%-17.32%	30.93%-37.84%	62.94%-73.33%	13.64%-20%
AVERAGE PERFORMANCE (0)	10.11%-17.72%	5.36%-10.1%	24.44%-30.38%	55.84%-62.5%	9%-13.56%
BETTER THAN AVERAGE PERFORMANCE (+1)	4.17%-10.1%	2.08%-5.26%	19.44%-24.39%	39.77%-53.33%	4.63%-8.24%
BEST PERFORMANCE (+2)	0%-4.03%	0%-2.04%	4%-19.32%	0%-38%	0%-4.44%

Table 4. Continued

	AVERAGE NUMBER INCREASED DEPENDENCIES IN 7 ADLs	WEIGHT LOSS (10+ LB)	NEW PRESSURE SORES	OBSERVED SKIN PROBLEMS
WORST PERFORMANCE (-2)	1.47-2.5	18.18%-37.5%	6.45%-16.67%	14%-26.51%
LESS THAN AVERAGE PERFORMANCE (-1)	1.18-1.46	14.49%-17.83%	3.96%-6.1%	10%-13.95%
AVERAGE PERFORMANCE (0)	.92-1.17	10.99%-14.29%	2.7%-3.85%	7.78%-9.9%
BETTER THAN AVERAGE PERFORMANCE (+1)	.67-.91	8.54%-10.96%	.78%-2.5%	3.77%-7.69%
BEST PERFORMANCE (+2)	.22-.65	2.08%-8.51%	0%	0%-3.67%

QUALITY INDEX SCORES

Quality Index measures for each facility equalled the sum of their scores on the fourteen variable scales. A perfect "bad" or "good" score of (-28) or +28 was possible with this number of variables, but with this scaling arrangement, most homes were expected to cluster near zero. Determination of these Quality Index scores produced a mean score of (-0.015), which was, in fact, near zero. The standard deviation was 6.43, demonstrating reasonable variance, and the scores exhibited a range of 28, from (-12) (the worst) to 16 (the best). The median was zero; the mode was (-1).

CASE-MIX

Case-mix mean scores were also determined for each facility. The mean case-mix score was 1.02, with a standard deviation of 0.07, and a range of 0.89 to 1.32. These findings were comparable to those reported by Arling and his colleagues (1987), from a 1985 study of Virginia's nursing homes. They computed a mean of 1.00 and a range of facility scores from 0.81 to 1.23.

Case-mix was significantly ($p = .05$) higher (indicating heavier care residents) in the homes with skilled units, where the mean case-mix score was 1.04, as opposed to the single level homes ($M = 1.01$). Presumably the presence of a skilled care unit brings the most physically disabled residents, with the greatest care needs, to these multiple level homes. The intermediate care units may inherit some of these residents once they

become stabilized, and they apparently maintain somewhat heavier care requirements.

The case-mix mean scores were not significantly correlated to the Quality Index measure ($r = -0.03$, $p = .71$). This was true for the homes with skilled care units ($r = -0.07$, $p = .62$), and even more so for the intermediate care-only homes ($r = -0.02$, $p = .83$). When case-mix was introduced into the later regression analysis, it was not a significant contributor to the model. However, more elaborate analyses of this data should incorporate some categorizing of norms by resident groups, for greater precision.

RELIABILITY AND VALIDITY

Internal Validity

Item analysis revealed a poor relationship between the index and two of the original variables. In the case of on-site observation of resident cleanliness and appropriateness of dress, all Medicaid residents in 57 percent of the homes scored zero on both these variables, so there was relatively little variance, and the amount of explained variance was only 0.001, with a probability of .67. The indicator of psychotropic drug use was found to have a negative correlation with the index. This finding probably reflected the need to further refine this variable by groups of residents, to identify those residents for whom two or more of these prescriptions might be appropriate, and those for whom the prescriptions would raise the question of overuse. Advancing to that level of analysis

with the help of an expert panel would be the next logical step in working with this data in further studies. However, for this project, these two variables were simply excluded from the final Quality Index.

External Validity

The Inspection of Care reports of deficiency findings for reviews conducted during the same period (July 1, 1987 to June 30, 1988) were tallied for use in external validity testing of the Quality Index measure. As noted before, the deficiencies were listed under ten categories. Following are the mean number of deficiencies and standard deviations for each category, in Table 5. The categories where the most deficiencies were found were nursing ($\bar{M} = 7.93$) and physician documentation ($\bar{M} = 6.17$). Pharmacy was the category with the fewest deficiencies cited ($\bar{M} = 0.57$). The total number of deficiencies ($\bar{M} = 35.05$) ranged from 5 to 128, with a standard deviation of 19.69; this number was assumed to be a rough measure of quality for these purposes (the lower the number, the better the quality).

Once these deficiency list tabulations were complete, they were used in correlational analysis with the Quality Index measure. The Quality Index did not correlate with the overall number of deficiencies at a significant level ($r = -0.16$, $p = .07$), but it did significantly correlate with the individual categories of nursing, social services, and rehabilitation, at the .05 level of probability or better. However, the largest r was only 0.25 (for nursing). (See Table 5 for details.)

Table 5. INSPECTION OF CARE DEFICIENCY LIST MEANS AND CORRELATIONS WITH QUALITY INDEX

CATEGORY	MEAN	STANDARD DEVIATION	r	p
Health and Safety	1.311	4.162	-.045	.604
Nursing	7.926	4.201	-.2497	.0035
Dietary	2.644	1.941	-.0393	.651
Activities	2.482	1.569	.0351	.6859
Social Services	3.659	1.901	-.2173	.0113
Rehabilitation	1.178	1.47	-.2027	.0184
Care Plans	1.37	1.262	-.0772	.3737
Physician Doc.	6.17	2.918	-.158	.0672
Pharmacy	0.57	0.697	-.0858	.3227
Housekeeping/Upkeep	4.57	5.579	-.0402	.6439
Resident Observation	3.17	4.162	-.065	.4539
TOTAL DEFICIENCIES	35.052	19.686	-.1565	.0698

These results must be tempered with two considerations. One was that the newly developed Quality Index was not yet itself a comprehensive measure of nursing home quality, but represented only what could be culled from the variables in these particular resident assessments. Secondly, in the current state of nursing home quality assessment, there is no single definitive measure, or "gold standard," yet existing, for use in validity comparisons. The Medicaid Inspections of Care were resident-focused and the observations on the floors described in the deficiency lists revealed this orientation. However, as noted previously, the deficiency lists reflected documentation errors (found by the Medicaid reviewers when examining resident charts) even more heavily. While this may be an important aspect of the quality and organization of the home, this focus is not itself a comprehensive measure of quality, as indicated by the literature review. Also the problems noted earlier may have weakened this as a comparative measure (i.e., a deficiency may reflect one or two hundred incidences of the same problem).

STRUCTURAL VARIABLES

The frequencies of four of the five structural variables (size, ownership, location, and percent Medicaid) were summarized in Tables 1 and 2. Although the presence of a skilled care unit was not one of the originally proposed variables, this factor exerted an impact that demanded consideration. In fact, t-tests revealed a significant difference ($p = .02$) between the Quality Index means of the intermediate care-only ($M = 0.86$) and the homes with skilled units ($M = -1.5$, indicating lower qual-

ity). Thus, the partial relationships in terms of presence or absence of a skilled care unit were examined in many of the subsequent analyses. The inter-relationships among the structural variables were identified before looking at them in relation to the Quality Index measure.

Structural Variable Relationships

According to the Student-Newman-Keuls test, the percentage Medicaid was not statistically different between the proprietary ($\bar{M} = .73$) and the non-profit homes ($\bar{M} = .68$). Not surprisingly, however, the proportion of Medicaid recipients was significantly higher in the publicly run facilities ($\bar{M} = .81$). There was no significant difference in the percentage Medicaid between rural and urban homes, nor between homes with skilled or without.

Rural nursing homes, with a mean of 110 beds, were significantly smaller ($p = .0001$) than their urban counterparts ($\bar{M} = 156$ beds). Non-profit, proprietary, and government facilities were no more likely to be in one setting or the other, according to Chi square analysis.

As would be expected, skilled units were significantly ($p = .0001$) more apt to be located in larger homes ($\bar{M} = 178$ beds); the average intermediate care-only facility (ICF) had 116 beds. No significant differences in distribution of skilled units across ownership types were revealed by Chi square analysis.

The weekly staffing ratios reported in Table 6 were divided to obtain a daily rate, for comparison to other states. For intermediate-care only homes, the hourly rates per resident day for R.N.s, L.P.N.s, and nursing

aides, were .208, .559, and 1.914, respectively, for a total nursing hours per day of 2.68. For the homes with skilled care units, the comparable ratios were .296, .547, and 2.003, for a total nursing hours per day of 2.845. These totals were about midway in the range reported in the Institute of Medicine (1986) study, which demonstrated wide interstate variation, from .32 nursing hours per resident day in New Hampshire, to 4 hours in Hawaii. (Additionally, it should be remembered that these Virginia figures were conservative estimates based on a full-time work week of 35, rather than 40, hours.)

There were no significant differences in staffing levels between rural and urban settings, but there was an interesting finding in regard to ownership. Here it appeared, when looking at the total sample, that the non-profit homes had significantly higher use of licensed practical nurses ($M = 4.85$), than did proprietary ($M = 3.64$) or public homes ($M = 3.99$). Staffing levels of registered nurses and nursing aides were also higher in the non-profit homes, but not significantly so. However, since the facilities with skilled units were significantly different from the homes without, as far as R.N. hours (although not L.P.N. or nursing aide hours), this finding, too, needed to be examined in terms of partial relationships. When broken down in this way, the single-level non-profits had not only a significantly higher level of L.P.N. hours, as compared to proprietary, but R.N. hours as well. (Nursing aide hours were not significantly different.) Across all homes, R.N. hours and nursing aide hours were significantly correlated; in the multiple-level facilities, the use of L.P.N.s and nursing aides showed an even stronger relationship ($r = 0.49$, $p = .0004$).

Percentage Medicaid had a significant negative correlation with registered nurse hours, in both single-level ($r = -0.33$, $p = .002$) and multiple-level homes ($r = -0.42$, $p = .003$). The percentage Medicaid was least related to the use of L.P.N.s. This suggested that homes with fewer Medicaid recipients provided higher staffing levels of the registered nurse position. Which caused which--whether the higher staffing levels succeeded in attracting more private pay residents, or whether having more private residents paying higher daily rates enabled the facilities to afford higher staffing levels--remains unclear. Zero-order correlation coefficients are recorded in Table 7.

Table 6. COMPARISON OF INTERMEDIATE CARE-ONLY HOMES (ICF) & HOMES WITH SKILLED CARE UNITS (ICF/SNF) ON SELECTED STRUCTURAL VARIABLES

	<u>ICF Only</u> (N = 85)		<u>ICF/SNF</u> (N = 50)		<u>N*</u>
	Mean	Std Dev	Mean	Std Dev	
Number of Beds	116.***	53	178.***	70	135
Percent Medicaid	73.36	16.95	71.29	15.38	135
R.N. Hours	1.46**	1.05	2.07**	.87	133
L.P.N. Hours	3.92	1.45	3.83	1.47	133
Aide Hours	13.40	2.26	14.02	2.57	132
Case-mix	1.01	0.06	1.04	.06	135
Quality	0.86b	6.61	-1.50b	5.25	135

(Rounded to 2 decimal places)

* Data on weekly staff hours not available for all homes.

*** Significantly different at $p = .0001$ level, according to t-test.

** Significantly different at $p = .001$ level, according to t-test.

b Significantly different at $p = .05$ level, according to t-test.

Results of Analysis of Variance in Quality Relationships

The results of the exploratory analysis of the structural variables in relation to the Quality Index measure were mixed in their support of the hypotheses. The findings of the analyses of variance are summarized here.

1. Ownership: Despite the small N (11) of government-owned homes in the sample, it was felt to be important to keep them as a separate group. Lemke and Moos (1989) made this point, stating the common habit of combining them with non-profit homes may deflate the true scores of the latter.

Analysis of variance showed the non-profit homes had a significantly higher mean Quality Index score ($M = 4.13$) as opposed to both the proprietary ($M = -0.95$) and public ($M = -0.55$) facilities, according to the Student-Newman-Keuls test (grand $M = -0.0148$). The latter two groups did not differ significantly. This finding was in line with the hypothesis that non-profit homes provide better quality overall. However, the conditions for this relationship must be specified. The significant difference was found only in the single-level homes; where the mean quality for the nonprofits was 6.65 ($n = 17$), as opposed to (-0.38) for the proprietary ($n = 61$) and (-2.43) for public facilities ($n = 7$). This relationship did not exist in the multi-level homes, but the numbers of nonprofits (7) and publicly-owned homes (4) were both so small in this sub-group that such comparisons cannot reliably be drawn.

Table 7. ZERO ORDER CORRELATION COEFFICIENTS, FOR INTERMEDIATE CARE ONLY (ICF) & HOMES WITH SKILLED CARE UNITS (ICF/SNF)

	Size	Medicaid	R.N.	L.P.N.	Aide
ICF (N = 85)					
Quality	-.331 .002	-.147 .180	.121 .269	.120 .272	.234 .032
Size (No. Beds)		-.125 .254	.060 .583	-.194 .075	-.147 .182
% Medicaid			-.333 .002	-.122 .268	-.197 .072
R.N. Hours				-.097 .376	.337 .002
L.P.N. Hours					.068 .537
ICF/SNF (N = 50)					
Quality	-.001 .994	.00 .488	.285 .049	.048 .748	.134 .363
Size (No. Beds)		-.038 .794	-.153 .299	-.179 .223	.265 .593
% Medicaid			-.418 .003	-.018 .904	-.265 .068
R.N. Hours				.241 .099	.351 .014
L.P.N. Hours					.488 .0004

(Rounded to 3 decimal places)

* Data on staff hours not available for all homes:
ICF (N = 84 for nursing aide hours)
ICF/SNF (N = 48 for all hours)

2. Size: The number of nursing home beds had a moderate but significant correlation ($r = -0.26$, $p = .0026$) with the Quality Index measure, but in a negative direction--the opposite of the hypothesis. The smaller homes performed better on these quality indicators than did the larger homes. However, again the conditions for this relationship must be specified. Size appeared to be a factor for single-level homes (correlation with quality: $r = -0.33$, $p = .002$), but the relationship disappeared in multiple-level homes ($r = -0.001$, $p = .99$). Perhaps this reflected the greater variation in size among the intermediate care-only facilities: there were no homes with less than 60 beds among the multiple-level homes. Another possible explanation may relate to the earlier studies that suggested larger homes were able to offer more services to their residents. Perhaps this is true only for the homes with skilled care units--that these facilities do in fact have more on-site services and therapies available, as compared to similarly sized intermediate care-only homes--and their intermediate care residents profited by this proximity.
3. Location: The t-test showed the mean of the rural homes ($M = 0.35$) was higher than for the urban ($M = -0.24$), as hypothesized, but not significantly. This may reflect, in part, the smaller number of beds found in rural homes.
4. Staff/resident ratio: The staffing information from the Health Department surveys was not broken down by intermediate versus skilled care units in homes which have both, and descriptive analysis showed a significant difference in mean number of R.N. hours between the two types, as expected due to current regulations. Therefore, two sepa-

rate analyses were conducted: one for the homes that have skilled units, and another for the intermediate care-only homes. The number of R.N., L.P.N., and nursing aide hours per resident were included in each analysis (refer to Table 6). Two significant relationships to the Quality Index were discovered: R.N. hours were key in the homes with skilled units ($r = 0.29$, $p = .05$), and nursing aide hours stood out in the single-level homes ($r = .23$, $p = .03$). These findings did not make a strong case of support for the hypothesized positive relationships between more staff and better quality, beyond these two mild ones: better quality was associated with more nursing aide hours in the intermediate care-only homes and with more R.N. hours in the multiple-level facilities.

5. Percentage of Medicaid residents: The correlation between the proportion of Medicaid recipients and the Quality Index was negative as hypothesized, but was very weak and insignificant ($r = -0.06$, $p = .48$). This varied between the two types of homes: it was positive in the multiple-level homes ($r = 0.10$, $p = .49$), and negative in the other homes ($r = -0.15$, $p = .18$). Therefore, while percentage Medicaid was correlated with staffing levels, there was not a clear translation into quality.

Regression Results

Both individual and multiple regression analyses were performed, with the Quality Index as the dependent variable, in a model that included number of beds, ownership, presence of skilled care unit, location,

R.N. hours, and case-mix. Because percentage Medicaid and nursing aide hours were more strongly correlated with R.N. hours than with quality, they were not included as independent variables to avoid multicollinearity problems. This model explained 13 percent of the variance across all nursing homes, with only number of beds and ownership significant at the .05 level. As earlier findings suggested possible interaction effects, interaction terms of number of beds and R.N. hours, each multiplied times the skilled variable (a dummy variable where 1 = skilled unit) were added. With these included, an additional five percent of the variance was explained, but they did not add significantly to the strength of the model as represented by the F value. In the interaction model, the presence of a skilled unit became a significant contributor, as was the skilled*size interaction term; these replaced the previously significant impact of ownership. With the skilled unit as the dummy variable, the following two regression equations were derived from the regression model. (Location was also dichotomous: 0 = Rural, 1 = Urban.) For single-level (intermediate care-only) homes,

$$Q = .10 (\text{R.N. Hours}) - .42 (\text{Number of Beds}) - .05 (\text{Location}) - .15 (\text{Ownership}) - .02 (\text{Case-mix}),$$

while for multiple-level facilities:

$$Q = -.77 + .28 (\text{R.N. Hours}) + .21 (\text{Number of Beds}) - .05 (\text{Location}) - .15 (\text{Ownership}) - .02 (\text{Case-mix}).$$

Table 8. MULTIPLE REGRESSION RESULTS (Dependent Variable = Quality Index)

INDEPENDENT VARIABLE	b	BETA	STANDARD ERROR	F
Size (No. of Beds)	-.04	-.42	.01	-3.03**
Skilled Unit (SNF)	-9.96	-.77	3.87	-2.57*
Location	.69	-.05	1.14	.61
Ownership	-.49	-.15	.29	-1.67
Case-mix	-1.57	-.02	8.15	-.19
RN Hours	.63	.10	.63	.99
SNF*Size	.04	.63	.02	2.22*
SNF*RN Hours	1.04	.19	1.19	.88

Intercept = 7.55; overall F = 3.28; df 8, 123; R-Square = .18

* p < .05; ** p < .005

Separate analyses were then executed for the intermediate-only and intermediate/skilled nursing homes, due to the differences observed earlier. The results were distinctly different, as anticipated by the above equations: number of beds was quite significant ($p = .006$) in a negative direction, for the ICF-only homes, while R.N. hours was the only variable that even approached significance ($p = .059$) for the homes with skilled care also. The model was stronger for the single-level homes ($F = 2.96$), and explained more variance (.16), than for the multiple-level ($F = 1.13$, $R\text{-square} = .12$). Since the staffing data were more precise for the single-level homes, the relationships identified in those homes were probably more reliable than the findings for the multiple-level facilities.

To further illuminate these relationships, separate individual regressions of the independent variables were also run for all homes, intermediate care-only, and homes with skilled care. The findings are presented in Table 9. Again, number of beds, and to a lesser degree, nonprofit status, contribute significantly to the variance in all homes, but this relationship disappears when looking at the homes with skilled care units. Presence of a skilled unit is itself a significant contributor to the Quality Index across all homes. Aide hours were also significant in the single-level homes, while only the registered nurse hours variable was significant in multiple-level homes.

Table 9. RESULTS OF INDIVIDUAL REGRESSIONS
(Dependent Variable = Quality Index)

<u>VARIABLE</u>	<u>ALL HOMES</u>			<u>ICF (N = 85)</u>			<u>ICF/SNF (N = 50)</u>		
	<u>F</u>	<u>p</u>	<u>R-SQ</u>	<u>F</u>	<u>p</u>	<u>R-SQ</u>	<u>F</u>	<u>p</u>	<u>R-SQ</u>
SIZE	9.46	.003	.066	10.24	.002	.110	.00	.994	.000
OWNERSHIP	7.48	.007	.053	5.84	.018	.066	1.10	.299	.023
LOCATION	0.28	.595	.002	0.02	.880	.000	0.08	.773	.002
% MEDICAID	0.41	.525	.003	1.90	.171	.023	0.81	.373	.017
R.N. HOURS	1.31	.254	.010	1.24	.269	.015	4.08	.049	.081
L.P.N. HOURS	1.38	.242	.011	1.24	.269	.015	0.10	.748	.002
AIDE HOURS	3.78	.054	.028	4.75	.032	.055	0.85	.363	.018
CASE-MIX	0.14	.705	.001	0.05	.825	.001	0.25	.617	.005
SKILLED UNIT	4.99	.027	.037						

In an effort to further clarify the structural relationships to the quality measure used in this project, the top tenth percentile of homes and the lowest tenth percentile were extracted for a closer look. The top percentile (n = 16) was conspicuous in the absence of skilled care units: only one home was multiple-level, whereas seven of the thirteen homes in the bottom percentile had skilled care units. Size was also quite different: only one home in the top group had more than 120 beds (180); seven had sixty beds or less, for a mean size of 92 beds (standard deviation = 37). This was quite a contrast to the "worst" performers, all of which had 118 or more beds, with a mean size of 164 beds (standard deviation = 17). In fact, the difference of means was significant at the .0007 level, according to t-tests.

Vladeck (1980) has stated, "The best voluntary facilities are the best there are. The worst nursing homes are almost exclusively proprietary" (p. 123). These results would suggest that he was only partially correct. The homes in the "worst" group were predominately for-profit; only two were non-profit, and one publicly owned. However, the "best" group was about evenly split, with nine proprietary and seven non-profits. Of course, with fewer non-profit homes in the original sample, this finding indicated a higher rate of such homes reached this level. At the same time, it also showed that the proprietary nursing homes cannot be painted in the broad negative strokes that have been typical in the past. There are some high quality for-profit homes. The fact that they exist may add credence to this author's theory about the critical role of the administration and management in achieving exemplary nursing home quality.

CHAPTER 8

DISCUSSION OF FINDINGS AND FUTURE IMPLICATIONS

The results of this study offer a new way of looking at what is going on inside nursing homes. Through the use of resident assessments and the scaling system, actual measurable criteria are established that clearly inform the observer about the relative performance of nursing homes.

QUALITY INDICATORS

One of the significant contributions of this study is the demonstration of the utility of standardized resident assessments as a source of information about nursing home performance. An assortment of process and outcome variables that have been linked with nursing home quality can readily be culled from the assessment format. Their use paves the way to a new era of increased knowledge about what truly occurs in the nursing home setting. Previously, there has been very little concrete data on actual incidence of these care features (Evans & Strumpf, 1989; Spector, Kapp, Tucker, & Sternberg, 1988).

Profile of Three Levels of Nursing Home Performance

The preceding analysis yields a more in-depth picture of nursing homes than has been common in the existing literature. For example, the

mean scores provide the following portrait of the residents in the average intermediate care nursing home:

- 56 percent of the residents are physically restrained
- 18 percent receive two or more prescribed tranquilizers, sedatives, barbituates, and/or anti-depressants
- 10 percent have an indwelling urinary catheter
- 52 percent receive some sort of therapy
- 17 percent receive range of motion exercises
- 5 percent receive bowel/bladder rehabilitation training
- 85 percent receive some additional nursing services
- 90 percent participate in some type of activities
- 28.5 percent have no opposing teeth and no dentures to compensate
- less than 2 percent (1.7) are fed via tube or syringe
- 56 percent eat in their sleeping quarters
- 86 percent have visitors
- average decline in seven ADLs in the past six months: 1.092
- less than 4 percent (3.7) developed pressure sores in the past six months
- 13.2 percent had a ten pounds or greater weight loss in the past six months
- 9 percent would be observed to have skin problems, but most residents would be clean and appropriately dressed

By using the scales, we can go a step further and also describe the best and worst performing homes on each quality indicator. Such infor-

mation is valuable in efforts to clarify what is "very good" and "very bad" in nursing home quality, and this technique enables us to look at these questions in new ways. The experience of residents in the best performing homes in each variable contrasts sharply with the worst performing homes, as clearly demonstrated in Table 10. In this table, the precise range of percentages of residents described by each quality indicator, in the top 20 percent of homes and the lowest 20 percent of homes on that indicator, are portrayed. The differences are striking. The scales also present at a glance the full scope of performance in actual numbers. For example, in even the "worst" performing homes, at least 40 percent of the residents are reportedly receiving some additional nursing services.

General Observations

In many of these cases, it is too early in the state of our knowledge to aver any certain percentage is categorically good or bad--it really can only be judged relative to other nursing homes. There are some exceptions; for example, in-house acquired pressure sores are generally avoidable, if good quality care is given. Otherwise, this sort of criterion is in the early stages. Perhaps if more researchers do comparable analyses, we might gradually achieve a good sense of what is appropriate. Some generalizations about performance on these indicators can be made however, both positive and negative.

Table 10. PERCENTAGE OF RESIDENTS ON QUALITY INDICATOR VARIABLES IN THE "BEST" AND "WORST" PERFORMING FACILITIES

Negative Quality Indicator	Best Performance (Highest Quintile)	Worst Performance (Lowest Quintile)
STAFF INTERVENTION		
Physical Restraints	6.5% - 44.1%	70.1% - 95.5%
Indwelling Catheter	0% - 3.2%	15.8% - 40%
No Therapies	0% - 21.2%	74.5% - 100%
No Range of Motion	18.4% - 67.9%	97.1% - 100%
No Bowel/Bladder Training	63.6% - 92.3%	99% - 100%
No Additional Nursing	0% - 4%	22.6% - 57.6%
No Activities	0% - 2.1%	17.6% - 56.1%
Sum Declines in ADLs*	.216 - .653	1.47 - 2.5
New Pressure Sores	0%	6.5% - 16.7%
Observed Skin Problems	0% - 3.7%	14% - 26.5%
NUTRITION/FOOD SERVICE		
No Teeth/No Dentures	4% - 19.3%	38.4 - 50.6%
Eats in Room	0% - 38%	74.8% - 98.1%
Weight Loss (10+ lb)	2.1% - 8.5%	18.2% - 37.5%
COMMUNITY RELATIONS		
No Visitors	0% - 4.4%	21.3% - 65.2%
* Average number of decreasing dependencies out of seven activities of daily living--this is not a percentage of residents as reported for the other variables.		

Positive

It appears that, on the optimistic side, residents are not abandoned, as most do receive visitors. Most are getting some sort of additional nursing services, which is an encouraging finding: folks in nursing homes are being NURSED! Tube/syringes are not widely used for feeding at the intermediate care level. The evidence does not support the idea of tremendous declines in independence, though future studies might fruitfully look at specific types of residents in this regard--new admissions, particular diagnoses. This variable also does not reflect the number of residents who are already totally dependent in all activities of daily living.

Over half the residents are receiving some therapy--either physical, speech, occupational, inhalation, reality orientation, or other--although this proportion could be larger, as demonstrated by the better performers. Finally, most residents are reported as having some activities. Too often, the bedfast who cannot come to the usual bingo games are overlooked, but they too can profit from some in-room activities, such as music tapes, and reading aloud.

Negative

On the negative side, one of the most glaring concerns is the almost total lack of bowel and bladder training. Though such treatment is not appropriate for every resident, this low incidence probably reflects a underlying acceptance of incontinence as "normal" for frail elderly.

However, Smith and her colleagues (Baigis-Smith, Smith, Rose, & Newman, 1989; Smith, 1988) and others (Pannill, Williams, & Davis, 1988) have reported heartening success in working with older clients to decrease incontinence. There is an urgent need for education among staff to promote understanding of what bowel and bladder training is, and the reasons for doing it. However, the administration must be committed to such efforts as a quality of life issue, in the face of a recent study (Schnelle, Sowell, Hu, & Traugher, 1988). These researchers found the cost of keeping residents continent, through frequent toileting, may actually exceed the already significant expense of cleaning and laundering involved for incontinent residents.

Almost as disappointing in performance is the lack of reported range of motion exercises. These are necessary to prevent contractures, and this finding again suggests the need for in-service to raise awareness of the importance and proper methods.

More than half the residents are physically restrained at times. This incidence is in the middle of the range reported from a recent review of the literature (Evans & Strumpf, 1989), where the few available figures varied from 25 to 84.6 percent. Evidence is accumulating that in many cases, such extensive restraining is not effective. For example, tying down agitated individuals may only agitate them further. We can do better than this with the aid of creative technology (e.g., homing devices, door alarms, sheltered walking areas) and imaginative ways of interacting with the resident.

Finally, it is a distinctly bad sign if 16 percent of a home's residents develop new pressure sores in a six month period; since the best

performers had none. This seems like a very strong indicator of quality care, which warrants inclusion in the index even though the overall variance between homes was relatively low.

RELATIONSHIPS OF STRUCTURAL VARIABLES TO QUALITY

The results of this study provide evidence that non-profit homes support higher staffing levels of nurses and perform significantly better on these quality indicators than do proprietary or publicly owned homes. However, the examination of the "best" and "worst" homes reveals that, while the majority of the latter are, in fact, proprietary, about half of the exemplary homes are, as well. Thus we can conclude that some proprietary owners can and do provide excellent quality and, therefore, for-profits do not automatically deserve the dubious image ordinarily accorded to them. Because the samples of the non-profit and public homes are small in relation to the proprietary, which may have allowed more measurement error, future studies should look at comparably-sized samples of all three.

The presence of a skilled care unit, making the facility multiple-level, appears to negatively affect the quality experienced by the intermediate care residents. Unfortunately, the staffing data used in this project did not differentiate, for the multiple-level homes, between staff for intermediate care and the staff assigned to the skilled care residents.

However, we can gather from analysis of the available data that, while these latter homes do have higher registered nurse hours (as expected),

they do not have significantly higher ratios of nursing aides and licensed practical nurses. At the same time, this staff has to care for not only the conspicuously higher medical demands of the skilled care residents, but also an intermediate care population which itself exhibits a higher case load demand than their peers in the single-level homes.

Therefore, there may be at least two explanations of the lower quality performance of the multiple-level homes. Existence of a skilled unit probably draws the individuals who are in the frailest conditions to those facilities. The heavier case-mix demands identified in this study may reflect residents who the intermediate care unit inherits from the skilled unit after stabilization; though stable, these individuals may be quite debilitated, with little chance of improvement. This sub-group of residents may be bedfast individuals for whom some of the quality indicators are not inappropriate, i. e. , eating in the room, no bowel and bladder training. This might explain some portion of the significantly lower quality, as measured by the new index, observed in the multiple-level homes. However, there may be another explanation as well. Although staff ratios show only moderate relationships to the quality measure in this study, we might surmise that these heavier care demands on the same number of staff as in single level facilities could result in lower quality.

The structural variable with the greatest apparent predictive value is size, with the smaller homes performing better, but again this seems connected somehow with the absence of a skilled care unit. Perhaps the larger homes become too big to maintain the personal touch and involvement of the administration, which was suggested in the expanded conceptual model presented here as a major influence on quality. However, maybe the

multiple-level homes have greater availability of on-site therapies and services, from which not only the skilled care but also the intermediate care residents can benefit. Thus, the lack of the personal touch is counter balanced in these homes.

Location does not appear to have any significant effect on quality, though the rural homes, which also tend to be smaller and single-level, are somewhat higher overall. The percentage Medicaid also does not contribute much to the variance in quality, implying that the level of Medicaid reimbursement is not a determining factor. Homes with fewer Medicaid recipients are found to have higher registered nurse staffing levels, but these did not fully translate into corresponding higher levels of quality, in this study. These higher staffing levels may be necessary to attract more private paying residents, or it may be that the facility can afford them because of the higher rates of payment from private pay residents.

Case-mix is not significant either, although future analyses should look at case-mix in relation to the specific variables. Adjustments could be built into particular variables, as appropriate. The Institute of Medicine recommends that norms be identified for each category of case-mix, suggesting at the very least, that the mentally competent, mentally impaired, and/or physically impaired residents could be considered separately.

LIMITATIONS OF THE STUDY

Certain considerations must be stated about the project, beyond what have been noted earlier in this paper. First of all, the data was limited to Medicaid recipients. As they comprise the majority of residents, they provide a reasonable sample. However, the study excludes nursing homes that are private pay only, or that had only a few Medicaid recipients. Ideally these homes could be included in further studies, as well as the private pay residents in the Medicaid-dominant homes.

The researcher tried to select variables from the resident assessments which were reliable and valid. Most are relatively straightforward, as when a resident either does or does not have skin problems. However, when a resident is checked as receiving activities, for example, these data reveal little about the intensity or degree of participation. Also, 100 percent of the assessments from a given review were not always contained in the available data set. Those that were not on the computer may have been special cases, which could have altered the results somewhat.

Validity testing of a new quality measure is only as good as the other measure used for comparison. George (1989) speaks of ideally comparing a new measure to a "gold standard"--a perfect measure of the particular phenomenon of interest. However, if there already is such a "gold standard," a new measure would be superfluous. As noted previously, because there is no definitive measure of nursing home quality, any such evaluations are imperfect.

Validity testing could be improved, however. The comprehensive quality measure suggested here could be compared with "expert" ratings

of each home, recorded at the same time the resident assessments are completed. These ratings could be simply judgements of overall quality, or could be broken down into the same general components of quality identified in the conceptual model. In this way, explicit and implicit quality measures, alluded to earlier, could be compared.

Staffing data could be more precise. Ideally it could be collected in the facility as the time of the review, and specifically for the intermediate care units.

Finally, a major limitation of the Medicaid assessment data is that it does not contain variables representative of all the sub-dimensions specified in the comprehensive quality model. Such variables could be included; for example, the percent of personalized rooms could serve as an indicator of the individual physical environment. Colorado has already taken steps to include more quality of life measure in their Inspections of Care, through querying residents about their satisfaction with their residential experience. Virginia could experiment with this as well. Similar scales for additional variables could be developed at the resident or facility level (e.g., number of public education efforts by administrative staff annually as an indicator of "inside-out"), and included in a more comprehensive index measure. Suggestions are given in more detail in a later section. The scores determined in this study have a sound foundation, but would provide a fuller picture with supplemental information for all the sub-dimensions.

FUTURE RESEARCH QUESTIONS

This exploratory project stimulates as many questions as it begins to answer. For example, some of the areas that warrant future investigation include:

- Do the homes with skilled care units, in fact, provide more therapies and services to their intermediate care residents, as opposed to single-level homes? The staffing patterns within the multiple-level homes should also be examined more precisely. The skilled-intermediate care distinction is scheduled to be abandoned in the near future, but perhaps there are some lessons to be learned from explorations of these relationships.
- The use of psychotropic drugs should be broken down and analysed by various resident sub-groups: those with histories of mental illness, or various diagnoses associated with mental health, and those without.
- As with psychotropic drug use, we need to establish norms for different case-mix groups for each of the quality indicators, to arrive at the population for whom each is most critical.
- How do private-pay only homes compare with the homes studied here and what are the full ramifications of the cost-quality relationship?
- How do different arrangements--for example, having an on-site medical director, having a geriatric nurse-practitioner, experimenting with varying staffing assignments--affect quality?

- What characteristics of the staff and their work environment are associated with better quality, and how can these desirable features be achieved?

Many of these questions hinge on finally developing a comprehensive and accepted measure of nursing home quality to use in comparisons. The findings of this project suggest that resident assessments can readily yield information useful for such a measure. However, most existing resident assessments were not designed with this larger vision in mind, and some adjustments will be essential.

SPECIFIC RECOMMENDATIONS FOR INCLUSION

The resident assessment currently in use in the Virginia Long-Term Care Information System already supplies valuable data about facility performance. The model's sub-dimension, quality of care, is particularly well represented. However, the use of such resident assessments for overall quality evaluation would be enhanced by the addition of items so that all eight sub-dimensions of nursing home quality are represented. Following are a representative sampling of suggestions for each quality sub-dimension.

1. STAFF INTERVENTION

- a. Quality of Care [already covered in existing form, although in some cases coding could be improved for these purposes, to allow for greater precision (e.g., frequency of activities, existence

of contractures), and a few additional variables (e.g., staff-related accidental injuries, receipt of mental health counselling)]

b. Quality of Caring--could be best judged by directly asking residents:

- Does it seem to you that the staff like their work?
- Do the staff seem to treat residents with respect?
- Do you feel like you have any special friends among the staff--someone you can really talk to and look forward to seeing?
- If you have a problem here, do you feel you can talk to someone about it?
- Do you know the names of most of the staff who help take care of you?

2. PHYSICAL ENVIRONMENT

a. General

- Is the resident's room clean?
- Is the resident's bathroom clean?
- Are the furniture and linens in good shape?
- Are there any safety hazards in the immediate area (broken tile, bed cranks sticking out, etc.)?
- Has the resident suffered any injury caused by the environment?

b. Individual

- Is the resident's portion of the room personalized, with many personal possessions?

- Has the resident had problems with belongings "disappearing"?
- Are the room and bathroom designed to facilitate independent use based on the resident's particular disabilities?
- Does the resident report being able to have some privacy when desired?
- Has the resident been recently moved to another room, without good reason?

3. NUTRITION/FOOD SERVICE

a. Nutritional Adequacy

- Items used here, plus percentage of residents who appear dehydrated (this is already included in the form, but was not used in the current exploratory study as it displayed relatively low variance between homes).

b. Appeal

- Items used here, plus:
- Does the resident feel she receives adequate assistance and time to eat her meals?
- Does the resident report having any choice in food selection?

4. COMMUNITY RELATIONS

a. Inside-out

- How often does the resident go out of the facility for trips of any kind?
- How often does the resident visit home, if possible?
- Is the resident involved in any community activities on a regular basis (e.g., church attendance)?

- How much trouble does the resident report in getting help, if necessary, to write and mail letters, or to make phone calls?
- b. Outside-in
- How often does the resident receive visitors?
 - Does the resident have any interaction with volunteers?
 - Does the resident receive care from any health professionals located in the community, beyond the attending physician, (including mental health counselling)?

A number of sources are available offering a wealth of additional possibilities for consideration (see for example, Illinois Department of Public Aid, n.d.; Lieberman & Tobin, 1983; Moos & Lemke, 1988). In many cases, these represent items already being noted by the Medicaid reviewers in their observations recorded in the deficiency lists. Adding them to the resident assessment would provide the great advantage of standardizing and computerizing this data, so precise incidence of each indicator could easily be tabulated. The tools are already in place, we have only to enlarge our realization of their potential.

POLICY IMPLICATIONS

At present, we are at the first step: establishing industry norms. The next stages call for (a) adding the missing variables and doing the same, and (b) developing norms for sub-groups of the nursing home population, in order to more precisely target the appropriate incidence of

indicators. As recommended by the Institute of Medicine, once this information is available, policy-level normative decisions can be made on their usage. Such determinations correspond with the "decision rules" recommended by Patton (1982), as the key to making effective use of management information systems, and the control systems described by Miller and Knapp (1979). The expectations or standards of performance (norms) are pre-set, and in effect, an alarm goes off when monitoring reveals a home has exceeded the limits allowed on any negative quality indicator.

Typically, this process could be part of an inspection procedure, as in New York. A limited survey is conducted on all homes, but if the "alarm" goes off, it would signal that a more extensive survey is needed in that home. The initial aim of this second level survey is to identify any acceptable reasons for unusually high incidences of the given variables; barring those, a more intensive investigation of deficiencies is executed.

In this way it is possible to target the limited resources of regulatory agencies toward the real problem facilities. At least five states are already experimenting with similar attempts to use the survey process to specifically identify poor quality homes, and they appear to be successful in this effort (Institute of Medicine, 1986).

Conversely, the use of norms can pave the way toward a system that emphasizes positive incentives for providers offering good care. These homes would be "rewarded" with less extensive and less frequent surveys and with more freedom to experiment with innovative approaches. Illinois has installed an elaborate new system incorporating this principle--the Quality Incentive Program (QUIP)--in which surveys that specify quality

of life and other aspects not traditionally included, as well as more common quality of care components, are conducted. A facility receives a star for each category in which it exceeds the requirements, and these stars are not only good advertising, but translate into extra money for the facility. This reimbursement arrangement cost the state an additional 22 million dollars annually (Peirce, n.d.). However, the system employs nurses who work closely with their assigned facilities, in a consultative as well as inspection role, and these nurses have saved the state 15 million dollars through catching costly administrative errors within the homes.

Barring such unforeseen "windfalls," it may be possible to finance these positive bonus payments of X amount per resident, through the increased use of intermediate sanctions for the deficient facilities. These include financial penalties for each day of noncompliance, as allowed in the Omnibus Reconciliation Act of 1987.

Whatever approach Virginia policymakers decide to pursue, it will be essential to solicit input from a wide range of interested parties. In addition to agency administrators, the providers themselves, as well as residents, should be heavily involved in establishing what really is important in the inspection process. Some of the large chains have a history of using resident assessments for quality control; we can profit from their experience too. A panel including representatives from all these groups should work together to decide how the norms will be used. For example, the goal-attainment arrangement could be used somewhat differently than presented here, to maintain the advantages of the five levels of attainment, which reveal far more information than a dichotomy (see

p. 100), but not so there would always automatically be a "worst" group. That is, once the norms are established, the performance scales could be set by expert opinion of this panel, so that those homes far exceeding expectations could be recognized, but no homes would necessarily fall into the "worst" category.

The nursing homes could receive and post reports of their ratings on each variable, with or without a total index score. If desired, the index scores could also be used to assign homes to one of three to five groups (top, better than average, average, less than average, worst). Since individual variables may always be somewhat susceptible to the quirks of the particular current population in each nursing home, and therefore cannot always be precisely interpreted, the use of the multiple-item index and assignment to broad groups of performance may be a more realistic representation. This rating could be a good public relations tool for facilities and helpful to consumers; however, the possible effect on morale of residents in the poorly performing homes is a problem that must be addressed. Even in these homes, though, a poor rating could stimulate residents, their families, and the caring staff who may be struggling with insufficient support, to exert pressure on the administration for necessary improvements.

Recognizing improvements in a facility from Time A to Time B is another avenue that could be pursued. The scale scores could be utilized to calculate an improvement score: i. e., incentives could be built in for each area in which the facility improved from one category to the next.

As stated earlier, the identification of standards is especially critical now, as we enter a dynamic period of change in the wake of recent legislation. In this way, we will then be able to assess the impact of the alterations in public policy on the lives of nursing home residents.

EXTENSIONS OF THE CONCEPTUAL MODEL

The facts that the regression model using size, ownership, location, and staff hours is not very strong, and that some proprietary owned homes are in the "best" performance group, actually lend credence to this author's theory--that something else, in addition to these traditionally-used variables, explains what makes quality happen. Once a comprehensive and accepted nursing home quality measure is derived from the resident assessments, as discussed here, it would be possible to test the larger hypotheses projected in the conceptual model. Is it really the administrative orientation that is critical? I believe the full model can ultimately be tested.

In the meantime, the dimensions of quality can be used in another way to facilitate our understanding of the mechanisms of nursing homes. What happens when some of the sub-dimensions are missing? Lazarsfeld (cited in Caplovitz, 1983) discusses the idea of "substruction" of a property space, through the cross-classification of the dimensions of a concept. Such a typological procedure may be useful in further studies employing the model, as a means of classification. For example, the two sub-dimensions of staff intervention, quality of care and quality of caring, yield the following property space or typology:

QUALITY OF CARING

		GOOD	BAD
QUALITY OF CARE	GOOD	Appropriate care given skillfully, by staff who enjoy their residents and their work	Technically good care given impersonally
	BAD	Staff personable and concerned but provide unskilled/inadequate care (Ill-trained? Ill-equipped?) (Potential for neglect)	Staff provide minimal care, and have little personal concern or interest in residents

Into which category do most nursing homes fall? And how do these various classifications relate to comprehensive quality as measured by the full range of quality indicators? This sort of exercise offers new ways to categorize nursing homes that have hitherto been lacking.

In discussing the functions of theories, Schuerman (1983) notes that theories organize our knowledge, by telling how things fit together, and so provide a framework for thinking about the phenomenon.

In an applied profession it is desirable to have theories that go even further and provide prescriptions. Ideally, they tell us what we should do in a situation if we want a particular outcome. Few theories in the human service professions achieve this ideal. Rather than being highly specific, they provide only broad guidelines (p.18).

The conceptual model and results of the data analysis lay a firm groundwork toward achieving this ideal specificity to guide future policy and practice.

CONCLUSION

Variables from individual resident assessments, aggregated for each nursing home, and a scaling system across a statewide sample of nursing homes, serve as the basis for a respectable multiple-item index of relative nursing home quality. A conceptual model of nursing home quality is presented which explains the association of these variables as measurable indicators of the quality construct. Significant differences in relative quality are suggested by the subsequent data analysis, most notably, the favorable performance of non-profit, single-level, and smaller facilities.

The products of this study are encouraging in terms of the potential use of resident assessments as informants about nursing home quality at the facility level. The innovative approach to organizing this data has tremendous practical applications. Not only can a multidimensional quality index measure be derived from the scaling system, but it also allows for each process and outcome variable to be examined separately if desired. While this study has some limits, the techniques themselves could be employed widely in the future to help us better understand nursing homes. For example, comparable variables and scales that reflect the eight sub-dimensions of nursing home quality could be developed. Such scales could then readily serve as the basis for reimbursement incentives (e.g., for every +2 category achieved), and for overall quality ratings. The system could also be used to compile a knowledge base, enabling a variety of comparative analyses.

One of the greatest merits of the present project is that it stimulates ideas for a wealth of further efforts to understand nursing home quality. The possibilities are unlimited: developing a more comprehensive quality measure based on the model, further analyses using the innovative scaling system to build our knowledge base, testing of the full conceptual model. The present research tempts us to proceed in these directions, and promises such efforts will be fruitful.

APPENDIX A

VIRGINIA MEDICAID LONG-TERM CARE INFORMATION SYSTEM RESIDENT ASSESSMENT

Pertinent Section of Virginia Medicaid Long-Term Care Information System Resident Assessment (Virginia Department of Medical Assistance Services, 1988, pp. 39-41).

MEDICAL STATUS					CHECK BOXES WHICH APPLY PL. IN SPACES AS INDICATED		NAME OR NUMBER	
SIGHT	NO IMPAIRMENT 1	ATTEMPTED ? CORRECTION 1 SPECIFY	NO CORRECTION 3	COMPLETE LOSS 4	DATE OF CHANGE OF SERV.	DIAGNOSES	M-COA CODE	DATE OF ONSET
	HEARING		0					
SPEECH			PREVIOUS REHABILITATION		DATE OF CHANGE			
<input type="checkbox"/> NO IMPAIRMENT 00 <input type="checkbox"/> IMPAIRMENT 1 <input type="checkbox"/> STRUCTURE OR MUSCULATURE OF VOCAL TRACT 2 TYPE <input type="checkbox"/> LINGUISTIC SYSTEM 3 <input type="checkbox"/> COMPLETE LOSS 4 <input type="checkbox"/> DOES NOT SPEAK—NO KNOWN IMPAIRMENT 5			COMPLETED 1	NOT COMPLETED 2				
DENTITION			COMPENSATION TYPE 1	DATE OF CHANGE	RISK FACTOR MEASUREMENTS/OTHER TESTS			
<input type="checkbox"/> NO TEETH MISSING OR FEW TEETH MISSING 00 <input type="checkbox"/> SOME OPPOSING TEETH 1 <input type="checkbox"/> NO TEETH OR NO OPPOSING TEETH 2			0		CIGARETTE SMOKING			
FRACTURES/DISLOCATIONS			0 NONE 00		<input type="checkbox"/> NEVER SMOKED 00 <input type="checkbox"/> DOES NOT SMOKE HISTORY UNKNOWN 10 <input type="checkbox"/> EX-SMOKER 2 SMOKES 3-4 PER DAY _____ 1, 2			
HIP FRACTURE(S) 1	LOCATION TREATMENT	PREVIOUS REHABILITATION PROGRAM	YES	NO OR NOT COMPLETED 2	DATE THIS OR YEAR 1	DATE THIS OR YEAR 2	HEIGHT	RECORD DATE AND READINGS
	OTHER FRACTURE(S) 2							
DISLOCATIONS 3							BLOOD PRESSURE	
MISSING LIMBS			0 NONE 00		BLOOD CHOLESTEROL			
FINGER(S) OR TOE(S) 1	LOCATION	PREVIOUS REHABILITATION PROGRAM	YES	NO OR NOT COMPLETED 2	DATE THIS OR YEAR 1	DATE THIS OR YEAR 2	BUN	
	BELOW ELBOW 2						ALBUMINURIA	
ABOVE ELBOW 3							BLOOD SUGAR SPECIFY TEST	
BELOW KNEE 4							HEMOGLOBIN OR HEMATOCRT	
ABOVE KNEE 5							DIG LEVEL SPECIFY TEST	
PARALYSIS/PARESIS			0 NONE 00		PROTHROMBIN TIME			
MONOPLEGIA PARESIS 1	LOCATION	PREVIOUS REHABILITATION PROGRAM	YES	NO OR NOT COMPLETED 2	DATE THIS OR YEAR 1	DATE THIS OR YEAR 2	SERUM POTASSIUM	
	METROPLEGIA PARESIS 2						CHEST X-RAY 1, 2	
PARAPLEGIA PARESIS 3							OTHER	
TRIPLEGIA PARESIS 4							JOINT MOTION	SPECIFY LIMBS AFFECTED
QUADRIPLEGIA PARESIS 5							DATE	
ALLERGIES—SPECIFY					M-COA CODE		WITHIN NORMAL LIMITS 0	
							LIMITED MOTION 1	
							INSTABILITY—CORRECTED 2	
							INSTABILITY—UNCORRECTED 3	
							IMMOBILITY 4	
							MEDICAL HISTORY	
							M-COA CODE	
							FAMILY HISTORY	
							M-COA CODE	

FUNCTIONING STATUS		MM = MECHANICAL HELP MH = HUMAN HELP	NAME OR NUMBER
BATHING DATE: [] [] [] [] [] [] WITHOUT HELP 0 [] [] [] [] [] [] MM ONLY 1 [] [] [] [] [] [] MH ONLY 2 0 [] [] [] [] [] [] MM AND MH 3 0 [] [] [] [] [] [] IS BATHED 4 0 [] [] [] [] [] [] OR DOES NOT BATH 5 [] [] [] [] [] [] DESCRIBE HELP [] [] [] [] [] []		ACTIVITIES OF DAILY LIVING (ADL) BLADDER FUNCTION DATE: [] [] [] [] [] [] CONTINENT 0 [] [] [] [] [] [] INCONTINENT 1 [] [] [] [] [] [] LESS THAN WKLY. [] [] [] [] [] [] EXTERNAL DEVICE [] [] [] [] [] [] SELF CARE 2 [] [] [] [] [] [] INDWELLING CATHETER [] [] [] [] [] [] SELF CARE 3 [] [] [] [] [] [] OSTOMY [] [] [] [] [] [] SELF CARE 4 [] [] [] [] [] [] INCONTINENT 5 0 [] [] [] [] [] [] WEEKLY OR MORE [] [] [] [] [] [] EXTERNAL DEVICE [] [] [] [] [] [] NOT SELF CARE 6 0 [] [] [] [] [] [] INDWELLING CATHETER [] [] [] [] [] [] NOT SELF CARE 7 0 [] [] [] [] [] [] OSTOMY [] [] [] [] [] [] NOT SELF CARE 8 0 [] [] [] [] [] [] TYPE OF OSTOMY [] [] [] [] [] [] OTHER PROBLEM [] [] [] [] [] []	
DRESSING WITHOUT HELP 0 [] [] [] [] [] [] MM ONLY 1 [] [] [] [] [] [] MH ONLY 2 0 [] [] [] [] [] [] MM AND MH 3 0 [] [] [] [] [] [] IS DRESSED 4 0 [] [] [] [] [] [] IS NOT DRESSED 5 0 [] [] [] [] [] [] DESCRIBE HELP [] [] [] [] [] []		MOBILITY LEVEL DATE: [] [] [] [] [] [] GOES OUTSIDE [] [] [] [] [] [] WITHOUT HELP 0 [] [] [] [] [] [] GOES OUTSIDE [] [] [] [] [] [] MM ONLY 1 0 [] [] [] [] [] [] GOES OUTSIDE [] [] [] [] [] [] MM ONLY 2 0 [] [] [] [] [] [] GOES OUTSIDE [] [] [] [] [] [] MM AND MH 3 0 [] [] [] [] [] [] CONFINED [] [] [] [] [] [] MOVES ABOUT 4 0 [] [] [] [] [] [] CONFINED—DOES [] [] [] [] [] [] NOT MOVE ABOUT 5 0 [] [] [] [] [] [] DESCRIBE HELP [] [] [] [] [] []	
TOILETING WITHOUT HELP 0 [] [] [] [] [] [] DAY & NIGHT [] [] [] [] [] [] MM ONLY 1 [] [] [] [] [] [] MH ONLY 2 0 [] [] [] [] [] [] MM AND MH 3 0 [] [] [] [] [] [] DOES NOT USE 4 [] [] [] [] [] [] TOILET ROOM 5 [] [] [] [] [] [] DESCRIBE HELP [] [] [] [] [] []		EATING/FEEDING WITHOUT HELP 0 [] [] [] [] [] [] MM ONLY 1 [] [] [] [] [] [] MH ONLY 2 0 [] [] [] [] [] [] MM AND MH 3 0 [] [] [] [] [] [] SPOON FED 4 0 [] [] [] [] [] [] SYRINGE OR [] [] [] [] [] [] TUBE FED 5 0 [] [] [] [] [] [] FED BY IV [] [] [] [] [] [] OR CLYSIS 6 0 [] [] [] [] [] [] DESCRIBE HELP [] [] [] [] [] []	
TRANSFERRING WITHOUT HELP 0 [] [] [] [] [] [] MM ONLY 1 [] [] [] [] [] [] MH ONLY 2 0 [] [] [] [] [] [] MM AND MH 3 0 [] [] [] [] [] [] IS TRANS- [] [] [] [] [] [] FERRED 4 0 [] [] [] [] [] [] IS NOT TRANS- [] [] [] [] [] [] FERRED 5 0 [] [] [] [] [] [] DESCRIBE HELP [] [] [] [] [] []		BEHAVIOR PATTERN APPROPRIATE 0 [] [] [] [] [] [] WANDERING-PASSIVE [] [] [] [] [] [] LESS THAN WEEKLY 1 [] [] [] [] [] [] WANDERING-PASSIVE [] [] [] [] [] [] WEEKLY OR MORE 2 0 [] [] [] [] [] [] ABUSIVE/AGGRESSIVE [] [] [] [] [] [] DISRUPTIVE— [] [] [] [] [] [] LESS THAN WEEKLY 3 0 [] [] [] [] [] [] ABUSIVE/AGGRESSIVE/ [] [] [] [] [] [] DISRUPTIVE— [] [] [] [] [] [] WEEKLY OR MORE 4 0 [] [] [] [] [] [] COMATOSE 5 [] [] [] [] [] [] TYPE OF [] [] [] [] [] [] INAPPROPRIATE [] [] [] [] [] [] BEHAVIOR [] [] [] [] [] []	
BOWEL FUNCTION CONTINENT 0 [] [] [] [] [] [] INCONTINENT - [] [] [] [] [] [] LESS THAN WEEKLY [] [] [] [] [] [] OSTOMY-SELF [] [] [] [] [] [] CARE 2 [] [] [] [] [] [] INCONTINENT 3 0 [] [] [] [] [] [] WEEKLY OR MORE [] [] [] [] [] [] OSTOMY - NOT [] [] [] [] [] [] SELF CARE 4 0 [] [] [] [] [] [] TYPE OF OSTOMY [] [] [] [] [] [] OTHER [] [] [] [] [] [] PROBLEM 5 [] [] [] [] [] []		WALKING WITHOUT HELP 0 [] [] [] [] [] [] MM ONLY 1 [] [] [] [] [] [] MH ONLY 2 [] [] [] [] [] [] MM AND MH 3 [] [] [] [] [] [] DOES NOT WALK 4 [] [] [] [] [] [] DESCRIBE HELP [] [] [] [] [] []	
ORIENTATION ORIENTED 0 [] [] [] [] [] [] DISORIENTED - SOME [] [] [] [] [] [] SPHERES SOME TIME 1 [] [] [] [] [] [] DISORIENTED - SOME [] [] [] [] [] [] SPHERES ALL TIME 2 0 [] [] [] [] [] [] DISORIENTED - ALL 3 [] [] [] [] [] [] SPHERES SOME TIME [] [] [] [] [] [] DISORIENTED - ALL 4 [] [] [] [] [] [] SPHERES ALL TIME [] [] [] [] [] [] COMATOSE 5 [] [] [] [] [] [] SPHERES [] [] [] [] [] [] AFFECTED [] [] [] [] [] []		WHEELING DOES NOT WHEEL- [] [] [] [] [] [] MOVES ABOUT 0 [] [] [] [] [] [] WITHOUT HELP 1 [] [] [] [] [] [] MM ONLY 2 [] [] [] [] [] [] MH ONLY 3 [] [] [] [] [] [] MM AND MH 4 [] [] [] [] [] [] IS WHEELED 5 [] [] [] [] [] [] IS NOT WHEELED 6 [] [] [] [] [] [] DESCRIBE HELP [] [] [] [] [] []	
STAIRCLIMBING WITHOUT HELP 0 [] [] [] [] [] [] MM ONLY 1 [] [] [] [] [] [] MH ONLY 2 [] [] [] [] [] [] MM AND MH 3 [] [] [] [] [] [] DOES NOT CLIMB 4 [] [] [] [] [] [] DESCRIBE HELP [] [] [] [] [] []		COMMUNICATION OF NEEDS VERBALLY-ENGLISH 0 [] [] [] [] [] [] VERBALLY - [] [] [] [] [] [] OTHER LANGUAGE 1 [] [] [] [] [] [] NONVERBALLY 2 [] [] [] [] [] [] DOES NOT [] [] [] [] [] [] COMMUNICATE 3 [] [] [] [] [] [] OTHER LANGUAGE [] [] [] [] [] [] NONVERBAL [] [] [] [] [] [] COMMUNICATION [] [] [] [] [] []	

SERVICES CURRENTLY RECEIVED		FILL IN SPACES AS INDICATED		NAME OR NUMBER	
THERAPIES		SPECIFY FREQUENCY		MEDICATIONS	
DATE				SPECIFY EACH MEDICATION BY CATEGORY INCLUDE DOSE ROUTE OF ADMINISTRATION, FREQUENCY, AND TIME OF LAST DOSE	
INHALATION: 1, 4				DATE	
OCCUPATIONAL:				ANALGESICS/ NARCOTICS	
PHYSICAL:				ANTACIDS	
SPEECH:				ANTIBIOTICS/ ANTI-INFECTIVES	
REALITY/ REMOTIVATION:				ANTICOAGULANTS	
SOCIAL SERVICE:				ANTHYPER- TENSIVES	
OTHER:				BOWEL REGULATORS	
OTHER SERVICES/SOCIAL CONTACTS					
RECREATION/ ACTIVITIES:				CARDIAC REGULATORS	
RELIGIOUS SERVICES:				DIURETICS/ ELECTROLYTES	
VISITORS:				INSULIN/ HYPOGLYCEMICS	
OTHER:				SEDATIVES/ BARBITURATES	
NUTRITION					
DIET—SPECIFY #				TRANQUILIZERS/ ANTIDEPRESSANTS	
FOOD/FLUID (if INTAKE—NO PROBLEM— 1 SPECIFY SUPPLEMENTAL NOURISHMENTS				VASCULATORS	
DINING LOCATION # 2				VITAMIN/IRON	
SPECIAL NURSING PROCEDURES				MEDICATION ADMINISTRATION	
SPECIFY SITES WHERE APPLICABLE TYPE AND FREQUENCY OF TREATMENT				NO MEDICATIONS #	
DECUBITUS CARE SITE(S): 3				SELF ADMINISTERED LESS THAN WEEKLY # 1	
DRESSING(S): 0 1 SITE(S): 3				BY AT HOME HEALTH CARE # 2	
EYE CARE— 1 SPECIFY				BY OTHER PROFESSIONAL # 3	
OXYGEN Rx— 1 4 TYPE				BY PROFESSIONAL # 4	
RESTORATIVE NURSING					
BOWEL/ BLADDER TRAINING 3					
ROM EXERCISES SITES: 4					
OTHER: 3					
RESTRAINTS—SITES OF APPLICATION:					
TEACHING OSTOMY CARE— TYPE: 6					
SELF INJECTION OTHER: 1 6					
OTHER SPECIAL NURSING:					
PROFESSIONAL VISITS . . . SPECIFY FREQUENCY OF VISITS					
ATTENDING MD/DO:					
OTHER MD/DO:					
AUDILOGIST:					
DENTIST:					
OPHTHALMOLOGIST/ OPTOMETRIST:					
PODIATRIST:					
HOME HEALTH:					
OTHER:					

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